



# UC DAVIS

**PUBLIC DRAFT  
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## **Sacramento Campus 2020 Long Range Development Plan Update**

**Volume 2:**  
Aggie Square Phase I  
Draft Supplemental Environmental Impact Report

**PUBLIC DRAFT**

# **UC DAVIS SACRAMENTO CAMPUS 2020 LONG RANGE DEVELOPMENT PLAN UPDATE**

## **VOLUME 2: AGGIE SQUARE PHASE I DRAFT SUPPLEMENTAL ENVIRONMENTAL IMPACT REPORT**

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# Volume 2: Aggie Square Phase I

## Executive Summary

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### ES.1 Introduction

This Executive Summary is provided in accordance with the California Environmental Quality Act (CEQA) Guidelines Section 15123. It contains an overview of the project-level analysis of the Aggie Square Phase I project of the University of California, Davis (UC Davis) Sacramento Campus 2020 Long Range Development Plan (LRDP) Update, which is contained in Volume 1 of the Draft Supplemental Environmental Impact Report (EIR). As stated in the State CEQA Guidelines Section 15123(a), “[a]n EIR shall contain a brief summary of the proposed actions and its consequences. The language of the summary should be as clear and simple as reasonably practical.” State CEQA Guidelines Section 15123(b) states, “[t]he summary shall identify: 1) each significant effect with proposed mitigation measures and alternatives that would reduce or avoid that effect; 2) areas of controversy known to the Lead Agency, including issues raised by agencies and the public; and 3) issues to be resolved including the choice among alternatives and whether or how to mitigate the significant effects.” Accordingly, this summary includes a brief synopsis of the Aggie Square Phase I project and project alternatives, environmental impacts and mitigation, areas of known controversy, and issues to be resolved during environmental review. Table AS-ES-1 presents the summary of potential environmental impacts, their level of significance without mitigation measures, the mitigation measures, and the levels of significance following the implementation of mitigation measures.

### ES.2 Summary Description of the 2020 LRDP Update Aggie Square Phase I

The Aggie Square Phase I project of the 2020 LRDP Update is located on the 146-acre Sacramento Campus, approximately 2.5 miles southeast of downtown Sacramento, and 17 miles east of the UC Davis main campus in Davis. Land uses surrounding the campus site include offices, public institutions, urban corridor, low-density suburban neighborhoods, and a high-density traditional neighborhood.

The site for the Aggie Square Phase I project is a roughly 9.55-acre parcel owned by the University and currently utilized as a surface parking lot and fleet maintenance building. At full its full implementation, Aggie Square is anticipated to comprise roughly 25-acres, however programmatic details for future phases of Aggie Square development have not been determined at this stage. Aggie Square Phase I consists of approximately 1,384,500 gross square feet (gsf) of building space and an additional 549,996 gsf of parking structure space, along with lifelong learning space (390,000 gsf), science, technology, and engineering space (711,000 gsf), residential and community-serving space (324 multi-family apartment units in 283,500 gsf), incubator and accelerator space, and public spaces.



The University will be a major tenant of Aggie Square Phase I, however significant demand for space is expected to result from the University's existing and future partners and other businesses that wish to take advantage of the co-location benefits of this innovation center.

The Aggie Square Phase I project extends 45th Street to become a central spine through the Sacramento Campus connecting the UC Davis Hospital, the Education, Housing, and Research land use designation, and Aggie Square. The 45th Street extension will run through the Aggie Square plaza, which will use special paving materials up to the front doors of all Aggie Square Phase I project buildings that face the plaza. New streets in Aggie Square will connect with 3rd Avenue and 4th Avenue along Stockton Boulevard to simplify street circulation.

Varied and connected open spaces and plazas would connect all Aggie Square phases with the Hospital and Education, Research, and Housing land uses. Volume 1 of this Supplemental EIR updates the framework for the UC Davis Sacramento Campus, and Aggie Square is included as part of the Education, Research, and Housing land use designation.

## ES.3 Goals and Objectives of Aggie Square Phase I

UC Davis has identified the following objectives for the Aggie Square Phase I project.

- Create within the University a place where University and non-University people are working together.
- Create state-of-the-art facilities for science, technology, engineering, and research as well as office space and education.
- Provide housing that meets affordability goals for students in the professional schools.
- Develop physical structures to support the University's involvement in enhancing regional workforce development, addressing food access and security, and supporting a diversity of people working at Aggie Square.
- Reduce waste and improve sustainability by making efficient use of existing infrastructure and land resources.
- Facilitate easy access from Aggie Square to UC Davis Hospital and nearby UC Davis clinics.
- Express a diverse architectural character reflective of the role of Aggie Square as an innovation district, with a special emphasis on planning and design strategies that are responsive to climate challenges and sun orientation.
- Embrace a character of architectural diversity and vitality, linked together by a rich network of public spaces and collective commitment of environmental sustainability.
- Establish public spaces for a wide-range of public activities that serve UC Davis Sacramento Campus employees and residents, as well as the broader community to provide venues for people from diverse communities of interest to meet, interact, share ideas, and spark new partnerships.

## ES.4 Summary of Environmental Impacts and Mitigation Measures

Pursuant to State CEQA Guidelines Section 15382, a significant effect on the environment is defined as “a substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by the plan, including land, air, water, minerals, flora, fauna, ambient noise, and objects of historic or aesthetic significance.” Chapter 3, *Existing Environmental Setting, Impacts, and Mitigation*, of this volume of the Supplemental EIR describes in detail the significant environmental impacts that would result from implementation of the Aggie Square Phase I project. Table AS-ES-1 summarizes the environmental impacts and mitigation measures discussed in these chapters. Chapter 4, *Cumulative Impacts*, and Chapter 5, *Other CEQA Considerations*, in Volume 1 of this Supplemental EIR provide a discussion of cumulative impacts and other CEQA considerations, respectively.

## ES.5 Significant and Unavoidable Environmental Impacts

Section 21100(b)(2)(A) of the State CEQA Guidelines stipulates that an EIR must include a detailed statement setting forth “in a separate section: any significant effect on the environment that cannot be avoided if the project is implemented.” Accordingly, this section provides a summary of significant environmental impacts of the Aggie Square Phase I project that cannot be mitigated to a less-than-significant level.

Chapter 3 provides a description of the potential environmental impacts of the Aggie Square Phase I project and recommends mitigation measures to reduce impacts, to the extent feasible. Chapter 4, *Cumulative Impacts*, of the 2020 LRDP Update Supplemental EIR (Volume 1) determines whether the incremental effects of this plan are significant when viewed in connection with the effects of past projects, other current projects, and probable future projects. After implementation of the recommended mitigation measures, most of the impacts associated with development of the plan would be reduced to a less-than-significant level.

Some impacts are considered significant and unavoidable; that is, no feasible mitigation is available or the mitigation measures available were not sufficient to reduce Aggie Square Phase I impacts to a less-than-significant level. Note, this is only a summary of those impacts; it is important to review the discussions in Chapters 3 (Volume 2) and 4 (Volume 1) of this Supplemental EIR to understand the full context of the impact determinations. Implementation of the Aggie Square Phase I project would result in the following significant unavoidable environmental impacts, following implementation of feasible mitigation measures:

- Impact AS-AQ-1: Conflict with or obstruction of implementation of the applicable air quality plan
- Impact AS-NOI-1: Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project from construction activities in excess of applicable standards
- Impact AS-TRA-1: Conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities

Aggie Square Phase I is part of the growth program analyzed in the 2020 LRDP Update. Accordingly, the Aggie Square Phase I project would contribute to the cumulative impacts associated with the 2020 LRDP Update and other projected regional growth. Cumulative impacts of the 2020 LRDP Update (including Aggie Square Phase I) are analyzed in Chapter 4 of Volume 1 of this Supplemental EIR and are not specifically addressed in Table AS-ES-1.

## ES.6 Alternatives to the 2020 LRDP Update

State CEQA Guidelines Section 15126.6, as amended, mandates that all EIRs include a comparative evaluation of the proposed plan with alternatives to the plan that are capable of attaining most of the plan's basic objectives, but would avoid or substantially lessen any of the significant effects of the plan. CEQA requires an evaluation of a "range of reasonable" alternatives, including the "no project" alternative. The following alternatives are under consideration for the Aggie Square Phase I project:

- **Alternative 1: No Project.** Under the No Project Alternative, the Aggie Square Phase I project would not be included in the 2020 LRDP Update, and the area of the campus where it is proposed would continue to be used as a surface parking lot and for other support uses until such time as a new parking structure and education and research uses are constructed.
- **Alternative 2: Reduced Intensity Development.** Under Alternative 2, the intensity of the Aggie Square Phase I project would be reduced by applying a four-story building height limit. The height limit would reduce the overall square footage of new buildings and would reduce the number of units in the Housing/Community Building of the project.

The State CEQA Guidelines Section 15126.6 states that an EIR should identify the "environmentally superior" alternative: "If the environmentally superior alternative is the 'no project' alternative, the EIR shall also identify an environmentally superior alternative among the other alternatives." As described in Chapter 4, *Alternatives*, in this volume of the Supplemental EIR, although it would not accomplish the basic project objectives, the Reduced Intensity Development Alternative would be the environmentally superior alternative.

## ES.7 Mitigation Monitoring and Report Program

CEQA and the State CEQA Guidelines (Public Resources Code [PRC] Section 21081.6 and State CEQA Guidelines Sections 15091[d] and 15097) require public agencies "to adopt a reporting and monitoring program for changes to the project which it has adopted or made a condition of project approval to mitigate or avoid significant effects on the environment." A Mitigation Monitoring and Reporting Program (MMRP) is required and has been prepared for Aggie Square Phase I because the Supplemental EIR identifies potential significant adverse impacts related to the project implementation, and mitigation measure have been identified to reduce those impacts. The MMRP, as presented in Table AS-ES-2, has been prepared to ensure that all required mitigation measures are implemented and completed in a satisfactory manner before and during project construction and operation as applicable. Unless otherwise specified, UC Davis is responsible for taking all actions necessary to implement the mitigation measures under its jurisdiction according to the specifications provided for each measure and for demonstrating that the action has been successfully completed. UC Davis, at its discretion, may delegate implementation responsibility or

portions thereof to a licensed contractor or other designated agent. Section 21081.6 of the Public Resources Code requires the lead agency to identify the “custodian of documents and other material” that constitutes the “record of proceedings” upon which the action on the project was based. The UC Davis Office of Campus Planning and Environmental Stewardship, or designee, is the custodian of such documents for the Aggie Square Phase I project.

**Table AS-ES-1. Summary of Impacts and Mitigation Measures**

Impact	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
<b>Aesthetics</b>			
<b>Impact AS-AES-1: Potential to have a substantial adverse effect on a scenic vista</b> The Sacramento Campus, of which the Aggie Square Phase I site is a part, is not part of a designated scenic vista. There would be <b>no impact</b> .	<b>NI</b>	<b>Mitigation Measures</b> No mitigation measures are necessary.	<b>NI</b>
<b>Impact AS-AES-2: Potential to substantially damage scenic resources along a scenic highway</b> The Sacramento Campus, of which the Aggie Square Phase I site is a part, is not visible from any scenic highway; consequently, there would be <b>no impact</b> .	<b>NI</b>	<b>Mitigation Measures</b> No mitigation measures are necessary.	<b>NI</b>
<b>Impact AS-AES-3: In non-urbanized areas, degradation of the existing visual character or quality of public views of the site and its surroundings; in urbanized areas, conflict with zoning or other regulations governing scenic quality</b> The Aggie Square Phase I project would result in changes in visual conditions at all key viewpoints, but would not conflict with regulations governing scenic quality. Visual impacts from construction and operation would occur at KVP AS-4, the campus major open space. However, with implementation of Mitigation Measures LRDP-AES-1, LRDP-AQ-2a, AS-AES-3a, and AS-AES-3b the resulting view of the loading dock and the views during construction would be <b>less than significant with mitigation</b> .	<b>S</b>	<b>Mitigation Measure AS-AES-3a: Permanent Visual Screening of Support Road and Loading Dock</b> To reduce visual quality impacts on the views from the campus major open space, designers and contractors will design and construct a permanent visual screen between the open space area and the loading dock area.  If possible, the support road will be realigned enough to create a planting pocket between the road and the open space area. If the planting pocket is created, vining plants will be grown on a natural-style fence such as woven wood, wood replica, or non-shiny metal finish and will be a minimum of 7 feet high. The fence will be designed to allow vining plants to penetrate and grow on either side of the fence to produce a natural screen effect. Plants used on the fence will either be native to the area or at least a suitable species that is compatible with the existing plantings in the campus major open space. Plants will be evergreen and noninvasive. A high curb will be installed between the support road and the planting area to protect it from trucks accessing and leaving the loading dock area. This fence will be installed, and the vining plants established prior to operational use of	<b>LTS</b>

NI = No impact

LTS = Less than significant

S = Significant

SU = Significant and unavoidable

Impact	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
		<p>the support road and loading dock. The landscape maintenance program for Aggie Square Phase I landscaping will include maintenance of the fence and screening vegetation in a manner that will provide the planned screening effect continuously over time.</p> <p>If the limited amount of space between the support road and the property edge of the open space area is not sufficient to accommodate the fence and vines on the Aggie Square Phase I site, the designers and contractors will work with the UC Davis personnel responsible for designing and maintaining the campus major open space to design and construct a screen for the open space area. This offsite screen will have a similar effect as the one described for the onsite fence and vines, but may also include other plantings compatible with existing vegetation, as directed by Sacramento Campus Facilities staff.</p> <p><b>Mitigation Measure AS-AES-3b: Construction Site Maintenance</b></p> <p>The following measures will be taken to reduce unsightly construction impacts.</p> <ul style="list-style-type: none"> <li>• To prevent unsightly weeds and fugitive dust from exposed soil, demolition, grading, and site preparation activities will occur as near to the next phase of construction as possible.</li> <li>• To prevent views of stockpiled soil, demolition debris, or cleared brush piles, such materials will be removed from the site after demolition. If this is not possible, or if the soil is being stockpiled for later use, stockpiles will be low enough so as to not be visible from adjacent streets, sidewalks, bicycle lanes and parking lots. Alternatively, they may be maintained far enough from the edges of the property to allow the barriers to block the line of sight. Soil piles will be covered or seeded to prevent unsightly weeds and fugitive dust.</li> <li>• Scaffolding will be removed as soon as possible when no longer needed. If scaffolding is needed for a later development stage more than 90 days away, the scaffolding will be stored behind the visual screening barrier or removed and rebuilt when needed again.</li> </ul>	

NI = No impact

LTS = Less than significant

S = Significant

SU = Significant and unavoidable

Impact	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
		<b>Mitigation Measure LRDP-AES-1: Install New Landscaping</b> Refer to Section 3.1 in Volume 1 of this Supplemental EIR. <b>Mitigation Measure LRDP-AQ-2a: Reduce construction-generated fugitive dust</b> Refer to Section 3.2 in Volume 1 of this Supplemental EIR.	
<b>Impact AS-AES-4: Introduction of a new source of substantial light or glare that would adversely affect daytime or nighttime views in the area</b>  The Aggie Square Phase I project would result in the construction of at least three glass-clad buildings, which could reflect sunlight and result in glare and would also shade the campus major open space, resulting in visual impacts as plants fail to thrive. Implementation of Mitigation Measures LRDP-AES-2a through LRDP-AES-2c and AS-AES-4 would reduce these effects to a less-than-significant level. Therefore, this impact would be <b>less than significant with mitigation</b> .	S	<b>Mitigation Measure LRDP-AES-2a: Apply Design Measures to Building Exteriors</b> Refer to Section 3.1 in Volume 1 of this Supplemental EIR. <b>Mitigation Measure LRDP-AES-2b: Utilize Directional Lighting Methods</b> Refer to Section 3.1 in Volume 1 of this Supplemental EIR. <b>Mitigation Measure LRDP-AES-2c: Review Lighting, Landscape, and Architectural Features Prior to Installation</b> Refer to Section 3.1 in Volume 1 of this Supplemental EIR. <b>Mitigation Measure AS-AES-4: Replace Campus Major Open Space Plantings</b> The designers and contractors for Aggie Square Phase I will work with the UC Davis personnel responsible for designing and maintaining the campus major open space to identify which plants would be negatively affected by the lack of afternoon sun. The Aggie Square Phase I developers will fund and/or implement, at the discretion of UC Davis, replacement of the negatively affected plants with ones that are adapted to afternoon shade within 1 year of the completion of the LLL Tower and LSTE East building. If these are not completed at the same time, this mitigation will be implemented within 1 year of the completion of each building.	LTS

NI = No impact

LTS = Less than significant

S = Significant

SU = Significant and unavoidable



Impact	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
<b>Air Quality</b>			
<b>Impact AS-AQ-1: Conflict with or obstruction of implementation of the applicable air quality plan</b> Aggie Square Phase I includes growth not accounted for in SMAQMD's air quality attainment plans. Mitigation Measure LRDP AQ-1 would reduce the severity of this impact, but not the impact would remain <b>significant and unavoidable</b> .	<b>S</b>	<b>Mitigation Measure LRDP-AQ-1: Coordinate with SACOG and SMAQMD on Planning Assumptions</b> Refer to Section 3.2 in Volume 1 of this Supplemental EIR.	<b>SU</b>
<b>Impact AS-AQ-2: Cumulatively considerable net increase of any criteria pollutant for which the project region is a nonattainment area for an applicable federal or state ambient air quality standard</b> Construction and operational emissions from implementation of the 2020 LRDP Update, including the emissions from Aggie Square Phase I, are included in Impact LRDP-AQ-2 in Volume 1 of this Supplemental EIR. That analysis concluded that with implementation of Mitigation Measures LRDP-AQ-2a through LRDP-AQ-2d, overall plan-related construction emissions would be less than significant. However, operational particulate matter (PM10) emissions would be significant and unavoidable, even with implementation of Mitigation Measures LRDP-AQ-2e and LRDP-TRA-3a. The following sections describe the emissions contributions of just Aggie Square Phase I and demonstrates that neither construction nor operation of Aggie Square Phase I would exceed SMAQMD's thresholds of significance with implementation of mitigation. Therefore, this impact would be <b>less than significant with mitigation</b> .	<b>S</b>	<b>Mitigation Measure LRDP-AQ-2a: Reduce construction-generated fugitive dust</b> Refer to Section 3.2 in Volume 1 of this Supplemental EIR. <b>Mitigation Measure LRDP-AQ-2b: Reduce construction-generated emissions from equipment and vehicle exhaust</b> Refer to Section 3.2 in Volume 1 of this Supplemental EIR. <b>Mitigation Measure LRDP-AQ-2c: Reduce evaporative emissions during architectural coatings</b> Refer to Section 3.2 in Volume 1 of this Supplemental EIR. <b>Mitigation Measure LRDP-AQ-2e: Reduce operational PM 10 emissions</b> Refer to Section 3.2 in Volume 1 of this Supplemental EIR. <b>Mitigation Measure LRDP-TRA-1a: Monitor transit service performance and implement strategies to minimize delays to transit service</b> Refer to Section 3.15 in Volume 1 of this Supplemental EIR. <b>Mitigation Measure AS-AQ-2: Restrict emergency generator testing to Saturday or Sunday</b> UC Davis will prohibit routine maintenance testing of Aggie Square Phase I emergency generators Monday through Friday. Testing of the emergency generators will only be allowed on Saturday or Sunday.	<b>LTS</b>

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Impact	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
<b>Impact AS-AQ-3: Exposure of sensitive receptors to substantial pollutant concentrations</b> <p>Construction and operational emissions from implementation of the 2020 LRDP Update, including the emissions from Aggie Square Phase I are included in Impact LRDP-AQ-3 in Volume 1 of this Supplemental EIR. That analysis concluded that with implementation of Mitigation Measures LRDP-AQ-2a through LRDP-AQ-2d, receptor exposure to overall plan-related construction emissions, including localized particulate matter, would be less than significant. However, receptor exposure to operational PM10 emissions would be significant and unavoidable, as would health risks from construction toxic air contaminant (TAC) emissions. The following sections describe the emissions contributions of just Aggie Square Phase I and demonstrates that neither construction nor operation of Aggie Square Phase I would expose sensitive receptors to substantial pollutant concentrations or health risks with implementation of mitigation. Therefore, this impact would be <b>less than significant with mitigation</b>.</p>	<b>S</b>	<p><b>Mitigation Measure LRDP-AQ-2a: Reduce construction-generated fugitive dust</b>  Refer to Section 3.2 in Volume 1 of this Supplemental EIR.</p> <p><b>Mitigation Measure LRDP-AQ-2b: Reduce construction-generated emissions from equipment and vehicle exhaust</b>  Refer to Section 3.2 in Volume 1 of this Supplemental EIR.</p> <p><b>Mitigation Measure LRDP-AQ-2c: Reduce evaporative emissions during architectural coatings</b>  Refer to Section 3.2 in Volume 1 of this Supplemental EIR.</p> <p><b>Mitigation Measure LRDP-AQ-2e: Reduce operational PM10 emissions</b>  Refer to Section 3.2 in Volume 1 of this Supplemental EIR.</p> <p><b>Mitigation Measure LRDP-TRA-1a: Monitor transit service performance and implement strategies to minimize delays to transit service</b>  Refer to Section 3.15 in Volume 1 of this Supplemental EIR.</p> <p><b>Mitigation Measure AS-AQ-2: Restrict emergency generator testing to Saturday or Sunday</b>  Refer to measure description under Impact AS-AQ-2.</p> <p><b>Mitigation Measure LRDP-AQ-3a: Reduce receptor exposure to construction generated diesel particulate matter</b>  Land use development projects implemented under the 2020 LRDP Update will require its prime construction contractor to implement the following measures to reduce receptor exposure to DPM concentrations and associated health risks.</p> <ul style="list-style-type: none"> <li>• Limit excess equipment idling to no more than 5 minutes (included in Mitigation Measure LRDP-AQ-2b).</li> <li>• Locate operation of diesel-powered construction equipment as far away from sensitive receptors as possible.</li> </ul>	<b>LTS</b>

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Impact	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
		<ul style="list-style-type: none"> <li>• Use equipment during times when receptors are not present (e.g., when school is not in session or during non-school hours), as feasible.</li> <li>• Establish staging areas for the construction equipment that are as distant as possible from offsite receptors, including existing residences.</li> <li>• Where feasible, use equipment with engines meeting EPA Tier 4 Final or better emission standards prior to 2025 (Mitigation Measure LRDP-AQ-2b requires Tier 4 Final engines beginning in 2025 for all development except Aggie Square Phase I, which is required to use EPA Tier 4 Final or better engines regardless of the construction year).</li> <li>• Where feasible, use haul trucks with on-road engines instead of off-road engines even for onsite hauling.</li> <li>• Use electric, compressed natural gas, or other alternatively fueled construction equipment instead of the diesel counterparts, where available.</li> </ul> <p>Coordinate with existing off-campus homeowners where projected cancer risks exceed 10 per million and offer financial assistance to use Minimum Efficiency Reporting Value (MERV) 14 air filters. Financial assistance will be provided for the purchase of up to two filters per year, or per manufacturer recommendations. UC Davis will establish an online procurement system (or similar) to facilitate the purchase and distribution of the filters to residents electing to participate in the program.</p>	

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Impact	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
<b>Biological Resources</b>			
<b>Impact AS-BIO-1: Potential adverse impacts on valley elderberry longhorn beetle</b> Construction activities associated with construction of the Aggie Square Phase I project could result in temporary construction disturbances associated with the development of existing parking areas adjacent to the campus major open space that supports nine elderberry shrubs. These shrubs were evaluated during a field reconnaissance and, as described above, are not expected to be occupied by valley elderberry longhorn beetle. This impact would be <b>less than significant</b> .	<b>LTS</b>	<b>Mitigation Measures</b> No mitigation measures are necessary.	<b>LTS</b>
<b>Impact AS-BIO-2: Disturbance of vegetation-nesting migratory birds and raptors, including Swainson's hawk and white-tailed kite</b> Activities associated with construction of the Aggie Square Phase I project, such as ground disturbance, vegetation removal, construction equipment use, and general presence of active construction crews, could disturb nesting Swainson's hawks, white-tailed kites, and other nesting migratory birds and raptors. Construction-related disturbances that result in nest abandonment or failure, and mortality of chicks or eggs of migratory birds and raptors would violate the Migratory Bird Treaty Act (MBTA) and California Fish and Game Code Sections 3503, 35.03.5 or 3511, and would be significant. Implementation of Mitigation Measure LRDP-BIO-2 would reduce this impact. Therefore, this impact would be <b>less than significant with mitigation</b> .	<b>S</b>	<b>Mitigation Measure LRDP-BIO-2: Conduct preconstruction surveys for nesting migratory birds and raptors, including special-status species, and establish protective buffers</b> Refer to Section 3.3 in Volume 1 of this Supplemental EIR.	<b>LTS</b>

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Impact	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
<b>Impact AS-BIO-3: Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance</b> Construction of the Aggie Square Phase I project could result in the removal of trees recognized to meet City of Sacramento standards for protected trees. Removal of protected trees in the project area would result in a significant impact. Implementation of Mitigation Measures LRDP-BIO-5a and LRDP-BIO-5b would ensure the impact was <b>less than significant with mitigation</b> .	<b>S</b>	<b>Mitigation Measure LRDP-BIO-5a: Avoid removal of protected trees</b> Refer to Section 3.3 in Volume 1 of this Supplemental EIR. <b>Mitigation Measure LRDP-BIO-5b: Compensate for unavoidable loss of protected trees</b> Refer to Section 3.3 in Volume 1 of this Supplemental EIR.	<b>LTS</b>
<b>Impact AS-BIO-4: Conflict with the provisions of an adopted habitat conservation plan, natural community conservation plan, or other approved local, regional, or state habitat conservation plan</b> No adopted or approved habitat conservation plans or natural community conservation plans regulate the proposed construction activities in the Aggie Square Phase I project area. Therefore, there would be <b>no impact</b> .	<b>NI</b>	<b>Mitigation Measures</b> No mitigation measures are necessary.	<b>NI</b>
<b>Archaeological, Historical, and Tribal Cultural Resources</b>			
<b>Impact AS-CUL-1: Potential to cause a substantial adverse change in the significance of a historical resource</b> According to the records search conducted for the 2020 LRDP Update, no historic resources have been identified within the Aggie Square Phase I project site. There are two historical resources present in the immediate vicinity of the project site, however, the development of Aggie Square would not adversely affect the setting of these resources. Therefore, the impact would be <b>less than significant</b> .	<b>LTS</b>	<b>Mitigation Measures</b> No mitigation measures are necessary.	<b>LTS</b>

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Impact	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
<b>Impact AS-CUL-2: Potential to cause a substantial adverse change in the significance of an archaeological resource</b> Although no cultural resources have been identified within the Aggie Square Phase I project area, ground disturbance associated with the project could result in disturbances to unidentified buried archaeological resources, which would be a significant impact. Implementation of Mitigation measures LRDP-CUL-2a and LRDP-CUL-2b would ensure that impacts on unknown archaeological resources are avoided. Therefore, this impact would be <b>less than significant with mitigation</b> .	<b>S</b>	<b>Mitigation Measure LRDP-CUL-2a: Conduct cultural resources sensitivity training</b> Refer to Section 3.4 in Volume 1 of this Supplemental EIR. <b>Mitigation Measure LRDP-CUL-2b: Stop work in the event of discovery of an archaeological resource</b> Refer to Section 3.4 in Volume 1 of this Supplemental EIR.	<b>LTS</b>
<b>Impact AS-CUL-3: Disturbance of any human remains, including those interred outside of dedicated cemeteries</b> There is potential for human remains to be unearthed during project-related ground-disturbing activities. Therefore, this impact would be significant. Implementation of LRDP-CUL-3b would ensure that impacts on human remains would be avoided. Therefore, this impact would be <b>less than significant with mitigation</b> .	<b>S</b>	<b>Mitigation Measure LRDP-CUL-3b: Stop work if human remains are encountered</b> Refer to Section 3.4 in Volume 1 of this Supplemental EIR.	<b>LTS</b>
<b>Impact AS-TCR-1: Potential to cause a substantial adverse change in the significance of a tribal cultural resource with cultural value to a California Native American tribe and that is listed or eligible for listing in the California Register of Historical Resources or in a local register of historical resources as defined in Public Resources Code Section 5020.1(k)</b> UC Davis has not received any requests from tribes culturally or traditionally affiliated with the project area in Sacramento County to be notified of opportunities to consult on new projects under Assembly Bill (AB) 52. Therefore, there would be <b>no impact</b> .	<b>NI</b>	<b>Mitigation Measures</b> No mitigation measures are necessary.	<b>NI</b>

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<b>Impact AS-TCR-2: Potential to cause a substantial adverse change in the significance of a tribal cultural resource with cultural value to a California Native American tribe and that is a resource determined by the lead agency to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1</b> UC Davis has not received any requests from tribes culturally or traditionally affiliated with the project area in Sacramento County to be notified of opportunities to consult on new projects under AB 52. Therefore, there would be <b>no impact</b> .	<b>NI</b>	<b>Mitigation Measures</b> No mitigation measures are necessary.	<b>NI</b>
<b>Energy</b>			
<b>Impact AS-EN-1: Wasteful, inefficient, or unnecessary consumption of energy resources during project construction or operation</b> Energy consumption would occur through construction, building operation, and transportation associated with Aggie Square Phase I. UC Davis has incorporated a wide variety of energy efficient design measures to reduce wasteful, inefficient, or unnecessary energy use. In addition, Mitigation Measures LRDP-TRA-1a and LRDP-GHG-2 include project-specific measures to further reduce energy consumption associated with Aggie Square Phase I. This impact would be <b>less than significant with mitigation</b> .	<b>S</b>	<b>Mitigation Measure LRDP-GHG-2: Implement verifiable actions or activities or purchase the equivalent GHG credits from a CARB-approved registry or a locally approved equivalent program to reduce GHG emissions generated by the Sacramento Campus</b> Refer to Section 3.7 in Volume 1 of this Supplemental EIR. <b>Mitigation Measure LRDP-TRA-1a: Monitor transit service performance and implement strategies to minimize delays to transit service</b> Refer to Section 3.15 in Volume 1 of this Supplemental EIR.	<b>LTS</b>
<b>Impact AS-EN-2: Conflict with or obstruction of a state or local plan for renewable energy or energy efficiency</b> Aggie Square Phase I would exceed CCR Title 24 Building Energy Efficiency Standards, and federal and state regulations including the Low Carbon Fuel Standard, Clean Car Standards, and Low Emission Vehicle Program by attainment of LEED Silver standards, continued implementation of the UC Sustainable Practices Policy and UC Davis CAP; therefore, this impact would be <b>less than significant</b> .	<b>LTS</b>	<b>Mitigation Measures</b> No mitigation measures are necessary.	<b>LTS</b>

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Impact	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
<b>Geology, Soils, and Seismicity</b>			
<b>Impact AS-GEO-1: Potential substantial adverse effects, including the risk of loss, injury, or death involving liquefaction</b> The Aggie Square Phase I project site is located in an area potentially subject to liquefaction, which could involve structural damage and associated risk. Geotechnical investigations would be necessary to reduce these risks, and therefore this impact is considered significant. Implementation of Mitigation Measure LRDP-GEO-1 would ensure this impact would be <b>less than significant with mitigation</b> .	<b>S</b>	<b>Mitigation Measure LRDP-GEO-1: Conduct Geotechnical Investigation</b> Refer to Section 3.6 in Volume 1 of this Supplemental EIR.	<b>LTS</b>
<b>Impact AS-GEO-2: Potential to result in substantial soil erosion or the loss of topsoil</b> Construction of individual projects would involve clearing and grading at project sites and trenching in areas where utility infrastructure would be laid. The Aggie Square Phase I project would be required to comply with National Pollutant Discharge Elimination System (NPDES) permit requirements and would be subject to a Stormwater Pollution Prevention Plan (SWPPP). Therefore, this impact would be <b>less than significant with mitigation</b> .	<b>S</b>	<b>Mitigation Measure LRDP-GEO-1: Conduct Geotechnical Investigation</b> Refer to Section 3.6 in Volume 1 of this Supplemental EIR.	<b>LTS</b>
<b>Impact AS-GEO-3: Placement of project-related facilities on expansive soil, creating substantial direct or indirect risks to life or property</b> Soils underlying the campus are characterized as being moderately expansive, thus there would be some potential for damage to improperly designed or constructed structures and facilities. However, adherence to the provisions in the California Building Code (CBC) as required by the University of California for all new construction, expansive soils would be addressed consistent with the current engineering standard of care, and the impact would be <b>less than significant</b> .	<b>LTS</b>	<b>Mitigation Measures</b> No mitigation measures are necessary.	<b>LTS</b>

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Impact	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
<b>Greenhouse Gas Emissions</b>			
<b>Impact AS-GHG-2: Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases</b> As disclosed in Impact LRDP-GHG-2 in Volume 1 of this Supplemental EIR, per-capita mobile source emissions resulting from the 2020 LRDP Update would exceed the Sacramento Area Council of Government's (SACOG's) <i>2020 Metropolitan Transportation Plan/Sustainable Communities Strategy</i> (MTP/SCS) (Sacramento Area Council of Governments 2019) GHG reduction target. Total emissions resulting from the 2020 LRDP Update would also exceed project-specific emissions thresholds derived from the state's long-term climate change goals under SB 32 and Executive Order (EO) B-55-18. GHG emissions generated by Aggie Square Phase I would contribute to this inconsistency finding, resulting in a significant impact. Implementation of the UC Sustainable Practices Policy, Mitigation Measures LRDP-AQ-2e, LRDP-TRA-3a, and LRDP-GHG-2 would reduce emissions consistent with the state's climate change reduction trajectory, as articulated under statewide regulations and legislation (e.g., SB 32, and EO B-55-18). This impact would therefore be <b>less than significant with mitigation</b> .	S	<b>Mitigation Measure LRDP-AQ-2e: Reduce operational PM10 emissions</b> Refer to Section 3.2 in Volume 1 of this Supplemental EIR. <b>Mitigation Measure LRDP-TRA-1a: Monitor transit service performance and implement strategies to minimize delays to transit service</b> Refer to Section 3.15 in Volume 1 of this Supplemental EIR. <b>Mitigation Measure LRDP-GHG-2: Implement verifiable actions or activities or purchase the equivalent GHG credits from a CARB-approved registry or a locally approved equivalent program to reduce GHG emissions generated by the Sacramento Campus</b> Refer to Section 3.7 in Volume 1 of this Supplemental EIR.	LTS
<b>Hazards and Hazardous Materials</b>			
<b>Impact AS-HAZ-1: Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials</b> Construction and operation of the Aggie Square Phase I project would result in transport, use, and disposal of hazardous materials to and from the project area. Adherence to existing regulations and compliance with safety standards would ensure this impact would be <b>less than significant</b> .	LTS	<b>Mitigation Measures</b> No mitigation measures are necessary.	LTS

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Impact	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
<b>Impact AS-HAZ-2: Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment</b>  Site workers, the public, and the environment could be inadvertently exposed to preexisting onsite contaminants during construction within the project footprint. Ground disturbing activities associated with construction may result in the release or disturbance of contaminated soil or hazardous building materials. Therefore, this impact would be significant. Implementation of Mitigation Measure LRDP-HAZ-2 would ensure that this impact would be <b>less than significant with mitigation</b> .	S	<b>Mitigation Measure LRDP-HAZ-2: Prepare a Phase I Environmental Site Assessment</b>  Refer to Section 3.8 in Volume 1 of this Supplemental EIR.	LTS
<b>Impact AS-HAZ-3: Result in hazardous emissions or handling of hazardous or acutely hazardous materials, substances, or waste within 0.25 mile of an existing or proposed school</b>  Hazardous materials and waste could be handled within 0.25 mile of an existing or proposed school as a result of project implementation. However, handling, storage, and disposal of hazardous materials associated with the project would be subject to campus safety programs and procedures. This impact would be <b>less than significant</b> .	LTS	<b>Mitigation Measures</b>  No mitigation measures are necessary.	LTS
<b>Impact AS-HAZ-4: Place project-related facilities on a site that is included on a list of hazardous materials sites, and resulting creation of a significant hazard to the public or the environment</b>  The analysis in Section 3.8, <i>Hazards and Hazardous Materials</i> , in Volume 1 of this Supplemental EIR identified two sites located within or immediately adjacent to the Aggie Square Phase I project. However, these sites have been remediated and closed and no longer pose a threat. The potential to encounter soil and groundwater contamination during construction would be <b>less than significant</b> .	LTS	<b>Mitigation Measures</b>  No mitigation measures are necessary.	LTS

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Impact	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
<b>Impact AS-HAZ-5: Impair implementation of or physical interference with an adopted emergency response plan or emergency evacuation plan</b> Implementation of the Aggie Square Phase I project could result in short-term, temporary impacts on street traffic because of potential extension of construction activities into the right-of-way. This could result in a reduction in the number of lanes or temporary closure of certain road segments. This would occur only during construction activities adjacent to roads. This impact would be <b>less than significant</b> .	<b>LTS</b>	<b>Mitigation Measures</b> No mitigation measures are necessary.	<b>LTS</b>
<b>Hydrology and Water Quality</b>			
<b>Impact AS-WQ-1: Violation of any water quality standards or waste discharge requirements or other degradation of surface or groundwater quality</b> Construction and operation activities of the Aggie Square Phase I project could generate pollutants that could temporarily contaminate runoff. However, BMPs and erosion and sediment control measures would be implemented to reduce pollutants in stormwater and other nonpoint-source runoff. Pollutants would be drained to the separate onsite stormwater drainage network and discharged offsite to the City of Sacramento's combined sewer system infrastructure. Compliance with the National Pollutant Discharge Elimination System (NPDES) Construction General Permit, University of California sustainability practices and procedures, and NEC (University of California 2010), would reduce impacts to surface and groundwater quality. Therefore, this impact would be <b>less than significant</b> .	<b>LTS</b>	<b>Mitigation Measures</b> No mitigation measures are necessary.	<b>LTS</b>

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Impact	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
<b>Impact AS-WQ-2: Substantial decrease of groundwater supplies or substantial interference with groundwater recharge such that the project may impede sustainable groundwater management of the basin</b> The Aggie Square Phase I project may require groundwater dewatering during construction. However, dewatering would be conducted on a one-time or temporary basis during construction and would not result in a loss of groundwater that would substantially deplete groundwater supplies. The addition of sustainable site design features such as landscaped open spaces including trees, green roofs, and garden terraces would increase infiltration of stormwater for groundwater recharge during operation of the project. Therefore, this impact would be <b>less than significant</b> .	<b>LTS</b>	<b>Mitigation Measures</b> No mitigation measures are necessary.	<b>LTS</b>
<b>Impact AS-WQ-3: Substantial alteration of existing drainage patterns in a manner that would result in substantial erosion or siltation onsite or offsite; substantial increase in the amount of surface runoff in a manner that would result in flooding onsite or offsite; creation of or contribution to runoff water that would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; obstruction or redirection of flood flows caused by drainage modifications</b> Development of the Aggie Square Phase I project would include a new onsite storm drainage network and open space, allowing a reduction in surface runoff and associated polluted runoff, reduced onsite and offsite flooding, and ultimately improved drainage. A separate onsite storm drainage network would be constructed to discharge flows to the City of Sacramento's combined sewer system infrastructure. Sustainability measures would include greywater harvesting and rainwater recovery for non-potable water reuse in buildings. Construction activities may expose soils that contain an excessive amount of water. As a result, damage to buildings or landscaping may result. Mitigation Measure LRDP-	<b>S</b>	<b>Mitigation Measure LRDP-WQ-1: Implement a Subsoil Drainage System to Avoid Damage to Buildings</b> Refer to Section 3.9 in Volume 1 of this Supplemental EIR.	<b>LTS</b>

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Impact	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
WQ-1 would require implementation of a subsoil drainage system to avoid potential damage. Implementation of Mitigation Measure LRDP-WQ-1 would reduce this impact to a less-than-significant level and therefore this impact is be <b>less than significant with mitigation</b> .			
<b>Impact AS-WQ-4: Conflict with or obstruction of implementation of a water quality control plan or sustainable groundwater management plan</b> The Aggie Square Phase I project would implement stormwater control BMPs during construction as required by the NPDES Construction General Permit, and reduce the discharge of pollutants and adverse impacts on water quality. Incorporation of landscaped areas and sustainable site design features would also reduce stormwater runoff flows and associated pollutants. As a result, water quality standards would be achieved, including the water quality objectives that protect designated beneficial uses of surface and groundwater, as defined in the <i>Water Quality Control Plan for the Sacramento River Basin and The San Joaquin River Basin</i> (Basin Plan) (Central Valley Regional Water Quality Control Board 2018) or in the Central Sacramento County Groundwater Management Plan. Therefore, there would be <b>no impact</b> .	<b>NI</b>	<b>Mitigation Measures</b> No mitigation measures are necessary.	<b>NI</b>
<b>Land Use and Planning</b>			
<b>Impact AS-LU-1: Cause a significant environmental impact due to a conflict with any applicable land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect</b> Development on the Sacramento Campus would be governed by the 2020 LRDP Update, which includes the Aggie Square Phase I project. Accordingly, within the project boundaries, the project would not conflict with any applicable land use plan, and this impact would be <b>less than significant</b> .	<b>LTS</b>	<b>Mitigation Measures</b> No mitigation measures are necessary.	<b>LTS</b>

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Impact	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
<b>Noise</b>			
<b>Impact AS-NOI-1: Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project from construction activities in excess of applicable standards</b> Aggie Square Phase I would involve the use of construction equipment outside of the daytime exempt hours in Sacramento. During evening, nighttime, or early morning hours, construction activity could generate noise levels in excess of the City of Sacramento's Exterior Noise Standards at the nearest sensitive uses. Mitigation Measure LRDP-NOI-1 would reduce the severity of this impact, but the impact would remain <b>significant and unavoidable</b> .	S	<b>Mitigation Measure LRDP-NOI-1: Implementation of Measures to Reduce Construction Noise</b> Refer to Section 3.11 in Volume 1 of this Supplemental EIR.	SU
<b>Impact AS-NOI-2: Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project from operations in excess of applicable standards</b> Operational noise sources resulting from the implementation of the Aggie Square Phase I Project would include heating, cooling, and ventilation equipment at individual future buildings, emergency generator testing, operational loading activities, and events at Aggie Square (which would likely include amplified music or speech). Noise from mechanical equipment and emergency generator testing may exceed the allowable noise levels. Mitigation for impacts related to mechanical equipment noise and emergency generator testing would be required. With implementation of Mitigation Measures LRDP-NOI-2a and LRDP-NOI-2b, impacts from emergency generator testing and from heating, cooling and ventilation equipment for the Aggie Square Phase I project would be reduced. This impact would be <b>less than significant with mitigation</b> .	S	<b>Mitigation Measure LRDP-NOI-2a: Reduce Noise Exposure from Emergency Generators</b> Refer to Section 3.11 in Volume 1 of this Supplemental EIR. <b>Mitigation Measure LRDP-NOI-2b: Reduce Noise Exposure from New Stationary Noise Sources</b> Refer to Section 3.11 in Volume 1 of this Supplemental EIR.	LTS

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Impact	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
<b>Impact AS-NOI-3: Generation of excessive groundborne vibration or groundborne noise levels</b> Construction activities for Aggie Square Phase I would have the potential to generate groundborne vibration that could result in annoyance effects to nearby sensitive land uses. There is also the potential that vibration could occur close enough to nearby buildings to result in potential damage-related effects. Implementation of Mitigation Measures LRDP-NOI-1, LRDP-NOI-3a, LRDP-NOI-3b, and Mitigation Measure AS-NOI-1 would reduce these impacts. This impact would be <b>less than significant with mitigation</b> .	<b>S</b>	<b>Mitigation Measure LRDP-NOI-1: Implementation of Measures to Reduce Construction Noise</b> Refer to Section 3.11 in Volume 1 of this Supplemental EIR. <b>Mitigation Measure AS-NOI-1: Minimum Distances for the Operation of Pile Drivers and Vibratory Rollers</b> Pile driving activity shall not occur within 225 feet of nearby Category 3 land uses, such as the Language Academy of Sacramento southeast of the project site, to ensure that vibration levels from pile driving do not exceed applicable vibration criteria for these uses. In addition, vibratory rollers shall not operate within 110 feet of nearby Category 3 land uses. <b>Mitigation Measure LRDP-NOI-3a: Implement Measures to Reduce Vibration-Related Annoyance Impacts to Onsite Land Uses</b> Refer to Section 3.11 in Volume 1 of this Supplemental EIR. <b>Mitigation Measure LRDP-NOI-3b: Implement Measures to Reduce Vibration-Related Annoyance Impacts to Offsite Land Uses</b> Refer to Section 3.11 in Volume 1 of this Supplemental EIR.	<b>LTS</b>
<b>Impact AS-NOI-4: Placement of project-related activities in the vicinity of a private airstrip or an airport land use plan or within 2 miles of a public airport or public use airport, resulting in exposure of people residing or working in the project area to excessive noise levels</b> As there are no public or public use airport facilities in the vicinity of the Sacramento Campus, and because Aggie Square Phase I would not result in any increases in emergency helicopter operations (since no hospital uses would be developed), there would be <b>no impact</b> related to aircraft noise from public use airports or private airstrips resulting from the project.	<b>NI</b>	<b>Mitigation Measures</b> No mitigation measures are necessary.	<b>NI</b>

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Impact	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
<b>Population and Housing</b>			
<b>Impact AS-POP-1: Creation of substantial population growth either directly or indirectly</b> Implementation of Aggie Square Phase I would increase the daily population of the Sacramento Campus through increased student enrollment, community partnerships, and UC Davis Health faculty and staff. However, this addition to the Sacramento region would not result in a substantial increase to the population. Therefore, this impact would be <b>less than significant</b> .	<b>LTS</b>	<b>Mitigation Measures</b> No mitigation measures are necessary.	<b>LTS</b>
<b>Public Services</b>			
<b>Impact AS-PS-1: Creation of a need for new or physically altered governmental facilities to maintain acceptable service ratios, response times, or other performance objectives for fire protection facilities</b> Aggie Square Phase I would be designed to comply with current building and fire codes and include appropriate fire safety measures and equipment. Aggie Square Phase I would not expand the geographic extent of the campus or increase the population such that an increase the demand for additional fire protection facilities would be necessary. The impact would be <b>less than significant</b> .	<b>LTS</b>	<b>Mitigation Measures</b> No mitigation measures are necessary.	<b>LTS</b>
<b>Impact AS-PS-2: Creation of a need for new or physically altered governmental facilities to maintain acceptable service ratios, response times, or other performance objectives for police protection facilities</b> Implementation of a facility upgrade project to provide increased space for police functions at the UC Davis Sacramento Campus would be consistent with the land use designations and planning principles identified in Aggie Square Phase I. Therefore, this impact would be <b>less than significant</b> .	<b>LTS</b>	<b>Mitigation Measures</b> No mitigation measures are necessary.	<b>LTS</b>

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Impact	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
<b>Impact AS-PS-3: Creation of a need for new or physically altered governmental facilities to maintain acceptable service ratios, response times, or other performance objectives for school facilities</b>  Schools would not be significantly affected by a minor increase in enrollment related to anticipated population growth and new residents associated with Aggie Square Phase I, and no new facilities would be needed. Therefore, this impact would be <b>less than significant</b> .	<b>LTS</b>	<b>Mitigation Measures</b>  No mitigation measures are necessary.	<b>LTS</b>
<b>Impact AS-PS-4: Creation of a need for new or physically altered governmental facilities to maintain acceptable service ratios, response times, or other performance objectives for other public facilities</b>  The need for construction of additional library facilities as the result of an increase in the Sacramento Campus population related to anticipated population growth and new residents associated with Aggie Square Phase I is not anticipated, and this impact would be <b>less than significant</b> .	<b>LTS</b>	<b>Mitigation Measures</b>  No mitigation measures are necessary.	<b>LTS</b>
<b>Recreation</b>			
<b>Impact AS-REC-1: Increased use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility that would occur or be accelerated</b>  The increased population would be served by existing on-campus facilities and facilities in the surrounding communities and is not expected to substantially increase the use of existing park facilities or result in substantial physical deterioration of existing facilities. Therefore, this impact would be <b>less than significant</b> .	<b>LTS</b>	<b>Mitigation Measures</b>  No mitigation measures are necessary.	<b>LTS</b>

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<b>Impact AS-REC-2: Construction or expansion of recreational facilities that might have an adverse physical effect on the environment</b>  While Aggie Square Phase I does include several areas of open space, no construction or expansion of recreational facilities that might have an adverse effect on the environment is proposed. Therefore, there would be <b>no impact</b> .	<b>NI</b>	<b>Mitigation Measures</b>  No mitigation measures are necessary.	<b>NI</b>
<b>Transportation and Circulation</b>			
<b>Impact AS-TRA-1: Conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities</b>  Development of Aggie Square Phase I would increase bicycle and pedestrian travel but would not physically disrupt an existing pedestrian or bicycle facility or interfere with implementation of a planned pedestrian or bicycle facility, and demand would not exceed capacity of the planned system. Growth associated with the development of Aggie Square Phase I would increase demand for transit serving the campus by approximately 200 new daily passengers, which would adversely affect bus transit operations. This impact would be <b>significant and unavoidable</b> .	<b>S</b>	<b>Mitigation Measure AS-TRA-1a: Construct operational improvements on Broadway and Stockton Boulevard</b>  Prior to project occupancy, UC Davis shall construct operational improvements on Broadway and Stockton Boulevard to reduce peak hour delay experienced by motorists, including transit vehicles. The operational improvements shall offset any degradation to transit on-time performance in excess of acceptable SacRT standards that would otherwise occur with the implementation of the Aggie Square Phase I project. Overall, transit improvements shall strive to achieve the on-time performance standard established in the most up-to-date SacRT Service Standards while minimizing the potential for conflicts with active transportation modes, inducing vehicle travel, or increasing VMT.  Potential improvements include the following. <ul style="list-style-type: none"> <li>• Transit signal priority for traffic signals along transit serving corridors where signal delay is a primary contributor to unacceptable on-time performance</li> <li>• Queue jump lanes for bus transit at signalized intersections</li> <li>• Turn lane improvements (i.e., dedicated or additional right-turn or left-turn lanes) where turning movements are a major contributing factor to transit delay</li> <li>• Providing transit-only lanes where feasible and practical</li> </ul> Transit facility and roadway improvements shall be designed and constructed in accordance with industry best practices and applicable	<b>SU</b>

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Impact	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
		<p>UC Davis, City of Sacramento, and State of California standards. Improvements shall be implemented or constructed in a manner that would not physically disrupt existing transit service or facilities (e.g., additional bus service that exceeds available bus stop or transit terminal capacity) or otherwise adversely affect transit operations.</p> <p><b>Mitigation Measure LRDP-TRA-1c: Monitor transit-related collisions and implement countermeasures to minimize potential conflicts with transit service and facilities</b></p> <p>Refer to Section 3.15 in Volume 1 of this Supplemental EIR.</p>	
<p><b>Impact AS-TRA-2: Conflict or be inconsistent with CEQA Guidelines Section 15064.3, subdivision (b)</b></p> <p>Development of the Aggie Square Phase I project would result in additional population and vehicle travel. However, the project is located in a low VMT-generating area of the Sacramento region with access to mass transit and multiple travel options. Additionally, the Aggie Square Phase I project would result in increased land use diversity that would increase internal trip capture and reduce VMT per employee. This impact would be <b>less than significant</b>.</p>	<b>LTS</b>	<p><b>Mitigation Measures</b></p> <p>No mitigation measures are necessary.</p>	<b>LTS</b>
<p><b>Impact AS-TRA-3: Result in changes to the transportation system that would create hazardous features or incompatible traffic uses.</b></p> <p>The Aggie Square Phase I project does not propose any new roadways or transportation facilities that would be inconsistent with applicable design standards. This impact would be less than significant.</p>	<b>LTS</b>	<p><b>Mitigation Measures</b></p> <p>No mitigation measures are necessary.</p>	<b>LTS</b>
<p><b>Impact AS-TRA-4: Result in inadequate emergency access</b></p> <p>The Aggie Square Phase I roadway and transportation network is designed to maintain high levels of accessibility and includes multiple emergency vehicle access facilities that can be used when necessary. This ensures emergency response vehicles have the</p>	<b>LTS</b>	<p><b>Mitigation Measures</b></p> <p>No mitigation measures are necessary.</p>	<b>LTS</b>

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Impact	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
necessary access when responding to an emergency. This impact would be <b>less than significant</b> .			
<p><b>Impact AS-TRA-5: Result in construction activity that could cause temporary impacts to transportation and traffic</b></p> <p>Development of Aggie Square Phase I would involve construction activities that could cause temporary impacts to transportation facilities. However, mitigation measure AS-TRA-5 would reduce this impact. Therefore, this impact would be <b>less than significant with mitigation</b>.</p>	S	<p><b>Mitigation Measure AS-TRA-5: Prior to the issuance of any grading or building permits, a Construction Traffic Management Plan (TMP) shall be prepared to the satisfaction of UC Davis Health and the City of Sacramento Department of Public Works</b></p> <p>The Construction TMP shall include items such as the following.</p> <ul style="list-style-type: none"> <li>• Preserving emergency vehicle access routes to existing buildings on the Sacramento Campus</li> <li>• Providing truck circulation routes/patterns that minimizes effects on existing vehicle traffic during peak travel periods and maintains safe bicycle circulation</li> <li>• Monitoring for roadbed damage and timing for completing repairs</li> <li>• Preserving safe and convenient passage for bicyclists and pedestrians through/around construction areas</li> <li>• Creating methods for partial (i.e., single lane)/complete street closures (e.g., timing, signage, location and duration restrictions), if necessary</li> <li>• Identifying detour routes for roadways subject to partial/complete street closures</li> <li>• Identifying temporary UC Davis shuttle stops and detoured shuttle routes if existing stops or routes are affected</li> <li>• Identifying temporary SacRT bus stops and detoured bus routes, if existing stops or routes are affected</li> <li>• Developing criteria for use of flaggers and other traffic controls</li> <li>• Providing a point of contact for nearby residents, Sacramento Campus staff, students, and visitors, and other stakeholders to contact to obtain construction information and have questions answered</li> </ul> <p>The Construction TMP shall be developed so that the following performance standards are achieved throughout project construction.</p>	LTS

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Impact	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
		<ul style="list-style-type: none"> <li>• Maintain emergency vehicle access to all buildings on the Sacramento Campus at all times.</li> <li>• Maintain identified emergency vehicle routes to UC Davis Health medical facilities at all times. Notify appropriate contacts for UC Davis Health and/or emergency responders at least 24 hours prior to any construction-related partial/complete closures that may affect emergency vehicle routes, and provide clear identification of detours when necessary.</li> <li>• Minimize construction traffic during morning and evening peak periods when street traffic on local and campus streets are highest.</li> <li>• Close (i.e., partially or fully) any construction-related public roadways only during off-peak periods and provide appropriate construction signage, including detour routing.</li> <li>• Limit detour routing to campus roadways or City collector and arterial roadways, such as Stockton Boulevard and Broadway, to the extent feasible. Include measures to minimize traffic increases on local residential roadways; this may include signage and law enforcement presence during partial/complete closures to discourage through-traffic use of local residential roadways.</li> <li>• Clear roadways, sidewalks, crosswalks, and bicycle facilities of debris (e.g., rocks) that could otherwise impede travel and impact public safety, and maintain them in this condition.</li> </ul> <p>UC Davis shall also consider any concurrent construction activity and other active Construction TMPs when reviewing the Construction TMP for the Aggie Square Phase I project. This review shall verify consistency across the Construction TMPs and verify that the Construction TMP addresses cumulative impacts that may occur when considering multiple on-going construction projects.</p>	

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Impact	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
<b>Utilities and Service Systems</b>			
<b>Impact AS-UT-1: Relocation or construction of new or expanded water, wastewater treatment, stormwater drainage, electric power, natural gas, or telecommunications facilities, with the potential to cause significant environmental effects</b>  While the implementation of Aggie Square Phase I would increase the amount of built space and campus population and generate a corresponding increase in demand for utilities, the campus and surrounding area have adequate facilities to accommodate this demand and would not require the relocation or construction of new facilities, the construction or relocation of which could cause significant environmental effects. This impact would be <b>less than significant</b> .	<b>LTS</b>	<b>Mitigation Measures</b>  No mitigation measures are necessary.	<b>LTS</b>
<b>Impact AS-UT-2: Creation of a need for new or expanded entitlements or resources for sufficient water supply to serve the project and reasonably foreseeable future development during normal, dry, and multiple dry years</b>  While Aggie Square Phase I would increase the campus population and generate a corresponding increase in demand for water, water conservation strategies are expected to partially offset the increased demand. The increased demand for water would not require new or expanded entitlements. Therefore, this impact would be <b>less than significant</b> .	<b>LTS</b>	<b>Mitigation Measures</b>  No mitigation measures are necessary	<b>LTS</b>

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<p><b>Impact AS-UT-3: A determination by the wastewater treatment provider that serves or may serve the project that it does not have adequate capacity to serve the project's projected demand in addition to the provider's existing commitments</b></p> <p>Development associated with Aggie Square Phase I would increase wastewater but would not require any substantial infrastructure improvements at the Sacramento Regional Wastewater Treatment Plant (SRWTP). Therefore, this impact would be <b>less than significant</b>.</p>	<b>LTS</b>	<p><b>Mitigation Measures</b></p> <p>No mitigation measures are necessary.</p>	<b>LTS</b>
<p><b>Impact AS-UT-4: Project-related exceedance of state or local solid waste standards or of the capacity of local infrastructure, or other impediments to attaining solid waste reduction goals</b></p> <p>While the implementation of Aggie Square Phase I would increase the campus population and generate a corresponding increase in solid waste, the UC Sustainable Practices Policy is expected to reduce waste and partially offset the increased demand for landfill capacity. The increased demand for landfill space would not require new or expanded entitlements. Therefore, this impact would be <b>less than significant</b>.</p>	<b>LTS</b>	<p><b>Mitigation Measures</b></p> <p>No mitigation measures are necessary.</p>	<b>LTS</b>
<p><b>Impact AS-UT-5: Inconsistency with federal, state, and local management and reduction statutes and regulations related to solid waste</b></p> <p>While UC Davis is not subject to state and local regulations related to solid waste, Aggie Square Phase I would comply with the UC Sustainable Practices Policy which encourages waste reduction and diversion programs and is consistent with regulations related to the management and reduction regulations related to solid waste. Therefore, this impact would be <b>less than significant</b>.</p>	<b>LTS</b>	<p><b>Mitigation Measures</b></p> <p>No mitigation measures are necessary.</p>	<b>LTS</b>

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**Table AS-ES-2. Aggie Square Mitigation and Monitoring Program**

Impact	Mitigation Measures	Monitoring and Reporting Procedure		Timing	Verification
<b>Aesthetics</b>					
<b>Impact AS-AES-3: In non-urbanized areas, degradation of the existing visual character or quality of public views of the site and its surroundings; in urbanized areas, conflict with zoning or other regulations governing scenic quality</b>	<b>Mitigation Measure AS-AES-3a: Permanent Visual Screening of Support Road and Loading Dock</b> To reduce visual quality impacts on the views from the campus major open space, designers and contractors will design and construct a permanent visual screen between the open space area and the loading dock area.	Design permanent visual screening as specified.	DE	Prior to final project approval	Sacramento Campus Facilities Design and Construction
	If possible, the support road will be realigned enough to create a planting pocket between the road and the open space area. If the planting pocket is created, vining plants will be grown on a natural-style fence such as woven wood, wood replica, or non-shiny metal finish and will be a minimum of 7 feet high. The fence will be designed to allow vining plants to penetrate and grow on either side of the fence to produce a natural screen effect. Plants used on the fence will either be native to the area or at least a suitable species that is compatible with the existing plantings in the campus major open space. Plants will be evergreen and noninvasive. A high curb will be installed between the support road and the planting area to protect it from trucks accessing and leaving the loading dock area. This fence will be installed, and the vining plants	Install permanent visual screening as specified.	CO	During project construction	Sacramento Campus Facilities Design and Construction

Project stage at which implementation of the measure is required:

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

Impact	Mitigation Measures	Monitoring and Reporting Procedure		Timing	Verification
	<p>established prior to operational use of the support road and loading dock. The landscape maintenance program for Aggie Square Phase I landscaping will include maintenance of the fence and screening vegetation in a manner that will provide the planned screening effect continuously over time.</p> <p>If the limited amount of space between the support road and the property edge of the open space area is not sufficient to accommodate the fence and vines on the Aggie Square Phase I site, the designers and contractors will work with the UC Davis personnel responsible for designing and maintaining the campus major open space to design and construct a screen for the open space area. This offsite screen will have a similar effect as the one described for the onsite fence and vines, but may also include other plantings compatible with existing vegetation, as directed by Sacramento Campus Facilities staff.</p>				
	<p><b>Mitigation Measure AS-AES-3b: Construction Site Maintenance</b></p> <p>The following measures will be taken to reduce unsightly construction impacts.</p> <ul style="list-style-type: none"> <li>To prevent unsightly weeds and fugitive dust from exposed soil, demolition, grading, and site preparation activities will occur as near</li> </ul>	Incorporate measure as part of construction specifications; inspect construction site at regular intervals during construction to verify compliance with measures.	CO	Regular intervals throughout the construction period	Sacramento Campus Facilities Design and Construction

Project stage at which implementation of the measure is required:

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	<p>to the next phase of construction as possible.</p> <ul style="list-style-type: none"> <li>To prevent views of stockpiled soil, demolition debris, or cleared brush piles, such materials will be removed from the site after demolition. If this is not possible, or if the soil is being stockpiled for later use, stockpiles will be low enough so as to not be visible from adjacent streets, sidewalks, bicycle lanes and parking lots. Alternatively, they may be maintained far enough from the edges of the property to allow the barriers to block the line of sight. Soil piles will be covered or seeded to prevent unsightly weeds and fugitive dust.</li> <li>Scaffolding will be removed as soon as possible when no longer needed. If scaffolding is needed for a later development stage more than 90 days away, the scaffolding will be stored behind the visual screening barrier or removed and rebuilt when needed again.</li> </ul>				
	<p><b>Mitigation Measure LRDP-AES-1: Install New Landscaping</b></p> <p>The University will install landscaping within the landscape buffer adjacent to new specific projects that are approved. Installation would occur within 1 year of the development of new projects.</p>	<p>Review project design for landscaping specifications.</p>	DE	Prior to final design approval	Sacramento Campus Facilities Design and Construction
		<p>Install landscaping.</p>	CO	Within 1 year of the development of new projects	Sacramento Campus Facilities Design and Construction

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Impact	Mitigation Measures	Monitoring and Reporting Procedure		Timing	Verification
	<p><b>Mitigation Measure LRDP-AQ-2a: Reduce construction-generated fugitive dust</b></p> <p>Land use development projects as part of the implementation of the 2020 LRDP Update will require its prime construction contractor to implement the following measures to reduce construction-generated fugitive dust. Control of fugitive dust is required per SMAQMD Rule 403 and enhanced by SMAQMD staff. The list of required measures was informed by SMAQMD's basic and enhanced construction emission control practices.</p> <ul style="list-style-type: none"> <li>• Water exposed soil with adequate frequency to prevent fugitive dust and particulates from leaving the project site. However, do not overwater to the extent that sediment flows off the site. Exposed surfaces include, but are not limited to soil piles, graded areas, and unpaved parking areas,</li> <li>• Suspend excavation, grading, and/or demolition activity when sustained wind speeds exceed 25 miles per hour (mph).</li> <li>• Install wind breaks (e.g., plant trees, solid fencing) on average dominant windward side(s) of construction areas. For purposes of implementation, chainlink fencing with added landscape</li> </ul>	Incorporate measure as part of construction specifications and documentation and inspect construction site at regular intervals during construction to verify compliance with specified construction-generated fugitive dust reduction measures.	CO	Regular intervals throughout the construction period	Sacramento Campus Facilities Design and Construction

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Impact	Mitigation Measures	Monitoring and Reporting Procedure	Timing	Verification
	<p>mesh fabric adequately qualifies as solid fencing.</p> <ul style="list-style-type: none"> <li>• For dust control in disturbed but inactive construction areas, apply soil stabilization measures adequate to mitigate airborne particulates as soon as possible.</li> <li>• Use wet power vacuum street sweepers to remove any visible trackout mud or dirt onto adjacent public roads at least once a day. Use of dry power sweeping is prohibited.</li> <li>• Treat site accesses from the paved road with a 6- to 12-inch layer of wood chips, mulch, gravel, or other approved method to reduce generation of road dust and road dust carryout onto public roads.</li> <li>• Cover or maintain at least 2 feet of free board space on haul trucks transporting soil, sand, or other loose material on the site. Any haul trucks that would be traveling along freeways or major roadways should be covered.</li> <li>• Establish a 15 mph speed limit for vehicles driving on unpaved portions of project construction sites.</li> <li>• Post a publicly visible sign with the telephone number and person to contact at the lead agency regarding dust complaints. This person will respond and take corrective action within 48 hours. The phone number of</li> </ul>			

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	<p>the District will also be visible to ensure compliance.</p> <p>UC Davis will ensure that the implementation of this mitigation measure is consistent with the UC Davis stormwater program and the California Stormwater Quality Association Stormwater BMP Handbook for New Development/Redevelopment and does not result in off-site runoff as a result of watering for dust control purposes.</p>				
<b>Impact AS-AES-4: Introduction of a new source of substantial light or glare that would adversely affect daytime or nighttime views in the area</b>	<p><b>Mitigation Measure LRDP-AES-2a: Apply Design Measures to Building Exteriors</b></p> <p>Design for specific projects will provide for the use of textured, nonreflective exterior surfaces and nonreflective glass.</p>	Review project design for use of textured, nonreflective exterior surfaces and nonreflective glass.	DE	Prior to final project design	Sacramento Campus Facilities Design and Construction
	<p><b>Mitigation Measure LRDP-AES-2b: Utilize Directional Lighting Methods</b></p> <p>Except as provided in Mitigation Measure LRDP AES-4c, all new outdoor lighting will use directional lighting methods with shielded and cutoff type light fixtures to minimize glare and upward-directed lighting.</p>	Review project design for use of directional lighting methods.	DE	Prior to final design approval	Sacramento Campus Facilities Design and Construction
	<p><b>Mitigation Measure LRDP-AES-2c: Review Lighting, Landscape, and Architectural Features Prior to Installation</b></p> <p>Noncutoff, unshielded lighting fixtures used to enhance nighttime views of walking paths, specific landscape</p>	Review project design for lighting, landscaping, and architectural features.	DE	Prior to final project design	Sacramento Campus Facilities Design and Construction

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Impact	Mitigation Measures	Monitoring and Reporting Procedure		Timing	Verification
	features, or specific architectural features will be reviewed by Sacramento Campus Facilities Planning, Design, and Construction staff prior to installation to ensure that the minimum amount of required lighting is proposed to achieve the desired nighttime emphasis, and the proposed illumination creates no adverse effect on nighttime views.				
	<b>Mitigation Measure AS-AES-4: Replace Campus Major Open Space Plantings</b>	Review campus major open space to identify plant replacement opportunities.	DE	Prior to final design approval	Sacramento Campus Facilities Design and Construction
	The designers and contractors for Aggie Square Phase I will work with the UC Davis personnel responsible for designing and maintaining the campus major open space to identify which plants would be negatively affected by the lack of afternoon sun. The Aggie Square Phase I developers will fund and/or implement, at the discretion of UC Davis, replacement of the negatively affected plants with ones that are adapted to afternoon shade within 1 year of the completion of the LLL Tower and LSTE East building. If these are not completed at the same time, this mitigation will be implemented in stages within 1 year of the completion of each building.	Replace campus major open space plantings, as deemed necessary.	CO	Within 1 year of development of new projects	Sacramento Campus Facilities Design and Construction

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Impact	Mitigation Measures	Monitoring and Reporting Procedure		Timing	Verification
<b>Air Quality</b>					
<b>Impact AS-AQ-1: Conflict with or obstruction of implementation of the applicable air quality plan</b>	<p><b>Mitigation Measure LRDP-AQ-1: Reduce construction-generated fugitive dust</b></p> <p>Within 90 days from certification of the 2020 LRDP Update Supplemental EIR, UC Davis will provide SACOG and SMAQMD with revised population, employment, building gsf, and housing growth forecasts that account for implementation of 2020 LRDP Update. UC Davis will coordinate with SMAQMD to ensure that emissions associated with campus growth can be accounted in their forthcoming plan to address the 2015 federal ozone standard.</p>	Provide SACOG and SMAQMD with revised population, employment, and building gsf, and housing growth forecasts; coordinate with SMAQMD to ensure that emissions.	DE	Within 90 days from the certification of the 2020 LRDP Update Supplemental EIR	UC Davis Campus Planning and Environmental Stewardship
<b>Impact AS-AQ-2: Cumulatively considerable net increase of any criteria pollutant for which the project region is a nonattainment area for an applicable federal or state ambient air quality standard</b>	<p><b>Mitigation Measure LRDP-AQ-2a: Reduce construction-generated fugitive dust</b></p> <p>Land use development projects as part of the implementation of the 2020 LRDP Update will require its prime construction contractor to implement the following measures to reduce construction-generated fugitive dust. Control of fugitive dust is required per SMAQMD Rule 403 and enhanced by SMAQMD staff. The list of required measures was informed by SMAQMD's basic and enhanced construction emission control practices.</p> <ul style="list-style-type: none"> <li>• Water exposed soil with adequate frequency to prevent fugitive dust and</li> </ul>	Incorporate measure as part of construction specifications and documentation and inspect construction site at regular intervals during construction to verify compliance with specified construction-generated fugitive dust reduction measures.	CO	Regular intervals throughout the construction period	Sacramento Campus Facilities Design and Construction

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Impact	Mitigation Measures	Monitoring and Reporting Procedure	Timing	Verification
	<p>particulates from leaving the project site. However, do not overwater to the extent that sediment flows off the site. Exposed surfaces include, but are not limited to soil piles, graded areas, and unpaved parking areas,</p> <ul style="list-style-type: none"> <li>• Suspend excavation, grading, and/or demolition activity when sustained wind speeds exceed 25 miles per hour (mph).</li> <li>• Install wind breaks (e.g., plant trees, solid fencing) on average dominant windward side(s) of construction areas. For purposes of implementation, chainlink fencing with added landscape mesh fabric adequately qualifies as solid fencing.</li> <li>• For dust control in disturbed but inactive construction areas, apply soil stabilization measures adequate to mitigate airborne particulates as soon as possible.</li> <li>• Use wet power vacuum street sweepers to remove any visible trackout mud or dirt onto adjacent public roads at least once a day. Use of dry power sweeping is prohibited.</li> <li>• Treat site accesses from the paved road with a 6- to 12-inch layer of wood chips, mulch, gravel, or other approved method to reduce generation of road dust and road dust carryout onto public roads.</li> </ul>			

Project stage at which implementation of the measure is required:

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Impact	Mitigation Measures	Monitoring and Reporting Procedure	Timing	Verification
	<ul style="list-style-type: none"> <li>• Cover or maintain at least 2 feet of free board space on haul trucks transporting soil, sand, or other loose material on the site. Any haul trucks that would be traveling along freeways or major roadways should be covered.</li> <li>• Establish a 15 mph speed limit for vehicles driving on unpaved portions of project construction sites.</li> <li>• Post a publicly visible sign with the telephone number and person to contact at the lead agency regarding dust complaints. This person will respond and take corrective action within 48 hours. The phone number of the District will also be visible to ensure compliance.</li> </ul> <p>UC Davis will ensure that the implementation of this mitigation measure is consistent with the UC Davis stormwater program and the California Stormwater Quality Association Stormwater BMP Handbook for New Development/Redevelopment and does not result in off-site runoff as a result of watering for dust control purposes.</p>			
	<p><b>Mitigation Measure LRDP-AQ-2b: Reduce construction-generated emissions from equipment and vehicle exhaust</b></p> <p>Land use development projects as part of the implementation of the 2020 LRDP Update will require its prime</p>	<p>Incorporate measure as part of construction specifications and documentation and inspect construction site at regular intervals during construction to verify compliance with specified construction-</p>	<p>CO</p> <p>Regular intervals throughout the construction period.</p>	<p>Sacramento Campus Facilities Design and Construction</p>

Project stage at which implementation of the measure is required:

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Impact	Mitigation Measures	Monitoring and Reporting Procedure	Timing	Verification
	<p>construction contractor to implement the following measures to reduce construction-generated emissions from equipment and vehicle exhaust. The list of required measures was informed by SMAQMD's basic and enhanced construction emission control practices.</p> <ul style="list-style-type: none"> <li>• For all development except Aggie Square Phase I, use construction equipment with engines meeting EPA Tier 3 or better emission standards prior to 2025 and EPA Tier 4 Final or better emission standards beginning in 2025. For Aggie Square Phase I, all engines must be EPA certified Tier 4 Final or better, regardless of construction year. Equipment requirements may be waived by UC Davis, but only under any of the following unusual circumstances: If a particular piece of off-road equipment with Tier 4 Final standards or Tier 3 standards is technically not feasible; not commercially available; or there is a compelling emergency need to use off-road equipment that does not meet the equipment requirements, above. If UC Davis grants the waiver, the contractor will use the next cleanest piece of off-road equipment available, in the following order: Tier 4 Interim, Tier 3, and then Tier 2 engines.</li> <li>• Use renewable diesel fuel in all heavy-duty off-road diesel-fueled equipment.</li> </ul>	generated emissions reduction measures.		

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Impact	Mitigation Measures	Monitoring and Reporting Procedure	Timing	Verification
	<p>Renewable diesel must meet the most recent ASTM D975 specification for Ultra Low Sulfur Diesel and have a carbon intensity no greater than 50 percent of diesel with the lowest carbon intensity among petroleum diesel fuels sold in California.</p> <ul style="list-style-type: none"> <li>Minimize idling time either by shutting equipment off when not in use or reducing the time of idling to 5 minutes (California Code of Regulations, Title 13, Sections 2449[d][3] and 2485). Provide clear signage that posts this requirement for workers at the entrances to the site.</li> <li>Provide current certificate(s) of compliance for CARB's In-Use Off-Road Diesel-Fueled Fleets Regulation (California Code of Regulations, Title 13, Sections 2449 and 2449.1).</li> </ul> <p>Maintain all construction equipment in proper working condition according to manufacturer's specifications. The equipment must be checked by a certified mechanic and determined to be running in proper condition before it is operated.</p>			
	<p><b>Mitigation Measure LRDP-AQ-2c: Reduce evaporative emissions during architectural coatings</b></p> <p>Land use development projects as part of the implementation of the 2020 LRDP Update will require its prime construction contractor to use no- or low-</p>	<p>Incorporate measure as part of construction and contractor specifications and documentation and inspect construction site at regular intervals during construction to</p>	<p>CO/OP Regular intervals throughout the construction period; implementing on a continuing</p>	<p>Sacramento Campus Facilities Design and Construction</p>

Project stage at which implementation of the measure is required:

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Impact	Mitigation Measures	Monitoring and Reporting Procedure		Timing	Verification
	solids content (i.e., no- or low-VOC) architectural coatings with a maximum VOC content of 50 grams per liter.	verify compliance with specified measure.		basis during operation	
	<p><b>Mitigation Measure LRDP-AQ-2e: Reduce operational PM10 emissions</b></p> <p>UC Davis will implement a program that incentivizes employees, students, residents, and visitors to carpool, use EVs, walk/bike, or use public transit to commute to and from the Sacramento Campus. The program will include, but is not limited to, the following features:</p> <ul style="list-style-type: none"> <li>• <b>Parking:</b> Limit parking capacity to meet onsite demand and provide preferential parking to carpool vehicles, vanpool vehicles, and EVs. The program will implement the following parking related sub-measures. <ul style="list-style-type: none"> <li>a. Provide no more onsite parking spaces than necessary to accommodate the number of employees working at a project site and/or the number of residents living at a project site, as determined by the project size and design.</li> <li>b. Where feasible, for future residential units (on-campus and Aggie Square Phase I), lease/sell parking space separately from the unit and provide the tenant the option of not purchasing/owning a space.</li> <li>c. Nonresidential land uses with 20 or more onsite parking spaces will</li> </ul> </li> </ul>	Implement program to incentivize alternative commuting modes.	OP	On a continuing basis with annual reporting	Sacramento Campus Facilities Design and Construction

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Impact	Mitigation Measures	Monitoring and Reporting Procedure	Timing	Verification
	<p>dedicate preferential parking spaces to vehicles with more than one occupant and zero emission vehicles (including battery electric vehicles and hydrogen fuel cell vehicles). The number of dedicated spaces should be no less than two spaces or 5 percent of the total parking spaces on the project site, whichever is greater. These dedicated spaces will be in preferential locations such as near the main entrances to the buildings served by the parking lot and/or under the shade of a structure or trees. These spaces will be clearly marked with signs and pavement markings. This measure will not be implemented in a way that prevents compliance with requirements in the California Vehicle Code regarding parking spaces for disabled persons or disabled veterans.</p> <p>d. Maintain a virtual or real “ride board” for employees and students to organize carpools and incentives for employees using public transit to commute to and from campus</p> <ul style="list-style-type: none"> <li>• <b>Vendor Trips:</b> Implement a program that incentivizes vendors to reduce the emissions associated with vehicles and equipment serving the UC Davis Sacramento Campus. The program will implement the following sub-measures</li> </ul>			

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Impact	Mitigation Measures	Monitoring and Reporting Procedure	Timing	Verification
	<p>to reduce vendor-related, mobile-source emissions.</p> <p>a. Incentivize the use of electric vehicles or other clean fuels in their trucks and equipment.</p> <p>b. Work with vendors, especially those using trucks, to reduce the number of vendor trips made to the campus through trip chaining, reducing the number of shipments, or other methods.</p> <ul style="list-style-type: none"> <li>• <b>Campus Shuttles:</b> Work with Fleet Services to convert Med-Transit (onsite) shuttles to electric or a lower-emission fuels or implement emission control technologies to reduce criteria air pollutant emissions from existing conditions.</li> <li>• <b>Pedestrian and Bicycle Infrastructure:</b> Enhance walkability and connectivity of the Sacramento Campus to surrounding residential and commercial uses. The program will implement the following site design related sub-measures. <ul style="list-style-type: none"> <li>a. Ensure all new external connections from the Sacramento Campus to existing or planned streets include bicycle/pedestrian access.</li> <li>b. Eliminate physical barriers such as walls, landscaping, and slopes that impede pedestrian circulation throughout the Sacramento Campus.</li> </ul> </li> </ul>			

Project stage at which implementation of the measure is required:

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Impact	Mitigation Measures	Monitoring and Reporting Procedure	Timing	Verification
	<p>c. Require all new sidewalks internal and adjacent to the Sacramento Campus to be at least 5 feet wide. Provide grade separation and wider sidewalks (e.g., 7 feet), wherever feasible.</p> <p>d. Require all new sidewalks within the Sacramento Campus to include vertical curbs or a planting strip to separate the sidewalk from the parking or travel lane.</p> <p>e. Construct new roads within the Sacramento Campus to include at least one traffic calming feature, such as street parking, chicanes, horizontal shifts (lane centerline that curves or shifts), bollards, rumble strips, or woonerfs. Coordinate with the City of Sacramento to encourage these features on external roads connecting to the campus.</p> <p>f. Construct new intersections within the Sacramento Campus to include marked crosswalks, count-down signal timers, curb extensions, channelization islands, speed tables, raised crosswalks, raised intersections, median islands, tight corner radii, traffic circles or mini-circles. Coordinate with the City of Sacramento to encourage these features on external intersections connecting to the campus</p>			

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Impact	Mitigation Measures	Monitoring and Reporting Procedure		Timing	Verification
	<ul style="list-style-type: none"> <li>• <b>Landscaping Equipment:</b> Reduce emissions from landscaping equipment through the following sub-measures.               <ol style="list-style-type: none"> <li>a. Beginning in 2030, require UC Davis landscapers and contracted landscaping companies that maintain campus greenspaces to utilize electric or alternatively fueled mowers and handheld equipment (e.g., trimmers, blowers).</li> <li>b. Encourage xeriscape landscaping in all new campus greenspaces.</li> </ol> </li> </ul>				
	<p><b>Mitigation Measure LRDP-TRA-1a: Monitor transit service performance and implement strategies to minimize delays to transit service</b></p> <p>During the 2020–2021 academic year, UC Davis shall coordinate with SacRT and other relevant transit operators to establish baseline on-time performance metrics for routes operating on Broadway and Stockton Boulevard within the vicinity of the Sacramento Campus consistent with established standards and methods. This process should consider the effects of the current COVID-19 pandemic on transit performance. UC Davis shall additionally coordinate with SacRT and other relevant transit operators to assess on-time performance for routes operating on Broadway and Stockton Boulevard within the vicinity of the Sacramento Campus every two years</p>	Document transit enhancement efforts and progress; continue to work with SacRT staff.	OC	Annually	Sacramento Campus Facilities Design and Construction

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Impact	Mitigation Measures	Monitoring and Reporting Procedure	Timing	Verification
	<p>over the 2020 LRDP Update planning horizon. During its standard project review process, UC Davis shall forecast and analyze traffic conditions on Broadway and Stockton Boulevard within the vicinity of the Sacramento Campus for individual development projects proposed under the 2020 LRDP Update that are expected to affect operations on these roadways. Relative to baseline levels, if operations on Broadway and Stockton Boulevard are found to cause transit services to fail to meet established standards or to worsen transit performance for services that already fail to meet established standards, or if a project-level analysis indicates the same, UC Davis shall institute TDM strategies to reduce peak hour vehicle trips and, in turn, delays to transit service on Broadway and Stockton Boulevard within the vicinity of the Sacramento Campus. The implementation of TDM strategies shall offset degradations to transit on-time performance in excess of established on-time performance standards (per the most up-to-date SacRT Service Standards) that are attributable to the implementation of the 2020 LRDP Update.</p> <p>Implementation of TDM strategies that would reduce delays to transit service on Broadway to Stockton Boulevard include strategies to reduce vehicle travel to and</p>			

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	<p>from campus and to minimize the effect of campus operations on surrounding roadways. Specific potential TDM strategies include, but are not limited to, the following:</p> <ul style="list-style-type: none"> <li>• Modify campus-operated shuttles to avoid Broadway and Stockton Boulevard, to the extent practical;</li> <li>• Promote walking and bicycling for student and employee trips to and from the UC Davis Sacramento Campus;</li> <li>• Expand public transit service, including additional service connecting campus with student and employee residential areas;</li> <li>• Implement a fair value commuting program or other pricing of vehicle travel and parking;</li> <li>• Provide carpool and/or vanpool incentive programs;</li> <li>• Allow flexible work hours and schedule classes to reduce arrivals/departures during peak hours; and</li> <li>• Offer remote working options.</li> </ul> <p>The TDM strategies implemented to reduce delays to transit service at these locations will be consistent with existing and planned TDM programs on campus. If these TDM strategies are not sufficient to reduce delays to transit service per the criteria described above, additional TDM measures or adjustments to the measures above shall be implemented, as needed to</p>			

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	reduce peak hour intersection delay consistent with the criteria described above.				
	<p><b>Mitigation Measure AS-AQ-2: Restrict emergency generator testing to Saturday or Sunday</b></p> <p>UC Davis will prohibit routine maintenance testing of Aggie Square Phase I emergency generators Monday through Friday. Testing of the emergency generators will only be allowed on Saturday or Sunday.</p>	Test emergency generators during times permitted as specified.	OP	Implement on a continuing basis during operation.	Sacramento Campus Facilities Design and Construction
<b>Impact AS-AQ-3: Exposure of sensitive receptors to substantial pollutant concentration</b>	<p><b>Mitigation Measure LRDP-AQ-2a: Reduce construction-generated fugitive dust</b></p> <p>Land use development projects as part of the implementation of the 2020 LRDP Update will require its prime construction contractor to implement the following measures to reduce construction-generated fugitive dust. Control of fugitive dust is required per SMAQMD Rule 403 and enhanced by SMAQMD staff. The list of required measures was informed by SMAQMD's basic and enhanced construction emission control practices.</p> <ul style="list-style-type: none"> <li>Water exposed soil with adequate frequency to prevent fugitive dust and particulates from leaving the project site. However, do not overwater to the extent that sediment flows off the site. Exposed surfaces include, but are not</li> </ul>	Incorporate measure as part of construction specifications and documentation and inspect construction site at regular intervals during construction to verify compliance with specified construction-generated fugitive dust reduction measures.	CO	Regular intervals throughout the construction period	Sacramento Campus Facilities Design and Construction

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Impact	Mitigation Measures	Monitoring and Reporting Procedure	Timing	Verification
	<p>limited to soil piles, graded areas, and unpaved parking areas,</p> <ul style="list-style-type: none"> <li>• Suspend excavation, grading, and/or demolition activity when sustained wind speeds exceed 25 miles per hour (mph).</li> <li>• Install wind breaks (e.g., plant trees, solid fencing) on average dominant windward side(s) of construction areas. For purposes of implementation, chainlink fencing with added landscape mesh fabric adequately qualifies as solid fencing.</li> <li>• For dust control in disturbed but inactive construction areas, apply soil stabilization measures adequate to mitigate airborne particulates as soon as possible.</li> <li>• Use wet power vacuum street sweepers to remove any visible trackout mud or dirt onto adjacent public roads at least once a day. Use of dry power sweeping is prohibited.</li> <li>• Treat site accesses from the paved road with a 6- to 12-inch layer of wood chips, mulch, gravel, or other approved method to reduce generation of road dust and road dust carryout onto public roads.</li> <li>• Cover or maintain at least 2 feet of free board space on haul trucks transporting soil, sand, or other loose material on the site. Any haul trucks</li> </ul>			

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Impact	Mitigation Measures	Monitoring and Reporting Procedure		Timing	Verification
	<p>that would be traveling along freeways or major roadways should be covered.</p> <ul style="list-style-type: none"> <li>Establish a 15 mph speed limit for vehicles driving on unpaved portions of project construction sites.</li> <li>Post a publicly visible sign with the telephone number and person to contact at the lead agency regarding dust complaints. This person will respond and take corrective action within 48 hours. The phone number of the District will also be visible to ensure compliance.</li> </ul> <p>UC Davis will ensure that the implementation of this mitigation measure is consistent with the UC Davis stormwater program and the California Stormwater Quality Association Stormwater BMP Handbook for New Development/Redevelopment and does not result in off-site runoff as a result of watering for dust control purposes.</p>				
	<p><b>Mitigation Measure LRDP-AQ-2b: Reduce construction-generated emissions from equipment and vehicle exhaust</b></p> <p>Land use development projects as part of the implementation of the 2020 LRDP Update will require its prime construction contractor to implement the following measures to reduce construction-generated emissions from equipment and vehicle exhaust. The list of</p>	<p>Incorporate measure as part of construction specifications and documentation and inspect construction site at regular intervals during construction to verify compliance with specified construction-generated emissions reduction measures.</p>	CO	Regular intervals throughout the construction period.	Sacramento Campus Facilities Design and Construction

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Impact	Mitigation Measures	Monitoring and Reporting Procedure	Timing	Verification
	<p>required measures was informed by SMAQMD's basic and enhanced construction emission control practices.</p> <ul style="list-style-type: none"> <li>For all development except Aggie Square Phase I, use construction equipment with engines meeting EPA Tier 3 or better emission standards prior to 2025 and EPA Tier 4 Final or better emission standards beginning in 2025. For Aggie Square Phase I, all engines must be EPA certified Tier 4 Final or better, regardless of construction year. Equipment requirements may be waived by UC Davis, but only under any of the following unusual circumstances: If a particular piece of off-road equipment with Tier 4 Final standards or Tier 3 standards is technically not feasible; not commercially available; or there is a compelling emergency need to use off-road equipment that does not meet the equipment requirements, above. If UC Davis grants the waiver, the contractor will use the next cleanest piece of off-road equipment available, in the following order: Tier 4 Interim, Tier 3, and then Tier 2 engines.</li> <li>Use renewable diesel fuel in all heavy-duty off-road diesel-fueled equipment. Renewable diesel must meet the most recent ASTM D975 specification for Ultra Low Sulfur Diesel and have a carbon intensity no greater than 50</li> </ul>			

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	<p>percent of diesel with the lowest carbon intensity among petroleum diesel fuels sold in California.</p> <ul style="list-style-type: none"> <li>Minimize idling time either by shutting equipment off when not in use or reducing the time of idling to 5 minutes (California Code of Regulations, Title 13, Sections 2449[d][3] and 2485). Provide clear signage that posts this requirement for workers at the entrances to the site.</li> <li>Provide current certificate(s) of compliance for CARB's In-Use Off-Road Diesel-Fueled Fleets Regulation (California Code of Regulations, Title 13, Sections 2449 and 2449.1).</li> </ul> <p>Maintain all construction equipment in proper working condition according to manufacturer's specifications. The equipment must be checked by a certified mechanic and determined to be running in proper condition before it is operated.</p>			
	<p><b>Mitigation Measure LRDP-AQ-2c: Reduce evaporative emissions during architectural coatings</b></p> <p>Land use development projects as part of the implementation of the 2020 LRDP Update will require its prime construction contractor to use no- or low-solids content (i.e., no- or low-VOC) architectural coatings with a maximum VOC content of 50 grams per liter.</p>	<p>Incorporate measure as part of construction and contractor specifications and documentation and inspect construction site at regular intervals during construction to verify compliance with specified measure.</p>	<p>CO/OP Regular intervals throughout the construction period; implementing on a continuing basis during operation</p>	<p>Sacramento Campus Facilities Design and Construction</p>

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Impact	Mitigation Measures	Monitoring and Reporting Procedure		Timing	Verification
	<p><b>Mitigation Measure LRDP-AQ-2e: Reduce operational PM10 emissions</b></p> <p>UC Davis will implement a program that incentivizes employees, students, residents, and visitors to carpool, use EVs, walk/bike, or use public transit to commute to and from the Sacramento Campus. The program will include, but is not limited to, the following features:</p> <ul style="list-style-type: none"> <li>• <b>Parking:</b> Limit parking capacity to meet onsite demand and provide preferential parking to carpool vehicles, vanpool vehicles, and EVs. The program will implement the following parking related sub-measures. <ul style="list-style-type: none"> <li>a. Provide no more onsite parking spaces than necessary to accommodate the number of employees working at a project site and/or the number of residents living at a project site, as determined by the project size and design.</li> <li>b. Where feasible, for future residential units (on-campus and Aggie Square Phase I), lease/sell parking space separately from the unit and provide the tenant the option of not purchasing/owning a space.</li> <li>c. Nonresidential land uses with 20 or more onsite parking spaces will dedicate preferential parking spaces to vehicles with more than one occupant and zero emission vehicles</li> </ul> </li> </ul>	Implement program to incentivize alternative commuting modes.	OP	On a continuing basis with annual reporting	Sacramento Campus Facilities Design and Construction

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Impact	Mitigation Measures	Monitoring and Reporting Procedure	Timing	Verification
	<p>(including battery electric vehicles and hydrogen fuel cell vehicles). The number of dedicated spaces should be no less than two spaces or 5 percent of the total parking spaces on the project site, whichever is greater. These dedicated spaces will be in preferential locations such as near the main entrances to the buildings served by the parking lot and/or under the shade of a structure or trees. These spaces will be clearly marked with signs and pavement markings. This measure will not be implemented in a way that prevents compliance with requirements in the California Vehicle Code regarding parking spaces for disabled persons or disabled veterans.</p> <p>d. Maintain a virtual or real “ride board” for employees and students to organize carpools and incentives for employees using public transit to commute to and from campus</p> <ul style="list-style-type: none"> <li>• <b>Vendor Trips:</b> Implement a program that incentivizes vendors to reduce the emissions associated with vehicles and equipment serving the UC Davis Sacramento Campus. The program will implement the following sub-measures to reduce vendor-related, mobile-source emissions.</li> </ul>			

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Impact	Mitigation Measures	Monitoring and Reporting Procedure	Timing	Verification
	<ul style="list-style-type: none"> <li>a. Incentivize the use of electric vehicles or other clean fuels in their trucks and equipment.</li> <li>b. Work with vendors, especially those using trucks, to reduce the number of vendor trips made to the campus through trip chaining, reducing the number of shipments, or other methods.</li> <li>• <b>Campus Shuttles:</b> Work with Fleet Services to convert Med-Transit (onsite) shuttles to electric or a lower-emission fuels or implement emission control technologies to reduce criteria air pollutant emissions from existing conditions.</li> <li>• <b>Pedestrian and Bicycle Infrastructure:</b> Enhance walkability and connectivity of the Sacramento Campus to surrounding residential and commercial uses. The program will implement the following site design related sub-measures. <ul style="list-style-type: none"> <li>a. Ensure all new external connections from the Sacramento Campus to existing or planned streets include bicycle/pedestrian access.</li> <li>b. Eliminate physical barriers such as walls, landscaping, and slopes that impede pedestrian circulation throughout the Sacramento Campus.</li> <li>c. Require all new sidewalks internal and adjacent to the Sacramento</li> </ul> </li> </ul>			

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	<p>Campus to be at least 5 feet wide. Provide grade separation and wider sidewalks (e.g., 7 feet), wherever feasible.</p> <p>d. Require all new sidewalks within the Sacramento Campus to include vertical curbs or a planting strip to separate the sidewalk from the parking or travel lane.</p> <p>e. Construct new roads within the Sacramento Campus to include at least one traffic calming feature, such as street parking, chicanes, horizontal shifts (lane centerline that curves or shifts), bollards, rumble strips, or woonerfs. Coordinate with the City of Sacramento to encourage these features on external roads connecting to the campus.</p> <p>f. Construct new intersections within the Sacramento Campus to include marked crosswalks, count-down signal timers, curb extensions, channelization islands, speed tables, raised crosswalks, raised intersections, median islands, tight corner radii, traffic circles or mini-circles. Coordinate with the City of Sacramento to encourage these features on external intersections connecting to the campus</p>			

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Impact	Mitigation Measures	Monitoring and Reporting Procedure		Timing	Verification
	<ul style="list-style-type: none"> <li>• <b>Landscaping Equipment:</b> Reduce emissions from landscaping equipment through the following sub-measures.               <ol style="list-style-type: none"> <li>a. Beginning in 2030, require UC Davis landscapers and contracted landscaping companies that maintain campus greenspaces to utilize electric or alternatively fueled mowers and handheld equipment (e.g., trimmers, blowers).</li> <li>b. Encourage xeriscape landscaping in all new campus greenspaces.</li> </ol> </li> </ul>				
	<p><b>Mitigation Measure LRDP-TRA-1a: Monitor transit service performance and implement strategies to minimize delays to transit service</b></p> <p>During the 2020–2021 academic year, UC Davis shall coordinate with SacRT and other relevant transit operators to establish baseline on-time performance metrics for routes operating on Broadway and Stockton Boulevard within the vicinity of the Sacramento Campus consistent with established standards and methods. This process should consider the effects of the current COVID-19 pandemic on transit performance. UC Davis shall additionally coordinate with SacRT and other relevant transit operators to assess on-time performance for routes operating on Broadway and Stockton Boulevard within the vicinity of the Sacramento Campus every two years</p>	Document transit enhancement efforts and progress; continue to work with SacRT staff.	OC	Annually	Sacramento Campus Facilities Design and Construction

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Impact	Mitigation Measures	Monitoring and Reporting Procedure	Timing	Verification
	<p>over the 2020 LRDP Update planning horizon. During its standard project review process, UC Davis shall forecast and analyze traffic conditions on Broadway and Stockton Boulevard within the vicinity of the Sacramento Campus for individual development projects proposed under the 2020 LRDP Update that are expected to affect operations on these roadways. Relative to baseline levels, if operations on Broadway and Stockton Boulevard are found to cause transit services to fail to meet established standards or to worsen transit performance for services that already fail to meet established standards, or if a project-level analysis indicates the same, UC Davis shall institute TDM strategies to reduce peak hour vehicle trips and, in turn, delays to transit service on Broadway and Stockton Boulevard within the vicinity of the Sacramento Campus.</p> <p>The implementation of TDM strategies shall offset degradations to transit on-time performance in excess of established on-time performance standards (per the most up-to-date SacRT Service Standards) that are attributable to the implementation of the 2020 LRDP Update.</p> <p>Implementation of TDM strategies that would reduce delays to transit service on Broadway to Stockton Boulevard include strategies to reduce vehicle travel to and</p>			

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Impact	Mitigation Measures	Monitoring and Reporting Procedure	Timing	Verification
	<p>from campus and to minimize the effect of campus operations on surrounding roadways. Specific potential TDM strategies include, but are not limited to, the following:</p> <ul style="list-style-type: none"> <li>• Modify campus-operated shuttles to avoid Broadway and Stockton Boulevard, to the extent practical;</li> <li>• Promote walking and bicycling for student and employee trips to and from the UC Davis Sacramento Campus;</li> <li>• Expand public transit service, including additional service connecting campus with student and employee residential areas;</li> <li>• Implement a fair value commuting program or other pricing of vehicle travel and parking;</li> <li>• Provide carpool and/or vanpool incentive programs;</li> <li>• Allow flexible work hours and schedule classes to reduce arrivals/departures during peak hours; and</li> <li>• Offer remote working options.</li> </ul> <p>The TDM strategies implemented to reduce delays to transit service at these locations will be consistent with existing and planned TDM programs on campus. If these TDM strategies are not sufficient to reduce delays to transit service per the criteria described above, additional TDM measures or adjustments to the measures above shall be implemented, as needed to</p>			

Project stage at which implementation of the measure is required:

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Impact	Mitigation Measures	Monitoring and Reporting Procedure		Timing	Verification
	reduce peak hour intersection delay consistent with the criteria described above.				
	<b>Mitigation Measure AS-AQ-2: Restrict emergency generator testing to Saturday or Sunday</b> UC Davis will prohibit routine maintenance testing of Aggie Square Phase I emergency generators Monday through Friday. Testing of the emergency generators will only be allowed on Saturday or Sunday.	Test emergency generators during times permitted as specified.	OP	Implement on a continuing basis during operation.	Sacramento Campus Facilities Design and Construction
<b>Biological Resources</b>					
<b>Impact AS-BIO-2: Disturbance of vegetation-nesting migratory birds and raptors, including Swainson's hawk and white-tailed kite</b>	<b>Mitigation Measure LRDP-BIO-2: Conduct preconstruction surveys for nesting migratory birds and raptors, including special-status species, and establish protective buffers</b> For any projects implemented under the 2020 LRDP Update that would require vegetation removal (i.e., trees, shrubs, and ruderal vegetation) or would result in construction disturbances in the vicinity of vegetated areas, the following measures will be implemented prior to initiation of construction to avoid and minimize impacts to Swainson's hawk, white-tailed kite, and other vegetation-nesting migratory birds and raptors, and to avoid violation of the MBTA, CESA, and California Fish and Game Code Sections 3503, 3503.5, and 3511.	Retain a qualified biologist to conduct preconstruction surveys; implement measures as applicable.	DE	Prior to final design approval and project construction	Sacramento Campus Facilities Design and Construction

Project stage at which implementation of the measure is required:

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Impact	Mitigation Measures	Monitoring and Reporting Procedure	Timing	Verification
	<ul style="list-style-type: none"> <li>For construction activities that occur during the nesting season for migratory birds and raptors (generally February through August), the University will retain a qualified wildlife biologist familiar with the nesting behavior of bird species that occur in the plan area to conduct a preconstruction nesting bird survey. The nesting bird surveys will be conducted no less than 14 days prior to vegetation removal or construction disturbance activities near nesting habitat. The survey will include a search of all trees and shrubs, and ruderal areas that provide suitable nesting habitat for birds and raptors within the construction disturbance area. In addition, a 600-foot area around the construction area will be surveyed for nesting raptors and a 100-foot area around the construction area will be surveyed for songbirds.</li> </ul> <p>If no special-status raptor species (i.e., Swainson's hawk or white-tailed kite) or active bird or raptor nests are detected during the preconstruction surveys, then no additional measures are required. If an active nest is found in the survey area, a no-disturbance buffer will be established to avoid disturbance or destruction of the nest site until the end of the breeding season (generally August 31) or until after a qualified wildlife biologist determines that the young have fledged and moved out of the construction area</p>			

Project stage at which implementation of the measure is required:

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Impact	Mitigation Measures	Monitoring and Reporting Procedure	Timing	Verification
	(this date varies by species). The extent of these buffers will be determined by a qualified biologist in coordination with any applicable agencies (as determined by species), and will depend on the level of noise or construction disturbance taking place, the line-of-sight between the nest and the disturbance, ambient levels of noise and other non-project disturbances, and other topographical or artificial barriers. Suitable buffer distances may vary between species; however, a minimum of 50 feet for songbirds and 300 feet for raptors is typical. In developed habitats, buffer areas may be adjusted based on presence of existing barriers.			
<b>Impact AS-BIO-3: Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance</b>	<b>Mitigation Measure LRDP-BIO-5a: Avoid removal of protected trees</b> Before a project is approved under the 2020 LRDP Update, the University will determine whether a tree that would be protected under the University’s tree ordinance (i.e., any tree with a DSH of 24 inches or more and in good health or a native tree species with a DSH of 12 inches or greater and in good health) is present on the site. If a protected tree is present within the development footprint, the University will modify project design to avoid the protected tree, if feasible.	Determine whether a heritage tree is present on the project site; retain a qualified arborist to evaluate tree health, if necessary; modify project design to avoid heritage trees, if feasible	DE  Prior to final design and project approval; prior to construction	Sacramento Campus Facilities Design and Construction

Project stage at which implementation of the measure is required:

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Impact	Mitigation Measures	Monitoring and Reporting Procedure		Timing	Verification
	<b>Mitigation Measure LRDP-BIO-5b: Compensate for unavoidable loss of protected trees</b> If avoidance is not feasible, the University will replace the removed heritage or specimen tree with the same species as any removed specimen tree at a ratio of 3:1.	Replace tree if avoidance is not feasible; document replacement of trees.	OC	Prior to occupancy of the building project that would require tree removal	Sacramento Campus Facilities Design and Construction
<b>Archaeological, Historical, and Tribal Cultural Resources</b>					
<b>Impact AS-CUL-2: Potential to cause a substantial adverse change in the significance of an archaeological resource</b>	<b>Mitigation Measure LRDP-CUL-2a: Conduct cultural resources sensitivity training:</b> Prior to any ground disturbance, construction crews will be required to attend a cultural resources sensitivity training. The training will focus on identifying potential archaeological resources as well as human remains. If potential archaeological resources or human remains are encountered, construction crews will be instructed to notify the University immediately.	Include training in construction contract; complete informal training.	CO	Prior to commencement of ground disturbing activities	UC Davis Environmental Planning
	<b>Mitigation Measure AS-CUL-2b</b> If an archaeological resource is discovered during construction, all project-related ground disturbance within 100 feet of the find shall cease. The University shall contact a qualified archaeologist within 24 hours to inspect the site. If a resource is determined to qualify as a unique archaeological resource (as defined by CEQA), and the	Include measure in construction contracts; verify that work is halted; retain archaeologist to assess find. If significant, implement additional measures as specified including documentation.	CO	During construction upon discovery of a resource	UC Davis Environmental Planning

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Impact	Mitigation Measures	Monitoring and Reporting Procedure		Timing	Verification
	University determines, in compliance with PRC 21083.2, which requires preservation in place as a first option, that the resource cannot feasibly be avoided, the University will retain a qualified archaeologist to conduct excavations to recover the material. Any archaeologically important artifacts recovered during monitoring shall be cleaned, catalogued, and analyzed, with the results presented in an archaeological data recovery report.				
<b>Impact AS-CUL-3: Disturbance of any human remains, including those interred outside of dedicated cemeteries</b>	<p><b>Mitigation Measure LRDP-CUL-3b: Stop work if human remains are encountered</b></p> <p>In the event of a discovery on campus of human bone, suspected human bone, or a burial, all excavation within 100 feet of the find will halt immediately and the University will contact a qualified archaeologist or the County Coroner within 24 hours to determine whether the bone is human. Consistent with California Health and Safety Code Section 7050.5(b), which prohibits disturbance of human remains uncovered by excavation until the coroner has made a finding relative to PRC Section 5097.5 procedures, the University will ensure that the remains, and a reasonable buffer around the remains established in coordination with the coroner or archaeologist, are protected against further disturbance. If it is determined</p>	Include measure in construction contracts; verify that work is halted; retain archaeologist or consult coroner to assess find. If find is significant, implement additional measures as specified, including reinterment	CO	During construction upon discovery of suspected human bone	UC Davis Environmental Planning

Project stage at which implementation of the measure is required:

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Impact	Mitigation Measures	Monitoring and Reporting Procedure	Timing	Verification
	<p>that the find is of Native American origin, the University will comply with the provisions of PRC Section 5097.98 regarding identification and involvement of the Native American Most Likely Descendant (MLD).</p> <p>If human remains cannot be left in place, the University will ensure that the qualified archaeologist and the MLD are provided opportunity to confer on archaeological treatment of human remains, and that appropriate studies, as identified through this consultation, are carried out prior to reinterment. The University will provide results of all such studies to the local Native American community and will provide an opportunity of local Native American involvement in any interpretative reporting.</p> <p>If the human remains are determined to be historic, and cannot be avoided and preserved in place, the area of the project site will be excavated under the supervision of an archaeologist and all human remains and associated artifacts will be removed from the site and analyzed. After analysis, all recovered human remains and associated artifacts will be placed in caskets and buried in a single mass grave at a local cemetery.</p>			

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Impact	Mitigation Measures	Monitoring and Reporting Procedure		Timing	Verification
<b>Energy</b>					
<b>Impact AS-EN-1: Wasteful, inefficient, or unnecessary consumption of energy resources during project construction or operation</b>	<p><b>Mitigation Measure LRDP-GHG-2: Implement verifiable actions or activities or purchase the equivalent GHG credits from a CARB-approved registry or a locally approved equivalent program to reduce GHG emissions generated by the Sacramento Campus</b></p> <p>As part of this mitigation measure, UC Davis is making the following separate, though overlapping, GHG emission reduction commitments: (1) As a CARB-covered entity, UC Davis will ensure emissions generated by the Central Energy Plant comply with CARB's cap and trade program; (2) Per the UC Sustainable Practices Policy, Scope 1 and Scope 2 GHG emissions generated by the Sacramento Campus shall, commencing in 2025, be entirely carbon neutral; (3) Also per the UC Sustainable Practices Policy, commencing in 2050, Scope 1, Scope 2, and Scope 3 (commuting and air travel) emissions generated by the Sacramento Campus shall be voluntarily offset; and (4) UC Davis shall undertake additional action to achieve the following GHG reduction performance standards for the Sacramento Campus:</p> <ul style="list-style-type: none"> <li>• By 2030, GHG emissions generated by the Sacramento Campus shall not</li> </ul>	Implement measure to reduce GHG emissions as specified, to achieve performance standards.	OP	During operation; ongoing documentation and review	Sacramento Campus Facilities Design and Construction

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Impact	Mitigation Measures	Monitoring and Reporting Procedure	Timing	Verification
	<p>exceed 60 percent of emissions generated by the campus in 1990.</p> <ul style="list-style-type: none"> <li>• By 2040, GHG emissions generated by the Sacramento Campus shall not exceed 20 percent of emissions generated by the campus in 1990.</li> <li>• By 2045 and thereafter, the Sacramento Campus shall achieve carbon neutrality (i.e., net zero emissions).</li> </ul> <p>GHG emissions generated by the Sacramento Campus in 1990 have been quantified as part of this Supplemental EIR and total 50,404 metric tons CO<sub>2</sub>e. This yields the following GHG targets for the above performance standards.</p> <ul style="list-style-type: none"> <li>• By 2030, GHG emissions generated by the Sacramento Campus shall not exceed 30,242 metric tons CO<sub>2</sub>e.</li> <li>• By 2040, GHG emissions generated by the Sacramento Campus shall not exceed 10,081 metric tons CO<sub>2</sub>e.</li> <li>• By 2045 and thereafter, GHG emissions generated by the Sacramento Campus shall not exceed net 0 metric tons CO<sub>2</sub>e.</li> </ul> <p>It is possible that some strategies implemented under the below commitments could independently achieve the performance standards of this measure. Various combinations of strategies could also be pursued to optimize total costs or community co-benefits. UC Davis will be responsible for determining the overall mix of strategies</p>			

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Impact	Mitigation Measures	Monitoring and Reporting Procedure	Timing	Verification
	<p>necessary to ensure the performance standards to mitigate GHG generated by the Sacramento Campus. Each of the measure commitments is described in more detail below.</p> <p><b><i>Compliance with CARB's Cap and Trade Program</i></b></p> <p>Any carbon credits purchased for the purpose of compliance with CARB's cap and trade program shall be purchased from an accredited carbon credit market. Such credits (or California Carbon Offsets) shall be registered with, and retired<sup>1</sup> by an Offset Project Registry, as defined in 17 California Code of Regulations § 95802(a), approved by the California Air Resources Board (CARB) such as, but not limited to, Climate Action Reserve (CAR), American Carbon Registry or Verra (formerly Verified Carbon Standard). In order to demonstrate that the carbon credits provided are real, permanent, additional, quantifiable, verifiable, and enforceable, as those terms are defined in the California Health and Safety Code Sections 38562(d)(1) and (2), UC Davis shall document in its annual report: (i) the protocol used to develop those credits, and (ii) the third-party verification report concerning those</p>			

<sup>1</sup> When Climate Reserve Tonnes (CRTs) are transferred to a retirement account in the Reserve System, they are considered retired. Retirement accounts are permanent and locked to prevent a retired CRT from being transferred again. CRTs are retired when they have been used to offset an equivalent ton of emissions or have been removed from further transactions on behalf of the environment.

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Impact	Mitigation Measures	Monitoring and Reporting Procedure	Timing	Verification
	<p>credits. As and when the credits are retired, UC Davis shall document in its annual report the unique serial numbers of those credits showing that they have been retired.</p> <p><b><i>Compliance with the UC Sustainable Practices Policy</i></b></p> <p>Compliance with the UC Sustainable Practices Policy for carbon neutrality will be accomplished through reductions in direct emissions, the purchase of renewable electricity and possibly biomethane, and the purchase of carbon credits. UC Davis will purchase voluntary carbon credits as the final action to reach the GHG emission reduction targets outline in the UC Sustainable Practices Policy. As part of the University Carbon Neutrality Initiative, internal guidelines have been developed to ensure that any use of credits for this purpose will result in additional, verified GHG emissions reductions from actions that align, as much as possible, with the University's research, teaching, and public service mission. Specifically, any voluntary carbon credits used by UC Davis to comply with the UC Sustainable Practices Policy will:</p> <ol style="list-style-type: none"> <li>1. Prioritize local (within the Sacramento region) and in-state credits over national credits. Credits shall be third-party verified by a major registry recognized by CARB such as CAR. If</li> </ol>			

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Impact	Mitigation Measures	Monitoring and Reporting Procedure	Timing	Verification
	<p>sufficient local and in-state credits are not available, UC Davis will purchase CARB conforming national credits registered with an approved registry.</p> <p>2. Be reported publicly and tracked through the Climate Registry (TCR) as required by the UC Sustainable Practices Policy. TCR is a non-profit organization governed by U.S. states and Canadian provinces and territories. UC Davis TCR reports will be third-party verified and posted publicly.</p> <p><b><i>Additional GHG Reduction Actions</i></b></p> <p>UC Davis shall do one or more of the following options to reduce GHG emissions generated by the Sacramento Campus to achieve the measure performance standards.</p> <p>1. Implement onsite GHG reduction actions on the Sacramento Campus (Option 1).</p> <p>2. Implement GHG reduction actions throughout the communities surrounding the Sacramento Campus in the City of Sacramento (Option 2).</p> <p>3. Purchase CARB verified GHG credits (Option 3).</p> <p>Each of the options is described in more detail below.</p> <p><u><i>Onsite GHG Reduction Actions</i></u></p>			

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Impact	Mitigation Measures	Monitoring and Reporting Procedure	Timing	Verification
	<p>Actions to reduce GHG emissions on the Sacramento Campus (Option 1) must exceed or not duplicate activities implemented pursuant to the UC Sustainable Practices Policy. Potential actions may include, but are not limited to the following.</p> <ul style="list-style-type: none"> <li>• <b>(1)-1:</b> All campus fleet vehicles scheduled for retirement shall be replaced with fuel efficient, LEV, ZEV, and/or alternative-fueled vehicles consistent with the needs of the campus.</li> <li>• <b>(1)-2:</b> New construction shall be required to employ solar roofs on at least 30 percent of roof square footage, unless mechanical equipment or other building specifications safely prohibit inclusion of solar roofs. The inclusion of solar roofs may be part of meeting LEED Silver or equivalent requirements.</li> <li>• <b>(1)-3:</b> Require use of natural alternatives to HFCs that are feasible and readily available for refrigeration and air conditioning. Natural refrigerants include ammonia, CO<sub>2</sub>, or hydrocarbons. UC Davis shall require all future development to meet CARB regulations restricting HFCs, if and when adopted.</li> </ul> <p>If UC Davis complies with the performance standards of this measure, as specified above, through</p>			

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	<p>implementation of onsite GHG reduction actions (Option 1), then no further action shall be required. If additional GHG reductions are required to meet the performance standards, they may be achieved through offsite GHG reduction actions (Option 2) or procurement of GHG credits (Option 3).</p> <p><u>Offsite GHG Reduction Actions</u></p> <p>Actions to reduce GHG emissions throughout the surrounding community (Option 2) may include, but are not limited to the following.</p> <ul style="list-style-type: none"> <li>• <b>(2)-1:</b> Develop a residential energy retrofit package in conjunction with the SMUD to achieve reductions in natural gas and electricity usage by the surrounding community. The retrofit package may include identification and sealing of dust and air leaks, installation of programmable thermostats, replacement of interior high use incandescent lamps with compact florescent lamps or LEDs, replacement of natural gas dryers with electric clothes dryers, replacement of windows with double-pane or triple-pane solar-control low-E argon gas filled wood frame windows, or other strategies selected by UC Davis in consultation with SMUD.</li> <li>• <b>(2)-2:</b> Develop a commercial energy retrocommissioning package in conjunction with SMUD to improve the</li> </ul>			

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Impact	Mitigation Measures	Monitoring and Reporting Procedure	Timing	Verification
	<p>energy efficiency of surrounding commercial buildings by at least 15 percent, relative to current (2019) energy consumption levels.</p> <ul style="list-style-type: none"> <li>• <b>(2)-3:</b> Develop a residential rooftop solar installation program in conjunction with SMUD. The installation program will allow surrounding homeowners to install solar photovoltaic systems at zero or minimal up-front cost. All projects installed under this measure must be designed for high performance (e.g., optimal full-sun location, solar orientation) and additive to utility RPS goals.</li> <li>• <b>(2)-4:</b> Develop a commercial rooftop solar installation program in conjunction with SMUD. The installation program will allow surrounding business owners to install solar photovoltaic systems at zero or minimal up-front cost. All projects installed under this measure must be designed for high performance (e.g., optimal full-sun location, solar orientation) and additive to utility RPS goals.</li> <li>• <b>(2)-5:</b> Partner with Sacramento Regional Transit to assess the feasibility of improving high-quality, regional transit serving the Sacramento Campus.</li> </ul>			

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	<p>If UC Davis complies with the performance standards of this measure, as specified above, through implementation of offsite GHG reduction actions (Option 2), then no further action shall be required. If additional GHG reductions are required to meet the performance standards, they may be achieved through onsite GHG reduction actions (Option 1) or procurement of GHG credits (Option 3).</p> <p><u><i>GHG Credits</i></u></p> <p>UC Davis may purchase GHG credits from a voluntary GHG credit provider that has an established protocol that requires projects generating GHG credits to demonstrate that the reduction of GHG emissions are real, permanent, quantifiable, verifiable, enforceable, and additional (per the definition in California Health and Safety Code Sections 38562(d)(1) and (2)). Definitions for these terms are as follows.</p> <ul style="list-style-type: none"> <li>• <b>Real:</b> Estimated GHG reductions should not be an artifact of incomplete or inaccurate emissions accounting. Methods for quantifying emission reductions should be conservative to avoid overstating a project's effects. The effects of a project on GHG emissions must be comprehensively accounted for, including unintended effects (often referred to as "leakage").</li> </ul>			

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	<ul style="list-style-type: none"> <li>• <b>Additional:</b> GHG reductions must be additional to any that would have occurred in the absence of the Climate Action Reserve, or of a market for GHG reductions generally. “Business as usual” reductions (i.e., those that would occur in the absence of a GHG reduction market) should not be eligible for registration.</li> <li>• <b>Permanent:</b> To function as offsets to GHG emissions, GHG reductions must effectively be “permanent.” This means, in general, that any net reversal in GHG reductions used to offset emissions must be fully accounted for and compensated through the achievement of additional reductions.</li> <li>• <b>Verified:</b> GHG reductions must result from activities that have been verified. Verification requires third-party review of monitoring data for a project to ensure the data are complete and accurate.</li> <li>• <b>Enforceable:</b> The emission reductions from offset must be backed by a legal instrument or contract that defines exclusive ownership and the legal instrument can be enforced within the legal system in the country in which the offset project occurs or through other compulsory means.</li> </ul> <p>GHG credits may be in the form of GHG offsets for prior reductions of GHG emissions verified through protocols or</p>			

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Impact	Mitigation Measures	Monitoring and Reporting Procedure	Timing	Verification
	<p>forecasted mitigation units for future committed GHG emissions meeting protocols. All credits shall be documented per protocols functionally equivalent in terms of stringency to CARB's protocol for offsets in the cap and trade program. If using credits not from CARB protocols, UC Davis must provide the protocols from the credit provider and must document why the protocols are functionally equivalent in terms of stringency to CARB protocols.</p> <p>UC Davis shall identify GHG credits in geographies closest to the Sacramento Campus first and only go to larger geographies (i.e., California, United States) if adequate credits cannot be found in closer geographies, or the procurement of such credits would create an undue financial burden. UC Davis shall provide the following justification for not using credits in closer geographies in terms of either availability or cost prohibition.</p> <ul style="list-style-type: none"> <li>• Lack of enough credits available in closer geographies (i.e., Sacramento County).</li> <li>• Prohibitively costly credits in closer geographies defined as credits costing more than 300 percent the amount of the current costs of credits in the regulated CARB offset market.</li> <li>• UC Davis documentation submitted supporting GHG credit proposals shall</li> </ul>			

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Impact	Mitigation Measures	Monitoring and Reporting Procedure	Timing	Verification
	<p>be prepared by individuals qualified in GHG credit development and verification and such individuals shall certify the following.</p> <ul style="list-style-type: none"> <li>Proposed credits meet the criteria in California Health and Safety Code Section 38562(d)(1) and (d)(2).</li> <li>Proposed credits meet the definitions for the criteria provided in this measure.</li> <li>The protocols used for the credits meet or exceed the standards for stringency used in CARB protocols for offsets under the California cap-and-trade system.</li> </ul> <p><b><i>Measure Monitoring and Reporting</i></b></p> <p>As a CARB-covered entity, UC Davis will ensure emissions generated by the Central Energy Plant comply with CARB's cap and trade program. Likewise, UC Davis will implement the UC Sustainable Practices Policy to meet the requirement of carbon neutrality for Scope 1 and 2 emissions by 2025 and carbon neutrality for Scope 3 emissions by 2050, as described above. These commitments will be incorporated into UC Davis' annual GHG inventory, which is used to track GHG emissions and sources on the Sacramento Campus. As part of the annual GHG inventory for the Sacramento Campus, UC Davis shall submit a report to The Regents specifying the annual</p>			

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	<p>amount of metric ton CO<sub>2</sub>e reduction achieved by additional GHG reduction actions implemented pursuant to this mitigation (i.e., Option 1, onsite actions, and Option 2, offsite actions). The report must include evidence that these actions are not being used to mitigate GHG for any other project or entity.</p> <p>GHG reductions achieved by the onsite and offsite actions should be incorporated into the Sacramento Campus' annual GHG inventory. The estimated annual emissions shall then be compared to the measure performance standards described above to determine the level of additional GHG reductions (if any). For the identified amount of exceedance of the performance standard(s), UC Davis shall purchase carbon credits according to the requirements established above under Option 3. As and when the credits are retired, UC Davis shall document in its annual report the unique identifier of those credits showing that they have been retired and accepted by TCR.</p>				
	<p><b>Mitigation Measure LRDP-TRA-1a: Monitor transit service performance and implement strategies to minimize delays to transit service</b></p> <p>During the 2020–2021 academic year, UC Davis shall coordinate with SacRT and other relevant transit operators to establish baseline on-time performance</p>	Document transit enhancement efforts and progress; continue to work with SacRT staff.	OC	Prior to occupancy	Sacramento Campus Facilities Design and Construction

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	<p>metrics for routes operating on Broadway and Stockton Boulevard within the vicinity of the Sacramento Campus consistent with established standards and methods. This process should consider the effects of the current COVID-19 pandemic on transit performance. UC Davis shall additionally coordinate with SacRT and other relevant transit operators to assess on-time performance for routes operating on Broadway and Stockton Boulevard within the vicinity of the Sacramento Campus every two years over the 2020 LRDP Update planning horizon. During its standard project review process, UC Davis shall forecast and analyze traffic conditions on Broadway and Stockton Boulevard within the vicinity of the Sacramento Campus for individual development projects proposed under the 2020 LRDP Update that are expected to affect operations on these roadways. Relative to baseline levels, if operations on Broadway and Stockton Boulevard are found to cause transit services to fail to meet established standards or to worsen transit performance for services that already fail to meet established standards, or if a project-level analysis indicates the same, UC Davis shall institute TDM strategies to reduce peak hour vehicle trips and, in turn, delays to transit service on Broadway and Stockton Boulevard within the vicinity of the Sacramento Campus.</p>			

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	<p>The implementation of TDM strategies shall offset degradations to transit on-time performance in excess of established on-time performance standards (per the most up-to-date SacRT Service Standards) that are attributable to the implementation of the 2020 LRDP Update.</p> <p>Implementation of TDM strategies that would reduce delays to transit service on Broadway to Stockton Boulevard include strategies to reduce vehicle travel to and from campus and to minimize the effect of campus operations on surrounding roadways. Specific potential TDM strategies include, but are not limited to, the following:</p> <ul style="list-style-type: none"> <li>• Modify campus-operated shuttles to avoid Broadway and Stockton Boulevard, to the extent practical;</li> <li>• Promote walking and bicycling for student and employee trips to and from the UC Davis Sacramento Campus;</li> <li>• Expand public transit service, including additional service connecting campus with student and employee residential areas;</li> <li>• Implement a fair value commuting program or other pricing of vehicle travel and parking;</li> <li>• Provide carpool and/or vanpool incentive programs;</li> </ul>			

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

Impact	Mitigation Measures	Monitoring and Reporting Procedure		Timing	Verification
	<ul style="list-style-type: none"> <li>• Allow flexible work hours and schedule classes to reduce arrivals/departures during peak hours; and</li> <li>• Offer remote working options.</li> </ul> <p>The TDM strategies implemented to reduce delays to transit service at these locations will be consistent with existing and planned TDM programs on campus. If these TDM strategies are not sufficient to reduce delays to transit service per the criteria described above, additional TDM measures or adjustments to the measures above shall be implemented, as needed to reduce peak hour intersection delay consistent with the criteria described above.</p>				
<b>Geology, Soils, and Seismicity</b>					
<b>Impact AS-GEO-1: Potential substantial adverse effects, including the risk of loss, injury, or death involving liquefaction</b>	<p><b>Mitigation Measure LRDP-GEO-1</b></p> <p>Conduct Geotechnical Investigation A site-specific, design-level geotechnical investigation will be conducted during the design phase of each building project under the 2020 LRDP Update. This investigation will be conducted by a licensed geotechnical engineer and include a seismic evaluation of ground acceleration under the design event as well as relevant soil conditions at the site. Geotechnical recommendations will subsequently be incorporated into the foundation and building design for the building project.</p>	Retain a certified engineering geologist or licensed geotechnical engineer to conduct site site-specific geotechnical investigation; document implementation of geotechnical recommendations.	DE	Prior to final design approval and project construction.	Sacramento Campus Facilities Design and Construction

Project stage at which implementation of the measure is required:

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

Impact	Mitigation Measures	Monitoring and Reporting Procedure		Timing	Verification
<b>Impact AS-GEO-2: Potential to result in substantial soil erosion or the loss of topsoil</b>	<b>Mitigation Measure LRDP-GEO-1</b> Conduct Geotechnical Investigation A site-specific, design-level geotechnical investigation will be conducted during the design phase of each building project under the 2020 LRDP Update. This investigation will be conducted by a licensed geotechnical engineer and include a seismic evaluation of ground acceleration under the design event as well as relevant soil conditions at the site. Geotechnical recommendations will subsequently be incorporated into the foundation and building design for the building project.	Retain a certified engineering geologist or licensed geotechnical engineer to conduct site site-specific geotechnical investigation; document implementation of geotechnical recommendations.	DE	Prior to final design approval and project construction.	Sacramento Campus Facilities Design and Construction
<b>Greenhouse Gas Emissions</b>					
<b>Impact AS-GHG-2: Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases</b>	<b>Mitigation Measure LRDP-AQ-2e: Reduce operational PM10 emissions</b> UC Davis will implement a program that incentivizes employees, students, residents, and visitors to carpool, use EVs, walk/bike, or use public transit to commute to and from the Sacramento Campus. The program will include, but is not limited to, the following features: <ul style="list-style-type: none"> <li>• <b>Parking:</b> Limit parking capacity to meet onsite demand and provide preferential parking to carpool vehicles, vanpool vehicles, and EVs. The program will implement the following parking related sub-measures.</li> </ul>	Implement program to incentivize alternative commuting modes.	OP	On a continuing basis with annual reporting	Sacramento Campus Facilities Design and Construction

Project stage at which implementation of the measure is required:

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

Impact	Mitigation Measures	Monitoring and Reporting Procedure	Timing	Verification
	<p>a. Provide no more onsite parking spaces than necessary to accommodate the number of employees working at a project site and/or the number of residents living at a project site, as determined by the project size and design.</p> <p>b. Where feasible, for future residential units (on-campus and Aggie Square Phase I), lease/sell parking space separately from the unit and provide the tenant the option of not purchasing/owning a space.</p> <p>c. Nonresidential land uses with 20 or more onsite parking spaces will dedicate preferential parking spaces to vehicles with more than one occupant and zero emission vehicles (including battery electric vehicles and hydrogen fuel cell vehicles). The number of dedicated spaces should be no less than two spaces or 5 percent of the total parking spaces on the project site, whichever is greater. These dedicated spaces will be in preferential locations such as near the main entrances to the buildings served by the parking lot and/or under the shade of a structure or trees. These spaces will be clearly marked with signs and pavement markings. This measure will not be implemented in a way that prevents compliance with requirements in the</p>			

Project stage at which implementation of the measure is required:

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Impact	Mitigation Measures	Monitoring and Reporting Procedure	Timing	Verification
	<p>California Vehicle Code regarding parking spaces for disabled persons or disabled veterans.</p> <p>d. Maintain a virtual or real “ride board” for employees and students to organize carpools and incentives for employees using public transit to commute to and from campus</p> <ul style="list-style-type: none"> <li>• <b>Vendor Trips:</b> Implement a program that incentivizes vendors to reduce the emissions associated with vehicles and equipment serving the UC Davis Sacramento Campus. The program will implement the following sub-measures to reduce vendor-related, mobile-source emissions. <ul style="list-style-type: none"> <li>a. Incentivize the use of electric vehicles or other clean fuels in their trucks and equipment.</li> <li>b. Work with vendors, especially those using trucks, to reduce the number of vendor trips made to the campus through trip chaining, reducing the number of shipments, or other methods.</li> </ul> </li> <li>• <b>Campus Shuttles:</b> Work with Fleet Services to convert Med-Transit (onsite) shuttles to electric or a lower-emission fuels or implement emission control technologies to reduce criteria air pollutant emissions from existing conditions.</li> </ul>			

Project stage at which implementation of the measure is required:

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Impact	Mitigation Measures	Monitoring and Reporting Procedure	Timing	Verification
	<ul style="list-style-type: none"> <li>• <b>Pedestrian and Bicycle Infrastructure:</b> Enhance walkability and connectivity of the Sacramento Campus to surrounding residential and commercial uses. The program will implement the following site design related sub-measures.               <ol style="list-style-type: none"> <li>a. Ensure all new external connections from the Sacramento Campus to existing or planned streets include bicycle/pedestrian access.</li> <li>b. Eliminate physical barriers such as walls, landscaping, and slopes that impede pedestrian circulation throughout the Sacramento Campus.</li> <li>c. Require all new sidewalks internal and adjacent to the Sacramento Campus to be at least 5 feet wide. Provide grade separation and wider sidewalks (e.g., 7 feet), wherever feasible.</li> <li>d. Require all new sidewalks within the Sacramento Campus to include vertical curbs or a planting strip to separate the sidewalk from the parking or travel lane.</li> <li>e. Construct new roads within the Sacramento Campus to include at least one traffic calming feature, such as street parking, chicanes, horizontal shifts (lane centerline that curves or shifts), bollards, rumble strips, or woonerfs. Coordinate with</li> </ol> </li> </ul>			

Project stage at which implementation of the measure is required:

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Impact	Mitigation Measures	Monitoring and Reporting Procedure	Timing	Verification
	<p>the City of Sacramento to encourage these features on external roads connecting to the campus.</p> <p>f. Construct new intersections within the Sacramento Campus to include marked crosswalks, count-down signal timers, curb extensions, channelization islands, speed tables, raised crosswalks, raised intersections, median islands, tight corner radii, traffic circles or mini-circles. Coordinate with the City of Sacramento to encourage these features on external intersections connecting to the campus</p> <ul style="list-style-type: none"> <li>• <b>Landscaping Equipment:</b> Reduce emissions from landscaping equipment through the following sub-measures. <ul style="list-style-type: none"> <li>a. Beginning in 2030, require UC Davis landscapers and contracted landscaping companies that maintain campus greenspaces to utilize electric or alternatively fueled mowers and handheld equipment (e.g., trimmers, blowers).</li> <li>b. Encourage xeriscape landscaping in all new campus greenspaces</li> </ul> </li> </ul>			
	<p><b>Mitigation Measure LRDP-TRA-1a: Monitor transit service performance and implement strategies to minimize delays to transit service</b></p> <p>During the 2020–2021 academic year, UC Davis shall coordinate with SacRT and</p>	Document transit enhancement efforts and progress; continue to work with SacRT staff.	OC Annually	Sacramento Campus Facilities Design and Construction

Project stage at which implementation of the measure is required:

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

Impact	Mitigation Measures	Monitoring and Reporting Procedure	Timing	Verification
	<p>other relevant transit operators to establish baseline on-time performance metrics for routes operating on Broadway and Stockton Boulevard within the vicinity of the Sacramento Campus consistent with established standards and methods. This process should consider the effects of the current COVID-19 pandemic on transit performance. UC Davis shall additionally coordinate with SacRT and other relevant transit operators to assess on-time performance for routes operating on Broadway and Stockton Boulevard within the vicinity of the Sacramento Campus every two years over the 2020 LRDP Update planning horizon. During its standard project review process, UC Davis shall forecast and analyze traffic conditions on Broadway and Stockton Boulevard within the vicinity of the Sacramento Campus for individual development projects proposed under the 2020 LRDP Update that are expected to affect operations on these roadways. Relative to baseline levels, if operations on Broadway and Stockton Boulevard are found to cause transit services to fail to meet established standards or to worsen transit performance for services that already fail to meet established standards, or if a project-level analysis indicates the same, UC Davis shall institute TDM strategies to reduce peak hour vehicle trips and, in turn, delays to transit service on</p>			

Project stage at which implementation of the measure is required:

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

Impact	Mitigation Measures	Monitoring and Reporting Procedure	Timing	Verification
	<p>Broadway and Stockton Boulevard within the vicinity of the Sacramento Campus.</p> <p>The implementation of TDM strategies shall offset degradations to transit on-time performance in excess of established on-time performance standards (per the most up-to-date SacRT Service Standards) that are attributable to the implementation of the 2020 LRDP Update.</p> <p>Implementation of TDM strategies that would reduce delays to transit service on Broadway to Stockton Boulevard include strategies to reduce vehicle travel to and from campus and to minimize the effect of campus operations on surrounding roadways. Specific potential TDM strategies include, but are not limited to, the following:</p> <ul style="list-style-type: none"> <li>• Modify campus-operated shuttles to avoid Broadway and Stockton Boulevard, to the extent practical;</li> <li>• Promote walking and bicycling for student and employee trips to and from the UC Davis Sacramento Campus;</li> <li>• Expand public transit service, including additional service connecting campus with student and employee residential areas;</li> <li>• Implement a fair value commuting program or other pricing of vehicle travel and parking;</li> </ul>			

Project stage at which implementation of the measure is required:

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

Impact	Mitigation Measures	Monitoring and Reporting Procedure		Timing	Verification
	<ul style="list-style-type: none"> <li>• Provide carpool and/or vanpool incentive programs;</li> <li>• Allow flexible work hours and schedule classes to reduce arrivals/departures during peak hours; and</li> <li>• Offer remote working options.</li> </ul> <p>The TDM strategies implemented to reduce delays to transit service at these locations will be consistent with existing and planned TDM programs on campus. If these TDM strategies are not sufficient to reduce delays to transit service per the criteria described above, additional TDM measures or adjustments to the measures above shall be implemented, as needed to reduce peak hour intersection delay consistent with the criteria described above.</p>				
	<p><b>Mitigation Measure LRDP-GHG-2: Implement verifiable actions or activities or purchase the equivalent GHG credits from a CARB-approved registry or a locally approved equivalent program to reduce GHG emissions generated by the Sacramento Campus</b></p> <p>As part of this mitigation measure, UC Davis is making the following separate, though overlapping, GHG emission reduction commitments: (1) As a CARB-covered entity, UC Davis will ensure emissions generated by the Central Energy Plant comply with CARB's cap and</p>	Implement measure to reduce GHG emissions as specified, to achieve performance standards.	OP	During operation; ongoing documentation and review	Sacramento Campus Facilities Design and Construction

Project stage at which implementation of the measure is required:

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

Impact	Mitigation Measures	Monitoring and Reporting Procedure	Timing	Verification
	<p>trade program; (2) Per the UC Sustainable Practices Policy, Scope 1 and Scope 2 GHG emissions generated by the Sacramento Campus shall, commencing in 2025, be entirely carbon neutral; (3) Also per the UC Sustainable Practices Policy, commencing in 2050, Scope 1, Scope 2, and Scope 3 (commuting and air travel) emissions generated by the Sacramento Campus shall be voluntarily offset; and (4) UC Davis shall undertake additional action to achieve the following GHG reduction performance standards for the Sacramento Campus:</p> <ul style="list-style-type: none"> <li>• By 2030, GHG emissions generated by the Sacramento Campus shall not exceed 60 percent of emissions generated by the campus in 1990.</li> <li>• By 2040, GHG emissions generated by the Sacramento Campus shall not exceed 20 percent of emissions generated by the campus in 1990.</li> <li>• By 2045 and thereafter, the Sacramento Campus shall achieve carbon neutrality.</li> </ul> <p>GHG emissions generated by the Sacramento Campus in 1990 have been quantified as part of this Supplemental EIR and total 50,404 metric tons CO<sub>2</sub>e. This yields the following GHG targets for the above performance standards.</p> <ul style="list-style-type: none"> <li>• By 2030, GHG emissions generated by the Sacramento Campus shall not exceed 30,242 metric tons CO<sub>2</sub>e.</li> </ul>			

Project stage at which implementation of the measure is required:

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Impact	Mitigation Measures	Monitoring and Reporting Procedure	Timing	Verification
	<ul style="list-style-type: none"> <li>By 2040, GHG emissions generated by the Sacramento Campus shall not exceed 10,081 metric tons CO<sub>2</sub>e.</li> <li>By 2045 and thereafter, GHG emissions generated by the Sacramento Campus shall not exceed 0 metric tons CO<sub>2</sub>e.</li> </ul> <p>It is possible that some strategies implemented under the below commitments could independently achieve the performance standards of this measure. Various combinations of strategies could also be pursued to optimize total costs or community co-benefits. UC Davis shall be responsible for determining the overall mix of strategies necessary to ensure the performance standards to mitigate GHG generated by the Sacramento Campus. Each of the measure commitments is described in more detail below.</p> <p><b><i>Compliance with CARB's Cap and Trade Program</i></b></p> <p>Any carbon credits purchased for the purpose of compliance with CARB's cap and trade program shall be purchased from an accredited carbon credit market. Such credits (or California Carbon Offsets) shall be registered with, and retired<sup>2</sup> by an Offset Project Registry, as defined in 17 California Code of</p>			

<sup>2</sup> When Climate Reserve Tonnes (CRTs) are transferred to a retirement account in the Reserve System, they are considered retired. Retirement accounts are permanent and locked to prevent a retired CRT from being transferred again. CRTs are retired when they have been used to offset an equivalent ton of emissions or have been removed from further transactions on behalf of the environment.

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Impact	Mitigation Measures	Monitoring and Reporting Procedure	Timing	Verification
	<p>Regulations § 95802(a), approved by the California Air Resources Board (CARB) such as, but not limited to, Climate Action Reserve (CAR), American Carbon Registry or Verra (formerly Verified Carbon Standard). In order to demonstrate that the carbon credits provided are real, permanent, additional, quantifiable, verifiable, and enforceable, as those terms are defined in the California Health and Safety Code Sections 38562(d)(1) and (2), UC Davis shall document in its annual report: (i) the protocol used to develop those credits, and (ii) the third-party verification report concerning those credits. As and when the credits are retired, UC Davis shall document in its annual report the unique serial numbers of those credits showing that they have been retired.</p> <p><b><i>Compliance with the UC Sustainable Practices Policy</i></b></p> <p>Compliance with the UC Sustainable Practices Policy for carbon neutrality will be accomplished through reductions in direct emissions, the purchase of renewable electricity and possibly biomethane, and the purchase of carbon credits. UC Davis will purchase voluntary carbon credits as the final action to reach the GHG emission reduction targets outline in the UC Sustainable Practices Policy. As part of the University Carbon Neutrality Initiative, internal guidelines</p>			

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Impact	Mitigation Measures	Monitoring and Reporting Procedure	Timing	Verification
	<p>have been developed to ensure that any use of credits for this purpose will result in additional, verified GHG emissions reductions from actions that align, as much as possible, with UC's research, teaching, and public service mission. Specifically, any voluntary carbon credits used by UC Davis to comply with the UC Sustainable Practices Policy will:</p> <ol style="list-style-type: none"> <li>1. Prioritize local (within the Sacramento region) and in-state credits over national credits. Credits shall be third-party verified by a major registry recognized by CARB such as CAR. If sufficient local and in-state credits are not available, UC Davis will purchase CARB conforming national credits registered with an approved registry.</li> <li>2. Be reported publicly and tracked through the Climate Registry (TCR) as required by the UC Sustainable Practices Policy. TCR is a non-profit organization governed by U.S. states and Canadian provinces and territories. UC Davis TCR reports will be third-party verified and posted publicly.</li> </ol> <p><b><i>Additional GHG Reduction Actions</i></b></p> <p>UC Davis shall do one or more of the following options to reduce GHG emissions generated by the Sacramento Campus to achieve the measure performance standards.</p>			

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Impact	Mitigation Measures	Monitoring and Reporting Procedure	Timing	Verification
	<p>1. Implement onsite GHG reduction actions on the Sacramento Campus (Option 1).</p> <p>2. Implement GHG reduction actions throughout the communities surrounding the Sacramento Campus in the City of Sacramento (Option 2).</p> <p>3. Purchase CARB verified GHG credits (Option 3).</p> <p>Each of the options is described in more detail below.</p> <p><u>Onsite GHG Reduction Actions</u></p> <p>Actions to reduce GHG emissions on the Sacramento Campus (Option 1) must exceed or not duplicate activities implemented pursuant to the UC Sustainable Practices Policy. Potential actions may include, but are not limited to the following.</p> <ul style="list-style-type: none"> <li>• <b>(1)-1:</b> All campus fleet vehicles scheduled for retirement shall be replaced with fuel efficient, LEV, ZEV, and/or alternative-fueled vehicles consistent with the needs of the campus.</li> <li>• <b>(1)-2:</b> New construction shall be required to employ solar roofs on at least 30 percent of roof square footage, unless mechanical equipment or other building specifications safely prohibit inclusion of solar roofs. The inclusion of solar roofs may be part of meeting</li> </ul>			

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Impact	Mitigation Measures	Monitoring and Reporting Procedure	Timing	Verification
	<p>LEED Silver or equivalent requirements.</p> <ul style="list-style-type: none"> <li>• <b>(1)-3:</b> Require use of natural alternatives to HFCs that are feasible and readily available for refrigeration and air conditioning. Natural refrigerants include ammonia, CO<sub>2</sub>, or hydrocarbons. UC Davis shall require all future development to meet CARB regulations restricting HFCs, if and when adopted.</li> </ul> <p>If UC Davis complies with the performance standards of this measure, as specified above, through implementation of onsite GHG reduction actions (Option 1), then no further action shall be required. If additional GHG reductions are required to meet the performance standards, they may be achieved through offsite GHG reduction actions (Option 2) or procurement of GHG credits (Option 3).</p> <p><u>Offsite GHG Reduction Actions</u></p> <p>Actions to reduce GHG emissions throughout the surrounding community (Option 2) may include, but are not limited to the following.</p> <ul style="list-style-type: none"> <li>• <b>(2)-1:</b> Develop a residential energy retrofit package in conjunction with the SMUD to achieve reductions in natural gas and electricity usage by the surrounding community. The retrofit package may include identification and</li> </ul>			

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Impact	Mitigation Measures	Monitoring and Reporting Procedure	Timing	Verification
	<p>sealing of dust and air leaks, installation of programmable thermostats, replacement of interior high use incandescent lamps with compact florescent lamps or LEDs, replacement of natural gas dryers with electric clothes dryers, replacement of windows with double-pane or triple-pane solar-control low-E argon gas filled wood frame windows, or other strategies selected by UC Davis in consultation with SMUD.</p> <ul style="list-style-type: none"> <li>• <b>(2)-2:</b> Develop a commercial energy retrocommissioning package in conjunction with SMUD to improve the energy efficiency of surrounding commercial buildings by at least 15 percent, relative to current (2019) energy consumption levels.</li> <li>• <b>(2)-3:</b> Develop a residential rooftop solar installation program in conjunction with SMUD. The installation program will allow surrounding homeowners to install solar photovoltaic systems at zero or minimal up-front cost. All projects installed under this measure must be designed for high performance (e.g., optimal full-sun location, solar orientation) and additive to utility RPS goals.</li> <li>• <b>(2)-4:</b> Develop a commercial rooftop solar installation program in conjunction with SMUD. The</li> </ul>			

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Impact	Mitigation Measures	Monitoring and Reporting Procedure	Timing	Verification
	<p>installation program will allow surrounding business owners to install solar photovoltaic systems at zero or minimal up-front cost. All projects installed under this measure must be designed for high performance (e.g., optimal full-sun location, solar orientation) and additive to utility RPS goals.</p> <ul style="list-style-type: none"> <li>• <b>(2)-5:</b> Partner with Sacramento Regional Transit to assess the feasibility of improving high-quality, regional transit serving the Sacramento Campus.</li> </ul> <p>If UC Davis complies with the performance standards of this measure, as specified above, through implementation of offsite GHG reduction actions (Option 2), then no further action shall be required. If additional GHG reductions are required to meet the performance standards, they may be achieved through onsite GHG reduction actions (Option 1) or procurement of GHG credits (Option 3).</p> <p><u>GHG Credits</u></p> <p>UC Davis may purchase GHG credits from a voluntary GHG credit provider that has an established protocol that requires projects generating GHG credits to demonstrate that the reduction of GHG emissions are real, permanent, quantifiable, verifiable, enforceable, and additional (per the definition in California</p>			

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Impact	Mitigation Measures	Monitoring and Reporting Procedure	Timing	Verification
	<p>Health and Safety Code Sections 38562(d)(1) and (2)). Definitions for these terms are as follows.</p> <ul style="list-style-type: none"> <li>• <b>Real:</b> Estimated GHG reductions should not be an artifact of incomplete or inaccurate emissions accounting. Methods for quantifying emission reductions should be conservative to avoid overstating a project's effects. The effects of a project on GHG emissions must be comprehensively accounted for, including unintended effects (often referred to as "leakage").</li> <li>• <b>Additional:</b> GHG reductions must be additional to any that would have occurred in the absence of the Climate Action Reserve, or of a market for GHG reductions generally. "Business as usual" reductions (i.e., those that would occur in the absence of a GHG reduction market) should not be eligible for registration.</li> <li>• <b>Permanent:</b> To function as offsets to GHG emissions, GHG reductions must effectively be "permanent." This means, in general, that any net reversal in GHG reductions used to offset emissions must be fully accounted for and compensated through the achievement of additional reductions.</li> <li>• <b>Verified:</b> GHG reductions must result from activities that have been verified. Verification requires third-party review of monitoring data for a project to</li> </ul>			

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Impact	Mitigation Measures	Monitoring and Reporting Procedure	Timing	Verification
	<p>ensure the data are complete and accurate.</p> <ul style="list-style-type: none"> <li>• <b>Enforceable:</b> The emission reductions from offset must be backed by a legal instrument or contract that defines exclusive ownership and the legal instrument can be enforced within the legal system in the country in which the offset project occurs or through other compulsory means.</li> </ul> <p>GHG credits may be in the form of GHG offsets for prior reductions of GHG emissions verified through protocols or forecasted mitigation units for future committed GHG emissions meeting protocols. All credits shall be documented per protocols functionally equivalent in terms of stringency to CARB's protocol for offsets in the cap and trade program. If using credits not from CARB protocols, UC Davis must provide the protocols from the credit provider and must document why the protocols are functionally equivalent in terms of stringency to CARB protocols.</p> <p>UC Davis shall identify GHG credits in geographies closest to the Sacramento Campus first and only go to larger geographies (i.e., California, United States) if adequate credits cannot be found in closer geographies, or the procurement of such credits would create an undue financial burden. UC Davis shall provide the following justification for not</p>			

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Impact	Mitigation Measures	Monitoring and Reporting Procedure	Timing	Verification
	<p>using credits in closer geographies in terms of either availability or cost prohibition.</p> <ul style="list-style-type: none"> <li>• Lack of enough credits available in closer geographies (i.e., Sacramento County).</li> <li>• Prohibitively costly credits in closer geographies defined as credits costing more than 300 percent the amount of the current costs of credits in the regulated CARB offset market.</li> <li>• UC Davis documentation submitted supporting GHG credit proposals shall be prepared by individuals qualified in GHG credit development and verification and such individuals shall certify the following. <ul style="list-style-type: none"> <li>◦ Proposed credits meet the criteria in California Health and Safety Code Section 38562(d)(1) and (d)(2).</li> <li>◦ Proposed credits meet the definitions for the criteria provided in this measure.</li> <li>◦ The protocols used for the credits meet or exceed the standards for stringency used in CARB protocols for offsets under the California cap-and-trade system.</li> </ul> </li> </ul> <p><b><i>Measure Monitoring and Reporting</i></b></p> <p>As a CARB-covered entity, UC Davis will ensure emissions generated by the Central Energy Plant comply with CARB's</p>			

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Impact	Mitigation Measures	Monitoring and Reporting Procedure	Timing	Verification
	<p>cap and trade program. Likewise, UC Davis will implement the UC Sustainable Practices Policy to meet the requirement of carbon neutrality for Scope 1 and 2 emissions by 2025 and carbon neutrality for Scope 3 emissions by 2050, as described above. These commitments will be incorporated into UC Davis' annual GHG inventory, which is used to track GHG emissions and sources on the Sacramento Campus. As part of the annual GHG inventory for the Sacramento Campus, UC Davis shall submit a report to The Regents specifying the annual amount of metric ton CO<sub>2</sub>e reduction achieved by additional GHG reduction actions implemented pursuant to this mitigation (i.e., Option 1, onsite actions, and Option 2, offsite actions). The report must include evidence that these actions are not being used to mitigate GHG for any other project or entity.</p> <p>GHG reductions achieved by the onsite and offsite actions should be incorporated into the Sacramento Campus' annual GHG inventory. The estimated annual emissions shall then be compared to the measure performance standards described above to determine the level of additional GHG reductions (if any). For the identified amount of exceedance of the performance standard(s), UC Davis shall purchase carbon credits according to the requirements established above under</p>			

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Impact	Mitigation Measures	Monitoring and Reporting Procedure		Timing	Verification
	Option 3. As and when the credits are retired, UC Davis shall document in its annual report the unique identifier of those credits showing that they have been retired and accepted by TCR.				
<b>Hazards and Hazardous Materials</b>					
<b>Impact AS-HAZ-2: Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment (potentially significant)</b>	<b>Mitigation Measure LRDP-HAZ-2: Prepare a Phase I Environmental Site Assessment</b> To minimize the risk of encountering unknown contamination during construction under the 2020 LRDP Update, the UC Davis Sacramento Campus would prepare a Phase I Environmental Site Assessment before all ground-disturbing construction in areas not previously investigated. A Phase I Environmental Site Assessment would conform with the American Society for Testing and Materials Standard Practice E1527-05 and include at a minimum the following site assessment requirements. <ul style="list-style-type: none"> <li>• An onsite visit to identify current conditions (e.g., vegetative dieback, chemical spill residue, presence of above- or underground storage tanks).</li> <li>• An evaluation of possible risks posed by neighboring properties.</li> <li>• Interviews with persons knowledgeable about the site's history (e.g., current or previous property owners, property managers).</li> </ul>	Conduct Environmental Site Assessment and document findings. Conduct remediation activities as necessary.	DE	Prior to final design approval and project construction	Sacramento Campus Facilities Design and Construction
		Monitor construction site, perform testing, and implement safety procedures, as necessary.	CO	Monitor construction site	Sacramento Campus Facilities Design and Construction

Project stage at which implementation of the measure is required:

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

Impact	Mitigation Measures	Monitoring and Reporting Procedure	Timing	Verification
	<ul style="list-style-type: none"> <li>• An examination of local planning files to check prior land uses and any permits granted.</li> <li>• File searches with appropriate agencies (e.g., State Water Board, fire department, county health department) having oversight authority relative to water quality and groundwater and soil contamination.</li> <li>• Examination of historical aerial photography of the site and adjacent properties.</li> <li>• A review of current and historic topographic maps of the site to determine drainage patterns.</li> <li>• An examination of chain-of-title for environmental liens and/or activity and land use limitations.</li> </ul> <p>If the Phase I Environmental Site Assessment indicates likely site contamination, a Phase II Environmental Site Assessment will be performed (also by an environmental professional).</p> <p>A Phase II Environmental Site Assessment would comprise the following.</p> <ul style="list-style-type: none"> <li>• Collection of original surface and/or subsurface samples of soil, groundwater, and building materials to analyze for quantities of various contaminants.</li> <li>• An analysis to determine the vertical and horizontal extent of contamination</li> </ul>			

Project stage at which implementation of the measure is required:

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

Impact	Mitigation Measures	Monitoring and Reporting Procedure	Timing	Verification
	<p>(if the evidence from sampling shows contamination).</p> <p>If contamination is uncovered as part of Phase I or II Environmental Site Assessments, remediation per EPA's RCRA regulations in 40 CFR Parts 260–299 will be required, and materials will be properly managed and disposed of prior to construction.</p> <p>Any contaminated soil identified on a project site must be properly disposed of in accordance with Department of Toxic Substances Control regulations in effect at the time.</p> <p>If, during construction, soil or groundwater contamination is suspected, construction activities will cease and appropriate health and safety procedures will be implemented, including the use of appropriate personal protective equipment (e.g., respiratory protection, protective clothing, helmets, goggles).</p>			

Project stage at which implementation of the measure is required:

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

Impact	Mitigation Measures	Monitoring and Reporting Procedure		Timing	Verification
<b>Hydrology and Water Quality</b>					
<b>Impact AS-WQ-3: Substantial alteration of existing drainage patterns in a manner that would result in substantial erosion or siltation onsite or offsite; substantial increase in the amount of surface runoff in a manner that would result in flooding onsite or offsite; creation of or contribution to runoff water that would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; obstruction or redirection of flood flows caused by drainage modifications</b>	<p><b>Mitigation Measure LRDP-WQ-1: Implement a Sub-Soil Drainage System to Avoid Damage to Buildings</b></p> <p>In the event a subsoil drainage system is required (as determined by a geotechnical analysis), the system will be installed underground to remove excessive water from the soil, and avoid damage to buildings or landscaping. Groundwater from exterior building footings will be conveyed to a sump pump. The effluent will be pumped into the building storm drainage system. Subsoil drainage systems that cannot discharge to the storm sewer by gravity flow would be drained by gravity to sump pumps and will be pumped into the building storm drainage system. Each sump pump will be sized for 100 percent of the estimated design flow. Sump pumps will be connected to the emergency (standby) power system to permit operation during a loss of normal power. Design criteria for the subsoil drainage system will be defined by the geotechnical report.</p>	Implement a subsoil drainage system, if required.	DE	Prior to final design approval	Sacramento Campus Facilities Design and Construction

Project stage at which implementation of the measure is required:

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

Impact	Mitigation Measures	Monitoring and Reporting Procedure		Timing	Verification
<b>Noise</b>					
<b>Impact AS-NOI-1: Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project from construction activities in excess of applicable standards</b>	<p><b>Mitigation Measure LRDP-NOI-1: Implementation of Measures to Reduce Construction Noise</b></p> <p>For construction activities associated with future projects under the 2020 LRDP Update, UC Davis will implement or incorporate the following noise reduction measures into construction specifications for contractor(s) implementation during project construction:</p> <ol style="list-style-type: none"> <li>1. Construction activities will be limited to the daytime hours of 7:00 a.m. and 6:00 p.m. Monday through Saturday and between 9:00 a.m. and 6:00 p.m. on Sunday, when feasible.</li> <li>2. Pile driving will not occur outside of the daytime hours of 7:00 a.m. and 6:00 p.m. Monday through Saturday and between 9:00 a.m. and 6:00 p.m. on Sunday.</li> <li>3. All construction equipment used for future projects will be equipped with suitable exhaust and intake silencers in good working order. All construction equipment will be properly maintained and equipped with intake silencers and exhaust mufflers and/or engine shrouds, in accordance with manufacturer recommendations. Equipment engine shrouds, if used, will be closed during equipment operation.</li> </ol>	Include measure in contract specifications; inspect construction site to verify measure is implemented.	CO	During construction	Sacramento Campus Facilities Design and Construction

Project stage at which implementation of the measure is required:

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

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

Project stage at which implementation of the measure is required:

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

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

Project stage at which implementation of the measure is required:

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



Impact	Mitigation Measures	Monitoring and Reporting Procedure		Timing	Verification
	<p>prolonged periods (i.e., more than 2 minutes).</p> <p>d. Retain a qualified noise specialist to conduct noise monitoring to ensure that noise reduction measures are achieved the necessary reductions such that levels at the receiving land uses do not exceed 55 dBA during the hours of 7:00 a.m. to 10:00 p.m. and 50 dBA during the hours of 10:00 p.m. to 7:00 a.m.</p>				
<b>Impact AS-NOI-2: Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project from operations in excess of applicable standards</b>	<p><b>Mitigation Measure LRDP-NOI-2a: Reduce Noise Exposure from Emergency Generators</b></p> <p>Prior to approval of a building permit for individual LRDP development projects proposing the installation of emergency generators, documentation will be submitted to the University demonstrating with reasonable certainty that noise from testing of the proposed generator(s) would not exceed 55 dBA at the nearest residential land use. Acoustical treatments to reduce noise from generator testing may include, but are not limited to, the following.</p> <ul style="list-style-type: none"> <li>• Enclosing generator(s)</li> <li>• Incorporating the use of exhaust mufflers or silencers to reduce exhaust noise</li> <li>• Selecting a relatively quiet generator model</li> </ul>	<p>Provide documentation related to expected generator noise; incorporate acoustical treatments, as necessary.</p> <p>Conduct testing during hours specified.</p>	DE	Prior to final project approval	Sacramento Campus Facilities Design and Construction

Project stage at which implementation of the measure is required:

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

Impact	Mitigation Measures	Monitoring and Reporting Procedure		Timing	Verification
	<ul style="list-style-type: none"> <li>• Orienting or shielding generator(s) to protect noise-sensitive receptors to the greatest extent feasible</li> <li>• Increasing the distance between generator(s) and noise-sensitive receptors</li> <li>• Placing barriers or enclosures around generator(s) to facilitate the attenuation of noise.</li> </ul> <p>In addition, all project generator(s) will be tested only between the hours of 7:00 a.m. and 10:00 p.m.</p> <p>All recommendations from the acoustical analysis necessary to ensure that generator noise would meet the above requirements will be incorporated into the building design and operations.</p>				
	<p><b>Mitigation Measure LRDP-NOI-2b: Reduce Noise Exposure from New Stationary Noise Sources</b></p> <p>During project design of individual projects proposed under the 2020 LRDP Update, UC Davis will review and ensure that noise-generating equipment, including heating and cooling equipment and exhaust fans, would not result in noise levels in excess of 50 dBA <math>L_{eq}</math> at the nearest residential land use. The project design will incorporate features to reduce equipment noise, as necessary, to ensure the 50 dB <math>L_{eq}</math> at nearby residential land uses is not exceeded. Design features that may be implemented to reduce noise</p>	Provide documentation related to expected noise from new stationary sources; incorporate noise reduction design features, as necessary; complete an acoustical analysis, as necessary.	DE	Prior to final project approval	Sacramento Campus Facilities Design and Construction

Project stage at which implementation of the measure is required:

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Impact	Mitigation Measures	Monitoring and Reporting Procedure		Timing	Verification
	include, but are not limited to: locating equipment within equipment rooms or enclosures that incorporate noise reduction features, such as acoustical louvers; incorporating exhaust and intake silencers, as applicable; or selecting quieter equipment. Should noise levels potentially exceed 50 dBA at the nearest residential land use, UC Davis may require the completion of a detailed noise control analysis (by a person qualified in acoustical analysis and/or engineering) that includes the incorporation of noise reduction measures (including quieter equipment, construction of barriers or enclosures, etc.) prior to the issuance of building permits.				
<b>Impact AS-NOI-3: Generation of excessive groundborne vibration or groundborne noise levels</b>	<b>Mitigation Measure AS-NOI-1: Minimum Distances for the Operation of Pile Drivers and Vibratory Rollers</b> Pile driving activity shall not occur within 225 feet of nearby Category 3 land uses, such as the Language Academy of Sacramento southeast of the project site, to ensure that vibration levels from pile driving do not exceed applicable vibration criteria for these uses. In addition, vibratory rollers shall not operate within 110 feet of nearby Category 3 land uses.	Include measure in contract specifications; inspect construction site to verify measure is implemented.	CO	During project construction	Sacramento Campus Facilities Design and Construction

Project stage at which implementation of the measure is required:

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

Impact	Mitigation Measures	Monitoring and Reporting Procedure		Timing	Verification
	<p><b>Mitigation Measure LRDP-NOI-1: Implementation of Measures to Reduce Construction Noise</b></p> <p>For construction activities associated with future projects under the 2020 LRDP Update, UC Davis will implement or incorporate the following noise reduction measures into construction specifications for contractor(s) implementation during project construction:</p> <ol style="list-style-type: none"> <li>1. Construction activities will be limited to the daytime hours of 7:00 a.m. and 6:00 p.m. Monday through Saturday and between 9:00 a.m. and 6:00 p.m. on Sunday, when feasible.</li> <li>2. Pile driving will not occur outside of the daytime hours of 7:00 a.m. and 6:00 p.m. Monday through Saturday and between 9:00 a.m. and 6:00 p.m. on Sunday.</li> <li>3. All construction equipment used for future projects will be equipped with suitable exhaust and intake silencers in good working order. All construction equipment will be properly maintained and equipped with intake silencers and exhaust mufflers and/or engine shrouds, in accordance with manufacturer recommendations. Equipment engine shrouds, if used, will be closed during equipment operation.</li> <li>4. All construction equipment and equipment staging areas will be located</li> </ol>	Include measure in contract specifications; inspect construction site to verify measure is implemented.	CO	During construction	Sacramento Campus Facilities Design and Construction

Project stage at which implementation of the measure is required:

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

Impact	Mitigation Measures	Monitoring and Reporting Procedure	Timing	Verification
	<p>as far as possible from nearby noise-sensitive land uses, and/or located such that existing or constructed noise attenuating features (e.g., temporary noise wall or blankets) block line of sight between affected noise-sensitive land uses and construction staging areas, to the extent feasible.</p> <p>5. Individual operations and techniques will be replaced with quieter procedures (e.g., using welding instead of riveting, mixing concrete offsite instead of onsite) where feasible and consistent with building codes and other applicable laws and regulations.</p> <p>6. Stationary noise sources such as generators or pumps will be located as far as feasible from noise-sensitive land uses.</p> <p>7. No less than one week prior to the start of construction activities at a particular location, notification will be provided to academic, administrative, and residential or noise-sensitive uses (such as schools) located within 500 feet of the construction site.</p> <p>8. For any construction activity that must extend beyond the daytime hours of 7:00 a.m. and 6:00 p.m. on weekdays and Saturdays, and between 9:00 a.m. and 6:00 p.m. on Sundays, the construction contractor for that project will ensure that noise levels at the nearest noise-sensitive land use do not</p>			

Project stage at which implementation of the measure is required:

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Impact	Mitigation Measures	Monitoring and Reporting Procedure	Timing	Verification
	<p>exceed 55 dBA during the hours of 7:00 a.m. to 10:00 p.m. and 50 dBA during the hours of 10:00 p.m. to 7:00 a.m., as feasible. In addition to measures described above, the following measures may also help achieve this performance standard.</p> <p>a. Install temporary noise barriers as close as possible to the noise source or the receptor and located within the direct line-of-sight path between the noise source and nearby sensitive receptor(s). The barrier should be constructed of material that has a surface weight of at least 1 pound per square foot and has an acoustical rating of at least 25 STC (Sound Transmission Class). This can include a temporary barrier constructed with plywood support on a wood frame, sound curtains supported on a frame, or other comparable material.</p> <p>b. Use “quiet” gasoline-powered compressors or electrically powered compressors as well as electric rather than gasoline- or diesel-powered forklifts for small lifting, where feasible.</p> <p>c. Prohibit idling of inactive construction equipment for prolonged periods (i.e., more than 2 minutes).</p>			

Project stage at which implementation of the measure is required:

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

Impact	Mitigation Measures	Monitoring and Reporting Procedure		Timing	Verification
	d. Retain a qualified noise specialist to conduct noise monitoring to ensure that noise reduction measures are achieved the necessary reductions such that levels at the receiving land uses do not exceed 55 dBA during the hours of 7:00 a.m. to 10:00 p.m. and 50 dBA during the hours of 10:00 p.m. to 7:00 a.m.				
	<p><b>Mitigation Measure LRDP-NOI-3a: Implement Measures to Reduce Vibration-Related Annoyance Impacts to Onsite Land Uses</b></p> <p>Should vibration-generating construction activities that do not involve pile driving be proposed within 140 feet of on-campus Category 1 buildings, or should pile driving activities be proposed within 500 feet of Category 1 land uses, the construction contractor will work with the University to identify vibration-producing activities on the construction schedule in advance. The construction contractor will coordinate the timing of the activities with hospital or research units that may be affected to reduce potential vibration-related annoyance effects on sensitive onsite hospital or research receptors. In addition, the construction contractor will appoint a project vibration coordinator who will serve as the point of contact for vibration-related complaints during project construction. Contact information for the</p>	Include measure in contract specifications; inspect construction site to verify measure is implemented.	CO	During project construction	Sacramento Campus Facilities Design and Construction

Project stage at which implementation of the measure is required:

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

Impact	Mitigation Measures	Monitoring and Reporting Procedure		Timing	Verification
	project vibration coordinator will be posted at the project site and on a publicly available project website. The project vibration coordinator will be contacted should vibration effects become too disruptive at on-campus uses, and will then work with the construction team to adjust activities to reduce vibration or to reschedule activities for a less sensitive time.				
	<p><b>Mitigation Measure LRDP-NOI-3b: Implement Measures to Reduce Vibration-Related Annoyance Impacts to Offsite Land Uses</b></p> <p>Should vibration-generating construction activities for future development under the 2020 LRDP Update (other than pile driving) be proposed outside of the daytime hours of 7:00 a.m. and 6:00 p.m. Monday through Saturday and between 9:00 a.m. and 6:00 p.m. on Sunday, equipment must not operate within 100 feet of on-campus or off-campus residential (Category 2) land uses. Vibration levels at the nearest Category 2 land use will not exceed the applicable vibration criteria of 72 VdB. The contact information for the project vibration coordinator (described in Mitigation Measure LRDP-NOI-3a) will be posted at the project site and on a publicly available project website. Should residents in the project area submit complaints to the project vibration coordinator for</p>	Include measure in contract specifications; adjust activities, if necessary.	CO	During project construction	Sacramento Campus Facilities Design and Construction

Project stage at which implementation of the measure is required:

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



Impact	Mitigation Measures	Monitoring and Reporting Procedure		Timing	Verification
	nighttime construction vibration concerns, the construction team will adjust activities to reduce vibration, or will reschedule activities for a less sensitive time such that vibration does not exceed 72 dB at nearby Category 2 land uses.				
<b>Transportation and Circulation</b>					
<b>Impact AS-TRA-1: Conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities</b>	<p><b>Mitigation Measure AS-TRA-1a: Construct operational improvements on Broadway and Stockton Boulevard</b></p> <p>Prior to project occupancy, UC Davis shall construct operational improvements on Broadway and Stockton Boulevard to reduce peak hour delay experienced by motorists, including transit vehicles. The operational improvements shall offset any degradation to transit on-time performance in excess of acceptable SacRT standards that would otherwise occur with the implementation of the Aggie Square Phase I project. Overall, transit improvements shall strive to achieve the on-time performance standard established in the most up-to-date SacRT Service Standards while minimizing the potential for conflicts with active transportation modes, inducing vehicle travel, or increasing VMT.</p> <p>Potential improvements include the following.</p>	Construct operational improvements as specified.	OC	Prior to occupancy	Sacramento Campus Facilities Design and Construction

Project stage at which implementation of the measure is required:

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

Impact	Mitigation Measures	Monitoring and Reporting Procedure	Timing	Verification	
	<ul style="list-style-type: none"><li>• Transit signal priority for traffic signals along transit serving corridors where signal delay is a primary contributor to unacceptable on-time performance</li><li>• Queue jump lanes for bus transit at signalized intersections</li><li>• Turn lane improvements (i.e., dedicated or additional right-turn or left-turn lanes) where turning movements are a major contributing factor to transit delay</li><li>• Providing transit-only lanes where feasible and practical</li></ul> <p>Transit facility and roadway improvements shall be designed and constructed in accordance with industry best practices and applicable UC Davis, City of Sacramento, and State of California standards. Improvements shall be implemented or constructed in a manner that would not physically disrupt existing transit service or facilities (e.g., additional bus service that exceeds available bus stop or transit terminal capacity) or otherwise adversely affect transit operations.</p>				
	<p><b>Mitigation Measure LRDP-TRA-1c: Monitor transit-related collisions and implement countermeasures to minimize potential conflicts with transit service and facilities</b></p> <p>During the 2020–2021 academic year and every 2 years thereafter, UC Davis shall</p>	Monitor and document traffic conditions as specified; forecast and analyze traffic conditions as specified; implement TDM strategies as necessary.	OP	During operation; ongoing documentation and review	Sacramento Campus Facilities Design and Construction

Project stage at which implementation of the measure is required:

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

Impact	Mitigation Measures	Monitoring and Reporting Procedure	Timing	Verification
	<p>record on-campus collisions involving a transit vehicle and establish a transit vehicle collision rate. The rate should be sensitive to transit provider, location context, and facility type (e.g., intersection versus segment). UC Davis shall determine the on-campus transit vehicle collision rate as part of a biennial mitigation monitoring program. In instances where the rate increases from the prior observation period, UC Davis shall develop and implement countermeasures that address collision hot-spots and common primary collision factors. UC Davis shall also identify and develop countermeasures for locations where the change in the mix of travel patterns and behavior is determined to be incompatible with the facility as designed. Potential countermeasures include physically separating modes in shared operating environments, particularly high- versus low-speed travel modes, and increased education and enforcement.</p> <p>Transit facility and roadway improvements that intend to minimize conflicts between transit vehicles and other travel modes shall be designed and constructed in accordance with industry best practices and applicable UC Davis, City of Sacramento (for facilities within the City of Sacramento), and State of California standards. Improvements shall be implemented or constructed in a manner that would not physically disrupt</p>			

Project stage at which implementation of the measure is required:

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

Impact	Mitigation Measures	Monitoring and Reporting Procedure	Timing	Verification
	existing transit service or facilities or otherwise adversely affect transit operations.			
<b>Impact AS-TRA-5: Result in construction activity that could cause temporary impacts to transportation and traffic</b>	<p><b>Mitigation Measure AS-TRA-5: Prior to the issuance of any grading or building permits, a Construction Traffic Management Plan (TMP) shall be prepared to the satisfaction of UC Davis Health and the City of Sacramento Department of Public Works</b></p> <p>The Construction TMP shall include items such as the following.</p> <ul style="list-style-type: none"> <li>• Preserving emergency vehicle access routes to existing buildings on the Sacramento Campus</li> <li>• Providing truck circulation routes/patterns that minimizes effects on existing vehicle traffic during peak travel periods and maintains safe bicycle circulation</li> <li>• Monitoring for roadbed damage and timing for completing repairs</li> <li>• Preserving safe and convenient passage for bicyclists and pedestrians through/around construction areas</li> <li>• Creating methods for partial (i.e., single lane)/complete street closures (e.g., timing, signage, location and duration restrictions), if necessary</li> </ul>			

Project stage at which implementation of the measure is required:

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

Impact	Mitigation Measures	Monitoring and Reporting Procedure	Timing	Verification
	<ul style="list-style-type: none"> <li>Identifying detour routes for roadways subject to partial/complete street closures</li> <li>Identifying temporary UC Davis shuttle stops and detoured shuttle routes if existing stops or routes are affected</li> <li>Identifying temporary SacRT bus stops and detoured bus routes, if existing stops or routes are affected</li> <li>Developing criteria for use of flaggers and other traffic controls</li> <li>Providing a point of contact for nearby residents, Sacramento Campus staff, students, and visitors, and other stakeholders to contact to obtain construction information and have questions answered</li> </ul> <p>The Construction TMP shall be developed so that the following performance standards are achieved throughout project construction.</p> <ul style="list-style-type: none"> <li>Maintain emergency vehicle access to all buildings on the Sacramento Campus at all times.</li> <li>Maintain identified emergency vehicle routes to UC Davis Health medical facilities at all times. Notify appropriate contacts for UC Davis Health and/or emergency responders at least 24 hours prior to any construction-related partial/complete closures that may affect emergency vehicle routes, and</li> </ul>			

Project stage at which implementation of the measure is required:

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

Impact	Mitigation Measures	Monitoring and Reporting Procedure	Timing	Verification
	<p>provide clear identification of detours when necessary.</p> <ul style="list-style-type: none"> <li>Minimize construction traffic during morning and evening peak periods when street traffic on local and campus streets are highest.</li> <li>Close (i.e., partially or fully) any construction-related public roadways only during off-peak periods and provide appropriate construction signage, including detour routing.</li> <li>Limit detour routing to campus roadways or City collector and arterial roadways, such as Stockton Boulevard and Broadway, to the extent feasible. Include measures to minimize traffic increases on local residential roadways; this may include signage and law enforcement presence during partial/complete closures to discourage through-traffic use of local residential roadways.</li> <li>Clear roadways, sidewalks, crosswalks, and bicycle facilities of debris (e.g., rocks) that could otherwise impede travel and impact public safety, and maintain them in this condition.</li> </ul> <p>UC Davis shall also consider any concurrent construction activity and other active Construction TMPs when reviewing the Construction TMP for the Aggie Square Phase I project. This review shall verify consistency across the</p>			

Project stage at which implementation of the measure is required:

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

Impact	Mitigation Measures	Monitoring and Reporting Procedure	Timing	Verification
	Construction TMPs and verify that the Construction TMP addresses cumulative impacts that may occur when considering multiple on-going construction projects.			

This volume (Volume 2) of the draft supplemental environmental impact report (Draft Supplemental EIR) evaluates the potential physical environmental impacts associated with development of the Aggie Square Phase I project of the UC Davis Sacramento Campus 2020 Long Range Development Plan Update (2020 LRDP Update). The following discussion provides an overview of the purpose, focus, and use of this volume of the Draft Supplemental EIR.

## 1.1 Purpose and Intended Use of this Project-Level Analysis of the EIR

This project-level analysis has been prepared under the University of California (UC) Board of Regents' (The Regents) direction in accordance with the requirements of the California Environmental Quality Act (CEQA) (Public Resources Code [PRC] Sections 21000, *et seq.*) and the State CEQA Guidelines (California Code of Regulations [CCR], Title 14, Division 6, Chapter 3, Sections 15000, *et seq.*) as Volume 2 of the programmatic Draft Supplemental EIR prepared for the 2020 LRDP Update. The Regents serve as the lead agency under CEQA for consideration of certification of this Supplemental EIR and potential project approval; CCR Section 15367 defines the lead agency as the agency with principal responsibility for carrying out and approving a project.

According to CEQA, if the lead agency determines that a project may have a significant effect on the environment, the lead agency shall prepare an EIR (CCR Section 15064(f)(1)). An EIR is an informational document used to inform public agency decision-makers and the general public of the significant environmental effects of a project, identify possible ways to mitigate or avoid the significant effects, and describe a range of reasonable alternatives to the project that could feasibly attain most of the basic objectives of the project while substantially lessening or avoiding any of the significant environmental impacts. Public agencies are required to consider the information presented in the EIR when determining whether to approve a project.

CEQA requires that state and local government agencies consider the environmental effects of projects over which they have discretionary authority before taking action on those projects (PRC Section 21000, *et seq.*). CEQA also requires that each public agency avoid or mitigate to less-than-significant levels, wherever feasible, the significant environmental effects of projects it approves or implements. If a project would result in significant and unavoidable environmental impacts (i.e., significant effects that cannot be feasibly mitigated to less-than-significant levels), the project can still be approved, but the lead agency must prepare and issue a "statement of overriding considerations" explaining in writing the specific economic, social, or other considerations that make those significant effects acceptable (PRC Section 21002; CCR Section 15093).



## 1.2 Relationship of This Volume to the 2020 LRDP Update

The 2020 LRDP Update Supplemental EIR presented in Volume 1 analyzes the potential physical environmental impacts that would be associated with full implementation of the 2020 LRDP Update (including Aggie Square Phase I), at a program level, and identifies measures to mitigate the significant impacts associated with projected land use changes and development. The project-specific analysis for Aggie Square Phase I is included in this second volume of the 2020 LRDP Update Supplemental EIR. The environmental analysis performed herein builds upon the broader programmatic analysis in Volume 1, provides a more focused project-specific evaluation, and discloses environmental impacts that could potentially result if Aggie Square Phase I is implemented as proposed.

The organization of project-specific environmental analysis follows the same overall format of the 2020 LRDP Update Supplemental EIR included in Volume 1; however, it avoids repetition of general background and setting information for certain environmental areas (as identified throughout this Supplemental EIR where appropriate), the regulatory context, overall growth-related information, as well as issues that were evaluated fully in Volume 1 that require no further analysis, including cumulative impacts and other CEQA considerations. Instead, this project-level environmental review serves to evaluate the more detailed project-level information specific to the Aggie Square Phase I project of the 2020 LRDP Update.

Mitigation measures identified in Volume 1 that mitigate or avoid significant effects on the environment caused by the Aggie Square Phase I project are also included in this volume. Additional project-specific mitigation measures are identified within this volume where appropriate.

## 1.3 Aggie Square Phase I

Each campus within the UC system periodically prepares a LRDP to guide campus development in anticipation of potential growth of student enrollment and new University-added programs. The UC Davis Sacramento Campus 2020 LRDP Update identifies the type and level of campus development and land uses at a plan level to support campus-related projected population growth and to enable expansion of existing facilities. Aggie Square Phase I has been proposed as a specific project included in the 2020 LRDP Update and analyzed within this Supplemental EIR.

The Aggie Square Phase I project consists of the following components with approximately 1,384,500 total gross square feet (gsf) of building space:

- Approximately 390,000 gsf of office, classroom, and co-working space housed in a building between up to 13 stories tall.
- Approximately 711,000 gsf of science, technology, and engineering space. This would be housed in two science/technology/engineering buildings each 9 stories tall.
- Approximately 324 multi-family apartment units totaling 283,500 gsf targeted for University-affiliated populations in a building up to 7 stories tall over a mixed-use/community-serving first floor. Undergraduates, as well as medical students and nursing students, are expected to be the primary occupants, and university faculty, staff and affiliates would also be potential residential tenants.

- Approximately 40,000 gsf of community-serving ground floor space. This floor would be dedicated to amenities for tenants and Aggie Square users, as well as community-serving storefronts with a focus on food and health.
- Incubator and accelerator space. The Aggie Square Phase I project would also include business incubator and accelerator spaces, which may be housed in one or both of the science, technology, and engineering spaces and the office, classroom, and co-working spaces.
- Public plazas would be the primary central gathering spaces for the project. Two primary public spaces would connect the Aggie Square Phase I project to the surrounding communities and would provide for lively interaction among occupants of Aggie Square, the Market Plaza and the Aggie Square public plaza.
- Parking facilities and transportation programs supporting the project's uses. A combination of transportation demand management measures and construction of new parking facilities would meet project access demands.

## 1.4 Review and Certification Process

Volume 2 is part of the 2020 LRDP Update Supplemental EIR and is being circulated in conjunction with Volume 1 for public and agency review. It is anticipated that Aggie Square Phase I will be presented to The Regents at the same time as the 2020 LRDP Update.

## Chapter 2

# Project Description: Aggie Square Phase I

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## 2.1 Introduction

This chapter presents a project-level description of the Aggie Square Phase I project. It describes the project's location, setting, goals and objectives, and elements, as well as the permits and approvals that may be necessary during project implementation.

## 2.2 Project Location and Setting

The Aggie Square Phase I project of the 2020 LRDP Update is on the 146-acre Sacramento Campus. At implementation of the 2020 LRDP Update, Aggie Square is anticipated to comprise roughly 25 acres, however details for future phases of Aggie Square have not been determined at this stage. The UC Davis Sacramento Campus is approximately 2.5 miles southeast of downtown Sacramento, 17 miles east of the UC Davis main campus in Davis. The Sacramento Campus is bounded by V Street on the north, Stockton Boulevard on the west, Broadway to the south, and a residential neighborhood to the east (Figure 2-1).

The Sacramento Campus is in the hub of the Sacramento metropolitan region off U.S. Route 50 near the State Route 99/Business 80 interchange in the city of Sacramento (Figures 2-1 and 2-2). UC Davis Health includes a 625-bed teaching hospital, a National Cancer Institute-designated Comprehensive Cancer Center, and a nationally ranked children's hospital. In 2018–2019, UC Davis Medical Center had over 34,000 inpatient admissions, over 80,000 emergency room visits, and over 900,000 clinic or office visits. Figure 2-3 shows the existing campus.

The site for the Aggie Square Phase I project is a roughly 9.55-acre parcel owned by the University and currently utilized as a surface parking lot and site of the campus fleet services facility. The campus fleet services facility, which consists of a maintenance garage, would be demolished and Parking Structure 6 (PS6) would be built in its place. The garage would not be reconstructed elsewhere, and fleet maintenance services would be incorporated by other existing buildings on campus in the future. Figure 2-2 shows the project footprint and staging areas, as well as the project site relative to the rest of the campus. The University would be a major tenant of the Aggie Square Phase I project, however significant demand for space is expected to result from the University's existing and future partners and other businesses that wish to take advantage of the co-location benefits of this innovation center.

The Aggie Square Phase I project extends 45th Street to become a central spine connecting the UC Davis Hospital, the Education, Housing, and Research land use designation, and Aggie Square. The 45th Street extension would run through the Aggie Square plaza, which would use special paving materials up to the front doors of all Aggie Square Phase I project buildings that face the plaza. New streets in Aggie Square would connect with 3rd Avenue and 4th Avenue along Stockton Boulevard to simplify street circulation. See Figure 2-3.

Varied and connected open spaces and plazas would connect all Aggie Square phases with the Hospital and Education, Research, and Housing land use designation. Volume 1 of this Supplemental

EIR updates the LRDP framework for the UC Davis Sacramento Campus, and Aggie Square would be part of the Education, Research, and Housing land use designation.

## 2.3 Goals and Objectives of Aggie Square Phase I

UC Davis has identified the following objectives for the Aggie Square Phase I project.

- Create within the University a place where University and non-University people are working together.
- Create state-of-the-art facilities for science, technology, engineering, and research as well as office space and education.
- Provide housing that meets affordability goals for students in the professional schools.
- Develop physical structures to support the University's involvement in enhancing regional workforce development, addressing food access and security, and supporting a diversity of people working at Aggie Square.
- Reduce waste and improve sustainability by making efficient use of existing infrastructure and land resources.
- Facilitate easy access from Aggie Square to UC Davis Hospital and nearby UC Davis clinics.
- Express a diverse architectural character reflective of the role of Aggie Square as an innovation district, with a special emphasis on planning and design strategies that are responsive to climate challenges and sun orientation.
- Embrace a character of architectural diversity and vitality, linked together by a rich network of public spaces and collective commitment of environmental sustainability.
- Establish public spaces for a wide range of public activities that serve UC Davis Sacramento Campus employees and residents, as well as the broader community to provide venues for people from diverse communities of interest to meet, interact, share ideas, and spark new partnerships.

## 2.4 Elements of Aggie Square Phase I

Aggie Square Phase I would include four new buildings and improvements to the overall site. The buildings comprise approximately 1,384,500 gross square feet (gsf) of building space and an additional 549,996 gsf of parking structure space. Aggie Square Phase I also includes several public areas, including the Market Plaza, Aggie Square plaza, and a Mobility Hub (Figure 2-3). The daily on-site population associated with Aggie Square Phase I is 4,474 per day.

Table 2-1 summarizes the logistics of the new buildings that are part of Aggie Square Phase I. A logistics plan and a site plan are provided in Figures 2-4 and 2-5, respectively.

**Table 2-1. Aggie Square Phase I Building Logistics**

Building	Gross Square Feet	Maximum Height*	Number of Floors
Life Science Technology Engineering West	324,000	125 feet	9
Life Science Technology Engineering East	387,000	125 feet	9
Lifelong Learning Tower	390,000	158.5 feet	13
Housing and Community Building	283,500	100 feet	7

Source: Wexford Science+Technology 2020 and UC Davis staff.

\* Height as measured to roofline. Additional rooftop mounted mechanical equipment could exceed identified height.

The Aggie Square Phase I project would consist of the following components with approximately 1,384,500 gsf of building space and two parking structures (the Housing/Community Garage and PS6).

### 2.4.1 Lifelong Learning Space

Aggie Square Phase I includes approximately 390,000 gsf of office, classroom, and co-working space housed in a building up to 13 stories tall called the Lifelong Learning [LLL] Tower. The initial concept for this office building is space that promotes lifelong learning. The LLL Tower is anticipated to include University programs and business partners interested in continuing education and workforce development, including the training of next generation professionals across a wide range of science, technology, engineering, and mathematics (STEM) and other disciplines.

### 2.4.2 Science, Technology, and Engineering Space

Approximately 711,000 gsf would be dedicated to science, technology, and engineering space in two science/technology/engineering buildings: Life Science Technology Engineering (LSTE) East and LSTE West. LSTE East would be approximately 387,000 gsf and LSTE West would be approximately 324,000 gsf. Both buildings would be up to nine stories tall. Research activities at the Sacramento Campus currently generate investment and interest in co-location by businesses in the fields of cell and gene therapy, genomics and next-generation sequencing, and advanced imaging modalities. Many of these businesses have expressed a strong demand for additional space that is not yet available on the Sacramento Campus and that would be provided by the Aggie Square Phase I project. In addition, conversations are underway with the UC Davis departments and research units, some of which are currently located on the UC Davis main campus, to explore expanding their research and teaching presence on the Sacramento Campus.

### 2.4.3 Residential and Community-Serving Space

Aggie Square Phase I would include approximately 324 multi-family apartment units in 283,500 gsf targeted toward University-affiliated populations (Table 2-1). The residential population is expected to be approximately 411 people. The building would be up to seven stories tall.

Undergraduates, as well as medical students and nursing students, are expected to be the primary occupants, and University faculty, staff, and affiliates would also be potential tenants. A mixture of various units on each floor, including studios, one-bedroom, two-bedroom, and up to two-and four-bedroom co-living and/or student units, would encourage a sense of community.

The ground floor would include approximately 40,000 gsf of community-serving space. This floor would be dedicated to amenities for tenants and Aggie Square users, as well as community-serving storefronts, with a focus on food and health. It would include a food hall with various eateries and an outdoor area (Market Plaza) suitable for a farmers market and other open-air events such as concerts and ceremonies. A parking garage (the Housing/Community Garage) would be associated with the Housing/Community Building.

#### **2.4.4 Incubator and Accelerator Space**

The Aggie Square Phase I project is also envisioned to include business incubator and accelerator spaces, which may be housed in one or both of the science, technology, and engineering space buildings (LSTE East and LSTE West) and/or the office, classroom, and co-working space (LLL Tower). Incubator and accelerator space consist of office and classroom spaces to allow training and development of entrepreneurial skills and encourage new business development. These efforts are key elements of Aggie Square Phase I collaboration to encourage economic development in the Sacramento region. The University anticipates that it and selected developer(s) will collaborate to define the exact amount of incubator and accelerator space to be incorporated into the Aggie Square Phase I project and to select one or more non-University entities to lease and manage these innovative spaces.

#### **2.4.5 Public Space**

Two primary public spaces (the Market Plaza and Aggie Square plaza) would connect the Aggie Square Phase I project to the surrounding communities and would provide for lively interaction among occupants of Aggie Square. The Market Plaza is intended to host a permanent farmers market pavilion, as well as an outdoor gathering space to complement the healthy food offerings and programs in the community-serving storefronts. The Aggie Square plaza would be a dynamic urban gathering and events space, fronted by entrances to all of the Aggie Square Phase I project buildings and first-floor amenities for tenants and Aggie Square users, as well as community-serving storefronts. The Aggie Square plaza would be also situated to accommodate future storefronts that could come with subsequent development phases, which would be located south of 3rd Avenue (Figure 2-3).

#### **2.4.6 Parking**

Parking facilities and transportation programs support the project's uses. A combination of transportation demand management (TDM) measures and construction of new parking facilities are anticipated to meet project access demands. The University intends to work closely with the selected developer(s) to identify and implement parking solutions that ensure adequate parking is available for both the Aggie Square Phase I project and other users on the Sacramento Campus (including the likelihood the University would fund the development of additional parking facilities). These solutions may include expanded TDM strategies, identification of any additional parking facilities to be built, and setting applicable monthly parking rates. PS6 is a six-story parking structure that would be constructed as part of the Aggie Square Phase I project, east of the LLL Tower and an open space area. PS6 would be 518,496 gsf and would provide 1,400 parking spaces. The Housing/Community Garage would provide approximately 90 parking spaces (2.55 spaces per 1,000 gsf) in approximately 31,500 gsf and would be associated with the Housing/Community Building.

## 2.4.7 Population

The population increase associated with Aggie Square Phase I is 4,552 per day. Population by building is shown in Table 2-2.

**Table 2-2. Aggie Square Phase I Population**

Building	Average Daily Population
Life Science Technology Engineering West	1,033
Life Science Technology Engineering East	1,237
Lifelong Learning Tower	1,651
Housing/Community Building	631

Sources: Wexford Science+Technology 2020; Davis pers. comm.

## 2.5 Access and Circulation

Aggie Square Phase I would be accessible to the north from 2nd Avenue at 45th Street, to the east by 2nd and 3rd Avenues, and to the West from one driveway on Stockton Boulevard between 2nd and 3rd Avenues. At Stockton Boulevard, 3rd Avenue would be extended eastward along the south edge of the Aggie Square project site to connect with the proposed parking structure. The 48th Street station of the Sacramento Regional Transit light rail Gold Line is within a 15-minute walk of Aggie Square Phase I and the #38 bus line stops nearby on Stockton Boulevard. Coupling these public transit options with the new Mobility Hub that would be located along 2nd Avenue, Aggie Square would be easily accessed by all potential user groups. As future phases are built, there would be additional access to the south from Broadway.

The Aggie Square Phase I project would extend 45th Street southward to become a central spine connecting the UC Davis Hospital, the Education, Research, and Housing land use designation, and Aggie Square. The 45th Street extension would run through the Aggie Square plaza, which would use special paving materials up to the front doors of all Aggie Square Phase I buildings that face the plaza. New streets in Aggie Square would connect with 3rd Avenue along Stockton Boulevard to simplify street circulation. 49th Street would provide vehicle access to PS6 and pedestrian traffic would cross the “Major Open Space” land use to access Aggie Square Phase I. A service driveway accessible from Stockton Boulevard would provide access to the residential building for deliveries. A buffer of 40 feet would be established along Stockton Boulevard, which would include a sidewalk, street trees, and other landscaping. See Figure 2-6.

## 2.6 Utilities and Infrastructure

Within the Aggie Square Phase I project site, all existing utilities would be demolished. Aggie Square would be developed with independent utility systems, including dedicated SMUD transformers and dedicated emergency power systems. To maximize energy efficiency, a new central plant would be constructed to serve Aggie Square Phase I. The new central plant would be located next to the loading area of LSTE East. The central plant would include the following components.

- A single energy system for the entire site

- Electric boilers, cooling towers, and chillers for heating and cooling
- Plumbing systems including heat recovery and thermal energy storage tanks for hot and cold water
- Electrical systems that may incorporate sustainable design such as bio-fuel generators and use of photovoltaic systems

## 2.7 Landscaping

The creation of welcoming public spaces, gardens, and experiences is intended to establish Aggie Square as a destination for residents, students, staff, and the general public. A paseo between the north ends of the two LSTE buildings would provide a link between Aggie Square Phase I and the new Mobility Hub (Figure 2-3). The 45th Street extension (the paseo) between the LSTE buildings would connect to the heart of the development—Aggie Square Plaza. All buildings would have generous shaded porticos that delineate and connect main public spaces. Furthermore, these porticos would be lined with large storefront windows and operable doors that would allow street-level retail and research spaces to spill out into the public realm and further activate the entire development.

Placing the Housing and Community Building that will be lower in height along Stockton Boulevard and the larger LSTE buildings and LLL Tower in the project site's interior would help to buffer the scale of Aggie Square Phase I. The ground level with open-air retail and thoughtfully landscaped open spaces/plazas is intended to complement the variety and density of programmatic uses.

All outdoor public spaces would share common design features such as floor paving, street furniture, and lighting to provide a sense of continuity. Other landscaping and public space elements include the following.

- A welcoming plaza at the north end of the site across from the Mobility Hub would feature a café/coffee shop with outdoor seating and large trees that offer shade.
- Incorporated elements that connect to the adjacent ground-floor food services, retail, personal services, and other community-serving amenities along the Paseo would differentiate and activate these public areas and promote walkability.
- Trees would be planted in Aggie Square Plaza in grid pattern like an orchard, enabling events to occur while providing generous shade.
- Ground-floor food services, retail, personal services, or community outreach efforts in the Market Plaza would connect with Stockton Boulevard to bring the community in to experience Aggie Square.
- Setbacks with green roofs and exterior terraces would increase users' exposure to daylight and the activity at the ground level, as well as create visual interest for those walking below.
- Porticos or open garden terraces would provide communal gathering spaces to encourage "creative collisions" among researchers in the LSTE buildings or to host impromptu outdoor class sessions in the LLL Tower.



## 2.8 Construction Phasing and Staging

Construction of Aggie Square Phase I would occur over eight primary phases between November 2020 and March 2023 (site demolition and preparation, plazas and site completion, construction of LSTE East, construction of LSTE West, construction of LLL Tower, construction of podium and parking, construction of residential, and construction of PS6). It is assumed that construction would take place primarily during daylight hours, though some nighttime construction may be necessary. Upon authorization to proceed with construction, the site would be secured with temporary construction fencing in coordination with the University and City of Sacramento, as applicable to maintain required emergency access. Fencing would be located within the Major Open Space Area and would consist of temporary chain link with landscape fabric overlaid (Figure 2-4). Multiple construction entrances would be created to allow flexibility throughout the project. Controlling site access during construction with minimal effect to the University would be accomplished using proper vehicular and pedestrian signage and durable traffic separation methods suitable for the congested urban location, coordinated via preapproved, detailed phasing and logistics plans. A temporary all-weather site access road would be constructed at or near the planned extension of 3rd Avenue. Housekeeping of the site and adjacent areas would be diligently maintained, all construction access areas would be tightly controlled and secure.

Due to the limited site area available, nearby space would be needed for materials staging, site field offices, and trade parking, which would be coordinated with other projects at the campus and other Sacramento Campus needs. It is likely that the area south of the 3rd Avenue extension would be used for parking and staging. The construction of the proposed buildings and would take place in a minimal time period and a constrained site. Extensive sequencing details are currently being designed and tested to minimize environmental impacts and to provide efficiency in the overall construction effort. Figure 2-7 shows construction crane placing and elevations. Figures 2-8a and 2-8b show the incoming and outgoing construction traffic routes.

## 2.9 Sustainability

Aggie Square Phase I would be developed in a manner to meet the goals of the *University of California Policy on Sustainable Practices* (UC Sustainable Practices Policy) (University of California 2019) and would continue to embrace and further UC Davis' commitment to and leadership in environmental sustainability. In addition to current Title 24 building code energy efficiency measures, UC Davis implements Green Building practices under the U.S. Green Building Council's LEED program and, at minimum, would achieve LEED Silver Certification for all Aggie Square Phase I project buildings. The baseline design for Aggie Square would exceed the State of California energy efficiency standards by at least 20 percent and achieve a minimum of LEED Silver®, and the various buildings of Aggie Square Phase I could operate independently of each other.

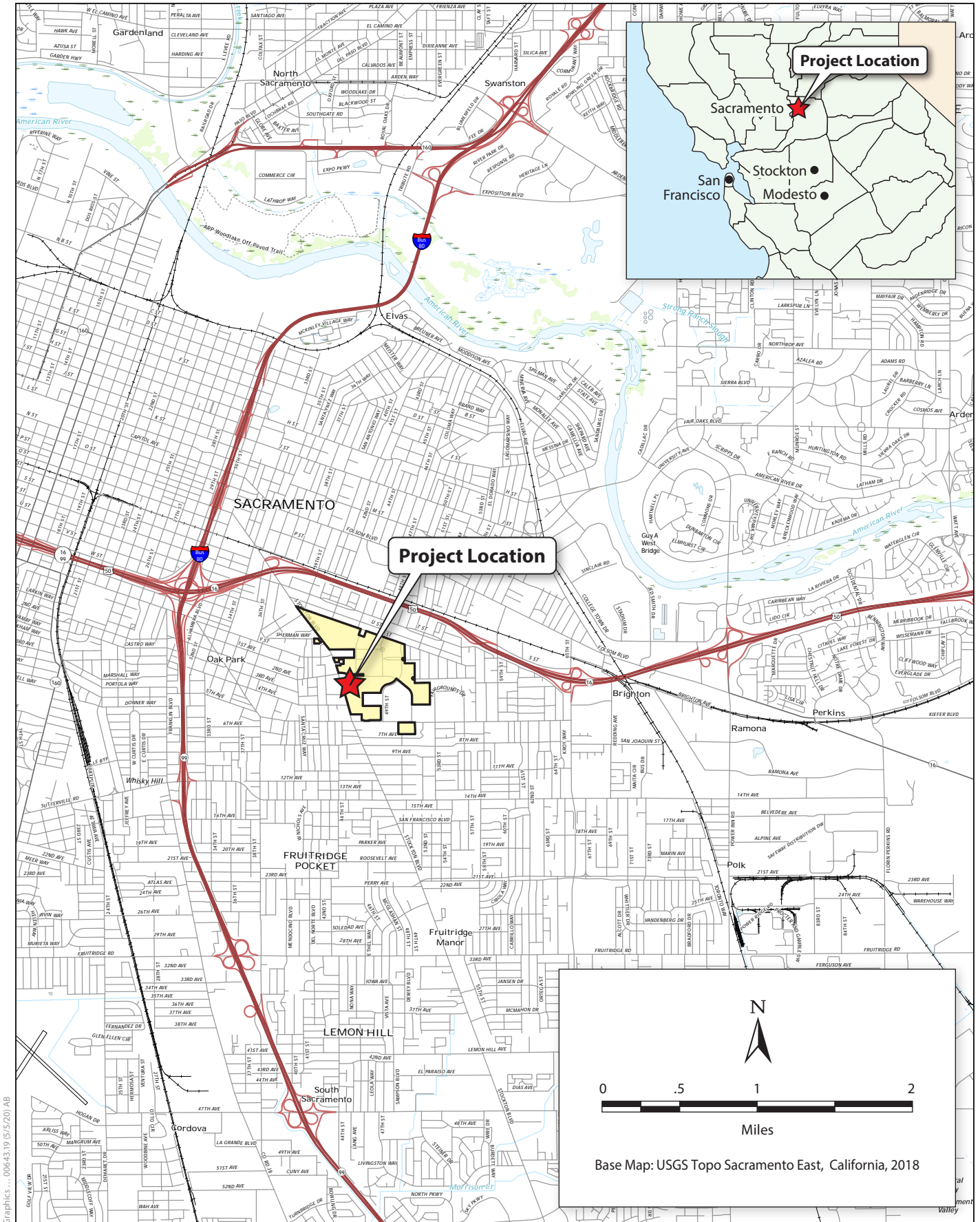
Aggie Square Phase I would incorporate climate-appropriate design with elements responsive to solar orientation such as window shading, generous canopies and outdoor pedestrian spaces, and other sustainable design solutions. The developer and UC Davis would work together to incorporate various sustainability measures in the buildings. Measures include but are not limited to using solar heated domestic water, graywater harvesting, rainwater and condensate recovery, high-performance building skins, use of green plugs, and siting buildings to maximize shade. The mechanical, electrical, and plumbing systems will also be designed for sustainability, and measures

could include using bio-fuel generators, passive ventilation, heat recovery, photovoltaic array on rooftops, etc.

## 2.10 Anticipated Public Approval

The Regents will be the lead agency under CEQA and will approve the project. The University will lead coordination with external agencies such as the City of Sacramento, Sacramento Municipal Utility District, and other regulatory and utility providers. It will also lead coordination with neighborhood and community groups. The following agencies may be required to issue permits or approve certain aspects of the project.

- California Department of Transportation (Caltrans) (Responsible Agency)—To provide temporary access for construction within Caltrans rights-of-way.
- Central Valley Regional Water Quality Control Board (Responsible Agency)—To provide waste discharge requirements for impacts to waters of the state and stormwater pollution prevention plan for construction/operation.
- State Water Resource Control Board (Responsible Agency)—To provide coverage under General Construction and Industrial Storm Water permits.
- Sacramento Metropolitan Air Quality Management District (Responsible Agency)—To comply with stationary source permitting requirements (e.g., Authority to Construct and Permit to Operate).
- City of Sacramento—Potential approval of roadway, bike path, sidewalk improvements.



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**UCDAVIS**

**Figure 2-1  
Project Vicinity**







### MARKET PLAZA (20,000 SQFT)

MARKET PAVILION  
MOVIE & PERFORMANCE  
STAGE & AMPHITHEATER  
GATHERING LAWN  
EDIBLE GARDEN  
OUTDOOR DINING  
COMMUNITY ARTS DISPLAY  
INFORMATION KIOSK  
INTERACTIVE PLAY



### PASEO (18,000 SQFT)

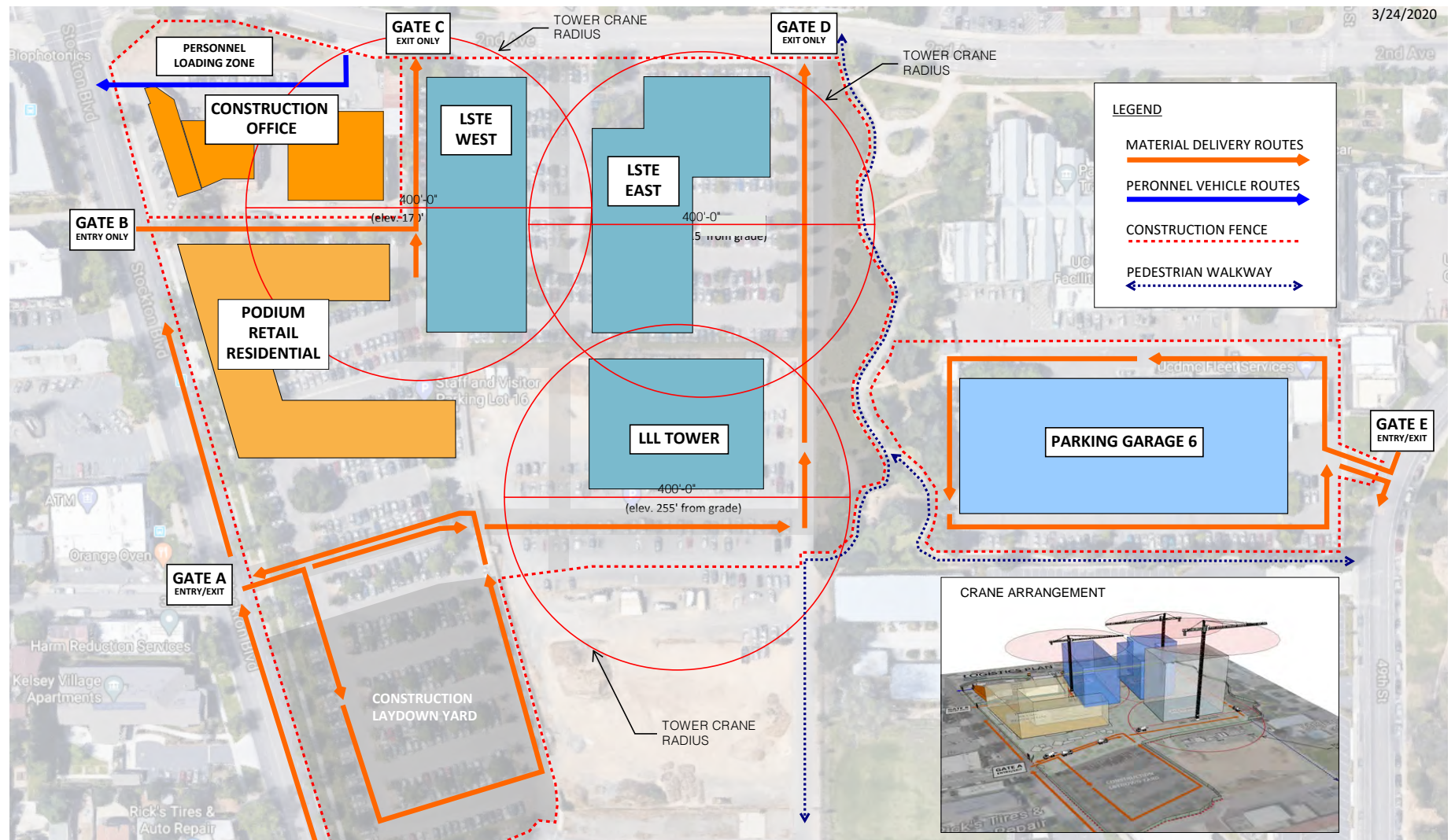
SMALL OUTDOOR GATHERING  
OUTDOOR SEATING  
CAMPUS WALK  
LAB PATIOS



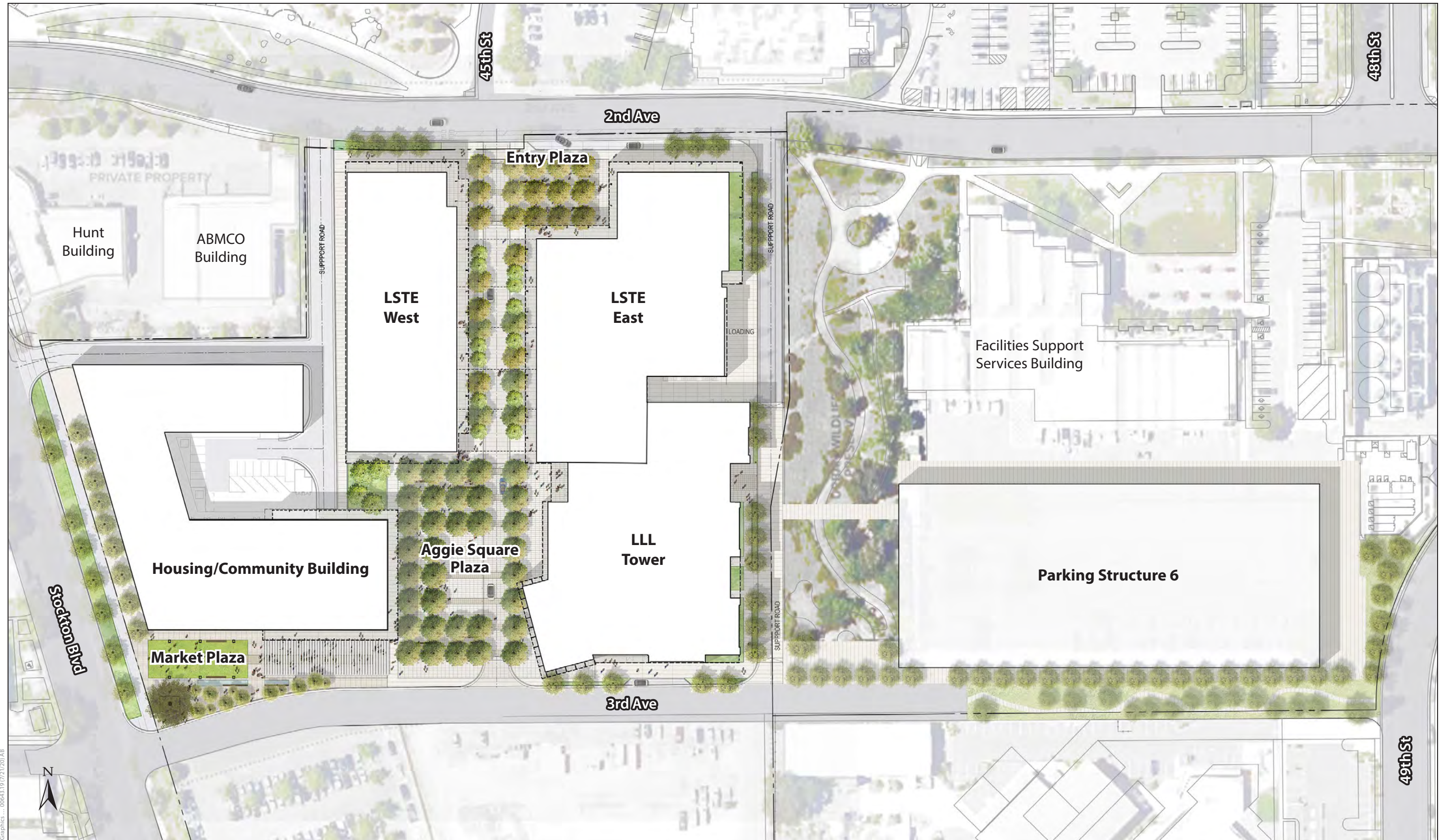
### AGGIE SQUARE PLAZA (32,000 SQFT)

LARGE OUTDOOR GATHERING  
OUTDOOR DINING  
CAMPUS CAREER FAIRS  
PUBLIC SPEECH  
CAMPUS CEREMONY  
BOOK/ARTS FAIRS  
OUTDOOR CLASSROOMS  
CAMPUS WALK

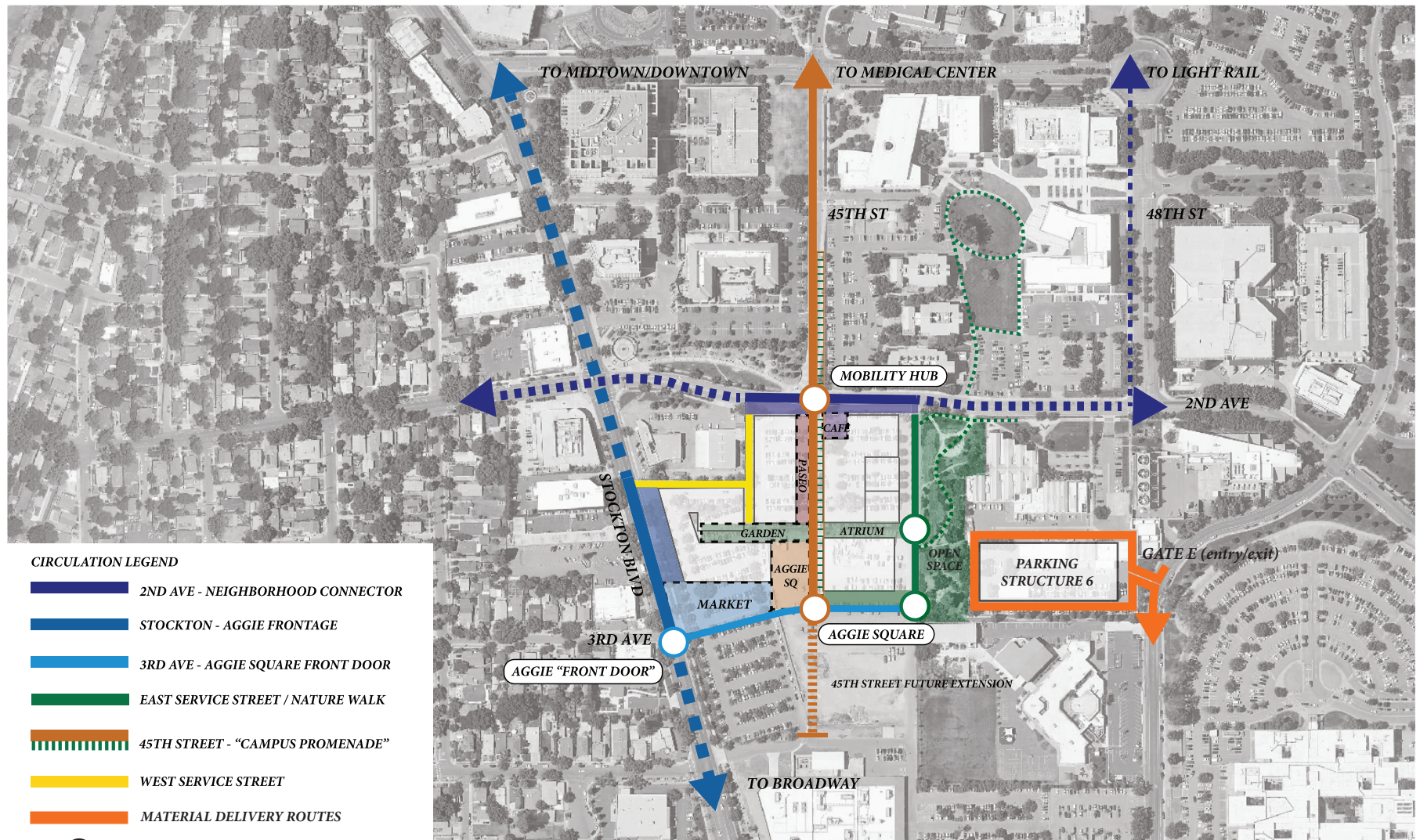




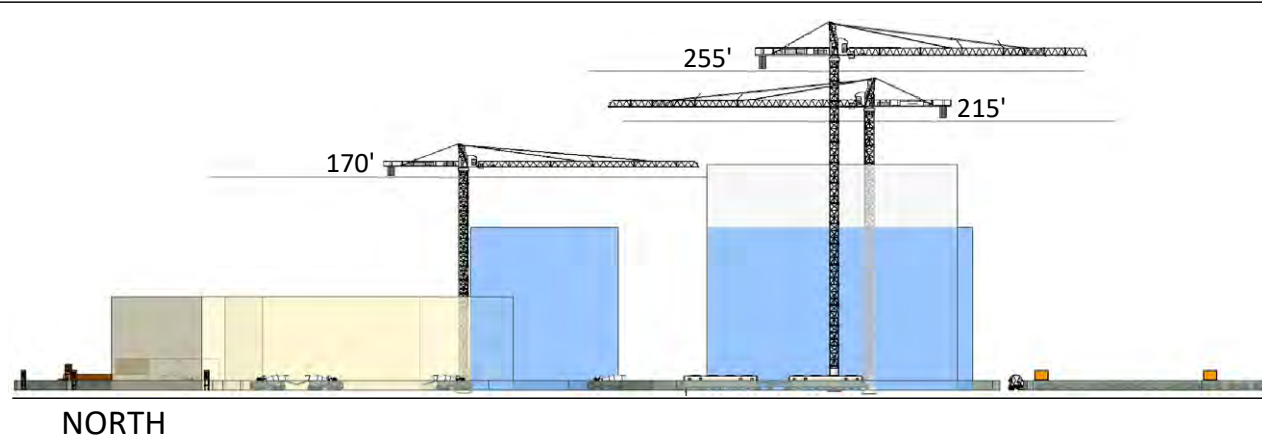
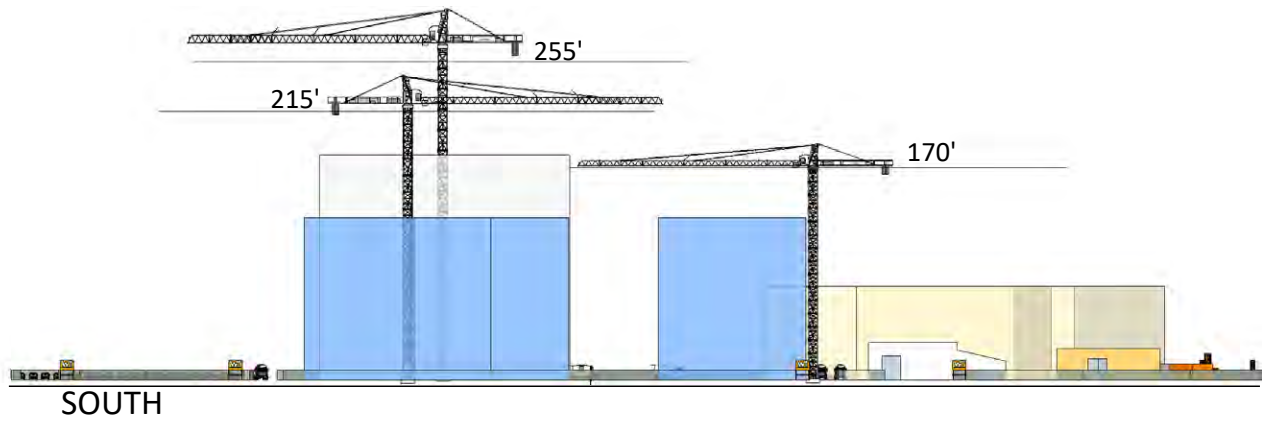


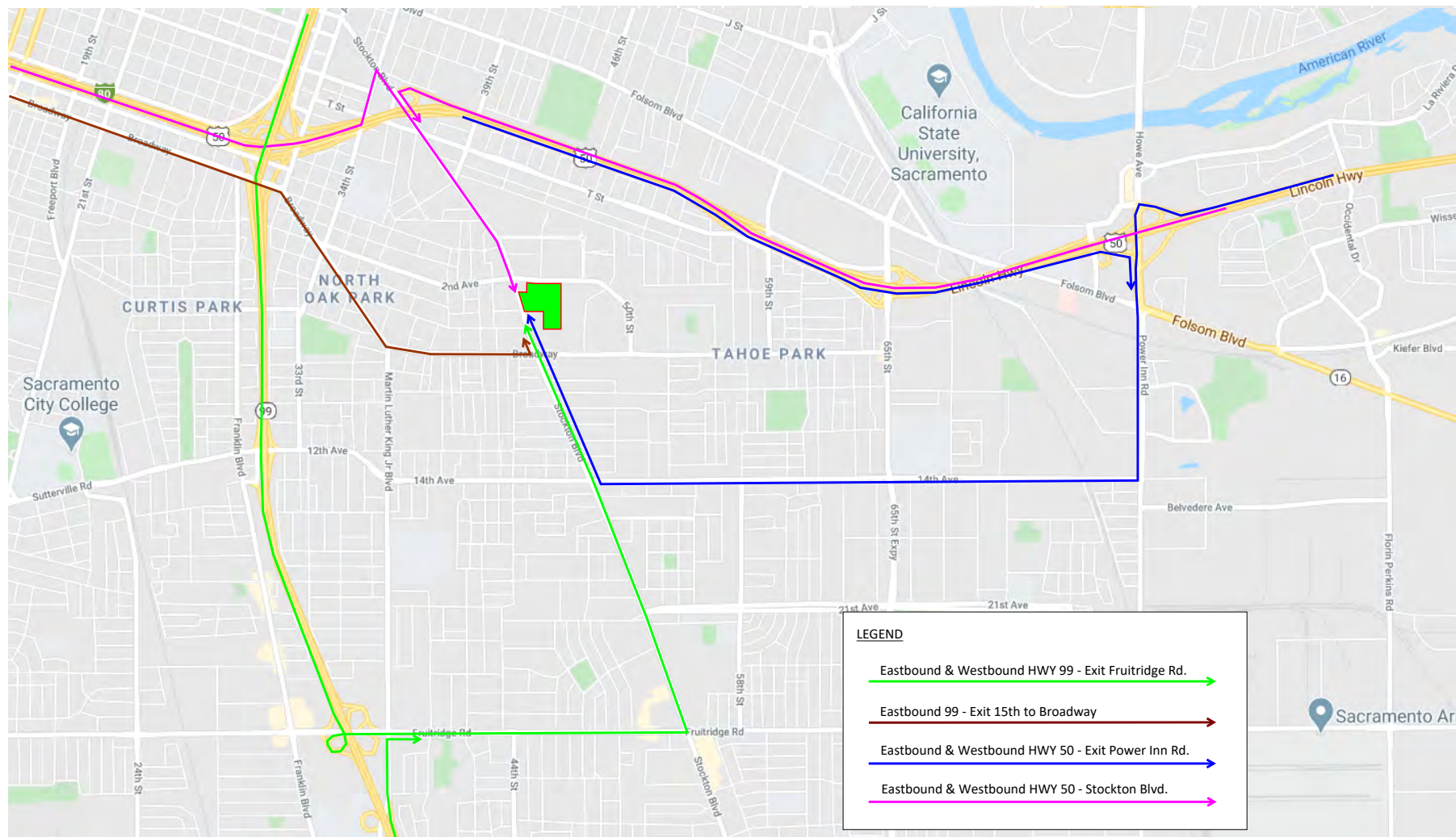


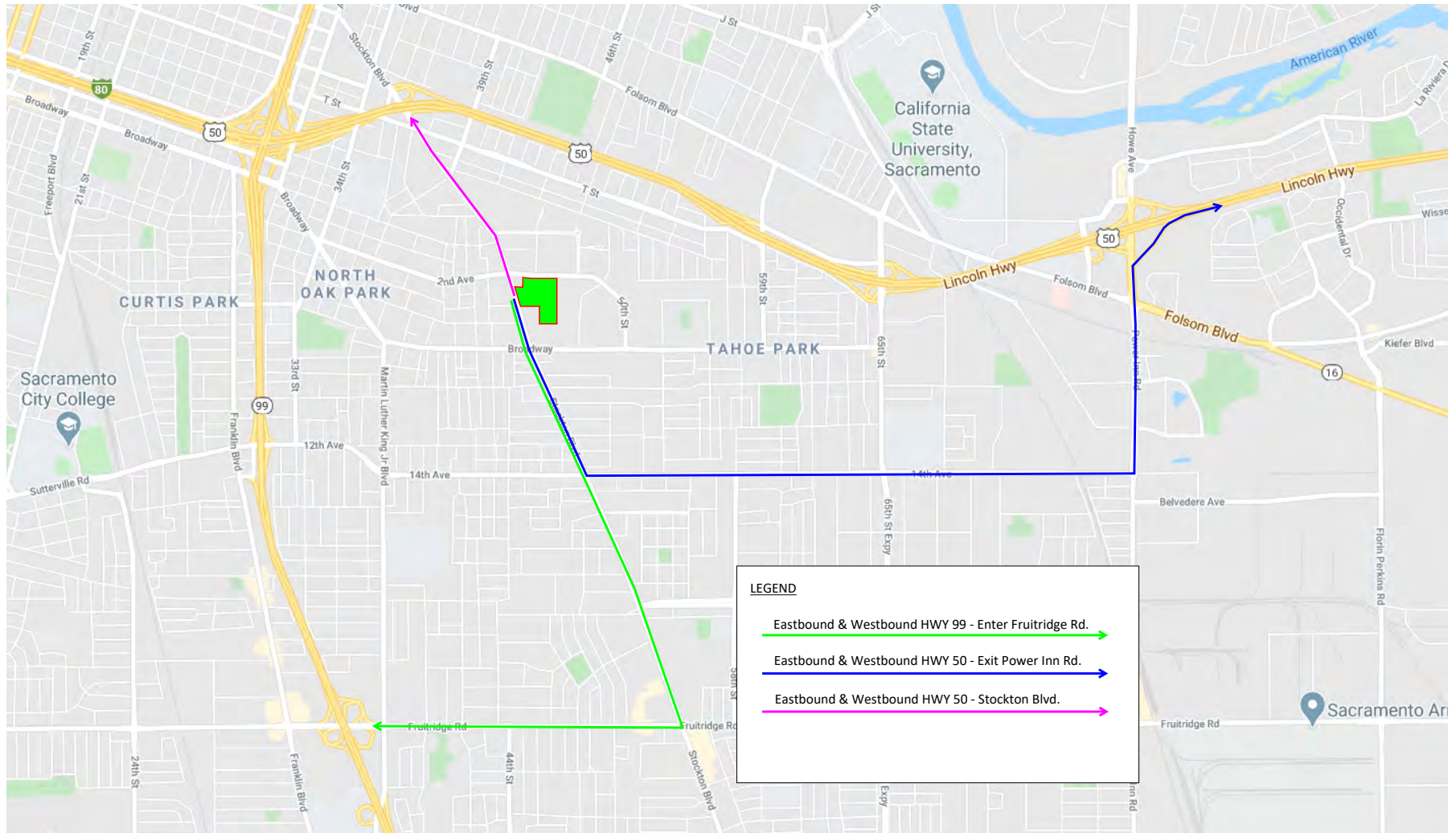












## Chapter 3

# Existing Environmental Setting, Impacts, and Mitigation

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Chapter 3 of this volume (Volume 2) of this Supplemental EIR evaluates the potential environmental impacts associated with the Aggie Square Phase I development. This chapter is divided by environmental resource category; each resource category is organized to provide an integrated discussion of the existing environmental conditions (including regulatory setting and environmental setting), potential environmental effects (including direct and indirect impacts, as needed), and measures to reduce significant effects, where feasible, of construction and operation of Aggie Square Phase I development.

The potential cumulative and growth-inducing impacts of Aggie Square Phase I are part of and within the scope of analysis of the 2020 LRDP Update provided in Volume 1 of this Supplemental EIR. This analysis is provided in Chapters 4, *Cumulative Impacts*, and 5, *Other CEQA Sections*, respectively.

## 3.0 Introduction to the Analysis

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

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



- Section 3.15, *Transportation and Circulation*
- Section 3.16, *Utilities and Service Systems*

Sections 3.1 through 3.16 follow the same general format as described below.

- **Regulatory Setting** refers back to Volume 1, where all of the laws, regulations, plans, and policies that are relevant to each resource category are described. Regulations originating from the University of California, federal, state, and regional and local levels are each discussed where applicable. Please see the discussion under *University of California Autonomy* below with respect to land use policies and municipal regulations.
- **Environmental Setting** presents the existing environmental conditions on the project site (Figure 2-1) and surrounding area as appropriate, in accordance with CEQA Guidelines (CCR Section 15125). Both volumes of this Supplemental EIR use the year 2019 as the baseline year to reflect existing environmental conditions. The baseline is discussed in Volume 1, Chapter 1, *Introduction*. The extent of the environmental project area evaluated differs among resources depending on the locations where impacts would be expected. For example, air quality impacts are assessed for the air basin (macroscale) as well as the site vicinity (microscale), whereas aesthetic impacts are assessed for the project area vicinity only.
- **Environmental Impacts and Mitigation Measures** identifies the thresholds of significance used to determine the level of significance of the environmental impacts for each resource category, in accordance with the CEQA Guidelines (CCR Sections 15126, 15126.2, and 15143). The thresholds of significance used in this Supplemental EIR are based on the checklist presented in Appendix G of the CEQA Guidelines, best available data, and applicable regulatory standards of relevant public agencies. The thresholds may also reflect local policies adopted for the purpose of avoiding or reducing an environmental impact, particularly for impacts that may affect off-campus resources, even if UC Davis is not bound by such policies. Please see the *University of California Autonomy* section below. The level of each impact is determined by comparing the effects of the project to the environmental setting baseline and the listed thresholds. Key methods and assumptions used to frame and conduct the impact analysis as well as issues or potential impacts not discussed further (i.e., such issues for which the project would have no impact) are also described. For the most part, impacts related to the construction and operation of Aggie Square Phase I are the same as those disclosed in Volume 1 of this Supplemental EIR.

Project impacts are organized in each subsection by brief project name, resource, and number (e.g., Impact AS-BIO-1, Impact AS-BIO-2, Impact AS-BIO-3, etc.). A bold-font impact statement, a summary of each impact, and its level of significance precedes the discussion of each impact. The discussion that follows the impact summary includes the substantial evidence supporting the impact significance conclusion.

The Supplemental EIR must describe any feasible measures that could avoid, minimize, rectify, reduce, or compensate for significant adverse impacts, and the measures are to be fully enforceable through incorporation into the project (Public Resources Code Section 21081.6[b]). Mitigation measures are not required for effects that are found to be less than significant. Where feasible mitigation for a significant impact is available, it is described following the impact. Each identified mitigation measure is labeled numerically to correspond with the number of the impact that would be mitigated by the measure. Where sufficient feasible mitigation is not available to reduce impacts

to a less-than-significant level, or where The Regents lack the ability to ensure that the mitigation is implemented as needed, the impacts are identified as remaining “significant and unavoidable.”

### 3.0.1 Terminology Used in the Supplemental EIR

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

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

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

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

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

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

**Mitigation Measures:** The CEQA Guidelines (CCR Section 15370) define mitigation as follows.

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

### 3.0.2 University of California Autonomy

UC Davis is part of the University of California, a constitutionally created entity of the State of California, with “full powers of organization and government” (Cal. Const. Art. IX, Section 9). As a constitutionally created State entity, the University is not subject to municipal regulations of

surrounding local governments, such as the City of Sacramento's *2035 General Plan* (City of Sacramento 2015) or land use ordinances, for uses on property owned or controlled by the University that are in furtherance of the University's education purposes. Although there is no formal mechanism for joint planning or the exchange of ideas, UC Davis may consider, for coordination purposes, aspects of local plans and policies for the communities surrounding the campus when it is appropriate and feasible, but it is not bound by those plans and policies in its planning efforts.

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

## 3.1 Aesthetics

This section describes the regulatory and environmental setting for aesthetics in the Aggie Square Phase I project area, analyzes effects on aesthetics that would result from implementation of Aggie Square Phase I, and provides mitigation measures to reduce the effects of any potentially significant impacts, if applicable.

In response to the Notice of Preparation for this Supplemental EIR, commenters expressed general concerns related to aesthetics, as listed in Section 3.1, *Aesthetics*, in Volume 1 of this Supplemental EIR. No additional comments specific to the Aggie Square Phase I project were received.

### 3.1.1 Existing Conditions

#### Regulatory Setting

Regulations, laws, policies, and plans applicable to and/or considered for Aggie Square Phase I are provided in Volume 1 of this Supplemental EIR. As the regulatory setting provided in Volume 1 considers potential development, including Aggie Square Phase I, within the entirety of the UC Davis Sacramento Campus as envisioned through the 2020 LRDP Update, no additional regulatory setting is provided for Aggie Square Phase I.

#### Environmental Setting

This section discusses the environmental setting relevant to aesthetics in the Aggie Square Phase I project area. For a description of the overall Sacramento Campus, see Volume 1 of this Supplemental EIR.

The Aggie Square Phase I project site is near the southern end of the Sacramento Campus on an 9.55-acre parcel currently used as surface parking lots (Lots 14 and 16) for staff and visitors and the campus fleet services facility. The site is bounded on the west by Stockton Boulevard, on the north by 2nd Avenue, on the east by the campus major open space area, and on the south by a proposed eastward extension of 3rd Avenue (through the existing parking lots). The site elevation is approximately 22 to 26 feet above mean sea level.

#### Visual Character

The overall visual character of a given area results from the unique combination of natural landscape features such as landform, water, and vegetation patterns as well as built features such as buildings, roads, and other structures. It includes attributes such as form, line, color, texture, scale, diversity, and continuity.

The visual character of the Aggie Square Phase I site is primarily a flat, paved site filled with cars and perimeter and internal trees. The only structures on the existing site are part of the campus fleet maintenance facility. This relatively undeveloped area contrasts with the built-out urban areas that surround it. The color of the site is dominated by green from the trees in the spring and summer. In the fall and winter, as the leaves of the deciduous trees drop, no one color is dominant, due to the multiple colors of leaves and cars. There is little diversity on the site, but it does have continuity due its single use: parking.



## Visual Resources

For purposes of this analysis, visual or aesthetic resources are generally defined as aesthetically pleasing natural and built landscape features that are visible to humans from public vantage points.

The existing trees along the edges and within the parking lots represent the only visual resources on the site. The most notable tree onsite is a large live oak (*Quercus agrifolia*) near the western side of Lot 16, which is approximately 30 feet tall and 30 feet wide. An irregular row of pines (*Pinus* sp.) grow along the 2nd Avenue entrance to Lot 14. The live oak and pines are even more notable in the winter because they are evergreen, holding their leaves and needles year-round.

## Viewshed

A site's viewshed is the area around the site from which the site is visible. This viewshed forms the study area for aesthetics analysis. The viewshed for the project is depicted on Figure 3.1-1. The viewshed extends beyond just the adjacent uses that can currently view the project, because the buildings in Aggie Square Phase I would be tall enough to be seen over the adjacent buildings that currently block views to the site.

The Aggie Square Phase I project site can currently be viewed from local streets, including Stockton Boulevard, 2nd Avenue, the southern terminus of 45th Street, and 4th Avenue. To the west of the site it is visible from adjacent commercial and campus buildings west of Stockton Boulevard. To the northwest, the Aggie Square Phase I site can be viewed from a commercial building at the southeast corner of Stockton Boulevard and 2nd Avenue. From the north side of 2nd Avenue, the site is visible from Cancer Survivors Park, the Marriott Hotel and hotel parking lot, and clinical labs and research buildings and their parking lot. From the east, the site can be viewed from the campus major open space and campus support facilities farther east. Southeast of the site is the Language Academy of Sacramento (formerly the Marian Anderson School), a K-8 charter school that can view the site primarily from the athletic fields and northern parking lot. From the south, the Aggie Square Phase I site is visible from the existing campus parking lot (i.e., the southern portion of Lot 16) and a research and education campus building on the south side of 4th Avenue. This area is the viewshed for the project (Figure 3.1-1).

## Viewers Groups, Viewer Exposure, and Viewer Sensitivity

Viewers make up the population visually affected by the project. Viewers are people whose views of the visual environment may be altered by the project. These viewers are divided into viewer groups, which are groups of viewers with similar characteristics such as viewer exposure, viewer sensitivity, and likely viewer response to changes in the view.

Viewer exposure is a measure of viewer groups' ability to see the project site. Viewer exposure has three attributes: location, quantity, and duration. *Location* relates to the position of the viewer in relationship to the site being viewed. The closer the viewer is to the site, the more the exposure. *Quantity* refers to how many people see the site. The more people who can see a site or the greater frequency a site is seen, the more exposure the site has to viewers. *Duration* refers to how long a viewer can keep the site in view. The longer the site can be kept in view, the more the exposure. High viewer exposure helps predict that viewers will have a response to a visual change.

Viewer sensitivity is a measure of the viewer's recognition of a particular view. It has three attributes: activity, awareness, and local values. *Activity* relates to the preoccupation of viewers, and

whether they are preoccupied thinking of something else, or whether they are truly engaged in observing their surroundings. The more viewers are actually observing their surroundings, the more sensitivity viewers would have to changes to visual resources. *Awareness* relates to the focus of the viewers, and whether they have a wide and general focus or a narrow and specific focus. The more specific the awareness, the more sensitive a viewer is to change. *Local values* and attitudes also affect viewer sensitivity. If the viewer group values aesthetics in general or if a specific visual resource has been protected by local, state, or national designation, it is likely that viewers will be more sensitive to visible changes. High viewer sensitivity helps predict that viewers will have a high concern for any visual change. Local values can be interpreted from policies in local general plans, ordinances such as those protecting trees, design guidelines affecting the site, and, most importantly, comments obtained during public outreach efforts, such as a CEQA scoping meeting.

Based on the land uses identified in the Aggie Square Phase I viewshed, the following viewer groups were identified.

### **Vehicular Travel Viewer Group**

These viewers are in cars or buses, and include drivers or passengers on Stockton Boulevard, 2nd Avenue, and 4th Avenue. They also include the following viewers in vehicles.

- Approaching Stockton Boulevard on eastbound 3rd Avenue.
- Approaching 2nd Avenue on southbound 45th Street.
- Using existing Parking Lots 14 and 16.
- Using the campus fleet services facility south of the site.

The vehicular travel viewer group exists directly adjacent to the west, north, and south sides of the Aggie Square Phase I site. Given the relatively high volumes of traffic on Stockton Boulevard, 2nd Street, and the parking lots, the viewer group is large. The duration of their views, however, is relatively short (approximately a minute or two for those on the adjacent roads), as is the time it takes for viewers to park and walk to their destinations or return. This results in a moderate level of viewer exposure.

These viewers are typically aware of their surroundings because most viewers are traveling to places they go regularly. These viewers do not have high viewer sensitivity for this site. None of the streets this group of viewers travels on have scenic route designations, and the site's current use as a parking offers little expectation of high visual quality. Therefore, this viewer group has moderately low viewer sensitivity.

### **Pedestrians and Bicyclists Viewer Group**

The pedestrians and bicyclists viewer group includes people traveling on foot or by bicycle. There are sidewalks on Stockton Boulevard and 2nd Avenue, and a trail system located in the campus major open space. There are designated bicycle routes on the surrounding streets, but bicycles still use these roadways for transportation, not for recreation.

The pedestrians and bicyclists viewer group is directly adjacent to the west, north, and east sides of the Aggie Square Phase I site. This viewer group is relatively large; as is typical of campuses, many people travel to and from the location on foot or by bicycle. Because these viewers move at a slower pace, the duration of their views is longer than those viewers in vehicles. This results in a moderately high level of viewer exposure.

This viewer group is somewhat preoccupied with the acts of walking and bicycling, but still has time to take in the visual environment around them. These viewers are typically aware of their surroundings because most of them use the street, sidewalks, and trails regularly. Most of them do not have expectations of high viewer sensitivity for this site, or even in the campus major open space. The site's current use as a parking area and campus fleet services facility offers little expectation of high visual quality. Therefore, this viewer group has moderately low viewer sensitivity.

### **Commercial Viewer Group**

The commercial viewer group includes people using the commercial, office, and campus buildings surrounding the Aggie Square Phase I site. The buildings around the site are between one and three stories tall, and do not offer a panoramic view of the site from upper levels. This viewer group also includes workers and visitors to the buildings.

The commercial viewer group is located across Stockton Boulevard and 2nd Avenue and further away, they are located east of the adjacent Urban Regional Park and south of Lot 16. The duration of views for the commercial viewer group is relatively short, usually the time it takes to walk into or out of a building or the duration they spend looking out the windows from offices or other commercial buildings. This results in a moderately low level of viewer exposure.

This viewer group is preoccupied by their activities, whether that is working or visiting businesses or offices. These viewers are moderately aware of their surroundings, but many of the commercial visitors are familiar with the business or office they are visiting. People who work in these buildings are more aware of and familiar with the Aggie Square Phase I site. Most viewers do not have high viewer sensitivity to this site. The site's current use as a parking area offers little expectation of high visual quality. Therefore, this viewer group has moderately low viewer sensitivity.

### **Recreational Viewer Group**

The recreational viewer group includes people using local recreational facilities with views of the Aggie Square Phase I site. These viewers are visitors to Cancer Survivors Park north of 2nd Avenue, visitors to the campus major open space east of the site, and, to a lesser extent, visitors to the athletic fields, ball courts, and playgrounds at the Language Academy of Sacramento charter school southeast of the site. However, views are partly obscured and at an angle at the charter school. At the park and within the campus major open space, viewers are typically engaged in passive recreation, while at the school viewers are engaged in active recreation.

The recreational viewer group is located north of 2nd Avenue, adjacent to the east side of the site, and farther to the southeast. The quantity of viewers is relatively small for the park and open space area, and though more viewers are at the school, many of their views are obscured. At the Cancer Survivors Park, there are benches facing south, with two benches directly across the street from the site, allowing extended views of the existing parking lot. At the campus major open space there are a few benches, only one of which faces the north Aggie Square Phase I site, and a few picnic tables near the south end. However, views from these tables are generally obscured by trees. The duration of views from the campus major open space is relatively short when viewers are walking through. At the school, viewers may be present for longer periods of time because of their activity; however, their view of the site is obscured. As a result, the recreational viewer group has a moderate level of viewer exposure.

This viewer group is usually preoccupied by their activities, whether that is passive or active recreation. Passive viewers in the recreational viewer group are moderately aware of their surroundings, though likely more focused on the park, open space area, or athletic fields than the project site. Viewers are usually frequent visitors, so they are aware of the existing parking lots on the site and other buildings such as the campus fleet maintenance facility. Most of the recreational viewer group has low aesthetic expectations for the site, but campus major open space viewers likely have expectations of higher visual quality because their activities are often visually oriented. Therefore, this viewer group has moderately high sensitivity.

### **Residential Viewer Group**

The residential viewer group is a small group of residents in the North Oak Park neighborhood that have views of the site, primarily along 3rd Avenue a block or two west of the site. Most of these residences do not have direct views of the site because they are behind the commercial uses on Stockton Boulevard. Only when coming and going from their homes on eastbound 3rd Avenue can they currently see the northern edge of the site at a distance.

The residential viewer group is small because only a few residences are in the viewshed. In this case, the viewer group's residences would be in the future viewshed when taller buildings of the Aggie Square Phase I project would be visible over the obscuring structures and landscaping. Currently the duration of views for this residential viewer group is short at less than a minute as they leave or return to their neighborhood on 3rd Avenue. This results in a low level of viewer exposure for residential viewers as a whole.

The residential viewer group is usually preoccupied by their activities, which are primarily driving, walking, or bicycling to and from their neighborhood. These viewers are moderately aware of their surroundings and the site, but their viewing is focused on the street and the surrounding homes, rather than the distant site on the east side of Stockton Boulevard. This viewer group has low aesthetic expectations for the site, which is a parking lot and campus fleet maintenance facility. Therefore, this viewer group has low viewer sensitivity.

## **Key Viewpoints**

Because it is not feasible to analyze all views from which the project would be seen, it is necessary to select a number of key viewpoints (KVPs) that would most clearly demonstrate change in the site's visual character and quality as a result of the project. KVPs represent the viewer groups that would have the highest potential to be affected by the project considering exposure and sensitivity. In addition, KVPs allow analysis of project alternatives.

The following four KVPs were selected for the Aggie Square Phase I project analysis (Figure 3.1-2).

- **KVP AS-1:** From the corner of Stockton Boulevard and 4th Avenue, looking northeast toward the site. This KVP represents the vehicular travel, pedestrians and bicyclists, and commercial viewer groups.
- **KVP AS-2:** From 3rd Avenue, approximately 250 feet west of Stockton Boulevard, looking east toward the site. This KVP represents the residential viewer group.
- **KVP AS-3:** From 2nd Avenue, approximately 150 feet west of 45th Street, looking south toward the site. This KVP represents the recreational and commercial viewer groups.

- **KVP AS-4:** From the campus major open space, approximately 100 feet south of 2nd Avenue, looking southwest toward the site. This KVP represents the recreational viewer group.

## Existing Visual Quality

Visual quality represents what typical viewer groups would be predicted to like or dislike about views of the visual environment. Different viewers may evaluate views differently based on their exposure and sensitivity, their familiarity with the view, and even their opinion of the project. The proverb that “beauty is in the eye of the beholder” holds true in this case. Therefore, visual quality is evaluated by identifying the vividness (i.e., memorability), intactness, and unity of the project site. *Vividness* is the extent to which the landscape is memorable and is associated with distinctive, contrasting, and diverse visual elements. *Intactness* is the integrity of visual features in the landscape and the extent to which the existing landscape is free from non-typical visual intrusions. *Unity* is the extent to which all visual elements combine to form a coherent, harmonious visual pattern.

### KVP AS-1, Stockton Boulevard and 4th Avenue

KVP AS-1 is shown in Figure 3.1-2 with its existing visual quality ranking. The photograph was taken in April 2020, which is notable because it is a season when the trees are a vibrant green with new growth. Because the photograph was taken during California’s shelter-in-place order due to the COVID-19 pandemic, the number of cars in the parking lot is unusually low.

Vividness is moderately low at KVP AS-1 because there is no focal point. Usually this area is a mass of multicolored cars with trees, with the cars dominating the view. Intactness is moderate because there are a few encroaching elements such as light poles and stockpiles, construction fencing, and construction containers. Construction containers are not visible in this photo, but are visible in winter when trees lack leaves. Unity is also moderate because of the two uses on the site (i.e., a surface parking lot and campus fleet maintenance facility) with different types of parking surfaces. The surface is primarily asphalt in Lot 16 (visible in this view) and the surface is compacted soil in the construction parking and yard (more visible in the winter). Overall, visual quality at KVP AS-1 is moderate.

### KVP AS-2, 3rd Avenue

KVP AS-2 is shown in Figure 3.1-2 with its existing visual quality ranking. This location is the eastern exit from a residential neighborhood. The photograph was taken in April 2020 when trees are at their most vibrant green of the year. During winter, these trees drop their leaves, allowing viewers to see cars in the parking lot at a distance.

Vividness is moderately low. There are a few green trees visible in the distance, but all of these trees drop their leaves in winter, and they do not make a large impact on the view. Intactness is low, with many encroaching elements including utility poles and on-street parking on a narrow street. Overall, visual quality at KVP AS-2 is moderately low.

### KVP AS-3, Cancer Survivors Park

KVP AS-3 is shown in Figure 3.1-2 with its existing visual quality ranking. The photograph was taken in April 2020, which is notable because the trees are at their most vibrant green. During the winter, only a few distant trees are evergreens, and the parked cars are more visible.

Vividness is moderately low. Except in the winter, the foreground trees provide a focal point in the narrow view because of their size and the dark green color. However, in a wider view, there are few trees, the foreground trees lose their leaves, and the trees do not represent a memorable part of the visual environment. At that time, a mass of multicolored cars dominated the view. Intactness is low because of encroaching elements, including traffic on 2nd Avenue, utility poles and wires, light towers in the parking lot, and signage along the street and at the parking lot entrance. Unity is also low. There is little cohesiveness in the landscaping, land use, and building types. Overall, visual quality at KVP AS-3 is moderately low.

#### **KVP AS-4, Campus Major Open Space**

KVP AS-4 is shown in Figure 3.1-2 with its existing visual quality ranking. Although the photograph was taken in April 2020, the view from the campus major open space would be similar in the winter, because most of the trees and other vegetation are evergreen.

Vividness is moderately high at this viewpoint. Although there is no single focal point, the foreground vegetation in the open space area and the trees in the middle ground and shrubs in the parking lot provide a vivid overall view. Intactness is moderately low because of encroaching elements, including cars and light towers in the parking lot, and the fleet maintenance facility in the background. Unity is moderate. The landscaping in the campus major open space and the parking lot are compatible and create a unified visual environment. Overall, visual quality at KVP AS-4 is moderate.

### **3.1.2 Environmental Impacts**

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

#### **Methods for Analysis**

The analysis in this section is based on professional judgment, the *Aggie Square Phase I, Sacramento, California, Schematic Design – 50% Progress Set Basis of Design* (University of California Davis, Wexford Science + Technology 2020), which presents details of the proposed project, and the Federal Highway Administration's *Guidelines for the Visual Impact Assessment of Highway Projects* (Federal Highway Administration 2015), modified to address a development project, which provides guidance for impact assessment.

Impacts related to visual character or quality are determined in the following steps.

- Inventorying the visible physical changes with the project.
- Assessing the visual quality with the project in the same way as existing visual quality is assessed, considering vividness, intactness, and unity.
- Comparing the with-project visual quality to the existing visual quality to identify the visual quality change, expressed on a scale from very high to very low for both adverse and beneficial impacts.

- Predicting viewer response to the changes in visual quality, based on their exposure and sensitivity, expressed on a scale from very high to very low.
- Determining the visual impact by considering both visual quality change and viewers' response to the visual quality change, expressed on a scale from very high to very low.

Generally, adverse impacts that are moderately high to very high are considered significant, while impacts that are moderate to very low are considered less than significant. Construction-phase impacts are also considered in the analysis of visual character and quality.

## Thresholds of Significance

Refer to Section 3.1 in Volume 1 of this Supplemental EIR for a discussion of applicable significance criteria.

## Impacts and Mitigation Measures

### **Impact AS-AES-1: Potential to have a substantial adverse effect on a scenic vista**

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The Sacramento Campus, of which the Aggie Square Phase I site is a part, is not part of a designated scenic vista. There would be **no impact**.

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The Aggie Square Phase I site is not part of a designated scenic vista. It is flat, and it is surrounded by built-out urban uses that limit short-range and long-range views to and from the site. Therefore, there would be **no impact**.

#### **Mitigation Measures**

No mitigation measures are necessary.

### **Impact AS-AES-2: Potential to substantially damage scenic resources along a scenic highway**

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The Sacramento Campus, of which the Aggie Square Phase I site is a part, is not visible from any scenic highway. Therefore, there would be **no impact**.

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The Aggie Square Phase I site is not visible from any scenic highway. Therefore, there would be **no impact** related to a substantial damage to scenic resources along a scenic highway.

#### **Mitigation Measures**

No mitigation measures are necessary.

### **Impact AS-AES-3: In non-urbanized areas, degradation of the existing visual character or quality of public views of the site and its surroundings; in urbanized areas, conflict with zoning or other regulations governing scenic quality**

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The Aggie Square Phase I project would result in changes in visual conditions at all key viewpoints, but would not conflict with regulations governing scenic quality. Visual impacts from construction and operation would occur at KVP AS-4, the campus major open space. However, the resulting view of the loading dock and the views during construction would be **less than significant with mitigation**.

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### ***Visible Physical Changes***

The Aggie Square Phase I site would be developed with the following four new buildings and a parking structure. Site renderings are shown in Figures 3.1-3a through 3.1-3e.

- A 13-story Lifelong Learning (LLL) Tower on the southeast corner of the site.
- Two 9-story-tall life sciences, technology and engineering buildings (i.e., Life Science Technology Engineering [LSTE] East at the site's northeast corner and LSTE West at the site's northwest corner).
- A seven-story Housing/Community Building
- Parking Structure 6 (PS6) would consist of 300,000 gsf and would provide 1,400 parking spaces.

The LLL Tower, LSTE East, and LSTE West buildings would be metal framed with glass cladding. The exterior of the residential Housing/Community Building and Market Plaza has not yet been identified.

The Aggie Square Phase I project site would be landscaped. Currently three landscaping schemes are being considered; all three schemes feature more trees than currently exist on the site, though much of this landscaping would not be visible offsite because it would be installed on the central spine running north-south as a pedestrian extension of 45th Street. The landscape program is organized into the following four areas.

- **Welcoming Plaza:** The Welcoming Plaza would be approximately 13,000 square feet, and would be across from the southern terminus of 45th Street between LSTE East and LSTE West. The Welcoming Plaza would include a ride-share departure and arrival area, an information stand, bicycle storage, and meeting and gathering place.
- **45th Street Extension/Paseo:** A paseo would extend southward from Welcoming Plaza between LSTE East and LSTE West and would have small outdoor gathering spaces, walkways, seating, and patios. It would be approximately 18,000 square feet.
- **Aggie Square Plaza:** Aggie Square plaza would be approximately 32,000 square feet, would be located south of Paseo, and would have a large outdoor gathering place for dining, events, and socializing.
- **Market Plaza:** Market Plaza would be approximately 20,000 square feet, would be located at the southwest corner of the site adjacent to Stockton Boulevard and would be an eastward extension of 3rd Avenue, providing a market pavilion, outdoor event space, and other outdoor uses.

Each of the three landscape schemes include street and sidewalk trees along Stockton Boulevard and 2nd Avenue and the future 3rd Avenue eastward extension, and a few trees along the support road on the east side of the site. Each landscape scheme would relocate the large oak tree in existing Lot 16 to a location near the Stockton Boulevard and 3rd Avenue intersection.

As stated in Volume 1, the *Sacramento 2035 General Plan* contains several policies related to visual quality, including preserving and enhancing neighborhoods by providing transitions, and requiring new development to respect the existing physical characteristics of adjacent neighborhoods. The landscape buffer and building setback will ensure that Aggie Square Phase I addresses building heights in the surrounding commercial corridor on Stockton Boulevard.



### ***Visual Character***

With development of the project, the visual character of Aggie Square Phase I site would be more modern than the existing site and the surroundings. The buildings would be taller than any of the adjacent buildings. The building heights would be similar to the heights of the buildings in the Hospital land use designation approximately 0.25 mile to the north. The three taller metal-framed and glass-clad buildings would contrast with the other buildings in the area and on the campus. Most multistory buildings have concrete exteriors or brick facades, with glass only for the windows.

The project's visual character when seen from offsite would be one of very large visual mass, with the existing surface parking lot being converted into buildings. There would be strong horizontal and vertical lines in the building edges and metal framing, smooth textures of the glass buildings, high contrast with the surrounding properties in scale, density, and style, and the project would dominate the visual environment.

### ***Visual Quality***

The view from KVP AS-1 would include the Housing/Community Building and Market Plaza. KVP AS-1 would also have views of the 158.5-foot-tall LLL Tower. The LSTE West building would be visible, and LSTE East building would be just visible behind the LLL Tower. Figures 3.1-3a through 3.1-3e show proposed landscaping.

The Aggie Square Phase I project would be a substantial change from existing conditions at KVP AS-1. The sidewalk and parkway trees bordering Stockton Boulevard would be similar, but most of the parked cars and existing trees would be removed from the view and would be replaced by large buildings.

Table 3.1-1 shows the visual quality and visual impact ratings for KVP AS-1. Under existing conditions, overall visual quality is moderate. With the project, overall visual quality would be moderately high. Vividness would increase to high with the introduction of large-scale buildings in an otherwise low-scale visual environment. Intactness under current conditions is moderate. With the project, the cars parked in the foreground would encroach on the organized view behind them. Unity would also be moderate. The site itself would have a unified appearance, but would contrast with the west side of Stockton Boulevard, which has been developed over time with buildings of different styles. The highly planned visual environment of Aggie Square Phase I (Figure 3.1-3a through Figure 3.1-3e) is typical of newer development. The change in visual quality is a moderately low level of beneficial change.

The three viewer groups represented by this KVP are vehicular travel, pedestrians and bicyclists, and commercial viewers.

Vehicle drivers and passengers on Stockton Boulevard and 4th Avenue currently have moderate exposure and moderately low sensitivity, resulting in a moderate viewer response. Combining the moderately low level of beneficial visual quality change for the project with the moderate visual response would result in a moderately low visual impact for the vehicular travel viewer group.

Pedestrians and bicyclists along Stockton Boulevard and in the remaining parking lot have moderately high exposure and sensitivity, resulting in moderately high viewer response. Combining the moderately low level of beneficial visual quality change for the project with the moderate visual response would result in a moderate visual impact for the pedestrians and bicyclists viewer group.

Commercial viewers on the west side of Stockton Boulevard have moderate exposure and moderately low sensitivity, resulting in moderate viewer response. Combining the moderately low level of beneficial visual quality change for the project with the viewers' moderate visual response would result in a moderately low visual impact for the commercial viewer group.

The overall visual impact for all three viewer groups combined would be moderate. This impact on visual character and quality at KVP AS-1 would be **less than significant**. No mitigation is required.

**Table 3.1-1. KVP AS-1 Visual Impact Rating**

	Vividness	Intactness	Unity	Overall Visual Quality
Existing	Moderately low	Moderate	Moderate	Moderate
With Project	High	Moderate	Moderate	Moderately high
<b><i>Visual Quality Change—Moderately Low Beneficial</i></b>				
Viewer Groups	Viewer Exposure	Viewer Sensitivity	Viewer Group Response	Visual Impact by Group
Vehicular Travel	Moderate	Moderately low	Moderate	Moderate
Pedestrians & Bicyclists	Moderately high	Moderately high	Moderately high	Moderate
Commercial	Moderate	Moderately low	Moderate	Moderately low
<b><i>Overall Visual Impact—Moderate</i></b>				

#### KVP AS-2, 3rd Avenue

The residential viewer group cannot see the existing site in KVP AS-2 except for distant and screened glimpses when leaving/returning to the neighborhood on 3rd Avenue. With implementation of the Aggie Square Phase I project that would not be the case. Instead of the view terminating near Stockton Boulevard, the view would include an extension of 3rd Avenue onto the project site, and the residential housing building and Market Plaza, with the 158.5-foot-tall LLL Tower in the background. Further to the north, the 125-foot-tall LSTE West and LSTE East buildings may be visible, especially in winter when many of the trees are bare. Elsewhere in the North Oak Park neighborhood, the LLL Tower may be visible at some locations over the roofs of houses and commercial buildings, especially along 43rd Street.

Table 3.1-2 shows the visual quality and visual impact rating for KVP AS-2. Under existing conditions, the visual quality is moderately low. With the implementation of Aggie Square Phase I, vividness would rise to moderate because the new tall buildings would create a focal point for viewers. Intactness would also be moderate; the foreground would be encroaching on organized development in the background. Unity would also be moderate; though there is little unity in the foreground, the project's strong design elements would unify the background view. Overall, the visual quality would be moderate, resulting in a low level of beneficial visual quality change.

**Table 3.1-2. KVP AS-2 Visual Impact Rating**

	Vividness	Intactness	Unity	Overall Visual Quality
Existing	Moderately low	Low	Low	Moderately low
With Project	Moderate	Moderate	Moderate	Moderate
<b><i>Visual Quality Change—Low Beneficial Change</i></b>				
Viewer Groups	Viewer Exposure	Viewer Sensitivity	Viewer Group Response	Visual Impact by Group
Residential	Low	Low	Low	Low
<b><i>Overall Visual Impact—Low</i></b>				

The residential viewer group is the only viewer group represented at this KVP. The viewers' distance from KVP AS-2 and their limited expectation of visual quality means they have low exposure and sensitivity. The residential viewer group's response to the visual quality change would also be low. Combined with the low level of beneficial quality change, this low viewer response would result in an overall low visual impact.

The 2020 LRDP Update includes a landscape buffer, staggered building heights, and overall building height limitation of 200 feet. Mitigation Measure LRDP-AES-1 entails installing landscaping within the landscape buffer when new projects are constructed and will be implemented to reduce visual impacts associated with the Aggie Square Phase I project. This impact would be **less than significant with mitigation**.

#### **Mitigation Measure LRDP-AES-1: Install New Landscaping**

Refer to Section 3.1 in Volume 1 of this Supplemental EIR.

#### ***KVP AS-3, Cancer Survivors Park***

From Cancer Survivors Park, the view across 2nd Avenue would be much different with implementation of Aggie Square Phase I from the existing view. Views from KVP AS-3 would include the LSTE East building in the foreground and LSTE West building farther west; each of these structures would be 125 feet tall. The top of the LLL Tower would also be visible in the background. The buildings would be clad in glass. The Welcoming Plaza would be between the buildings, providing the entry from the 2nd Avenue to the center spine of Aggie Square Phase I. There are multiple options in the design plan for Aggie Square Phase I, but at the 2nd Avenue boundary the plans are similar.

The Aggie Square Phase I project would be a substantial change from existing conditions. The sidewalk and parkway trees bordering 2nd Avenue would increase, and the former entrance to the parking lot would be heavily landscaped with trees and other plantings. The parked cars and parking lot trees would be removed from the view, and would be replaced by two large buildings.

Table 3.1-3 shows the visual quality and visual impact ratings for KVP AS-3. Under existing conditions, overall visual quality is moderately low. With Aggie Square Phase I, overall visual quality would be moderately high. Vividness would also be high, with the large glass buildings and landscape plaza creating a memorable image. Intactness would be moderate, with the roadway traffic, street signs, and utility poles and wires encroaching into the view. Unity would be

moderately high, especially on the site. However, the contrasting metal building offsite to the right would reduce unity in the wider view. The visual quality change would be a moderate beneficial change.

**Table 3.1-3. KVP AS-3 Visual Impact Rating**

	Vividness	Intactness	Unity	Overall Visual Quality
Existing	Moderately low	Low	Low	Moderately low
With Project	High	Moderate	Moderately high	Moderately high
<b><i>Visual Quality Change—Moderate Beneficial Change</i></b>				
Viewer Groups	Viewer Exposure	Viewer Sensitivity	Viewer Group Response	Visual Impact by Group
Vehicular Travel	Moderate	Moderately low	Moderate	Low
Pedestrians & Bicyclists	Moderately high	Moderately high	Moderately high	Moderate
Commercial	Moderate	Moderately low	Moderate	Low
Recreational	Moderate	Moderately high	Moderate	Moderate
<b><i>Overall Visual Impact—Moderately Low</i></b>				

Four viewer groups are represented by this KVP AS-3: the vehicular travel, pedestrians and bicyclists, commercial, and recreational viewer groups.

The vehicular travel viewer group on 2nd Avenue has moderate exposure and moderately low sensitivity, resulting in moderate viewer response. Combining the moderate level of beneficial visual quality change for the project with the moderate visual response would result in a low visual impact for the vehicular travel viewer group.

For the pedestrians and bicyclists viewer group, there are sidewalks on both sides of 2nd Avenue, and striped bicycle lanes. The pedestrians and bicyclists along 2nd Avenue have moderately high exposure and sensitivity, resulting in moderately high viewer response. Combining the moderate level of beneficial visual quality change for Aggie Square Phase I with the moderately high visual response would result in a moderate visual impact for the pedestrians and bicyclists viewer group.

The commercial viewer group on the north side of 2nd Avenue has moderate exposure and moderately low sensitivity, resulting in moderate viewer response. Combining the moderate level of beneficial visual quality change for Aggie Square Phase I with the moderate visual response would result in a moderately low visual impact for the commercial viewer group.

The recreational viewer group, whose viewers might sit on benches facing Aggie Square Phase I or might walk through Cancer Survivors Park, has moderate exposure (separated by 2nd Avenue) and moderately high sensitivity, which would result in a moderate viewer response. When the moderate level of beneficial visual quality change is combined with the moderate view response, the result is a moderate visual impact for the recreational viewer group.

The overall visual impact for all four viewer groups combined would be moderately low. This impact on visual character and quality at KVP AS-3 would be **less than significant**.

*KVP AS-4, Campus Major Open Space*

The view from KVP AS-4 would change with Aggie Square Phase I. In the foreground, a support road would border the existing open space area, similar to the eastern perimeter roadway in the existing parking lot. For all three landscape design options, there would be approximately 12 trees planted, similar to the existing trees along the perimeter of the parking lot. Beyond the support road and trees would be the 125-foot-tall LSTE East building along the northern portion of the open space area and the 158.5-foot-tall LLL Tower along the southern end. For context, the campus support buildings on the east side of the open space area are approximately 50 feet tall. These buildings would be approximately 40 feet from the western edge of the open space area, and approximately 70 feet from the closest point of the trail. Both buildings would have glass facades. The view from the campus major open space would be of the back side of these buildings, with the support road providing access to the loading docks, which would be visible from KVP AS-4 in the middle ground. The buildings would overlap and would block any background views.

Table 3.1-4 shows the visual quality and visual impact ratings for KVP AS-4. Under existing conditions, overall visual quality is moderate. With Aggie Square Phase I, the visual quality would be moderately low. Vividness would be high because of the tall glass-covered buildings' effect on the view. Intactness would be low; the structures would visually encroach on the recreational viewer group, completely shading the campus major open space in the morning and potentially resulting in glare from reflected sunlight in the afternoon (see Impact AS-AES-4). Unity would be low. The contrast between the open space area and the buildings 40 to 70 feet away would create two separate visual environments sharing no unifying elements. The area to the east of KVP AS-4 would remain unchanged. Overall, the visual quality with the project would be moderately low.

**Table 3.1-4. KVP AS-4 Visual Impact Rating**

	Vividness	Intactness	Unity	Overall Visual Quality
Existing	Moderately high	Moderately low	Moderate	Moderate
With Project	High	Low	Low	Moderately low
<b><i>Visual Quality Change—High Adverse Change</i></b>				
Viewer Groups	Viewer Exposure	Viewer Sensitivity	Viewer Group Response	Visual Impact by Group
Recreational	Moderately low	Moderately low	Moderately low	Moderately low
<b><i>Overall Visual Impact—Moderately low</i></b>				

The recreational viewer group is the only viewer group represented at KVP AS-4. There are a few benches in the area, only one of which faces the Aggie Square Phase I site. Duration of views are relatively short when walking through the area. These viewers have moderately low exposure and moderately low sensitivity, and therefore, a moderately low viewer response. As a result of the moderately low visual quality rating with Aggie Square Phase I and the moderately low viewer response, the overall visual impact would be moderately low, resulting in a significant impact on visual character and quality. One factor in this impact is the view of the loading dock from KVP AS-4. Mitigation Measure AS-AES-3a would reduce this impact by screening views of the loading dock area. Therefore, this impact on visual quality at KVP AS 4 would be **less than significant with mitigation**.

### ***Construction Impacts to Visual Character and Quality***

Construction of the project would result in temporary, but significant impacts on the visual character and quality of the area. These impacts would occur during each phase of construction. During the demolition and earthwork phases, these impacts would result from the presence of large construction equipment on the site, demolition debris, soil stockpiles and brush clearance piles, and exposure of cleared soil. If there are construction delays in between grading and further construction, planned or otherwise, the exposed soil may become covered in weeds and appear unkempt. In addition, construction activities could result in fugitive dust, which would affect visual quality on and off the site (see Section 3.2, *Air Quality*, Mitigation Measure LRDP-AQ-2a).

It is anticipated that construction would occur between November 2020 and March 2023. Not all of the site would be developed at once, leaving some areas undeveloped for periods of time, and screened fencing would be installed at the beginning of each phase of construction. Construction of the high-rise buildings would require the use of cranes, scaffolding, and other equipment would be visible from long distances even with screened fencing, though construction in the area (including cranes) is a common occurrence. See Figure 2-7 in Chapter 2, *Project Description*, for crane locations and elevations during construction. Materials storage, construction parking and access, and staging areas can also be unsightly. Construction-phase visual impacts would especially affect the pedestrians and bicyclists, and recreational viewer groups, who would be closest to the site (see Impact AS-AES-4 for more information about construction light and glare impacts).

Construction-phase impacts would be temporary but significant. Mitigation Measures AS-AES-3b and LRDP-AQ-2a would reduce unsightly construction effects. Therefore, this impact would be **less than significant with mitigation**.

#### **Mitigation Measure AS-AES-3a: Permanent Visual Screening of Support Road and Loading Dock**

To reduce visual quality impacts on the views from the campus major open space, designers and contractors will design and construct a permanent visual screen between the open space area and the loading dock area.

If possible, the support road will be realigned enough to create a planting pocket between the road and the open space area. If the planting pocket is created, vining plants will be grown on a natural-style fence such as woven wood, wood replica, or non-shiny metal finish and will be a minimum of 7 feet high. The fence will be designed to allow vining plants to penetrate and grow on either side of the fence to produce a natural screen effect. Plants used on the fence will either be native to the area or at least a suitable species that is compatible with the existing plantings in the campus major open space. Plants will be evergreen and noninvasive. A high curb will be installed between the support road and the planting area to protect it from trucks accessing and leaving the loading dock area. This fence will be installed, and the vining plants established prior to operational use of the support road and loading dock. The landscape maintenance program for Aggie Square Phase I landscaping will include maintenance of the fence and screening vegetation in a manner that will provide the planned screening effect continuously over time.

If the limited amount of space between the support road and the property edge of the open space area is not sufficient to accommodate the fence and vines on the Aggie Square Phase I site, the designers and contractors will work with the UC Davis personnel responsible for designing and maintaining the campus major open space to design and construct a screen for the open

space area. This offsite screen will have a similar effect as the one described for the onsite fence and vines, but may also include other plantings compatible with existing vegetation, as directed by Sacramento Campus Facilities staff.

### **Mitigation Measure AS-AES-3b: Construction Site Maintenance**

The following measures will be taken to reduce unsightly construction impacts.

- To prevent unsightly weeds and fugitive dust from exposed soil, demolition, grading, and site preparation activities will occur as near to the next phase of construction as possible.
- To prevent views of stockpiled soil, demolition debris, or cleared brush piles, such materials will be removed from the site after demolition. If this is not possible, or if the soil is being stockpiled for later use, stockpiles will be low enough so as to not be visible from adjacent streets, sidewalks, bicycle lanes and parking lots. Alternatively, they may be maintained far enough from the edges of the property to allow the barriers to block the line of sight. Soil piles will be covered or seeded to prevent unsightly weeds and fugitive dust.
- Scaffolding will be removed as soon as possible when no longer needed. If scaffolding is needed for a later development stage more than 90 days away, the scaffolding will be stored behind the visual screening barrier or removed and rebuilt when needed again.

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

Refer to Section 3.2 in Volume 1 of this Supplemental EIR.

### **Impact AS-AES-4: Introduction of a new source of substantial light or glare that would adversely affect daytime or nighttime views in the area**

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The Aggie Square Phase I project would result in the construction of at least three glass-clad buildings, which could reflect sunlight and result in glare and would also shade the campus major open space, resulting in visual impacts as plants fail to thrive. Implementation of Mitigation Measures LRDP-AES-2a through LRDP-AES-2c and AS-AES-4 would reduce these effects to a less-than-significant level. Therefore, this impact would be **less than significant with mitigation**.

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#### ***Daytime Light and Glare Effects***

The Aggie Square Phase I site would be developed with four new buildings. At least three buildings would be glass clad. The exterior treatment of the seven-story housing/community building has not been identified but would likely be similar to the renderings shown in Figures 3.1-3a through 3.1-3e.

Depending on the time of year and the amount of cloud cover, the tall buildings could reflect sunlight toward the east early in the morning, and toward the south and east on winter mornings. Because of the building heights, this morning glare could affect people on westbound 2nd Avenue and on northbound and southbound 49th Street, as well as on nearby land uses such as the campus major open space, the Language Academy of Sacramento (including the play areas), and the California Justice Department building parking lot east of 49th Street. In the afternoon, the glare would occur in the opposite direction (i.e., to the west and northwest). This could affect drivers on Stockton Boulevard, eastbound 2nd, 3rd, and 4th Avenues, and in parking lots and driveways on the west side of Stockton Boulevard. These glare effects could be disturbing, and potentially dangerous for drivers, a significant visual impact. Implementation of Mitigation Measure LRDP-AES-2a, from

Volume 1 of this Supplemental EIR, which requires the use of textured non-reflective exterior surfaces and non-reflective glass, would reduce this impact. Therefore, this impact would be **less than significant with mitigation**.

The tall buildings would also have an opposite light effect; the loss of light in the campus major open space. Because the open space area is east of the tall buildings (i.e., 40 to 200 feet away), it would be in shade for most of the afternoon, with the exception of the area's southern end in winter, when the sun is lower in the sky. The plants in the campus major open space have adapted to the area's hot summer afternoon sun and would likely fail to thrive, and may even die, when subjected to a shady afternoons. This would be a potentially significant visual impact to the viewers in this location. Mitigation Measure AS-AES-4 would replace plants with those adapted to afternoon shade. Therefore, this impact would be **less than significant with mitigation**.

### ***Nighttime Light and Glare Effects***

The lighting plan for Aggie Square Phase I has not been specified. There are no adjacent nighttime uses that would be affected by lighting on the Aggie Square Phase I site. Stockton Boulevard is primarily commercial uses that are not open in the nighttime hours. Residences are located on side streets off of Stockton Boulevard and do not have direct views from their homes or yards. It is assumed that there are few nighttime visitors to the campus major open space. Implementation of Mitigation Measures LRDP-AES-2b and LRDP-AES-2c from Volume 1 of this Supplemental EIR, requiring new outdoor lighting to use directional lighting methods with shielded and cutoff type light fixtures and minimum amounts of lighting with no adverse effect on nighttime views, would reduce this impact. Therefore, this impact would be **less than significant with mitigation**.

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

Refer to Section 3.1 in Volume 1 of this Supplemental EIR.

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

Refer to Section 3.1 in Volume 1 of this Supplemental EIR.

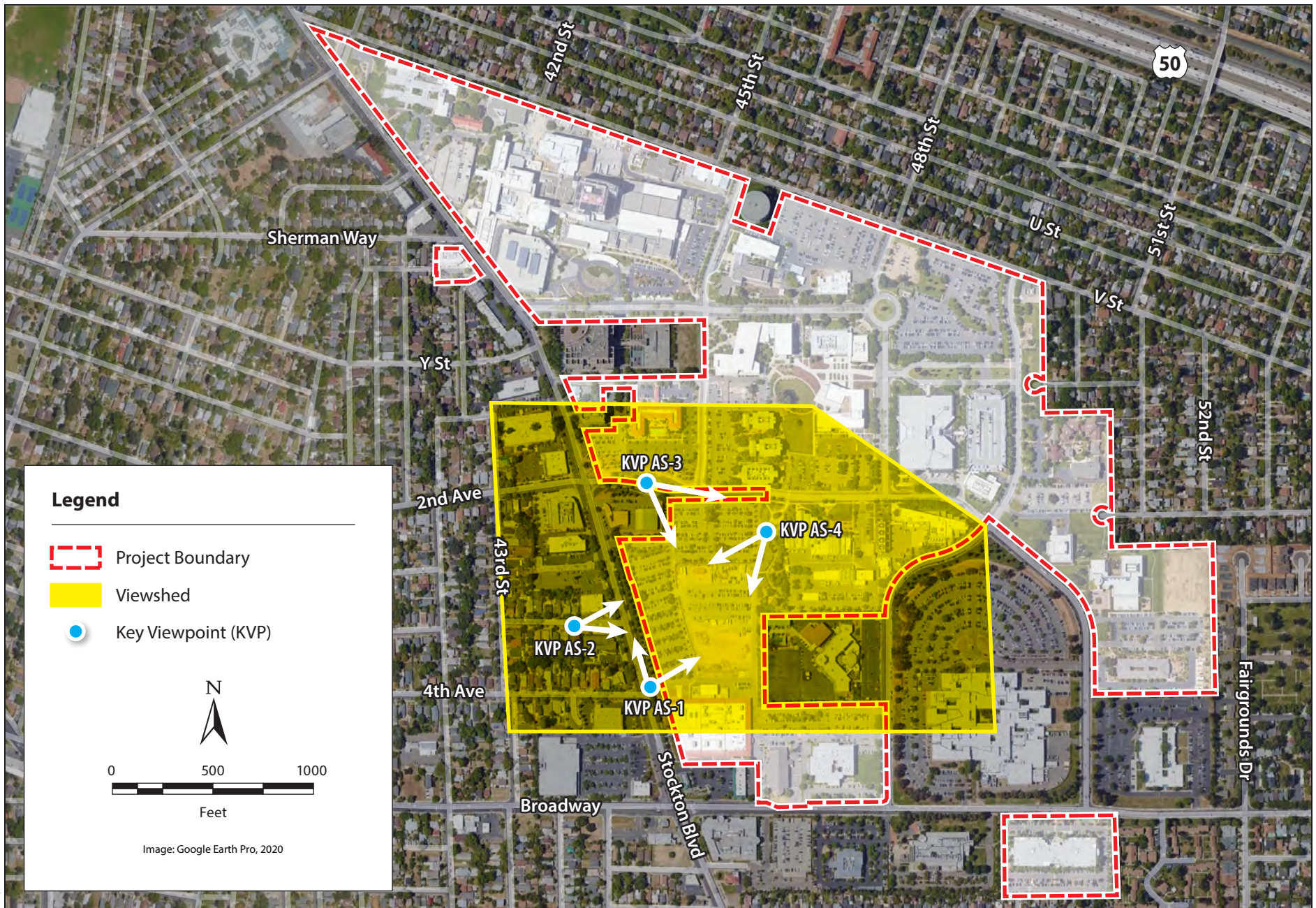
#### **Mitigation Measure LRDP-AES-2c: Review Lighting, Landscape, and Architectural Features Prior to Installation**

Refer to Section 3.1 in Volume 1 of this Supplemental EIR.

#### **Mitigation Measure AS-AES-4: Replace Campus Major Open Space Plantings**

The designers and contractors for Aggie Square Phase I will work with the UC Davis personnel responsible for designing and maintaining the campus major open space to identify which plants would be negatively affected by the lack of afternoon sun. The Aggie Square Phase I developers will fund and/or implement, at the discretion of UC Davis, replacement of the negatively affected plants with ones that are adapted to afternoon shade within 1 year of the completion of the LLL Tower and LSTE East building. If these are not completed at the same time, this mitigation will be implemented in stages within 1 year of the completion of each building.





**Figure 3.1-1**  
**Viewshed and Key Viewpoints**





**P KVP AS-1, Stockton Boulevard and 4th Avenue: Existing Visual Quality**  
*Vividness (memorability), moderately low; intactness, moderate; unity, moderate.*



**KVP AS-2, 3rd Avenue: Existing Visual Quality**  
*Vividness (memorability), moderately low; intactness, low; unity, low.*





**KVP AS-3, Cancer Survivors Park: Existing Visual Quality**

*Vividness (memorability), moderately low; intactness, moderately low; unity, low.*



**KVP AS-4, Campus Major Open Space: Existing Visual Quality**

*Vividness (memorability), moderately high; intactness, moderately low; unity, moderate.*























## 3.2 Air Quality

This section describes the regulatory and environmental setting for air quality in the Aggie Square Phase I project area, analyzes effects on air quality that would result from implementation of Aggie Square Phase I, and provides mitigation measures to reduce the effects of any potentially significant impacts, if applicable.

### 3.2.1 Existing Conditions

#### Regulatory Setting

Regulations, laws, policies, and plans applicable to and/or considered for Aggie Square Phase I are provided in Volume 1 of this Supplemental EIR. As the regulatory setting provided in Volume 1 considers potential development, including Aggie Square Phase I, within the entirety of the Sacramento Campus as envisioned through the 2020 LRDP Update, no additional regulatory setting is provided for Aggie Square Phase I.

#### Environmental Setting

Refer to Section 3.2, *Air Quality*, Section 3.2.1, *Existing Conditions*, in Volume 1 of this Supplemental EIR for a discussion of the regional environmental setting for the UC Davis Sacramento Campus, including the Aggie Square Phase I project area. The Aggie Square Phase I project area is located within the boundaries of the campus; as such, Aggie Square Phase I has the same existing air quality characteristics as the entire campus.

### 3.2.2 Environmental Impacts

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

#### Methods for Analysis

Criteria pollutants and precursors resulting from construction and operation of Aggie Square Phase I were quantified using standard and accepted software tools, techniques, and emission factors as described in detail below. A full list of assumptions and model outputs can be found in Appendix D, *Air Quality and Greenhouse Gas Modeling Inputs and Supporting Data*, in Volume 1 of this Supplemental EIR.

#### Construction Criteria Pollutants and Precursors

Construction emissions were calculated using the California Emissions Estimator Model (CalEEMod) Version 2016.3.2, as recommended by the Sacramento Metropolitan Air Quality Management District (SMAQMD) (2020). Construction emissions would originate from off-road equipment exhaust, vehicle exhaust (on-road vehicles), site grading and earth movement, demolition,

application of architectural coatings, and paving. Each of these sources was considered in the Aggie Square Phase I construction analysis and CalEEMod modeling.

Construction of Aggie Square Phase I would occur over eight primary phases between November 2020 and March 2023. UC Davis provided the anticipated construction schedule, number of daily construction personnel, number of vendor and haul truck trips, acres to be graded and paved, demolition quantities, and the amount of exported and imported material (Dulcich pers. comm. [a]). The construction contractor, Wexford, also provided UC Davis an inventory of all off-road equipment that could be used to construct the project. The inventory consists of 58 individual pieces of equipment within 10 general equipment categories (e.g., excavators, graders). Based on consultation with Wexford and UC Davis, no more than 15 pieces of equipment would operate concurrently on a single day, and for no more than 8 hours each (Dulcich pers. comm. [a]). For the purposes of this analysis, maximum daily equipment emissions were conservatively modeled assuming the 15 most pollutant-intensive pieces of equipment would each operate 8 hours per day. Annual equipment emissions were modeled based on the fleet inventory and total equipment operating hours, as provided by Wexford and UC Davis (Dulcich pers. comm. [a]).

## **Operational Criteria Pollutant and Precursor Inventory**

### **Aggie Square Phase I**

Operation of Aggie Square Phase I would generate criteria pollutant and precursor emissions from mobile sources (e.g., visitor trips), area sources (e.g., landscaping equipment), energy sources (e.g., natural gas), stationary sources (e.g., emergency diesel generators), and fugitive sources (e.g., laboratories). Each of these sources was considered in the Aggie Square Phase I operational analysis, as described below.

Fehr & Peers provided the forecasted daily trips and vehicle miles traveled (VMT) resulting from implementation of Aggie Square Phase I (Hananouchi pers. comm.). The California Air Resources Board's EMFAC2017 was used to obtain emission factors based on aggregated-speed emission rates for all vehicle types operating in Sacramento County in 2024 (which is the first operational year for the project). Adjustment factors were applied to the emission rates for gasoline-powered vehicles to account for the effects of the Safer Affordable Fuel-Efficient (SAFE) Vehicles Rule (California Air Resources Board 2019).<sup>1</sup> The resulting criteria pollutants and precursors were quantified by multiplying the EMFAC2017 emission factors by the trip and VMT inventory provided by Fehr & Peers.

CalEEMod (Version 2016.3.2) was used to estimate emissions from area and energy sources. Area sources include landscaping equipment, consumer products, and the routine application of architectural coatings. CalEEMod default values for the building square footage were assumed. Aggie Square Phase I includes all-electric design, except for commercial cooking appliances (Dulcich pers. comm. [a]). CalEEMod default values for the restaurant land use category were assumed to estimate the minor amount of natural gas that may be used and the associated emissions.

The project would maintain four 1,341-horsepower and two 2,012 horsepower emergency diesel generators. This equipment would be at the Aggie Square Central Energy Plant. All generators would

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<sup>1</sup> Part One of the SAFE Vehicles Rule was released in September 2019 and removed California's ability to set state-specific carbon dioxide emissions standards for light-duty vehicles. Part Two of the SAFE Vehicles Rule was released in March 2020 and amends and establishes national carbon dioxide and fuel economy standards.

meet U.S. Environmental Protection Agency (EPA) Tier 3 emission standards and were assumed to operate a maximum of 30 minutes per day and 16 hours per year for routine maintenance and testing (Dulcich pers. comm. [a]). Criteria pollutant and precursor emissions were estimated using Tier 3 emission factors from the CalEEMod User's Guide (California Air Pollution Control Officers Association 2017).

The project includes approximately 30,700 square feet of clinical research labs. Research activity in laboratories can result in various reactive organic gases (ROG) from solvents and chemicals specific to the type of research being conducted. Evaporative ROG emissions associated with new labs were quantified using the same technique and emission factors for estimating laboratory emissions for the UC Davis Sacramento Campus, as described in Volume 1 of this Supplemental EIR.

### **Existing Conditions (Surface Parking)**

The project would demolish an existing surface parking lot and the Fleet Maintenance Center. Existing vehicle trips to the surface lot would be redistributed to other onsite parking lots. Likewise, fleet maintenance activities would be shifted to another campus facility. Accordingly, there would be no material change in existing emissions with implementation of Aggie Square Phase I.

## **Human Health Risk Assessment from Exposure to Toxic Air Contaminants**

### **Construction**

A human health risk assessment (HRA) was performed using EPA's most recent dispersion model, AERMOD (version 19191) and chronic risk assessment values recommended by the Office of Environmental Health Hazard Assessment (OEHHA) (2015), as described in Volume 1 of this Supplemental EIR. Concentration modeling for Aggie Square Phase I was based on construction hours of 9:00 a.m. to 5:00 p.m. 5 days per week between 2020 and 2023. Emissions from offsite haul trucks were modeled along segments adjacent to the construction footprint along Broadway and Stockton Boulevard. Where sensitive receptor locations were identified within 1,000 feet of the project site, discrete receptors were placed at 20-meter intervals.

### **Operational**

Diesel-powered delivery trucks and onsite emergency generators would emit diesel particulate matter (DPM). In addition, onsite labs would emit ROG that could expose nearby sensitive receptors to increased cancer and non-cancer risks. An HRA was performed using EPA's AERMOD (version 19191) and OEHHA (2015) guidance, as described in Volume 1 of this Supplemental EIR. Rooftop and ground floor generators were modeled for Aggie Square Phase I with release heights of 36 feet and 18 feet, respectively (Dulcich pers. comm. [b]). Emissions from offsite delivery trucks were modeled along Stockton Boulevard, 2nd Avenue, and 50th Street and were assumed to occur at any time (i.e., 24 hours per day) during a year.

Sensitive receptors were placed at the same locations as the construction analysis (described above). Additional onsite residential receptors were placed at the current location of Parking Lot 17 to account for anticipated residences that would be constructed during the year 2030 to 2040 timeframe. New residential and recreational receptors were also added for Aggie Square Phase I. A receptor height of 1.8 meters was assumed.

## Correlation of Criteria Pollutants to Potential Human Health Consequences

Potential health effects associated with construction and operational criteria pollutants generated by Aggie Square Phase I were estimated using SMAQMD's *Guidance to Address the Friant Ranch Ruling for CEQA Projects in the Sac Metro Air District*, as described in Volume 1 of this Supplemental EIR (Ramboll 2020).

## Thresholds of Significance

Refer to Section 3.2.2, *Environmental Impacts*, in Volume 1 of this Supplemental EIR for a discussion of applicable significance criteria.

## Issues Not Evaluated Further

The following impacts were identified as part of the analysis of the 2020 LRDP Update in Volume 1 of this Supplemental EIR, and are either (1) adequately evaluated at the program level of analysis of the 2020 LRDP Update, or (2) not applicable to Aggie Square Phase I.

### Asbestos

Potential impacts resulting from receptor exposure to asbestos under the 2020 LRDP Update, including Aggie Square Phase I, are sufficiently discussed at the plan level in Volume 1 of this Supplemental EIR. Aggie Square Phase I would comply with SMAQMD Rule 902. As a result, additional and/or potentially significant impacts are not anticipated, and no additional project-specific analysis is necessary.

### Odors

Potential odor sources that would occur under the 2020 LRDP Update, including Aggie Square Phase I, are sufficiently discussed at the plan level in Volume 1 of this Supplemental EIR. As a mixed-use development, including commercial, education, research, and residential land uses, no unique or substantial odors are anticipated as a result of implementation of Aggie Square Phase I that were not accounted for in the plan level in Volume 1 of this Supplemental EIR. As a result, additional and/or potentially significant impacts are not anticipated, and no additional project-specific analysis is necessary.

## Impacts and Mitigation Measures

### Impact AS-AQ-1: Conflict with or obstruction of implementation of the applicable air quality plan

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Aggie Square Phase I includes growth not accounted for in SMAQMD's air quality attainment plans. Mitigation Measure LRDP-AQ-1 would reduce the severity of this impact, but the impact would remain **significant and unavoidable**.

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As discussed under Impact LRDP-AQ-1 in Volume 1 of this Supplemental EIR, SMAQMD's air quality attainment plans are based, in part, on regional population and employment (and thus VMT) growth projections from the Sacramento Area Council of Governments (SACOG). Thus, a project's conformance with SACOG's *Metropolitan Transportation Plan/Sustainable Communities Strategy*

(MTP/SCS) that was considered in the preparation of the air quality attainment plans would demonstrate that the project would not conflict with or obstruct implementation of plans.

SACOG's current MTP/SCS is the 2020 MTP/SCS, which was adopted in November 2019. While the 2020 MTP/SCS is SACOG's most current planning document, the Sacramento Regional Ozone Attainment Plan (OAP), which was prepared in 2017, was informed by SACOG's prior 2016 MTP/SCS. Growth projections for SACOG's 2016 MTP/SCS were based on state-of-the-art data, analysis, and local planning data that were available at the time of the 2016 MTP/SCS, including the 2010 LRDP for the UC Davis Sacramento Campus. The additional population, development, and housing units supported by the 2020 LRDP Update, including Aggie Square Phase I, represents growth that was not previously considered in the 2010 LRDP, and by extension, the 2016 MTP/SCS. Specifically, the 2016 MTP/SCS did not assume any new housing units for the UC Davis Sacramento Campus, whereas Aggie Square Phase I would construct up to 324 residential units.

The anticipated growth from implementation of Aggie Square Phase I is greater than what was assumed in the 2016 MTP/SCS, which informed the analysis and conclusions of the Sacramento Regional OAP. This is a potentially significant impact. Mitigation Measure LRDP-AQ-1 is required to ensure the administrative process to update SACOG's growth projections is completed, thus informing the air quality analysis and strategies contained within SMAQMD's forthcoming ozone attainment plan adequately consider implementation of Aggie Square Phase I. Implementation of Mitigation Measure LRDP-AQ-1 will ultimately ensure Aggie Square Phase I is consistent with SMAQMD's long-term ozone planning efforts for the Sacramento region. However, updates to the growth projections and development of the ozone plan would be completed by external agencies (SACOG and SMAQMD) and are therefore beyond the direct control of UC Davis. Accordingly, this impact is conservatively determined to be **significant and unavoidable**.

#### **Mitigation Measure LRDP-AQ-1: Coordinate with SACOG and SMAQMD on Planning Assumptions**

Refer to Section 3.2 in Volume 1 of this Supplemental EIR.

#### **Impact AS-AQ-2: Cumulatively considerable net increase of any criteria pollutant for which the project region is a nonattainment area for an applicable federal or state ambient air quality standard**

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Construction and operational emissions from implementation of the 2020 LRDP Update, including the emissions from Aggie Square Phase I, are included in Impact LRDP-AQ-2 in Volume 1 of this Supplemental EIR. That analysis concluded that with implementation of Mitigation Measures LRDP-AQ-2a through LRDP-AQ-2d, overall plan-related construction emissions would be less than significant. However, operational particulate matter (PM<sub>10</sub>) emissions would be significant and unavoidable, even with implementation of Mitigation Measures LRDP-AQ-2e and LRDP-TRA-1a. The following sections describe the emissions contributions of just Aggie Square Phase I and demonstrate that neither construction nor operation of Aggie Square Phase I would exceed SMAQMD's thresholds of significance with implementation of mitigation. Therefore, this impact would be **less than significant with mitigation**.

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### Construction

Criteria pollutants and precursors generated by construction of Aggie Square Phase I were quantified using CalEEMod, as described above. Construction activities would be short term, occurring between November 2020 and March 2023. Table 3.2-1 summarizes the results of the emissions modeling. The table compares maximum daily and annual emissions to SMAQMD's nitrogen oxides (NO<sub>x</sub>), PM<sub>10</sub>, and fine particulate matter (PM<sub>2.5</sub>) thresholds. Although SMAQMD does not recommend ROG thresholds, estimates of construction-generated ROG emissions, which are an ozone precursor, are shown for informational purposes only. Refer to Appendix D in Volume 1 of this Supplemental EIR for model outputs.

**Table 3.2-1. Estimated Unmitigated Construction Criteria Pollutants and Precursors for Aggie Square Phase I**

Year	Maximum Daily Emissions (lb/day)				Annual Emissions (tpy)	
	ROG <sup>a</sup>	NO <sub>x</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>
2020	6	65	31	17	0.2	0.1
2021	49	76	<u>106</u>	57	1.6	0.9
2022	230	64	<u>82</u>	44	1.1	0.4
2023	326	56	<u>92</u>	46	0.3	0.1
SMAQMD Threshold <sup>b</sup>	–	85	80 <sup>c</sup>	82 <sup>c</sup>	14.6 <sup>c</sup>	15.0 <sup>c</sup>

Source: ICF modeling.

Note: Underline results indicate an exceedance of SMAQMD's threshold.

ROG = reactive organic gases; NO<sub>x</sub> = nitrogen oxides; PM = particulate matter; lb/day = pounds per day; tpy = tons per year.

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

<sup>b</sup> In developing these thresholds, SMAQMD considered levels at which project emissions are cumulatively considerable. Consequently, exceedances of project-specific thresholds would be cumulatively considerable.

<sup>c</sup> With application of best management practices.

As shown in Table 3.2-1, construction of Aggie Square Phase I would result an exceedance of SMAQMD's maximum daily PM<sub>10</sub> threshold between 2021 and 2023. These exceedances are primarily due to fugitive dust emissions generated by earthmoving activities (e.g., truck hauling and material loading and unloading). Because PM<sub>10</sub> emissions would exceed SMAQMD's threshold, this impact would be potentially significant. Mitigation Measures LRDP-AQ-2a through LRDP-AQ-2c are required to reduce emissions below SMAQMD's PM<sub>10</sub> threshold and ensure the project complies with SMAQMD's best management practices to control fugitive dust (see Table 3.2-2).<sup>2</sup> Accordingly, this impact would be **less than significant with mitigation**.

<sup>2</sup> Emission offsets, as required by Mitigation Measure LRDP-AQ-2d, would not be individually required for construction of Aggie Square Phase I. Nonetheless, a portion of NO<sub>x</sub> emissions generated by construction of Aggie Square Phase I may be offset through mitigation fees paid by UC Davis to address cumulative NO<sub>x</sub> emissions (inclusive of Aggie Square Phase I) from implementation of the 2020 LRDP Update.

**Table 3.2-2. Estimated Mitigated Construction Criteria Pollutants and Precursors for Aggie Square Phase I**

Year	Maximum Daily Emissions (lb/day)				Annual Emissions (tpy)	
	ROG <sup>a</sup>	NO <sub>x</sub>	PM10	PM2.5	PM10	PM2.5
2020	2	12	10	4	<0.1	<0.1
2021	25	30	32	15	0.8	0.2
2022	115	25	26	12	1.0	0.3
2023	163	21	35	14	0.3	0.1
SMAQMD Threshold <sup>b</sup>	–	85	80 <sup>c</sup>	82 <sup>c</sup>	14.6 <sup>c</sup>	15.0 <sup>c</sup>

Source: ICF modeling.

ROG = reactive organic gases; NO<sub>x</sub> = nitrogen oxides; PM = particulate matter; lb/day = pounds per day; tpy = tons per year.

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

<sup>b</sup> In developing these thresholds, SMAQMD considered levels at which project emissions are cumulatively considerable. Consequently, exceedances of project-specific thresholds would be cumulatively considerable.

<sup>c</sup> With application of best management practices.

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

Refer to Section 3.2 in Volume 1 of this Supplemental EIR.

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

Refer to Section 3.2 in Volume 1 of this Supplemental EIR.

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

Refer to Section 3.2 in Volume 1 of this Supplemental EIR.

## ***Operation***

Operation of Aggie Square Phase I would generate criteria pollutants and precursors from mobile sources (e.g., vehicle trips), area sources (e.g., landscaping equipment), stationary sources (e.g., emergency diesel generator), and fugitive sources (e.g., laboratories). Emissions from each of these sources were calculated using the methods detailed under *Methods for Analysis* above. Table 3.2-3 summarizes the modeled operation-related emissions of criteria air pollutants and precursors under implementation conditions of Aggie Square Phase I in 2024. Emissions are compared to SMAQMD thresholds.

**Table 3.2-3. Estimated Unmitigated Operational Criteria Pollutants and Precursors for Aggie Square Phase I**

Source	Maximum Daily Emissions (lb/day)				Annual Emissions (tpy)	
	ROG	NO <sub>x</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>
Mobile	26	51	79	21	13.6	3.7
Area	34	<1	<1	<1	<0.1	<0.1
Energy	<1	1	<1	<1	<0.1	<0.1
Stationary	1	18	1	1	<0.1	<0.1
Fugitive	1	0	0	0	0.0	0.0
Total <sup>a</sup>	63	70	79	22	13.7	3.8
SMAQMD Threshold <sup>b</sup>	65	65	80	82	14.6	15.0

Source: ICF modeling. Refer to Appendix D.

ROG = reactive organic gases; NO<sub>x</sub> = nitrogen oxides; PM = particulate matter; lb/day = pounds per day; tpy = tons per year.

<sup>a</sup> Values may not add due to rounding.

<sup>b</sup> In developing these thresholds, SMAQMD considered levels at which project emissions are cumulatively considerable. Consequently, exceedances of project-specific thresholds would be cumulatively considerable.

As shown in Table 3.2-3, ROG, PM<sub>10</sub>, and PM<sub>2.5</sub> emissions resulting from operation of Aggie Square Phase I would not exceed SMAQMD thresholds. However, operational NO<sub>x</sub> emissions would exceed SMAQMD's daily threshold of 65 pounds per day. The increase in NO<sub>x</sub> emissions above SMAQMD's threshold is due to additional VMT expected under the project and emergency generator testing. This analysis conservatively assumes all six emergency generators could be tested on the same day, and that testing would occur on a weekday commensurate with peak vehicle activity. While conservative, the modeled NO<sub>x</sub> emissions above SMAQMD's threshold is a significant impact.

Aggie Square Phase I is subject to Mitigation Measures LRDP-AQ-2e and LRDP-TRA-1a because the Aggie Square Phase I is part of the 2020 LRDP Update, which was found to have significant and unavoidable operational PM<sub>10</sub> emissions under Impact LRDP-AQ-2 in Volume 1 of this Supplemental EIR. Mitigation Measure LRDP-AQ-2e would reduce NO<sub>x</sub> emissions by reducing vehicle trips, enhancing walkability and pedestrian network connectivity, and supporting low-emission and zero-emissions vehicles and equipment. Mitigation Measure LRDP-TRA-1a will also support vehicle emissions reductions by facilitating service improvements that are necessary to improve transit performance and reliability. However, UC Davis does not have jurisdiction over transit service or vehicle trips. The effectiveness of Mitigation Measure LRDP-AQ-2e, for example, would depend on the cooperation of visitors, employees, patients, and vendors visiting the plan area.

Mitigation Measure AS-AQ-2 is required to ensure NO<sub>x</sub> emissions resulting from operation of Aggie Square Phase I are reduced to a less-than-significant level. This measure prohibits emergency generating testing on weekdays, requiring the service be provided exclusively on Saturday or Sunday. While this action would not reduce the amount of daily NO<sub>x</sub> generated by the stationary sources, it would avoid the generation of those emissions on weekdays when vehicle activity (and thus mobile source emissions) is greatest. Table 3.2-4 presents daily operational emissions with implementation of Mitigation Measure AS-AQ-2. The table shows weekday emissions based on peak vehicle activity and no emergency generator testing. Weekend emissions are also shown, which is when emergency generating testing would be allowed. Weekend mobile source emissions were



estimated based on expected Saturday VMT and vehicle trips, based on information provided by Fehr & Peers (Manciati pers. comm.).

**Table 3.2-4. Estimated Mitigated Operational Daily Criteria Pollutants and Precursors for Aggie Square Phase I**

Time Period and Source	Maximum Daily Emissions (lb/day)			
	ROG	NO <sub>x</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>
<b>Weekday (M-F)</b>				
Mobile	26	51	79	21
Stationary <sup>a</sup>	0	0	0	0
Area, Energy, and Fugitive	36	1	<1	<1
Total <sup>b</sup>	62	52	79	22
<b>Weekend (Saturday)</b>				
Mobile	20	39	60	15
Stationary	1	18	1	1
Area, Energy, and Fugitive	36	1	<1	<1
Total <sup>a</sup>	57	58	61	17
SMAQMD Threshold <sup>c</sup>	65	65	80	82

Source: ICF modeling. Refer to Appendix D.

ROG = reactive organic gases; NO<sub>x</sub> = nitrogen oxides; PM = particulate matter; lb/day = pounds per day; M = Monday; F = Friday.

<sup>a</sup> Emergency generator testing prohibited on weekdays, per Mitigation Measure AS-AQ-2.

<sup>b</sup> Values may not add due to rounding.

<sup>c</sup> In developing these thresholds, SMAQMD considered levels at which project emissions are cumulatively considerable. Consequently, exceedances of project-specific thresholds would be cumulatively considerable.

As shown in Table 3.2-4, NO<sub>x</sub> emission resulting from operation of Aggie Square Phase I would not exceed SMAQMD thresholds with implementation of Mitigation Measure AS-AQ-2. Accordingly, this impact would be **less than significant with mitigation**.

#### **Mitigation Measure LRDP-AQ-2e: Reduce operational emissions of ROG, NO<sub>x</sub>, and PM**

Refer to Section 3.2 in Volume 1 of this Supplemental EIR.

#### **Mitigation Measure LRDP-TRA-1a: Monitor transit service on-time performance and implement strategies to minimize delays to transit service**

Refer to measure description under Impact LRDP-TRA-1 in Section 3.15, *Transportation and Circulation*, in Volume 1 of this Supplemental EIR.

#### **Mitigation Measure AS-AQ-2: Restrict emergency generator testing to Saturday or Sunday**

UC Davis will prohibit routine maintenance testing of Aggie Square Phase I emergency generators Monday through Friday. Testing of the emergency generators will only be allowed on Saturday or Sunday.

**Impact AS-AQ-3: Exposure of sensitive receptors to substantial pollutant concentrations**

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Construction and operational emissions from implementation of the 2020 LRDP Update, including the emissions from Aggie Square Phase I are included in Impact LRDP-AQ-3 in Volume 1 of this Supplemental EIR. That analysis concluded that with implementation of Mitigation Measures LRDP-AQ-2a through LRDP-AQ-2d, receptor exposure to overall plan-related construction emissions, including localized particulate matter, would be less than significant. However, receptor exposure to operational PM<sub>10</sub> emissions would be significant and unavoidable, as would health risks from construction toxic air contaminant (TAC) emissions. The following sections describe the emissions contributions of just Aggie Square Phase I and demonstrates that neither construction nor operation of Aggie Square Phase I would expose sensitive receptors to substantial pollutant concentrations or health risks with implementation of mitigation. Therefore, this impact would be **less than significant with mitigation**.

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***Regional Criteria Pollutants***

SMAQMD develops region-specific California Environmental Quality Act thresholds of significance in consideration of existing air quality concentrations and attainment or nonattainment designations under the NAAQS and CAAQS. Recognizing that air quality is a cumulative problem, SMAQMD typically considers projects that generate criteria pollutants and ozone precursor emissions that are below the thresholds to be minor in nature. Such projects would not adversely affect air quality or exceed the NAAQS or CAAQS. As described under Impact AS-AQ-2, neither construction nor operation of Aggie Square Phase I would generate criteria pollutants or precursors in excess of SMAQMD thresholds with mitigation.

Specifically, Mitigation Measures LRDP-AQ-2a through LRDP-AQ-2c are required to reduce emissions below SMAQMD's PM<sub>10</sub> threshold and ensure the project complies with SMAQMD's best management practices to control fugitive dust. Mitigation Measure AS-AQ-2 is required to ensure NO<sub>x</sub> emissions resulting from operation of Aggie Square Phase I are reduced to a less-than-significant level. Aggie Square Phase I also is subject to Mitigation Measures LRDP-AQ-2e and LRDP-TRA-1a. Mitigation Measure LRDP-AQ-2e would reduce NO<sub>x</sub> emissions by reducing vehicle trips, enhancing walkability and pedestrian network connectivity, and supporting low-emission and zero-emissions vehicles and equipment. Mitigation Measure LRDP-TRA-1a will also support vehicle emissions reductions by facilitating service improvements that are necessary to improve transit performance and reliability. However, UC Davis does not have jurisdiction over transit service or vehicle trips.

As such, Aggie Square Phase I would not contribute a significant level of emissions that would degrade regional air quality within the Sacramento Valley Air Basin. This impact would be **less than significant with mitigation**.

Table 3.2-13 in Section 3.2 in Volume 1 of this Supplemental EIR provides a conservative estimate of potential health effects associated with regional criteria pollutants generated by the 2020 LRDP Update, inclusive of construction and operational emissions associated with Aggie Square Phase I.

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

Refer to Section 3.2 in Volume 1 of this Supplemental EIR.

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

Refer to Section 3.2 in Volume 1 of this Supplemental EIR.

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

Refer to Section 3.2 in Volume 1 of this Supplemental EIR.

**Mitigation Measure LRDP-AQ-2e: Reduce operational PM10 emissions**

Refer to Section 3.2 in Volume 1 of this Supplemental EIR.

**Mitigation Measure LRDP-TRA-1a: Monitor transit service on-time performance and implement strategies to minimize delays to transit service**

Refer to Section 3.15 in Volume 1 of this Supplemental EIR.

**Mitigation Measure AS-AQ-2: Restrict emergency generator testing to Saturday or Sunday**

Refer to measure description under Impact AS-AQ-2.

***Localized Particulate Matter***

During earthmoving activities required for construction, localized fugitive dust would be generated. The amount of dust generated by a project is highly variable and dependent on the size of the disturbed area at any given time, the amount of activity, soil conditions, and meteorological conditions. Despite this variability in emissions, SMAQMD (2020) acknowledges that there are numerous control measures that can be reasonably implemented to significantly reduce construction fugitive dust emissions. Mitigation Measure LRDP-AQ-2a requires regular watering, covering of materials, and other practices that would reduce construction-related fugitive dust emissions by up to 75 percent, depending on the construction year and emissions source. Mitigation Measure LRDP-AQ-2b would also reduce exhaust-related particulate matter. With implementation of Mitigation Measures LRDP-AQ-2a and LRDP-AQ-2b, neither PM2.5 nor PM10 emissions would exceed SMAQMD's thresholds of significance (see Table 3.2-2). Accordingly, localized particulate matter emissions would be **less than significant with mitigation** and would not expose receptors to substantial pollutant concentrations or risks.

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

Refer to Section 3.2 in Volume 1 of this Supplemental EIR.

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

Refer to Section 3.2 in Volume 1 of this Supplemental EIR.

**Other Toxic Air Contaminants****Construction**

Construction of Aggie Square Phase I has the potential to create inhalation health risks at adjacent receptor locations from exposure to DPM. Construction would result in DPM emissions primarily from diesel-fueled off-road equipment and heavy-duty trucks. Table 3.2-5 prescribes the maximum estimated health risks at receptor locations within 1,000 feet of Aggie Square Phase I from exposure to construction-generated DPM. Receptors include existing recreational, residential, educational, and medical facilities, as shown in Figure 3.2-2 in Section 3.2 in Volume 1 of this Supplemental EIR. The new Rehabilitation Hospital is expected to be completed in 2022, and therefore could also be exposed to minor amounts of Aggie Square Phase I construction emissions in 2022 and 2023.<sup>3</sup> Both unmitigated risks and risks with implementation of Mitigation Measure LRDP-AQ-2b are presented in Table 3.2-5. Mitigation Measure LRDP-AQ-2b is required to reduce exhaust emissions from construction equipment, as described under Impact AS-AQ-2, and therefore would directly reduce associated health risks.

**Table 3.2-5. Estimated Maximum Cancer and Chronic Hazard Risks from Construction-Generated DPM for Aggie Square Phase I**

Receptor Type	Cancer Risk (per million)		HI (unitless)	
	Unmitigated	Mitigated (LRDP-AQ-2b)	Unmitigated	Mitigated (LRDP-AQ-2b)
<b>Existing</b>				
Recreational (Shriners playground)	5	<1	<1	<1
Recreational (all other)	2	<1	<1	<1
Residential	<u>17</u>	1	<1	<1
Medical	3	<1	<1	<1
Educational (Language Academy)	<u>33</u>	1	<1	<1
<b>New</b>				
Medical (Rehabilitation Hospital)	1	<1	<1	<1
SMAQMD Threshold	10	10	1.0	1.0

Source: ICF modeling. Refer to Appendix E.

Note: Underline results indicate an exceedance of SMAQMD's threshold.

HI = hazard index; AQ = air quality.

As shown in Table 3.2-5, construction activities could expose nearby residential receptors and students at the Language Academy of Sacramento to a significant increase in cancer risk. However, Mitigation Measure LRDP-AQ-2b would reduce DPM and corresponding health risks to less than significant. Accordingly, with implementation of Mitigation Measure LRDP-AQ-2b, this impact would be **less than significant with mitigation**. Aggie Square Phase I is also subject to Mitigation Measure LRDP-AQ-3a because Aggie Square Phase I is part of the 2020 LRDP Update, which was found to

<sup>3</sup> New Aggie Square Phase I receptors would not occupy the project site until after construction is complete. Likewise, onsite residential receptors in the LRDP plan area would not be constructed until after 2030. Accordingly, there would be no exposure from Aggie Square Phase I construction.

have significant and unavoidable construction health risks under Impact LRDP-AQ-3 in Volume 1 of this Supplemental EIR.

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

Refer to Section 3.2 in Volume 1 of this Supplemental EIR.

**Mitigation Measure LRDP-AQ-3a: Reduce receptor exposure to construction-generated diesel particulate matter**

Refer to Section 3.2 in Volume 1 of this Supplemental EIR.

Operation

Diesel-powered delivery trucks and onsite emergency generators would emit DPM once Aggie Square Phase I is operational in 2024. In addition, research chemicals used at the new 30,700-square-foot laboratory may emit ROG that could expose nearby sensitive receptors to increased cancer and non-cancer risks. Table 3.2-6 presets the maximum estimated health risks at existing and new receptor locations from exposure to operational TAC emissions.

**Table 3.2-6. Estimated Maximum Cancer and Hazard Risks from Operations-Generated TAC for Aggie Square Phase I**

Receptor Type	Cancer Risk (per million)	HI (unitless)	
		Acute	Chronic
<b>Existing</b>			
Recreational (Shriners playground)	1	<1	<1
Recreational (all other)	1	<1	<1
Residential	1	<1	<1
Medical	1	<1	<1
Educational (Language Academy)	1	<1	<1
<b>New</b>			
Recreational (Aggie Square Phase I)	1	<1	<1
Residential (Aggie Square Phase I)	2	<1	<1
Residential (onsite in Plan Area)	3	<1	<1
Medical (Rehabilitation Hospital)	1	<1	<1
SMAQMD Threshold	10	1.0	1.0

Source: ICF modeling. Refer to Appendix E.

Note: Underline results indicate an exceedance of SMAQMD's threshold.

HI = hazard index.

As shown in Table 3.2-6, operation of Aggie Square Phase I would not exceed SMAQMD's cancer and health hazard thresholds. This impact is **less than significant**.

Although this impact is less than significant, Aggie Square Phase I is still subject to Mitigation Measure LRDP-AQ-3b because Aggie Square Phase I is part of the 2020 LRDP Update, which was found to have less than significant with mitigation operational health risks under Impact LRDP-AQ-3 in Volume 1 of this Supplemental EIR. Mitigation Measure LRDP-AQ-3b requires emergency

generators maintained by Aggie Square Phase I to use renewable diesel. Because Aggie Square Phase I does not affect generator usage at the Central Energy Plant, the remaining provisions of Mitigation Measure LRDP-AQ-3b would not apply to the project.

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

Refer to Section 3.2 in Volume 1 of this Supplemental EIR.

## 3.3 Biological Resources

This section describes the regulatory and environmental setting for biological resources in the Aggie Square Phase I project area, analyzes effects on biological resources that would result from implementation of Aggie Square Phase I, and provides mitigation measures, if applicable, to reduce the effects of any potentially significant impacts.

### 3.3.1 Existing Conditions

#### Regulatory Setting

Regulations, laws, policies, and plans applicable to and/or considered for Aggie Square Phase I are provided in Section 3.3, *Biological Resources*, of Volume 1 of this Supplemental EIR. As the regulatory setting provided in Volume 1 considers potential development, including Aggie Square Phase I, within the entirety of the UC Davis Sacramento Campus as envisioned through the 2020 LRDP Update, no additional regulatory setting is provided for Aggie Square Phase I.

#### Environmental Setting

The environmental setting provided in Section 3.3, *Biological Resources*, in Volume 1 of this Supplemental EIR includes the Aggie Square Phase I project area. The methods and data reviewed are the same as those described in Volume 1. This section provides additional details relevant to biological resources in the Aggie Square Phase I project area.

#### Vegetation Communities and Land Cover Types

The Aggie Square Phase I project area includes urban landscaping/development and ruderal land cover types. This section focuses on additional details regarding trees within the urban landscaping/development land cover type. The eastern portion of the Aggie Square Phase I project area includes the campus major open space area, which is described in Section 3.3, *Biological Resources*, Volume 1 of this Supplemental EIR. The central campus open space area supports nine elderberry shrubs, which were planted during development of this open space area and were not part of the native vegetation in this area.

#### Urban Landscaping/Development

Approximately 230 planted trees are present in urban landscaping in the Aggie Square Phase I project area, including California native tree species such as valley oak (*Quercus lobata*), interior live oak (*Quercus wislizeni*), and coast redwood (*Sequoia sempervirens*). Non-native tree species include red gum (*Eucalyptus camaldulensis*), pine (*Pinus* sp.), red or scarlet oak (*Quercus* sp.), and horticultural species. Developed areas within the Aggie Square Phase I project area consist mostly of paved and unpaved parking lots and existing campus fleet services facility in the northwest and southeast portions of the project area.

#### Aquatic Resources and Sensitive Communities

The Aggie Square Phase I project area does not support any waters of the United States, waters of the state, or sensitive natural communities (e.g., streams, wetlands, riparian areas) that would fall

under the jurisdiction of federal or state resource agencies. Therefore, these sensitive resource categories will not be further addressed in this analysis.

## Special-Status Species

Special-status species are plants and animals included in the categories listed in Section 3.3, *Biological Resources*, in Volume 1 of this Supplemental EIR, and the same special-status species lists included in Volume 1 were reviewed for the Aggie Square Phase I project.

### Special-Status Plants

No special-status plant species are expected to occur in the Aggie Square Phase I project area given its developed and highly disturbed condition.

### Special-Status Wildlife

The list of special-status wildlife documented or with potential to occur within a 5-mile radius of the Aggie Square Phase I project area are included in Section 3.3, *Biological Resources*, in Volume 1 of this Supplemental EIR. Of the 15 species listed in Volume 1, the following species or groups of taxa have potential habitat in the Aggie Square Phase I project area.

- **Valley elderberry longhorn beetle.** As described in Volume 1, nine blue elderberry (*Sambucus Mexicana*) shrubs, the host plant for valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*), are located within the campus major open space area, which is adjacent to the Aggie Square Phase I site on the east (Figure 3.3-1). The nine elderberry shrubs in the plan area were planted during initial development of the open space area in compliance with a mitigation measure in the UCMDC 1989 LRDP EIR to mitigate for impacts on urban wildlife. Historic aerial imagery of the campus major open space area in 1993 depicts the habitat as grassland with a few scattered trees located adjacent to existing buildings. Presently, vegetation in the vicinity of the elderberry shrubs consists of a variety of planted native and non-native trees including, valley oak, interior live oak, cedar, pine, acacia, manzanita, and almond trees. This habitat is considered non-riparian.

Based on the USFW's 2017 *Framework for Assessing Impacts to the Valley Elderberry Longhorn Beetle*, occupancy of valley elderberry longhorn beetle within non-riparian habitats is assessed based on a several factors including, presence of exit holes, proximity to known occupied sites and riparian areas, and site locality in relation to historic riparian corridors. The presence of exit holes in a shrub increases the likelihood that the shrub is occupied by valley elderberry longhorn beetles; however, a lack of exit holes does not preclude occupancy (U.S. Fish and Wildlife Service 2017).

The nine elderberry shrubs present within the campus major open space area were surveyed for exit holes on March 3, 2020 by ICF wildlife biologist, Angela Alcalá. No exit holes were identified during this survey. Based on the lack of exit holes, additional information was assessed to determine likelihood of occupancy by valley elderberry longhorn beetle. The closest known occupied habitat is along the American River 1.9 miles northeast of the campus major open space area (CNDDDB occurrence 279: 2009) (California Department of Fish and Wildlife 2020). The closest riparian habitat is 1.9 miles to the northeast along the American River and 3.2 miles to the west along the Sacramento River. Land uses between the campus major open space area and these riparian corridors consists entirely of urban development with no contiguous habitat linking the open space area to suitable valley elderberry longhorn beetle habitat. As discussed



above, the elderberry shrubs present within the plan area are not remnants from an historic riparian corridor but were planted during development of the campus major open space area.

Studies indicate that the valley elderberry longhorn beetles are poor dispersers and require contiguous or nearly contiguous vegetated habitat to successfully disperse (Collinge et al. 2001). Because its physical dispersal capability is limited, this fragmentation decreases the likelihood of successful colonization of unoccupied habitat. This lack of dispersing capability and the large distance (i.e., 1.9 miles) between elderberry shrubs in the Aggie Square Phase I project area and the closest suitable riparian habitat make the potential of the species to disperse from the American River and to colonize the onsite elderberry shrubs extremely low. Therefore, valley elderberry longhorn beetles are not expected to occur in the Aggie Square Phase I project area.

- **Purple Martin.** As described in Volume 1, there is potential for purple martins (*Progne subis*) (state species of special concern) to nest within tree cavities, which could be present in the Aggie Square Phase I project area.
- **Swainson's hawk and white-tailed kite.** There is a low potential for Swainson's hawk (*Buteo swainsoni*) (state threatened species) or white-tailed kite (*Elanus leucurus*) (state fully protected species) to nest in the Aggie Square Phase I project area. Several large trees are present in the northwest portion of the project area and in the central campus open space area (Figure 3.3-1) that could support potential raptor nesting. Although raptors generally avoid nesting in urban areas, some birds have acclimated to human disturbances and may nest in less desirable areas to avoid competition with other territorial raptors for nesting sites.

### Wildlife Movement Corridors

The Aggie Square Phase I project area is largely developed and is surrounded by dense urban development. There are no streams or open contiguous habitat areas that link the project area to natural or developed areas that could support wildlife populations. Therefore, no established wildlife movement corridors exist within the Aggie Square Phase I project area.

Wildlife movement within the Aggie Square Phase I project area largely consists of migratory birds that could nest, forage, or take temporary refuge within trees. Within the project area, tree and shrub nesting birds that are acclimated to human disturbances could use landscape trees or trees within the central campus open space area for nesting.

## 3.3.2 Environmental Impacts

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

### Methods for Analysis

The analysis of potential impacts to biological resources resulting from construction and operation of the Aggie Square Phase I project is based on a comparison of baseline conditions, as described in *Environmental Setting*, to expected conditions during and after construction of the project. Evaluation of potential biological resource impacts is based on a review of existing species occurrence data and habitat requirements of species that could occur in the project area and

vicinity. Refer to Section 3.3, *Biological Resources*, in Volume 1 of this Supplemental EIR for a further discussion of methods for analysis and review of species lists databases.

## Thresholds of Significance

Refer to Section 3.3, *Biological Resources*, in Volume 1 of this Supplemental EIR for a discussion of applicable significance criteria.

## Issues not Evaluated Further

As discussed in Section 3.3.1, *Existing Conditions* under *Environmental Setting* in Volume 1, the special-status plants evaluation concludes that there is not suitable habitat for any special-status plants known to occur in the region surrounding the campus, and no special-status plant species are expected to occur in the Aggie Square Phase I project area because of its developed and highly disturbed condition. The discussion in Volume 1 additionally finds that no riparian or sensitive natural communities occur on the campus. Finally, the section finds that no waters of the United States or waters of the state are present on the campus. Because the campus, and, therefore, the project area, does not support any special-status plant habitat, riparian habitat, sensitive natural communities, or state- or federally protected wetlands, these resources are not addressed further in this analysis.

## Impacts and Mitigation Measures

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

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Activities associated with construction of the Aggie Square Phase I project could result in temporary construction disturbances associated with the development of existing parking areas adjacent to the campus major open space and permanent modification to the central campus open space that supports nine elderberry shrubs. These shrubs were evaluated during a field reconnaissance and, as described above, are not expected to be occupied by valley elderberry longhorn beetle. This impact would be **less than significant**.

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The construction of Aggie Square Phase I may result in the removal of one or more of the elderberry shrubs located within the project area. Elderberry shrubs are considered potential habitat for valley elderberry longhorn beetle; however, the elderberry shrubs in the project area are unlikely to be occupied by valley elderberry longhorn beetle because they were planted during development of the campus major open space area, are not part of a riparian zone, and are separated from known occurrences of valley elderberry longhorn beetle and suitable riparian habitat by dense urban development (see Figure 2-2). As discussed above, the location of these shrubs, in combination with the lack of exit holes indicate that valley elderberry longhorn beetle is not likely to be present within the project area and is not likely to colonize the project area in the future because the shrubs are located 1.9 miles from known occupied habitat or suitable riparian habitat (U.S. Fish and Wildlife Service 2017). Therefore, this impact would be **less than significant**.

### Mitigation Measures

No mitigation measures are necessary.

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

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Activities associated with construction of the Aggie Square Phase I project, such as ground disturbance, vegetation removal, construction equipment use, and general presence of active construction crews, could disturb nesting Swainson's hawks, white-tailed kites, and other nesting migratory birds and raptors. Construction-related disturbances that result in nest abandonment or failure, and mortality of chicks or eggs of migratory birds and raptors would violate the Migratory Bird Treaty Act (MBTA) and California Fish and Game Code Sections 3503, 3503.5 or 3511, and would be significant. Implementation of Mitigation Measure LRDP-BIO-2 would reduce this impact. Therefore, this impact would be **less than significant with mitigation**.

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The Aggie Square Phase I project area contains scattered trees, shrubs, and patchy ruderal grassland, adjacent to a heavily vegetated area in the campus major open space (Figure 3.3-1) that provides nesting opportunities for Swainson's hawk, white-tailed kite and other migratory birds and raptors. There are numerous nesting records for Swainson's hawk and several records for white-tailed kite along the Sacramento and American Rivers near the project area (California Department of Fish and Wildlife 2020). Swainson's hawks have also been reported to nest in urban areas within Sacramento, with the closest documented nest sites occurring 2 miles west of the project area within redwood trees in the backyard of a residence (California Department of Fish and Game Natural Diversity Database [CNDDB] occurrence 2675) and at John C. Fremont City Park (CNDDB occurrence 2216) (California Department of Fish and Wildlife 2020). If active migratory bird or raptor nests are present within or near areas proposed for construction as part of the Aggie Square Phase I project, construction activities could result in the removal of active nests or disturbance of nesting birds, potentially resulting in nest abandonment, nest failure, or mortality of chicks or eggs.

Ruderal grassland habitat in the southern part of the Aggie Square Phase I project area could also be used as foraging habitat for raptors and some migratory birds; however, these areas are limited (less than 0.2 acre total) and are heavy disturbed (e.g., use as parking areas and materials staging). Conversion of ruderal grasslands as part of the development for the Aggie Square Phase I project is not expected to substantially reduce foraging opportunities for migratory birds and raptors, including Swainson's hawk and white-tailed kite.

Loss or disturbance of actively nesting migratory birds and raptors, including Swainson's hawk and white-tailed kite, is considered potentially significant. Implementation of Mitigation Measure LRDP-BIO-2 would reduce this impact to a less-than-significant level and therefore the impact would be **less than significant with mitigation**.

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

Refer to Section 3.3 in Volume 1 of this Supplemental EIR.

**Impact AS-BIO-3: Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance**

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Construction of the Aggie Square Phase I project could result in the removal of heritage or specimen trees, although none were noted during the reconnaissance survey in March 2020. As a constitutionally created State entity, the University is not subject to municipal regulations, including the City of Sacramento policies and ordinances. However, the UC Davis main campus in Davis has tree protection standards, and if construction of Aggie Square Phase I would result in removal of heritage or specimen trees, this impact would be significant. No heritage or specimen trees were observed and Mitigation Measures LRDP-BIO-5a and LRDP-BIO-5b would ensure that heritage or specimen trees are protected. This impact would be **less than significant with mitigation**.

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Trees in the Aggie Square Phase I project area that meet the City of Sacramento standard for protected trees were planted as part of landscaping in and around the existing parking lot. The campus is not subject to the City's tree preservation ordinance, which requires a permit and compensation for loss of City Trees and Private Protected Trees due to construction activities. The UC Davis main campus recognizes two categories of on-campus trees that meet standards for important trees, including heritage trees and specimen trees. Based on the tree sizes and species for heritage trees (i.e., healthy valley oak trees with trunk diameters of 33 inches or greater at a height of 24 inches from the ground), no trees observed on the Aggie Square Phase I project site meet the UC Davis criteria for protected trees.

Up to 230 trees could be removed for construction of the Aggie Square Phase I project and approximately 120 trees would be planted as part of the project. The University avoids native trees whenever practical and, if removal is required, includes the planting of native trees in landscaping plans. One of the native oak trees within the Aggie Square Phase I site could potentially be avoided by project design and construction.

Because these trees are all located in an urbanized area, the habitat in which the trees are located is not sensitive or critical as wildlife habitat and the timespan for replacement of the protected trees as wildlife habitat would not be significant. Implementation of Mitigation Measures LRDP-BIO-5a and LRDP-BIO-5b would ensure that no heritage trees or specimen trees would be removed and would ensure this impact is **less than significant with mitigation**.

**Mitigation Measure LRDP-BIO-5a: Avoid removal of protected trees**

Refer to Section 3.3 in Volume 1 of this Supplemental EIR.

**Mitigation Measure LRDP-BIO-5b: Compensate for unavoidable loss of protected trees**

Refer to Section 3.3 in Volume 1 of this Supplemental EIR.

**Impact AS-BIO-4: Conflict with the provisions of an adopted habitat conservation plan, natural community conservation plan, or other approved local, regional, or state habitat conservation plan**

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No adopted or approved habitat conservation plans or natural community conservation plans regulate the proposed construction activities in the Aggie Square Phase I project area. Therefore, there would be **no impact**.

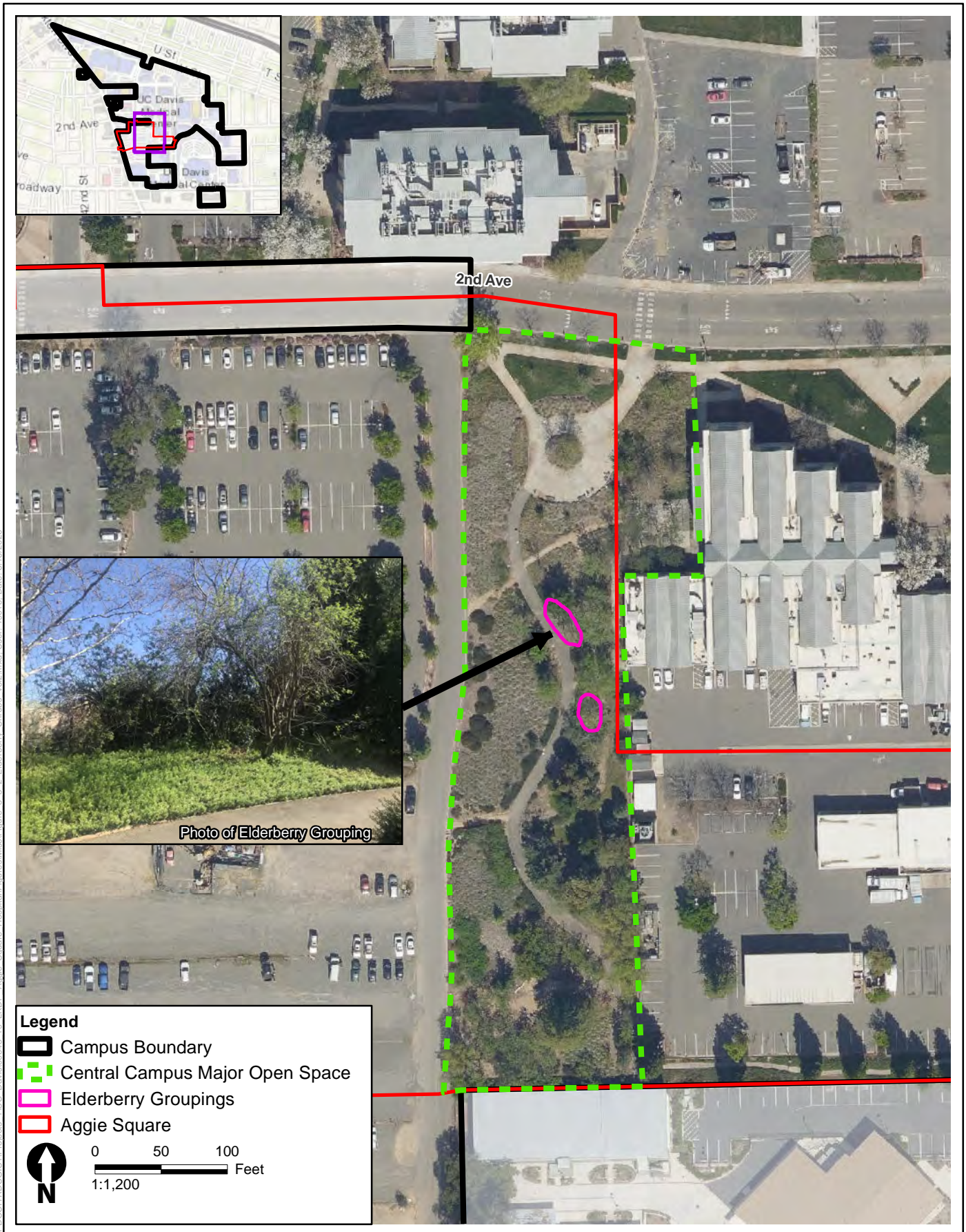
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No adopted or approved habitat conservation plans or natural community conservation plans regulate the proposed construction activities in the Aggie Square Phase I project area. Therefore, the Aggie Square Phase I project would not conflict with a Habitat Conservation Plan or Natural Community Conservation Plan. There would be **no impact**.

**Mitigation Measures**

No mitigation measures are necessary.





**Figure 3.3-1**  
**Elderberry Shrubs within the Central Campus Open Space**

## 3.4 Archaeological, Historical, and Tribal Cultural Resources

This section describes the regulatory and environmental setting for archaeological, historical, and tribal cultural resources in the Aggie Square Phase I project area, analyzes effects on archaeological, historical, and tribal cultural resources that would result from implementation of Aggie Square Phase I, and provides mitigation measures to reduce the effects of any significant impacts, if applicable.

### 3.4.1 Existing Conditions

#### Regulatory Setting

Regulations, laws, policies, and plans applicable to and/or considered for Aggie Square Phase I are provided in Volume 1 of this Supplemental EIR. As the regulatory setting provided in Volume 1 considers potential development, including Aggie Square Phase I, within the entirety of the UC Davis Sacramento Campus as envisioned through the 2020 LRDP Update, no additional regulatory setting is provided for Aggie Square Phase I.

#### Environmental Setting

The environmental setting provided in Section 3.4, *Archaeological, Historical, and Tribal Cultural Resources*, in Volume 1 of this Supplemental EIR includes the Aggie Square Phase I project area. The methods and data reviewed are the same as those described in Volume 1.

#### Known Cultural Resources

##### Archaeological Resources

On April 14, 2020, a records search was conducted at the California Historic Resources Information System North Central Information Center located at California State University, Sacramento. The records search included previous cultural resources studies conducted within the Sacramento Campus plan area, as well as previously recorded cultural resources in the plan area. On April 6, 2020, a request was sent to the Native American Heritage Commission for a search of their Sacred Lands database. No response has been received to date. A records search showed that there were no known recorded archaeological resources associated with the Sacramento Campus site and the potential for Native American sites, including Native American burial sites, is low.

##### Built Environment Resources

According to the records search conducted for the 2020 LRDP Update, no historic resources have been identified within the Aggie Square Phase I project site, and there are no historical resources present in the immediate vicinity of the project site.

Two buildings located just south of the Aggie Square Phase I site, the Governor's Hall and Exhibition Hall, are currently 50 years of age or older and have not been formally evaluated to determine their status as a CEQA historical resources. However, it is understood that both buildings are important in

local history and of interest to the preservation community. Therefore, for the purposes of this project, it is assumed that the Governor's Hall and the Exhibition Hall are eligible for listing in the CRHR and the NRHP at a local level. Therefore, the Governor's Hall and the Exhibition Hall are assumed to be historically significant and historic properties. A field visit was conducted as part of the evaluation for this Supplemental EIR on March 14, 2020. There have been no perceptible external changes to the buildings.

### **Tribal Cultural Resources**

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

Impacts on tribal cultural resources are assessed based on the results of consultations conducted pursuant to the AB 52 process. UC Davis has not received a request for notification of projects in Sacramento County from any of the local tribes. Accordingly, UC Davis is not required to issue invitations to consult under AB 52 and no AB 52 consultations with any tribe have occurred.

## **3.4.2 Environmental Impacts**

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

### **Methods for Analysis**

On April 14, 2020, a records search was conducted at the California Historic Resources Information System North Central Information Center located at California State University, Sacramento. The records search included previous cultural resources studies conducted within the project area as well as previously recorded cultural resources within the project area. The records search did not identify any historic resources on the Sacramento Campus. An architectural historian conducted map research to document construction dates of buildings within the Aggie Square Phase I project area. No buildings within the project area are potentially historic, but one structure located adjacent to the project area, the Institute for Regenerative Care (the former Exhibition Hall) is more than 50 years old and is assumed to meet the criteria for listing on state and federal registers (see discussion



in Volume 1). On April 6, 2020, a request was sent to the Native American Heritage Commission for a search of their Sacred Lands database. No response has been received to date.

## Thresholds of Significance

Refer to Section 3.4 in Volume 1 of this Supplemental EIR for a discussion of applicable significance criteria.

## Impacts and Mitigation Measures

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

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According to the records search conducted for the 2020 LRDP Update, no historic resources have been identified within the Aggie Square Phase I project site. There are two historical resources present in the immediate vicinity of the project site, however, the development of Aggie Square would not adversely affect the setting of these resources. Therefore, the impact would be **less than significant**.

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According to the records search conducted for the 2020 LRDP Update, no historic resources have been identified within the Aggie Square Phase I project site. There are two historical resources, the Governor's Hall and the Institute for Regenerative Care (the Exhibition Hall), present in the immediate vicinity of the project site. The development of Aggie Square would affect the setting of the of both these resources, as it would be visible adjacent to the historic Exhibition Hall and visible behind Governor's Hall from Broadway. However, the setting of the Governor's Hall and the Exhibition Hall has already been altered by development since the buildings' period of significance. Therefore, this further development would not adversely affect the setting or significance of the Governor's Hall or the Exhibition Hall. Therefore, the project would not cause a substantial adverse change or indirect effect in the significance of a historical resource as defined in Section 15064.5. The impact would be **less than significant**.

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

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Although no cultural resources have been identified within the Aggie Square Phase I project area, ground disturbance associated with the project could result in disturbances to unidentified buried archaeological resources, which would be a significant impact. Implementation of Mitigation measures LRDP-CUL-2a and LRDP-CUL-2b would ensure that impacts on unknown archaeological resources are avoided. Therefore, this impact would be **less than significant with mitigation**.

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Although no cultural resources have been identified within the Aggie Square Phase I project area, ground disturbance associated with the project could result in disturbances to unidentified buried archaeological resources. Because implementation of the proposed project could cause a substantial adverse change in the significance of an unidentified archaeological resource, this impact would be potentially significant. Implementation of Mitigation measures LRDP-CUL-2a and LRDP-CUL-2b would ensure this impact would be **less than significant with mitigation**.

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

Refer to Section 3.4 in Volume 1 of this Supplemental EIR.

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

Refer to Section 3.4 in Volume 1 of this Supplemental EIR.

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

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There is potential for human remains to be unearthed during project-related ground-disturbing activities. Therefore, this impact would be significant. Implementation of LRDP-CUL-3b would ensure that impacts on human remains would be avoided. Therefore, this impact would be **less than significant with mitigation**.

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It is possible that historic human remains would be encountered during ground-disturbing activities during construction. The most sensitive area is in the northern portion of the campus where a burial ground associated with the Sacramento County Hospital was located; however, the Aggie Square Phase I site is on the west side of campus more than a 0.25 mile away from the burial ground. Both the LSTE West and LSTE East buildings would have a basement level that would require excavation. Because there is the possibility that human remains could be encountered during ground disturbance, this impact would be potentially significant. Implementation of Mitigation Measure LRDP-CUL-3b would ensure that impacts on unknown archaeological resources, including human remains, are avoided and would reduce this impact to a less-than-significant level. Therefore, this impact would be **less than significant with mitigation**.

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

Refer to Section 3.4 in Volume 1 of this Supplemental EIR.

**Impact AS-TCR-1: Potential to cause a substantial adverse change in the significance of a tribal cultural resource with cultural value to a California Native American tribe and that is listed or eligible for listing in the California Register of Historical Resources or in a local register of historical resources as defined in Public Resources Code Section 5020.1(k)**

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UC Davis has not received any requests from tribes culturally or traditionally affiliated with the project area in Sacramento County to be notified of opportunities to consult on new projects under Assembly Bill (AB) 52. Therefore, there would be **no impact**.

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As discussed in the environmental setting section in Section 3.4 in Volume 1, no local tribes have requested notification for projects in Sacramento County, and no known tribal resources are located on the Sacramento Campus.

Because UC Davis has not received requests from tribes culturally or traditionally affiliated with the project area in Sacramento County to be notified of opportunities to consult on new projects under AB 52, UC Davis is not required to take further action under AB 52 and there would be **no impact**.

**Mitigation Measures**

No mitigation measures are necessary.

If tribal cultural resources are identified during project implementation, compliance with PRC Section 21080.3.2 and Section 21084.3(a) would be required.

**Impact AS-TCR-2: Potential to cause a substantial adverse change in the significance of a tribal cultural resource with cultural value to a California Native American tribe and that is a resource determined by the lead agency to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1**

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UC Davis has not received any requests from tribes culturally or traditionally affiliated with the project area in Sacramento County to be notified of opportunities to consult on new projects under AB 52. Therefore, there would be **no impact**.

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Because UC Davis has not received requests from tribes culturally or traditionally affiliated with the plan area in Sacramento County to be notified of opportunities to consult on new projects under AB 52, UC Davis is not required to take further action under AB 52, and there would be **no impact**.

**Mitigation Measures**

No mitigation measures are necessary.

If tribal cultural resources are identified during project implementation, compliance with PRC Section 21080.3.2 and Section 21084.3(a) would be required.

## 3.5 Energy

This section describes the regulatory and environmental setting for energy in the Aggie Square Phase I project area, analyzes effects on energy that would result from implementation of Aggie Square Phase I, and provides mitigation measures, if applicable, to reduce the effects of any potentially significant impacts.

### 3.5.1 Existing Conditions

#### Regulatory Setting

Regulations, laws, policies, and plans applicable to and/or considered for Aggie Square Phase I are provided in Volume 1 of this Supplemental EIR. As the regulatory setting provided in Volume 1 considers potential development, including Aggie Square Phase I, within the entirety of the UC Davis Sacramento Campus as envisioned through the 2020 LRDP Update, no additional regulatory setting is provided for Aggie Square Phase I.

#### Environmental Setting

This section discusses the environmental setting relevant to energy in the Aggie Square Phase I project area.

The Sacramento Campus currently operates a Central Cogeneration Plant (Central Energy Plant) that provides electricity to the campus. The Central Energy Plant provides normal and emergency electrical power, chilled and hot water for cooling and heating, and process steam to most campus buildings.

The Sacramento Campus peak cooling load in 2019 (baseline) was estimated to be 9,500 tons of refrigeration, and is projected to grow to 12,100 tons by 2030. The campus peak heating load in 2019 was estimated to be 50,000 British thermal units per hour (MBH) and projected to grow to 82,500 MBH by 2030. The Sacramento Campus peak electric power load in 2019 was 17.2 megawatts (MW) and is projected to grow up to 19.4 MW by 2030. The current peak emergency power load is 7.7 MW and projected to grow up to 9.3 MW by 2030 (Affiliated Engineers, Inc. 2019).

Currently, the Aggie Square Phase I project site consists of a surface parking lot, where no energy is used, and the campus fleet maintenance building, which is served by the Central Energy Plant and is included in the peak loads described above.

#### Energy Use and Global Warming

Scientists and climatologists have produced evidence that the burning of fossil fuels by vehicles, power plants, industrial facilities, residences, and commercial facilities has led to an increase in the earth's temperature. For an analysis of GHG production and proposed 2020 LRDP Update impacts on climate change, please see Section 3.7, *Greenhouse Gas Emissions*.

## 3.5.2 Environmental Impacts

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

### Methods for Analysis

Refer to Section 3.5, *Energy*, in Volume 1 of this Supplemental EIR for a discussion of the methodology used in the impacts analysis section below.

### Thresholds of Significance

Refer to Section 3.5, *Energy*, in Volume 1 of this Supplemental EIR for a discussion of applicable significance criteria.

### Impacts and Mitigation Measures

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

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Energy consumption would occur through construction, building operation, and related transportation associated with Aggie Square Phase I. UC Davis has incorporated a wide variety of energy efficient design measures to reduce wasteful, inefficient, or unnecessary energy use. In addition, Mitigation Measures LRDP-TRA-1a and LRDP-GHG-2 include project-specific measures to further reduce energy consumption associated with Aggie Square Phase I. This impact would be **less than significant with mitigation**.

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

#### ***Construction-Related Energy***

Energy would be required to implement Aggie Square Phase I, including operation and maintenance of construction equipment and transportation of construction materials. The energy expenditure required to construct the buildings and infrastructure associated with Aggie Square Phase I would be nonrecoverable. Most energy consumption would result from operation of off-road construction equipment and on-road vehicle trips associated with commutes by construction workers and haul truck trips. Total project construction generated carbon dioxide (CO<sub>2</sub>) exhaust emissions are 8,739 metric tons. Per the Climate Registry, 22.5 pounds of CO<sub>2</sub> are emitted per gallon of diesel combusted

(Climate Registry 2019). Some of the emissions would be generated by gasoline vehicles (e.g., emissions from construction worker commute vehicles). More CO<sub>2</sub> is emitted per gallon of gasoline combusted. Assuming all emissions are generated by diesel vehicles, approximately 860,000 gallons of diesel would be consumed during construction of Aggie Square Phase I, which would result in the emission of approximately 17.3 metric tons of CO<sub>2</sub> (0.002 percent of that emitted in the state). In addition to liquid fuel, construction would consume approximately 18,000 megawatt hours (MWh) of electricity.

As stated in Volume 1, there are no unusual project characteristics that would necessitate the use of construction equipment that would be less energy efficient than the equipment used at comparable construction sites in other parts of the state. Idling of on-site equipment during construction would be limited to no more than 5 minutes in accordance with California Code of Regulations, Title 13, Sections 2449(d)(3) and 2485. Further, on-site construction equipment may include alternatively fueled vehicles (such as natural gas) where feasible. Finally, the selected construction contractors would use the best available engineering techniques, construction and design practices, and equipment operating procedures, thereby ensuring that the wasteful consumption of fuels and use of energy would not occur. Therefore, this impact would be **less than significant**.

### ***Operational Building Energy and Stationary Sources***

Refer to Section 3.5.2, *Energy Impact LRDP-EN-1*, in Volume 1 of this Supplemental EIR for a discussion of operational building energy and stationary sources impacts analysis. Also refer to Table 3.5-1 in Section 3.5.2 in Volume I, which summarizes the levels of energy consumption by utility under existing conditions and implementation conditions of the 2020 LRDP Update, which include Aggie Square Phase I.

Aggie Square Phase I operational fuel consumption is estimated to be as follows.

- Mobile sources: 1,452,624 gallons of diesel/gasoline per year
- Energy sources:
  - Natural gas: 2.4 million kiloBTUs (kBtu) per year
  - Electricity: 27,500 MWh per year
- Stationary sources: About 1 gallon of diesel per year

The Aggie Square Phase I buildings would be all-electric, including residential kitchens. Commercial kitchens could use natural gas. Aggie Square Phase I would not be connected to the existing Central Energy Plant, and instead would have dedicated Sacramento Municipal Utility District (SMUD) transformers and dedicated emergency power systems. To maximize energy efficiency and achieve sustainability goals, a new central plant would be constructed to serve Aggie Square Phase I and would be located next to the loading area of LSTE East. The central plant would include: a single energy system for the entire site; electric boilers, cooling towers, and chillers for heating and cooling; plumbing systems including heat recovery and thermal energy storage tanks for hot and cold water; and electrical systems that may incorporate sustainable design such as bio-fuel generators and use of photovoltaic systems.

Aggie Square Phase I is committed to achieving a baseline of U.S. Green Building Council Leadership in Energy and Environmental Design (LEED) Silver certification, and will strive toward achieving LEED Gold certification where possible. The baseline design for all buildings will exceed State of

California energy efficiency standards by at least 20 percent. Building design includes installing additional on-site renewable electricity supplies. Building design includes the goals of obtaining 100 percent clean electricity. Energy efficient features of Aggie Square Phase I include but are not limited to the following:

- Optimizing site design/building façade to reduce energy consumption and maximize natural ventilation and cooling
- Water saving measures such as high efficiency toilets/waterless type urinals
- Energy saving measures including energy-efficient recirculation air fans and air systems and heat recovery systems
- Energy Star Class A roofing
- Designing building façades to optimize daylight heat/glare control, fixed shading systems, and energy efficient insulation, windows, and glazing
- Potential use of greywater reuse, rainwater collection on rooftops, and thermal energy storage

Additionally, per UC Davis' goals, buildings would be designed, constructed, and commissioned to outperform California Building Code energy-efficiency standards by at least 20 percent or to meet whole-building energy performance targets specified in the Basis of Design report<sup>1</sup> and plans for Aggie Square Phase I (University of California, Davis 2020). Building designs/plans would also integrate the goals of obtaining 100 percent clean electricity. UC Davis is also committed to utilizing electricity from the SMUD Greenergy Program.

### ***Operational Transportation Energy***

Operational fuel consumption with implementation of Aggie Square Phase I is estimated to be approximately 1,452,000 gallons of diesel/gasoline, and 2.4 million kBtu of natural gas per year. Aggie Square Phase I would result in additional vehicle travel generated by new users and residents. However, as described in Section 3.15, *Transportation, Traffic, and Parking*, the Sacramento Campus is a low VMT-generating area of the Sacramento region with access to mass transit and multiple travel options. New residents associated with Aggie Square Phase I would not add to VMT associated with commutes because they will live and work on campus. Aggie Square Phase I would further add to the campus' existing mix of medical, education, and employment uses, as well as increase complementary land uses, which would increase internal trip capture and reduce VMT generation. Trips generated by operation of Aggie Square Phase I would not be considered inefficient, wasteful, and unnecessary. Furthermore, per the UC Davis Sustainability Policy, by 2025, 50 percent of all new light-duty vehicle acquisitions will be zero emission or hybrid vehicles.

### ***Summary***

Construction-related energy demand would result from operation of off-road construction equipment and on-road vehicle trips associated with commutes by construction workers and haul truck trips. Operational-related energy demand would result from building energy use and increases in vehicular traffic. Aggie Square Phase I would comply with the most current energy-efficient standard (i.e., CCR Title 24 Energy Efficiency Standards). Additionally, Aggie Square Phase I is

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<sup>1</sup> ASHRAE defines the Basis of Design report as "a document that records the major thought processes and assumptions behind design decisions made to meet the owner's project requirements."

committed to achieving a baseline of LEED Silver certification and will strive toward LEED Gold certification and UC Sustainable Practice Policy Green Building targets. These certifications and targets are designed to reduce waste and increase building energy efficiency.

As the Sacramento Campus has continued to implement energy efficiency measures over the past several years, total campus energy use has decreased, and this trend would be anticipated to continue with Aggie Square Phase I. The incorporation of design features consistent with those mentioned above and in combination with State energy efficiency requirements would reduce overall energy use. For the reasons explained above, energy consumption from the project through construction, building operation, and transportation would not be considered wasteful, inefficient, or unnecessary. Although the project is not anticipated to result in a substantial use of energy, there would be construction and operational-related energy demand that would result from building energy use and increases in vehicular traffic. With implementation of mitigation measures LRDP-GHG-2 and LRDP-TRA-1a, which would reduce operational transportation energy, this impact would be **less than significant with mitigation**.

**Mitigation Measure LRDP-GHG-2: Implement verifiable actions or activities or purchase the equivalent GHG credits from a CARB-approved registry or a locally approved equivalent program to reduce GHG emissions generated by the Sacramento Campus**

Refer to Section 3.7, *Greenhouse Gases*, in Volume 1 of this Supplemental EIR.

**Mitigation Measure LRDP-TRA-1a: Monitor transit service performance and implement strategies to minimize delays to transit service**

Refer to Section 3.15, *Transportation and Circulation*, in Volume 1 of this Supplemental EIR.

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

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Aggie Square Phase I would exceed CCR Title 24 Building Energy Efficiency Standards, and federal and state regulations including the Low Carbon Fuel Standard, Clean Car Standards, and Low Emission Vehicle Program by attainment of LEED Silver standards, continued implementation of the UC Sustainable Practices Policy and UC Davis CAP; therefore, this impact would be **less than significant**.

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Refer to Section 3.5.2, *Energy*, Impact LRDP-EN-2, in Volume 1 of this Supplemental EIR for a discussion of energy efficiency consistent with applicable plans, policies, and regulations adopted for the purpose of avoiding or mitigating environmental effects related to energy. Aggie Square Phase I would exceed CCR Title 24 Building Energy Efficiency Standards to reduce energy use, is committed to achieving a baseline of LEED Silver and will strive toward LEED Gold certification, and will meet UC Sustainable Practices Policy goals. In addition, adherence to the increasingly stringent vehicle efficiency standards (i.e., the Low Carbon Fuel Standard, Clean Car Standards, and Low Emission Vehicle Program) as well as Aggie Square Phase I design features (e.g., window shading, generous canopies and outdoor pedestrian spaces, solar heated domestic water, graywater harvesting, rainwater and condensate recovery, high-performance building skins, use of green plugs, siting buildings to maximize shade, and bio-fuel generators, passive ventilation, heat recovery, etc.) consistent with UC Carbon Neutrality goals would reduce energy consumption to be consistent with applicable plans, policies, and regulations for renewable energy or energy efficiency. Section 3.5,



*Greenhouse Gases*, further describes energy efficient measures that will be applied to the Aggie Square Phase I project. The energy efficient design of Aggie Square Phase I would preemptively reduce energy use during peak hours. Furthermore, the majority of the buildings would close after business hours, and would be largely closed on the weekends, which would further reduce energy use, compared to other buildings on campus such as the Main hospital. Therefore, this impact would be **less than significant**.

### **Mitigation Measures**

No mitigation measures are necessary.

## 3.6 Geology, Soils, and Seismicity

This section describes the regulatory and environmental setting for geology, soils, and seismicity in the Aggie Square Phase I project area, analyzes effects on geology, soils, and seismicity that would result from implementation of Aggie Square Phase I, and provides mitigation measures to reduce the effects of any potentially significant impacts, if applicable.

### 3.6.1 Existing Conditions

#### Regulatory Setting

Regulations, laws, policies, and plans applicable to and/or considered for Aggie Square Phase I are provided in Volume 1 of this Supplemental EIR and in Section 4.5.3, *Regulatory Setting*, of the 2010 LRDP Final EIR. As the regulatory setting provided in Volume 1 consider potential development, including Aggie Square Phase I, within the entirety of the UC Davis Sacramento Campus as envisioned through the 2020 LRDP Update, no additional regulatory setting information is provided for Aggie Square Phase I.

#### Environmental Setting

The environmental setting section from the 2010 LRDP Final EIR (Section 4.5.2, *Environmental Setting*), which is still applicable to the 2020 LRDP Update, describes the environmental setting for Aggie Square Phase I.

### 3.6.2 Environmental Impacts

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

#### Methods for Analysis

To evaluate project impacts, resource conditions that could pose a risk to the 2020 LRDP Update were identified through review of documents pertaining to these topics within the project area. Sources consulted include U.S. Geological Survey (USGS) and California Geological Survey (CGS) technical maps and guides; the Natural Resources Conservation Service (NRCS) Soil Survey (available through the Soil Survey Geographic Database [SSURGO]); previous environmental impact reports; background reports prepared for nearby plans and projects; and published geologic literature. The information obtained from these sources was reviewed and summarized to establish existing conditions as described in Volume 1 of this Supplemental EIR and in Section 4.5.2 of the 2010 LRDP Final EIR, and to identify potential environmental hazards. In determining level of significance, the analysis assumes that Aggie Square Phase I would comply with relevant laws, regulations, and guidelines.

## Thresholds of Significance

Refer to Section 3.6, *Geology, Soils, and Seismicity*, in Volume 1 of this Supplemental EIR for a discussion of applicable significance criteria.

## Issues Not Evaluated Further

The 2010 LRDP Final EIR concluded that further analysis of the following issues was not required in the EIR; therefore, these issues are not discussed further.

- Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:
  - Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area, or based on other substantial evidence of a known fault (refer to CGS Special Publication 42 [California Geological Survey 2018]);
  - Strong seismic ground shaking; or
  - Landslides.
- Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in onsite or offsite landslide, lateral spreading, subsidence, liquefaction, or collapse.
- Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater.
- Directly or indirectly destroy a unique paleontological resource or site or unique geological feature.

## Impacts and Mitigation Measures

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

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The Aggie Square Phase I project site is located in an area potentially subject to liquefaction, which could involve structural damage and associated risk. Geotechnical investigations would be necessary to reduce these risks, and therefore this impact is considered significant. Implementation of Mitigation Measure LRDP-GEO-1 would ensure this impact would be **less than significant with mitigation**.

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

The potential for liquefaction exists at the Sacramento Campus for future development, including development of Aggie Square Phase I; therefore, existing Mitigation Measure LRDP-GEO-1 would be applicable to Aggie Square Phase I and is shown below. With implementation of Mitigation Measure LRDP-GEO-1, which would require the recommended geotechnical investigations, impacts related to liquefaction would be reduced to less than significant. This impact would be **less than significant with mitigation**.

#### **Mitigation Measure LRDP-GEO-1: Conduct Geotechnical Investigation**

Refer to Section 3.6 in Volume 1 of this Supplemental EIR.

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

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Construction of the Aggie Square Phase I project would involve clearing and grading at the project site and trenching in areas where utility infrastructure would be laid. The Aggie Square Phase I project would be required to comply with National Pollutant Discharge Elimination System (NPDES) permit requirements and would be subject to a Stormwater Pollution Prevention Plan (SWPPP). Therefore, this impact would be **less than significant with mitigation**.

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As discussed in Volume 1 of this document, the Sacramento Campus is extensively developed and has a long history of urban development and use. The topsoil in the project site has already either been removed or extensively altered in conjunction with previous development, including the existing parking lot and campus fleet services facility. Therefore, the Aggie Square Phase I project would not result in a significant loss of topsoil and therefore, this impact would be **less than significant**.

The Aggie Square Phase I project would be subject to a SWPPP, NPDES permit compliance, geotechnical investigation, and adherence to any resulting geotechnical investigation recommendations. Mitigation Measure LRDP-GEO-1 would reduce impacts related to soil erosion and therefore, the impact would be **less than significant with mitigation**.

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

#### **Mitigation Measure LRDP-GEO-1: Conduct Geotechnical Investigation**

Refer to Section 3.6 in Volume 1 of this Supplemental EIR.

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

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

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Volume 1 of this Supplemental EIR identified that soils underlying the campus are characterized as moderately expansive; there would be some potential for damage to improperly designed or

constructed structures and facilities. However, with adherence to the California Building Code (CBC) as required by the University of California for all new construction, risks associated with expansive soils would be addressed consistent with the current engineering standard of care, and the impact would be **less than significant**.

### **Mitigation Measures**

No mitigation measures are necessary.

## 3.7 Greenhouse Gas Emissions

This section describes the regulatory and environmental setting for greenhouse gas (GHG) emissions in the Aggie Square Phase I project area, analyzes effects on GHG emissions that would result from implementation of Aggie Square Phase I, and provides mitigation measures to reduce the effects of any potentially significant impacts, if applicable.

### 3.7.1 Existing Conditions

#### Regulatory Setting

Regulations, laws, policies, and plans applicable to and/or considered for Aggie Square Phase I are provided in Volume 1 of this Supplemental EIR. As the regulatory setting provided in Volume 1 considers potential development, including Aggie Square Phase I, within the entirety of the UC Davis Sacramento Campus as envisioned through the 2020 LRDP Update, no additional regulatory setting is provided for Aggie Square Phase I.

#### Environmental Setting

Refer to Section 3.7, *Greenhouse Gas Emissions*, Section 3.7.1, *Existing Conditions*, in Volume 1 of this Supplemental EIR for a discussion of the regional environmental setting for the UC Davis Sacramento Campus, including the Aggie Square Phase I project area. Due to the global nature of climate change, the Aggie Square Phase I is similarly affected by climate change as for the entire campus.

### 3.7.2 Environmental Impacts

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

#### Methods for Analysis

##### Construction Emissions

Construction GHG emissions would originate from off-road equipment exhaust, vehicle exhaust (on-road vehicles), and electricity consumption. Emissions from off-road equipment and on-road vehicles were quantified using the CalEEMod model (version 2016.3.2) and the methods described in Section 3.2, *Air Quality*. GHG emissions generated by electricity used to power onsite contractor trailers were quantified using activity data (e.g., megawatt hours) provided by UC Davis (Dulcich pers. comm. [a]) and emission factors from the Sacramento Metropolitan Air Quality Management District (SMAQMD) and the U.S. Environmental Protection Agency (EPA) (Ramboll 2020; U.S.

Environmental Protection Agency 2020). The utility emission factors were adjusted to account for implementation of Senate Bill (SB) 100.<sup>1</sup>

## Operational Emissions

### Aggie Square Phase I

Operation of Aggie Square Phase I would generate GHG emissions from mobile sources (e.g., vehicle trips), area sources (e.g., landscaping equipment), solid waste generation, water and wastewater use, vegetation changes, stationary sources (e.g., emergency diesel generators), and fugitive sources (e.g., chillers). GHG emissions generated by these sources were calculated using a variety of models and reports, as described below.

As discussed in Chapter 3.2, *Air Quality*, Fehr & Peers provided the forecasted trips and vehicle miles traveled (VMT) for land uses in the 2020 LRDP Update plan area, including Aggie Square Phase I (Hananouchi pers. comm.). The California Air Resources Board's (CARB's) EMFAC2017 model was used to obtain emission factors based on aggregated-speed emission rates for all vehicle types operating in Sacramento County in 2024, which is the first operational year for the project. CARB's SAFE Vehicles Rule adjustment factors were applied to the emission factors for gasoline-powered vehicles (California Air Resources Board 2020). The resulting GHG emissions were quantified by multiplying the EMFAC2017 model emission factors by the trip and VMT inventory provided by Fehr & Peers.

CalEEMod was used to estimate emissions from landscaping equipment, solid waste generation, water and wastewater use, natural gas consumption (commercial cooking only), and vegetation changes. UC Davis provided the anticipated water and wastewater use for Aggie Square Phase I, which was input into CalEEMod (Dulcich pers. comm. [b]). CalEEMod default values for land use types and sizes (i.e., square foot of hospital) were used to estimate activity and resulting emissions for landscaping equipment and solid waste generation. CalEEMod default values for the restaurant land use category were assumed to estimate the minor amount of natural gas that may be used for commercial cooking and the associated GHG emissions. Potential changes in carbon sequestration were analyzed using CalEEMod's vegetation module assuming the project would remove 110 trees (Dulcich pers. comm. [b]).

Aggie Square Phase I is expected to consume 27,500 megawatts of electricity per year (Dulcich pers. comm. [b]). GHG emissions generated by this purchased electricity in 2024 were quantified using emission factors from the SMAQMD and EPA (Ramboll 2020; U.S. Environmental Protection Agency 2020). As discussed in Volume 1 of this Supplemental EIR, pursuant to the UC's Sustainable Practices Policy (University of California 2019), the Sacramento Campus is required to obtain 100 percent clean electricity from the Sacramento Municipal Utility District (SMUD) beginning in 2025. Accordingly, following the first year of operation in 2024, there would be zero GHG emissions generated by purchased electricity.

The Aggie Square Phase I project would maintain four 1,341-horsepower and two 2,012-horsepower emergency diesel generators. All generators would meet EPA Tier 3 emission standards, and during modeling, were assumed to operate 16 hours per year for routine

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<sup>1</sup> SB 100 revises and extends the state's renewable resource targets under its Renewable Portfolio Standard to 50 percent by December 31, 2026, 60 percent by December 31, 2030, and 100 percent (i.e., carbon-free) by December 31, 2045.

maintenance and testing (Dulcich pers. comm. [b]). GHG emissions were estimated using emission factors from the CalEEMod User's Guide (California Air Pollution Control Officers Association 2017).

LSTE West, LSTE East, and the LLL Tower would each maintain one air-cooled scroll compressor chiller and one heat recovery chiller. Low global warming potential refrigerants would be prioritized for the chillers should they become commercially available and cost effective. For the purposes of this analysis, all chillers were conservatively assumed to use R-134a refrigerant, which is used in the existing Central Cogeneration Plant (Central Energy Plant) chillers. Regular use of the chillers may result in unintentional leaks and fugitive losses of R-134a.<sup>2</sup> The exact amount of R-134a that may be lost during normal operation is not currently known. Accordingly, the average annual leak rate of 1.7 percent for the four existing chillers at UC Davis' Central Energy Plant were considered representative of the new chillers' annual leak rate, and was used to estimate future R-134a losses (Olageuz pers. comm.). The leak rate was multiplied by the charge sizes of the chillers to quantify annual fugitive R-134a emissions (Dulcich pers. comm. [b]).

### Existing Conditions (Surface Parking)

Aggie Square Phase I would demolish an existing surface parking lot and the Fleet Maintenance Center. Existing vehicle trips to the surface lot would be redistributed to other onsite parking lots. Likewise, fleet maintenance activities would be shifted to another campus facility. Accordingly, there would be no material change in existing emissions with implementation of Aggie Square Phase I.

## Thresholds of Significance

Refer to Section 3.7, *Greenhouse Gas Emissions*, in Volume 1 of this Supplemental EIR for a discussion of applicable significance criteria.

### Issues Not Evaluated Further

The following impacts were identified as part of the analysis of the 2020 LRDP Update in Volume 1 of this Supplemental EIR, and are either adequately evaluated at the program level of analysis of the 2020 LRDP Update, or do not apply to Aggie Square Phase I.

### Generation of Significant GHG Emissions (Considerable Contribution to Climate Change)

Impact LRDP-GHG-1 in Volume 1 of this Supplemental EIR evaluated the potential increase in GHG emissions associated with the 2020 LRDP Update, including project-specific emissions resulting from Aggie Square Phase I. Tables 3.7-7 and 3.7-8 in Volume 1 of this Supplemental EIR list modeling results, including those from Aggie Square Phase I. Based on the analysis conducted, the 2020 LRDP Update, including Aggie Square Phase I, would result in a net reduction of emissions relative to existing conditions. Because the 2020 LRDP Update would result in a net reduction of GHG emissions, implementation of the 2020 LRDP Update, including Aggie Square Phase I, would not contribute a significant amount of GHG emissions or contribute to existing cumulative emissions. This impact would be **less than significant**, and no additional project-specific analysis is required.

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<sup>2</sup> Emissions of hydrofluorocarbons from refrigeration equipment can also occur during manufacturing (including equipment charging) and during equipment disposal. These upstream (i.e., manufacturing) and downstream (i.e., recycling) emissions, otherwise known as "lifecycle emissions," are not included in the analysis, consistent with guidance from the California Natural Resources Agency (2018).



## Impacts and Mitigation Measures

### **Impact AS-GHG-2: Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases**

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As disclosed in Impact LRDP-GHG-2 in Volume 1 of this Supplemental EIR, per-capita mobile source emissions resulting from the 2020 LRDP Update would exceed the Sacramento Area Council of Government's (SACOG's) *2020 Metropolitan Transportation Plan/Sustainable Communities Strategy* (MTP/SCS) (Sacramento Area Council of Governments 2019) GHG reduction target. Total emissions resulting from the 2020 LRDP Update would also exceed project-specific emissions thresholds derived from the state's long-term climate change goals under SB 32 and Executive Order (EO) B-55-18. GHG emissions generated by Aggie Square Phase I would contribute to this inconsistency finding, resulting in a significant impact. Implementation of the UC Sustainable Practices Policy, Mitigation Measures LRDP-AQ-2e, LRDP-TRA-1a, and LRDP-GHG-2 would reduce emissions consistent with the state's climate change reduction trajectory, as articulated under statewide regulations and legislation (e.g., SB 32, and EO B-55-18). This impact would therefore be **less than significant with mitigation**.

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Impact LRDP-GHG-2 in Volume 1 of this Supplemental EIR evaluated consistency of the 2020 LRDP Update with relevant local, state, and regional GHG reduction plans, policies, and regulations. Based on that analysis, the 2020 LRDP Update, including Aggie Square Phase I, would not conflict with UC Davis plans and policies, implementation of the *2017 Climate Change Scoping Plan* (California Air Resources Board 2017), or other general state regulations adopted for the purposes of reducing GHG emissions (e.g., SB 100). However, mobile source emissions would exceed the MTP/SCS per capita GHG reduction target. Total emissions resulting from the 2020 LRDP Update, include Aggie Square Phase I, would also exceed project-specific emissions thresholds derived from the state's long-term climate change goals. This exceedance could affect the state's ability to achieve its 2030 reduction target under SB 32 and future goal of carbon neutrality by 2045. GHG emissions generated by Aggie Square Phase I would contribute to this inconsistency finding, resulting in a significant impact.

Table 3.7-1 presents estimated construction and operational emissions resulting from Aggie Square Phase I. The operational results are reflective of opening day (i.e., 2024) conditions. As noted above, pursuant to the UC's Sustainable Practices Policy, the Sacramento Campus is required to obtain 100 percent clean electricity from SMUD beginning in 2025. Accordingly, following the first year of operation in 2024, there would be zero GHG emissions generated by purchased electricity.

While quantitative SB 32 and EO B-55-18 GHG reduction targets were proportionally applied to the Sacramento Campus, and were developed for the 2020 LRDP Update, it would be inappropriate to develop similar numeric thresholds for an individual project like Aggie Square Phase I (i.e., no emission sources were present on the project site in 1990). Accordingly, consistency of Aggie Square Phase I with GHG reduction plans and targets is assessed qualitatively.

Some of the broad-scale shifts in how energy will be produced and used in the future are outside of the control of Aggie Square Phase I. The changes necessitated by the State's long-term climate policy will require additional policy and regulatory changes, which are unknown at this time. Therefore, the extent to which the project's emissions and resulting impacts would be mitigated through implementation of such changes is not known and cannot be known at this time. Furthermore, implementation of additional policy and regulatory changes is in the jurisdiction of State-level

agencies (e.g., CARB), not UC Davis. However, some measures (e.g., decarbonization, energy efficiency, and reduced fossil-fuel-based VMT) can be facilitated at least to some extent through implementation of specific GHG reduction measures. Under this same rationale, if Aggie Square Phase I did not implement measures to maximize energy efficiency or decarbonize, the reductions may not be enough for an individual project to meet the aggressive long-term cumulative reduction goals.

**Table 3.7-1. Estimated GHG Emissions for Aggie Square Phase I (2024)**

Emission Scope and Source	Metric Tons CO <sub>2</sub> e
<b>Scope 1 and 2</b>	
Stationary <sup>a</sup>	58
Energy <sup>b</sup>	4,039
Fugitive <sup>c</sup>	292
Area <sup>d</sup>	6
Total Scope 1 and 2	4,394
<b>Scope 3</b>	
Mobile <sup>e</sup>	12,726
Water and wastewater use	7
Solid waste generation	438
Construction <sup>f</sup>	295
Total Scope 3	13,465
Total emissions (all scopes)	17,860

Source: ICF modeling.

CO<sub>2</sub>e = carbon dioxide equivalent.

<sup>a</sup> Emissions from diesel emergency generators.

<sup>b</sup> Emissions from purchased electricity and natural gas. Beginning in 2025, all electricity will be purchased from 100 percent zero carbon sources.

<sup>c</sup> Emissions from refrigeration and air conditioning equipment.

<sup>d</sup> Emissions from landscaping equipment.

<sup>e</sup> Emissions from vehicle trips made by employees, residents, students, and visitors.

<sup>f</sup> Total construction emissions amortized over a 30-year building lifespan.

On-Campus Partner Buildings, including Aggie Square Phase I, are not subject to the University Carbon Neutrality Initiative. However, Aggie Square Phase I is required to implement the UC's Sustainable Practices Policy. Aggie Square Phase I is being designed to substantially exceed minimum building efficiency standards through the installation of high efficiency and heat recovery chillers, use of dedicated outdoor air systems, daylighting controls, demand control ventilation, water cooled lab equipment, air-sealing, high performance insulation, and other commitments. The project will also purchase 100 percent clean electricity from SMUD beginning in 2025.

While these sustainability initiatives will achieve substantial reductions in electricity related GHG emissions, the project includes new natural gas infrastructure for commercial cooking. To meet the state's expressed 2045 climate neutrality goal (per EO B-55-18), the Governor's Office of Planning and Research (OPR) (Governor's Office of Planning and Research 2018) recommends all-electric buildings. Similarly, analysis conducted by SMAQMD shows that new development in Sacramento County must be constructed without natural gas infrastructure for Sacramento County to meet its

regional 2030 GHG target for the building energy sector (Ramboll 2020). Aggie Square Phase I would also generate additional VMT and associated mobile source emissions (see Table 3.7-1). Without electrification of the transportation sector, increases in VMT could impede the state's ability to achieve carbon neutrality.

The achievement of long-term GHG reduction targets will require substantial change in terms of how energy is produced and consumed, as well as other economy-wide changes, many of which can only be implemented by the State and federal government. As such, placing the entire burden of meeting long-term reduction targets on local government or new development would be disproportionate and likely ineffective. Nevertheless, given that Aggie Square Phase I includes emissions sources that may be inconsistent with the state's long-term reduction trajectory, this impact is conservatively determined to be significant.

Mitigation Measure LRDP-AQ-2e, which is required to address criteria pollutants from mobile sources, would likewise reduce GHG emissions by, reducing vehicle trips, enhancing walkability and pedestrian network connectivity, and supporting low-emission and zero-emissions vehicles and equipment. Measure LRDP-TRA-1a would also support vehicle emissions reductions by facilitating service improvements that are necessary to improve transit performance and reliability. These measures would collectively reduce mobile source GHG emissions. Likewise, Mitigation Measure LRDP-GHG-2 requires the Sacramento Campus to offset GHG emissions, inclusive of those generated by Aggie Square Phase I, to achieve a campus wide 40 percent reduction in 1990 emissions levels by 2030, an 80 percent reduction in 1990 emissions levels by 2040, and carbon neutrality beginning in 2045. Because emissions from Aggie Square Phase I will be reduced pursuant to Mitigation Measure LRDP-GHG-2, the project would not conflict with the GHG reduction targets of SACOG's MTP/SCS, SB 32 or EO B-55-18. Consequently, this impact is **less than significant with mitigation**.

**Mitigation Measure LRDP-AQ-2e: Reduce operational PM10 emissions**

Refer to Section 3.2, *Air Quality*, in Volume 1 of this Supplemental EIR.

**Mitigation Measure LRDP-TRA-1a: Monitor transit service on-time performance and implement strategies to minimize delays to transit service**

Refer to Section 3.15, *Transportation and Circulation*, in Volume 1 of this Supplemental EIR.

**Mitigation Measure LRDP-GHG-2: Implement verifiable actions or activities or purchase the equivalent GHG credits from a CARB-approved registry or a locally approved equivalent program to reduce GHG emissions generated by the Sacramento Campus**

Refer to Section 3.7, *Greenhouse Gases*, in Volume 1 of this Supplemental EIR.

## 3.8 Hazards and Hazardous Materials

This section describes the regulatory and environmental setting for hazards and hazardous materials in the Aggie Square Phase I project area, analyzes effects on hazards and hazardous materials that would result from implementation of Aggie Square Phase I, and provides mitigation measures, if applicable, to reduce the effects of any potentially significant impacts.

### 3.8.1 Existing Conditions

#### Regulatory Setting

Regulations, laws, policies, and plans that apply to or that would be considered for Aggie Square Phase I are provided in Volume 1 of this Supplemental EIR. As the regulatory setting provided in Volume 1 considers potential development, including Aggie Square Phase I, within the entirety of the UC Davis Sacramento Campus as envisioned through the 2020 LRDP Update, no additional regulatory setting information is provided for Aggie Square Phase I.

#### Environmental Setting

Refer to Section 3.8, *Hazards and Hazardous Materials*, under *Existing Conditions*, in Volume 1 of this Supplemental EIR for a discussion of the regional environmental setting for the UC Davis Sacramento Campus, including the Aggie Square Phase I project area. The Aggie Square Phase I project area is within the campus boundaries; as such, Aggie Square Phase I has the same existing characteristics regarding hazards and hazardous materials as for the entire Sacramento Campus.

The analysis in Section 3.8 in Volume 1 of this Supplemental EIR identified two sites in the Aggie Square Phase I project area. However, these sites have been remediated, closed, and no longer pose a threat. The site at 2751 Stockton Boulevard is located along the southern project boundary. In 1994, soil contamination from a leaking underground storage tank (LUST) containing gasoline was reported at the site. No other information about the LUST was found during the records search. The State Water Resources Control Board shows the site status as closed in 2004 (State Water Resources Control Board 2020a). The second site is located at the eastern boundary of the project at 2800 49th Street. A release of gasoline/diesel via a LUST was reported in June 2003. Petroleum hydrocarbons were found in soil samples collected below tank dispensers. Modifications to stop the leak commenced the same day, and the case was closed on March 3, 2005 (State Water Resources Control Board 2020b). Both sites have been investigated and cleanup of contaminated soils and/or groundwater completed.

### 3.8.2 Environmental Impacts

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

## Methods for Analysis

The baseline for hazards and hazardous materials includes the hazards and hazardous materials that currently exist in the project area, which are identified in sources cited in Section 3.8 of Volume 1 of this Supplemental EIR. This section provides a discussion of the potential risks involving hazards and hazardous materials as a result of the project.

### Issues Not Evaluated Further

The Aggie Square Phase I project area is not within 2 miles of an airport or airport land use plan. The closest airport is the Executive Airport approximately 2.75 miles southwest of the project area. Therefore, the threshold of significance for a safety hazard or excessive noise near the project does not apply and is not evaluated further.

The project area is not in or near a state responsibility area or in a Very High Fire Severity Zone. The project area is designated as a Local Responsibility Area (California Department of Forestry and Fire Protection 2008) and is in a developed, urban setting consisting primarily of paved surfaces and landscaping. As a result, the project would not expose people or structures to a significant risk associated with wildland fires; therefore, no further analysis is required.

## Thresholds of Significance

Refer to Section 3.8 in Volume 1 of this Supplemental EIR for a discussion of applicable significance criteria.

## Impacts and Mitigation Measures

### **Impact AS-HAZ-1: Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials**

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Construction and operation of the Aggie Square Phase I project would result in transport, use, and disposal of hazardous materials to and from the project area. Adherence to existing regulations and compliance with safety standards would ensure this impact would be **less than significant**.

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#### ***Construction***

The proposed project would include construction of facilities that could result in the routine transport, use, or disposal of hazardous materials. Construction of Aggie Square Phase I project would involve small quantities of commonly used materials, such as fuels and oils, to operate construction equipment. This type of use is not considered routine such that the use is regularly or frequently conducted. Accidental releases of small quantities of these substances during construction could contaminate soils and degrade the quality of surface water and groundwater, or be released into the air, resulting in a potential public safety hazard. However, consistent with applicable laws and regulations, as discussed in *Regulatory Setting* in Section 3.8.1, *Existing Conditions*, in Volume 1 of this Supplemental EIR, the transportation, handling, and disposal of these materials would be compliant with regulations enforced by the Certified Unified Program Agency and the California Division of Occupational Safety and Health. In addition, the implementation of standard best management practices under the storm water pollution prevention plan (SWPPP) (see Section 3.9.1, *Hydrology and Water Quality*, in Volume 1 of this Supplemental EIR for a discussion of

SWPPPs) would further reduce the potential of accidental release or exposure. This impact would be **less than significant**.

### ***Operation***

Operation of the Aggie Square Phase I project would result in the continued transport, use, and disposal of hazardous materials to and from the project area. The addition of research facility space could lead to an increase in the use and transport of hazardous materials.

The types of hazardous materials used would be comparable to those currently used in the existing laboratories and the hospital on the Sacramento Campus (see Section 3.8 in Volume 1 of this Supplemental EIR). Unless properly regulated, the potential for accidental release of a hazardous material could cause a significant hazard to the public or the environment.

Biohazardous waste and radioactive wastes are currently used, disposed of, and transported to and from the UC Davis Sacramento Campus. Hazardous materials or waste generated during operation of the Aggie Square Phase I project would comply with existing safety controls, plans, and procedures, as well as, all applicable federal and state regulations and standards. Therefore, the potential to expose campus occupants to substantial health or safety risks is low.

See Section 3.8 in Volume 1 of this Supplemental EIR for applicable regulations, plans, and programs relating to the use, disposal of, and transport of hazardous materials.

The volume of hazardous materials transported to and from campus would likely increase as a result of the project. However, as described in Section 3.8 in Volume 1 of this Supplemental EIR, the Hazardous Waste Collection Facility handles most hazardous materials generated at the existing hospital, clinics, and laboratories, thereby limiting offsite transportation. Adherence to existing regulations and compliance with the safety procedures mandated by applicable federal, state, university, and local laws and regulations would minimize the risks resulting from the routine transportation, use, storage, or disposal of hazardous materials or hazardous wastes associated with operation of the project. Based on the above analysis, the Aggie Square Phase I project would not create of a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials. The impact would be **less than significant**.

### **Mitigation Measures**

No mitigation measures are necessary.

### **Impact AS-HAZ-2: Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment**

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Site workers, the public, and the environment could be inadvertently exposed to preexisting onsite contaminants during construction within the project footprint. Ground disturbing activities associated with construction may result in the release or disturbance of contaminated soil or hazardous building materials. Implementation of Mitigation Measure LRDP-HAZ-2 would ensure that this impact would be **less than significant with mitigation**.

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As noted above, the two sites located within or immediately adjacent to the Aggie Square Phase I project have been remediated and closed and no longer pose a threat.

However, it is known that historically, there was less stringent oversight regarding the disposal of hazardous materials. As such, it is possible that other, previously unknown sites of soil and/or groundwater contamination exist in the project footprint. Ground disturbing activities, such as grading and excavation, and demolition of the surface parking lot and campus fleet services facility, may expose construction workers and the general public to hazardous materials that may result in health effects. Potential hazards to human health include ignition of flammable liquids or vapors, inhalation of toxic vapors in confined spaces such as trenches, and skin contact with contaminated soil or water.

Implementation of Mitigation Measure LRDP-HAZ-2 as would reduce this impact to a less-than-significant level, and therefore this impact would be **less than significant with mitigation**.

#### **Mitigation Measure LRDP-HAZ-2: Prepare a Phase I Environmental Site Assessment**

Refer to Section 3.8 in Volume 1 of this Supplemental EIR.

#### **Impact AS-HAZ-3: Result in hazardous emissions or handling of hazardous or acutely hazardous materials, substances, or waste within 0.25 mile of an existing or proposed school**

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Hazardous materials and waste could be handled within 0.25 mile of an existing or proposed school as a result of project implementation. However, handling, storage, and disposal of hazardous materials associated with the project would be subject to campus safety programs and procedures. This impact would be **less than significant**.

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The Language Academy of Sacramento Charter School (formerly the Marian Anderson Elementary School) is located immediately south of the project area at 2850 49th Street, Sacramento. Hazardous materials and waste would continue to be handled within 0.25 mile of an existing school under the project. However, the Aggie Square Phase I project would comply with existing safety plans, programs, practices, and procedures, as discussed in Section 3.8.1 in Volume 1 of this Supplemental EIR; therefore, the potential impacts involving hazardous materials/wastes within 0.25 mile of a school would be **less than significant**.

#### **Mitigation Measures**

No mitigation measures are necessary.

#### **Impact AS-HAZ-4: Place project-related facilities on a site that is included on a list of hazardous materials sites, and resulting creation of a significant hazard to the public or the environment**

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The analysis in Section 3.8 in Volume 1 of this Supplemental EIR identified two sites located within or immediately adjacent to the Aggie Square Phase I project. However, these sites have been remediated and closed and no longer pose a threat. The potential to encounter soil and groundwater contamination during construction would be **less than significant**.

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The site at 2751 Stockton Boulevard is located along the southern boundary of Aggie Square Phase I. Soil contamination from a leaking underground storage tank (UST) containing gasoline was reported at the site in 1994. No other information was found in the records search. The State Water Resources Control Board shows the site status as closed in 2004 (State Water Resources Control Board 2020a).

The second site is located at the eastern boundary of Aggie Square Phase I at 2800 49th Street. A release of gasoline/diesel via a leaking UST was reported in June 2003. Petroleum hydrocarbons were found in soil samples collected below tank dispensers. Modifications to stop the leak commenced the same day and the case was closed on March 3, 2005 (State Water Resources Control Board 2020b). The sites at 2751 Stockton Boulevard and 2800 49th Street have been investigated and cleanup of contaminated soils and/or groundwater completed. As a result, the potential to encounter soil and groundwater contamination during construction would be **less than significant**.

#### **Mitigation Measures**

No mitigation measures are necessary.

#### **Impact AS-HAZ-5: Impair implementation of or physical interference with an adopted emergency response plan or emergency evacuation plan**

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Implementation of the Aggie Square Phase I project could result in short-term, temporary impacts on street traffic because of potential extension of construction activities into the right-of-way. This could result in a reduction in the number of lanes or temporary closure of certain road segments. This would occur only during construction activities adjacent to roads. This impact would be **less than significant**.

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The project, if adopted, would be subject to the 2020 LRDP Update for the Sacramento Campus. As such, the project would be required to comply with provisions in the *Emergency Action & Evacuation Plan* (UC Davis Health 2019).

Further, implementation of the project would not result in the construction of any facilities that would interfere with emergency vehicle access to the campus. If needed, alternate routes would be established before any temporary closures and routes for evacuation, in case of an emergency, would be established and remain open. This impact would be **less than significant**.

#### **Mitigation Measures**

No mitigation measures are necessary.



## 3.9 Hydrology and Water Quality

This section describes the regulatory and environmental setting for hydrology and water quality in the Aggie Square Phase I project area, analyzes effects on hydrology and water quality that would result from implementation of Aggie Square Phase I, and provides mitigation measures, if applicable, to reduce the effects of any potentially significant impacts.

### 3.9.1 Existing Conditions

#### Regulatory Setting

Regulations, laws, policies, and plans that apply to or that would be considered for Aggie Square Phase I are provided in Volume 1 of this Supplemental EIR. The regulatory setting provided in Volume 1 considers potential development, including Aggie Square Phase I, within the entirety of the UC Davis Sacramento Campus as envisioned through the 2020 LRDP Update. Additional regulatory setting information is provided below for Aggie Square Phase I.

#### Environmental Setting

Refer to Section 3.9.1, *Existing Conditions*, in Volume 1 of this Supplemental EIR for a discussion of the regional environmental setting for the UC Davis Sacramento Campus, including the Aggie Square Phase I project area. The Aggie Square Phase I project area is within the campus boundaries; as such, Aggie Square Phase I has the same overall existing hydrology and water quality characteristics as for the entire Sacramento Campus.

Currently, the 9.55-acre project site serves as surface parking and the fleet maintenance facility and is mostly impervious. The existing onsite drainage system consists of a series of inlets that are connected to a piped network draining to the southeast and ultimately to the City of Sacramento's combined sewer system.

### 3.9.2 Environmental Impacts

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

#### Methods for Analysis

Impacts of construction and operation of the Aggie Square Phase I project were analyzed by comparing baseline conditions, as described in Section 3.9 under *Existing Conditions* in Volume 1 of this Supplemental EIR, to conditions during construction and operations of the project. Evaluation of potential hydrologic and water quality impacts is based on a review of existing documents and studies that address water resources in the vicinity of the project area. The analysis focuses on issues related to surface hydrology, groundwater supply, surface and groundwater quality, and flood hazards. The key construction-related impacts were identified and evaluated qualitatively based on

the physical characteristics of the project and the magnitude, intensity, location, and duration of activities.

## Thresholds of Significance

Refer to Section 3.9 in Volume 1 of this Supplemental EIR for a discussion of applicable significance criteria.

### Issues Not Evaluated Further

As discussed in Section 3.9. under *Environmental Impacts* in Volume 1 of this Supplemental EIR, the project area is not located in a Federal Emergency Management Agency 100-year floodplain and would not be subject to risk of flooding. Due to the project's distance from the coast and because no large water bodies are close to the Sacramento Campus, the project site is not subject to inundation by a tsunami or seiche. In addition, best management practices (BMPs) would be implemented as required by federal, county, and local requirements to minimize degradation of water quality associated with stormwater runoff during construction. Further, construction and maintenance activities would comply with University of California sustainability practices and procedures for stormwater management, stormwater requirements established by NEC requirements, and regional waste discharge requirements. The stormwater pollution prevention plan (SWPPP) would include a range of stormwater control BMPs such as installing silt fences or staked straw wattles to prevent silt runoff to storm drains. Operations would comply with the requirements of the NEC, University of California sustainability practices and procedures for stormwater management, and regional waste discharge requirements, and risk of flooding would be reduced. Therefore, there would be no impact and the impact of risk of release of pollutants as a result of project inundation in flood hazard, tsunami, or seiche zones is not evaluated further.

## Impacts and Mitigation Measures

### **Impact AS-WQ-1: Violation of any water quality standards or waste discharge requirements or other degradation of surface or groundwater quality**

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Construction and operation activities of the Aggie Square Phase I project could generate pollutants that could temporarily contaminate runoff. However, BMPs and erosion and sediment control measures would be implemented to reduce pollutants in stormwater and other nonpoint-source runoff. Pollutants would be drained to the separate onsite stormwater drainage network and discharged offsite to the City of Sacramento's combined sewer system infrastructure. Compliance with the National Pollutant Discharge Elimination System (NPDES) Construction General Permit, University of California sustainability practices and procedures, and NEC (University of California 2010), would reduce impacts to surface and groundwater quality. Therefore, this impact would be **less than significant**.

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#### ***Construction***

Project construction activities, such as site clearing, grubbing, demolition of existing surface and underground features, could result in short-term water quality impacts associated with soil erosion and sediment transport on roadways or water bodies through storm drains. Construction activities could also generate dust, litter, oil, and other pollutants that could temporarily contaminate runoff.

However, stormwater on the western half of the campus is detained onsite prior to discharge into the City of Sacramento's combined sewer system and treated prior to discharge into the receiving waters of the American River. To reduce the potential for discharge of pollutants into the receiving water, end-of-line treatment pollutant controls are in place. In addition, standard methods at the site perimeter for erosion and runoff control, including filtration, would continue to be used during construction.

Construction equipment may also contain toxic or hazardous substances, including fuels, lubricants, oil, grease, and paint. Other potential water quality impacts may include chemical spills into storm drains or groundwater aquifers if proper minimization measures are not implemented. Implementation of a project-specific SWPPP and good housekeeping practices such as non-stormwater management, proper waste handling, secondary containment for hazardous materials and waste management would reduce release of contaminants and associated impacts to water quality.

In addition, temporary erosion and sediment control measures that comply with Central Valley Regional Water Quality Control Board requirements would be implemented. Temporary BMPs would include installing or creating the following at the project site.

- Filter barriers
- Sediment silt fence
- Inlet protection
- Construction entrance
- Dust suppressors
- Erosion control matting

Implementation of temporary BMPs would also include addressing source control, which would reduce onsite erosion, offsite runoff, and sedimentation. These measures would be required to reduce pollutants in stormwater and other nonpoint-source runoff.

All project construction activities would be subject to existing water quality requirements. Because more than 1 acre of land would be disturbed for the Aggie Square Phase I project, compliance with the NPDES Construction General Permit would be required. As part of compliance with the NPDES Construction General Permit, standard erosion control measures and other BMPs would be identified in a SWPPP. The SWPPP would detail measures to control soil erosion and waste discharge from project construction areas. These measures would be implemented during construction to reduce contamination of waterways. BMPs included in the SWPPP would be required to use the best available technology that is economically achievable and the best conventional pollutant control technology. More commonly implemented BMPs would consist of a range of measures for reducing pollutants in stormwater and other nonpoint-source runoff.

As required by the Construction General Permit, a SWPPP must be submitted before a project's grading permit is issued. NPDES Construction General Permit would require use of BMPs to restrict soil erosion and sedimentation and restrict non-stormwater discharges from the construction site as well as release of hazardous materials. The Aggie Phase I project must also comply with University of California sustainability practices and procedures for stormwater management. The sustainability procedures include water action plans to address stormwater management and BMPs, and

encourage stormwater quality elements such as source control, site design (low impact development), and stormwater treatment measures.

In addition, construction activities must comply with the NEC submitted to the State Water Resources Control Board each year, Sacramento's general plan, and local stormwater and construction site runoff ordinances. These requirements involve developing and implementing an erosion and sedimentation control plan specific to a construction site that will minimize water quality impacts and specify standards to ensure water quality is not degraded. Compliance with these requirements would ensure that construction activities do not result in violation of water quality standards or waste discharge requirements, or otherwise result in water quality degradation. Potential impacts on water quality from construction activities on the Sacramento Campus would be **less than significant**.

Portions of the basement levels for the Life Sciences Technology Engineering (LSTE) East and LSTE West buildings would be at or below the existing groundwater elevation. Prior to construction, soil boring test results would determine the elevation of groundwater and potential for any environmental contaminants. As a result, the need for below-grade foundation waterproofing may change (University of California, Davis et al. 2020). In the event dewatering is required, the project's SWPPP would include a dewatering plan, which would establish measures to minimize contaminant releases into groundwater during excavation. Coverage under the NPDES Construction General Permit typically includes dewatering activities as authorized non-stormwater discharges provided that dischargers prove there is adequate water quality and that the discharge is not likely to affect beneficial uses.

Although small amounts of construction-related dewatering are covered under the NPDES Construction General Permit, the Central Valley Regional Water Board also has requirements related to dewatering activities (i.e., Order R5-2016-0076/NPDES Permit CAG995002 as amended by Order R5-2018-0002). Compliance with Central Valley Regional Water Board dewatering requirements would ensure proper treatment measures are implemented prior to discharge to prevent potential water quality impacts to surface waters. All dewatering requirements would be met to ensure water quality is not affected.

Therefore, construction of the Aggie Square Phase I project would not violate any water quality standards or waste discharge requirements or otherwise degrade surface or groundwater quality. Construction-related water quality impacts would be **less than significant**.

### ***Operation***

The Aggie Square Phase I project would involve operating and maintaining laboratories, lecture halls, office/dry research facilities, conference and retail space, retail food space, parking, and open space. These land uses and operational activities could increase existing or could generate new levels of potential pollutants of concern in the project area, such as trash, sediments, pesticides, bacteria, nutrients, metals, oils, or other toxins. Operation and maintenance activities of the Aggie Square Phase I project would generate pollutants of concern from landscape maintenance, building maintenance, storing materials and substances, and vehicle use. In addition, food service areas may generate additional pollutants such as organic materials (i.e., food waste), oil, or grease. Runoff from impervious surfaces could contain nonpoint pollution sources that are typical of urban settings. These sources are normally associated with automobiles, trash, cleaning solutions, and landscaped areas. However, good housekeeping practices such as regular trash collection would be implemented onsite. Pollutants would be drained by new drainage inlets, which would convey

runoff to the separate onsite storm drainage network. Flows would ultimately discharge to the City of Sacramento's combined sewer system infrastructure and would be treated prior to discharge into receiving waters.

Currently, the 9.55-acre project site serves as surface parking and the fleet maintenance facility. After Aggie Square Phase I project implementation, the site would include 4.25 acres (i.e., 52 percent) of impervious cover and 4.0 acres (i.e., 48 percent) of open space. The addition of sustainable site design features such as landscaped open spaces/plazas including trees, green roofs, and garden terraces would increase infiltration of stormwater for groundwater recharge and allow pollutant filtration of stormwater, thereby reducing and treating surface runoff and associated pollutants. Reduced stormwater runoff would also reduce the potential for erosion and sedimentation.

In addition, the Aggie Square Phase I project would comply with campus stormwater management practices, as required. Water Action Plans would provide practices, as required by University of California sustainability practices and procedures for stormwater management to control the discharge of pollutants into stormwater. In addition, campus construction projects would implement stringent post-construction water quality requirements that control for pH and turbidity as required by the NPDES Construction General Permit. The Sacramento Campus uses only U.S. Environmental Protection Agency-registered landscape maintenance products and intends to use products with the lowest toxicity (University of California 2010). This practice would extend to the Aggie Square Phase I project site.

All excess flows would be detained in the onsite detention basin before discharge. In addition, the NPDES Construction General Permit emphasizes runoff reduction through onsite stormwater reuse. Sustainability measures for the site include greywater harvesting and rainwater recovery for non-potable water reuse in buildings. The Aggie Square Phase I project would be designed and maintained in accordance with State Water Board water quality requirements, such as the NEC and University of California sustainability practices and procedures.

Therefore, operation of the Aggie Square Phase I project would not violate any water quality standards or waste discharge requirements or otherwise degrade surface or groundwater quality. Operation-related water quality impacts would be **less than significant**.

### **Mitigation Measures**

No mitigation measures are necessary.

**Impact AS-WQ-2: Substantial decrease of groundwater supplies or substantial interference with groundwater recharge such that the project may impede sustainable groundwater management of the basin**

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The Aggie Square Phase I project may require groundwater dewatering during construction. However, dewatering would be conducted on a one-time or temporary basis during construction and would not result in a loss of groundwater that would substantially deplete groundwater supplies. The addition of sustainable site design features such as landscaped open spaces including trees, green roofs, and garden terraces would increase infiltration of stormwater for groundwater recharge during operation of the project. Therefore, this impact would be **less than significant**.

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Portions of the basement levels for the LSTE East and LSTE West buildings would be at or below the existing groundwater elevation. Prior to construction, soil boring test results would determine the elevation of groundwater at the specific building locations (University of California, Davis et al. 2020). Therefore, construction dewatering may be required during excavation activities, which could result in a temporary reduction in groundwater volumes. In the event that groundwater is encountered during construction, dewatering would be conducted on a one-time or temporary basis during the construction phase and would not result in a loss of water that would substantially deplete groundwater supplies. The water supply for construction activities (e.g., dust control, concrete mixing, material washing) would most likely come from nearby hydrants and existing surface supplies, or would be trucked to the site. No groundwater would be used during construction. Therefore, impacts on groundwater supplies from construction activities would be **less than significant**.

Currently, the 9.55-acre project site serves as surface parking and the fleet maintenance facility. After Aggie Square Phase I project implementation, the site would include 4.25 acres (i.e., 52 percent) of impervious cover and 4.0 acres (i.e., 48 percent) of open space. The addition of sustainable site design features such as landscaped open spaces/plazas including trees, green roofs, and garden terraces, would increase infiltration of stormwater for groundwater recharge and reducing surface runoff. Therefore, the project would not substantially interfere with groundwater recharge, decrease the size of groundwater recharge areas, or impede sustainable groundwater management of the basin. During operations, water supply would be obtained from the existing City of Sacramento water infrastructure and would use limited amounts of groundwater for landscaping. Therefore, the project would not substantially increase groundwater demand.

Therefore, the Aggie Square Phase I project would not result in a substantial decrease of groundwater supplies or a substantial interference with groundwater recharge such that the project may impede sustainable groundwater management of the basin. Groundwater impacts would be **less than significant**.

**Mitigation Measures**

No mitigation measures are necessary.

**Impact AS-WQ-3: Substantial alteration of existing drainage patterns in a manner that would result in substantial erosion or siltation onsite or offsite; substantial increase in the amount of surface runoff in a manner that would result in flooding onsite or offsite; creation of or contribution to runoff water that would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; obstruction or redirection of flood flows caused by drainage modifications**

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Development of the Aggie Square Phase I project would include a new onsite storm drainage network and open space, allowing a reduction in surface runoff and associated polluted runoff, reduced onsite and offsite flooding, and ultimately improved drainage. A separate onsite storm drainage network would be constructed to discharge flows to the City of Sacramento's combined sewer system infrastructure. Sustainability measures would include greywater harvesting and rainwater recovery for non-potable water reuse in buildings. Construction activities may expose soils that contain an excessive amount of water. As a result, damage to buildings or landscaping may result. Mitigation Measure LRDP-WQ-1 would require implementation of a subsoil drainage system to avoid potential damage. Implementation of Mitigation Measure LRDP-WQ-1 would reduce this impact to a less-than-significant level and therefore this impact is be **less than significant with mitigation**.

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### ***Construction***

During construction, stormwater drainage patterns on the Sacramento Campus could be temporarily altered. However, the Aggie Square Phase I project would implement BMPs, as required by the NPDES Construction General Permit and the associated SWPPP, to minimize the potential for erosion or siltation and temporary changes in drainage patterns during construction.

Implementation of BMPs would also capture and infiltrate small amounts of sheetflow such that offsite runoff from the construction site would not increase, ensuring that drainage patterns are not significantly altered. BMPs would be implemented to control construction site runoff, ensure proper stormwater control and treatment, and reduce the discharge of polluted runoff to the storm drain system. Therefore, construction of the Aggie Square Phase I project would not alter the existing drainage pattern in a manner that would result in substantial erosion or siltation, would not increase the rate or amount of surface runoff in a manner that would result in flooding onsite or offsite, or provide substantial additional sources of polluted runoff. In addition, the Water Action Plan would provide practices to prevent stormwater pollution during construction activities, as required by University of California sustainability practices and procedures for stormwater management.

Construction activities may expose soils that contain an excess of water. As a result, damage to buildings or landscaping may result. Mitigation Measure LRDP-WQ-1 would require implementation of a subsoil drainage system to avoid potential damage, based on site-specific soil conditions.

Therefore, with the implementation of Mitigation Measure LRDP-WQ-1, Aggie Square Phase I construction would not result in an exceedance of drainage system capacities, and this impact would be **less than significant with mitigation**.

## ***Operation***

Currently, the Aggie Square Phase I project site serves as surface parking and the fleet maintenance facility. The proposed design emphasizes climate-appropriate elements, including outdoor pedestrian spaces and other sustainable design solutions. Landscaped open spaces and plazas would include trees, green roofs, and garden terraces. After project implementation, the 9.95-acre project site would include 4.25 acres (i.e., 52 percent) of impervious cover and 4.0 acres (i.e., 48 percent) of open space. Although drainage patterns would be altered, pervious areas would increase compared to existing conditions. The addition of open space would reduce surface runoff and associated polluted runoff, reduce the potential for onsite or offsite flooding, and ultimately improve drainage (University of California, Davis et al. 2020).

With project implementation, all existing utilities on the site would be demolished. A separate onsite stormwater drainage network would be constructed to discharge flows to the City of Sacramento's combined sewer system infrastructure (Figure 3.9-1). The proposed point of connection for Aggie Square Phase I is the existing piped network southeast of the project area.

A stormwater drainage system would be provided to convey rainwater from flat roofs to a holding tank for rainwater reuse. Secondary roof drainage would be accomplished using a dedicated piped overflow drainage system separate from the primary stormwater drainage system. Clearwater waste from air handling units, coolers, and other equipment would be conveyed by gravity flow and connect to the building storm drain. The stormwater drainage system would be sized based on a maximum rainfall rate of 1.5 inches per hour (University of California, Davis et al. 2020). The existing storm sewer system has the capacity to serve future planned improvements. Storm sewer infrastructure would be relocated around future building footprints and would provide services to each future building (Affiliated Engineers Inc., 2019).

The Aggie Square Phase I project would also implement various sustainability measures, including using greywater harvesting and rainwater recovery. Rainwater, greywater, subsoil drainage discharge, and clearwater discharge would be collected in an exterior cistern (i.e., a holding tank) for nonpotable water reuse as supply for irrigation and for flushing toilet waste. During a rain event, the holding tank would overflow to the storm sewer, which discharges a larger volume of water, while the holding tank collecting greywater would overflow to the sanitary system. A day tank upstream of a filtration and bacterial control system would hold the combined grey and rainwater for 24 hours, and have a filtration and bacterial control system downstream of the tank. When rain and greywater is not available to fill the day tank, a non-potable water make-up line would be available (University of California, Davis et al. 2020). A Water Action Plan would provide practices to prevent stormwater pollution, as required by University of California sustainability practices and procedures for stormwater management. The Water Action Plan encourages features such as appropriate source control, low impact development, and stormwater treatment measures to be considered during the planning stages of projects to protect stormwater quality and manage stormwater flows. Therefore, operational drainage associated with the Aggie Square Phase I project would not result in flooding or exceedance of drainage system capacities or associated impacts, and the impact would be **less than significant**.

### **Mitigation Measure LRDP-WQ-1: Implement a Subsoil Drainage System to Avoid Damage to Buildings**

Refer to Section 3.9 in Volume 1 of this Supplemental EIR.



**Impact AS-WQ-4: Conflict with or obstruction of implementation of a water quality control plan or sustainable groundwater management plan**

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The Aggie Square Phase I project would implement stormwater control BMPs during construction as required by the NPDES Construction General Permit, and reduce the discharge of pollutants and adverse impacts on water quality. Incorporation of landscaped areas and sustainable site design features would also reduce stormwater runoff flows and associated pollutants. As a result, water quality standards would be achieved, including the water quality objectives that protect designated beneficial uses of surface and groundwater, as defined in the *Water Quality Control Plan for the Sacramento River Basin and The San Joaquin River Basin* (Basin Plan) (Central Valley Regional Water Quality Control Board 2018) or in the Central Sacramento County Groundwater Management Plan. Therefore, there would be **no impact**.

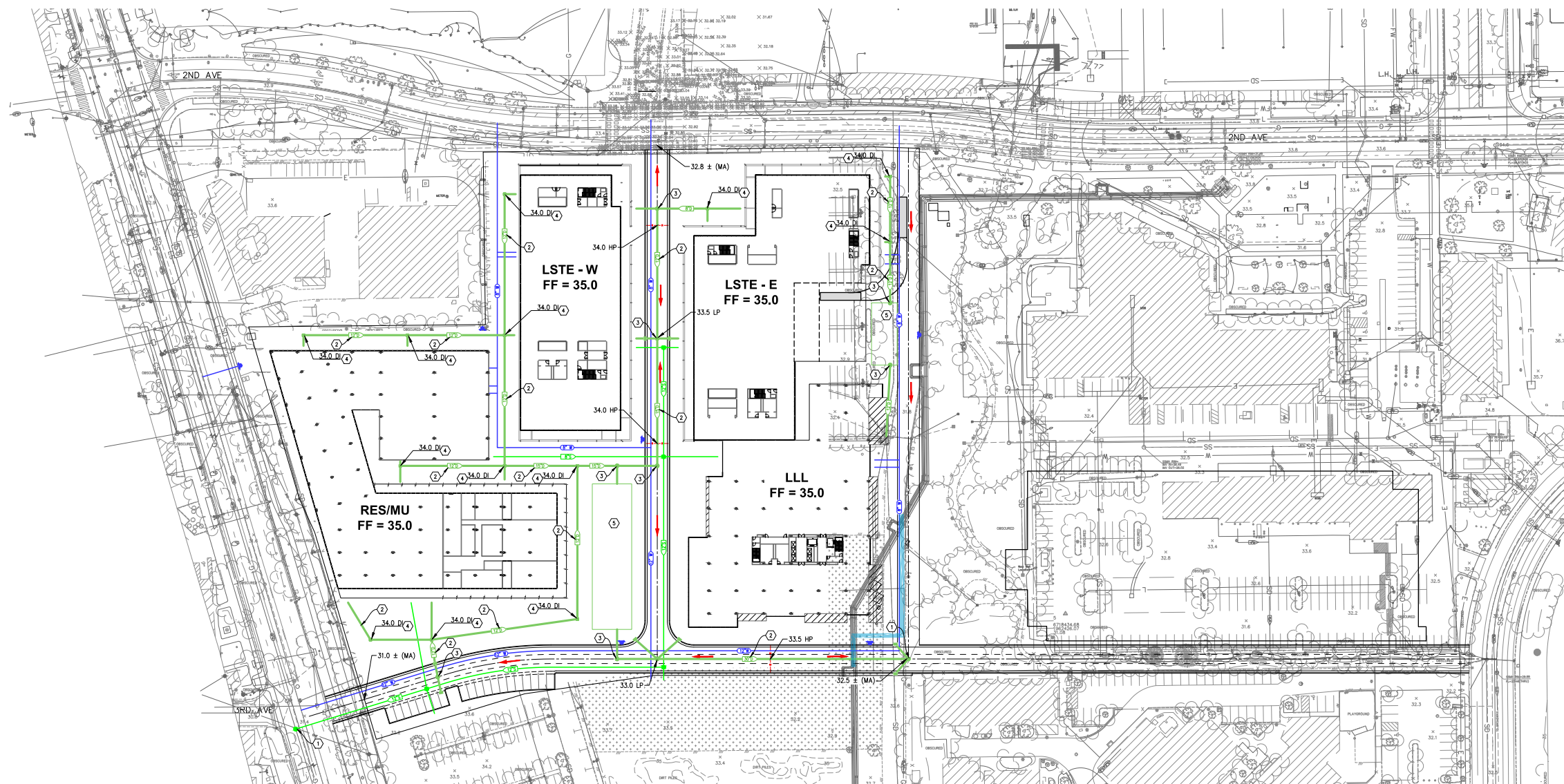
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During construction, commonly practiced BMPs would be implemented to control site runoff and reduce the discharge of pollutants to storm drain systems. As part of compliance with permit requirements during ground disturbing or construction activities, implementation of water quality control measures and BMPs would ensure that water quality standards are maintained, including the water quality objectives that protect designated beneficial uses of surface and groundwater, as defined in the Basin Plan. Construction runoff would also comply with the appropriate water quality objectives for the region. The NPDES Construction General Permit requires that stormwater discharges must not contain pollutants that cause or contribute to an exceedance of any applicable water quality objectives or water quality standards, including designated beneficial uses. Incorporation of sustainable site design features such as landscaped open spaces and green roofs would also reduce stormwater runoff flows and associated pollutants. During operation, groundwater use would be similar to existing conditions. Surface landscaping would utilize water efficient landscaping.

Therefore, the Aggie Square Phase I project would not conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan, and there would be **no impact**.

**Mitigation Measures**

No mitigation measures are necessary.



## KEYNOTES

- ① INSTALL NEW STORM DRAIN MANHOLE AND CONNECT TO EXISTING PUBLIC STORM DRAIN MAIN.
- ② INSTALL NEW PUBLIC STORM DRAIN MAIN PER CITY OF SACRAMENTO STANDARDS.
- ③ INSTALL NEW PUBLIC STORM DRAIN MANHOLE PER CITY OF SACRAMENTO STANDARD DWG. NO. S-70.
- ④ INSTALL AREA DRAIN INLET.
- ⑤ INSTALL UNDERGROUND STORMWATER STORAGE SYSTEM.

## NOTES:

1. THIS SCHEMATIC DESIGN GRADING & DRAINAGE EXHIBIT WAS PREPARED TO DEPICT PROPOSED DESIGN CONCEPTS AS REQUIRED FOR THE ENTITLEMENT PROCESS. ACTUAL FINAL DESIGN MAY VARY FROM THAT SHOWN HEREON AS THE DESIGN PROCESS PROGRESSES.
2. THIS EXHIBIT IS BASED ON THE PRELIMINARY AGGIE SQUARE REDEVELOPMENT SITE PLAN PREPARED BY ZGF DATED MARCH 2020.
3. UTILITIES AND PIPE SIZES SHOWN ARE ESTIMATES ONLY. SIZES AND LOCATIONS MAY CHANGE DURING FINAL DESIGN.
4. TOPOGRAPHIC SURVEY PREPARED BY SYNERGY MAPPING, INC., DATED OCTOBER 26, 2018.
5. EXISTING UTILITY IMPROVEMENTS ARE BASED ON DATA PROVIDED BY UC DAVIS. ACTUAL SIZES, TYPES AND LOCATIONS MAY VARY FROM INFORMATION SHOWN HEREON.
6. STORMWATER PLANTER LOCATIONS, SIZE AND ELEVATIONS SHOWN HEREON ARE CONCEPTUAL AND INTENDED TO DEPICT PROPOSED DESIGN CONCEPTS AS REQUIRED FOR SCHEMATIC DESIGN PROCESS. ACTUAL FINAL DESIGN MAY VARY FROM THAT SHOWN HEREON AS THE DESIGN PROCESS PROGRESSES.

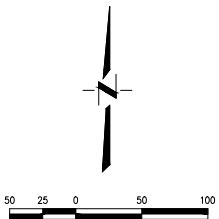


Figure 3.9-1  
Drainage Plan

## 3.10 Land Use and Planning

This section describes the regulatory and environmental setting for land use and planning in the Aggie Square Phase I project area, analyzes effects on land use and planning that would result from implementation of Aggie Square Phase I, and provides mitigation measures to reduce the effects of any potentially significant impacts, if applicable.

### 3.10.1 Existing Conditions

#### Regulatory Setting

Regulations, laws, policies, and plans applicable to or considered for Aggie Square Phase I are provided in Volume 1 of this Supplemental EIR. As the regulatory setting provided in Volume 1 considers potential development, including Aggie Square Phase I, within the entirety of the UC Davis Sacramento Campus as envisioned through the 2020 LRDP Update, no additional regulatory setting is provided for Aggie Square Phase I.

#### Environmental Setting

For existing and surrounding land uses, refer to Section 3.10, *Land Use and Planning*, in Volume 1 of this Supplemental EIR.

#### Study Area

The Aggie Square Phase I project site is a 9.55-acre parcel within the UC Davis Sacramento Campus in Sacramento, which is approximately 2.5 miles southeast of downtown Sacramento, 17 miles east of the UC Davis main campus in Davis, and 90 miles northeast of San Francisco (Figure 2-2). The 9.55-acre parcel is owned by the University and is currently used as a surface parking lot and campus fleet services facility. The site is currently designated as Education and Research, Open Space, and Parking Structure in the 2010 LRDP. On the Sacramento Campus, the Aggie Square Phase I site is adjacent to the Central Energy Plant and Language Academy of Sacramento Charter School (formerly the Marian Anderson Elementary School) to the east, 2nd Avenue to the north, the UC Davis Clinical and Translational Science Center to the south, and Stockton Boulevard to the west. Under the 2020 LRDP Update, the land use designations for the project site would not change, although the acreages of each designation will change slightly. The Education and Research land use designation has been renamed to Education, Research and Housing.

### 3.10.2 Environmental Impacts

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

## Methods for Analysis

This analysis is based on review of documents pertaining to the Aggie Square Phase I project site and potential compatibility of the project with existing and planned land uses near the project site. In determining the level of significance, this analysis assumes that the project would comply with the 2020 LRDP Update and with local general plan policies, where feasible.

## Thresholds of Significance

Refer to Section 3.10 in Volume 1 of this Supplemental EIR for a discussion of applicable significance criteria.

### Issues Not Evaluated Further

Previous analysis conducted for the 2010 LRDP concluded that development of the 2010 LRDP would not physically divide the community. The Aggie Square Phase I project site is located within the boundaries of the existing Sacramento Campus analyzed in the 2010 LRDP. No aspect of the project would physically divide the community; therefore, this issue is not discussed further.

## Impacts and Mitigation Measures

### **Impact AS-LU-1: Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect**

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Development on the Sacramento Campus would be governed by the 2020 LRDP Update, which includes the Aggie Square Phase I project. Accordingly, within the project boundaries, the project would not conflict with any applicable land use plan, and this impact would be **less than significant**.

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The Aggie Square Phase I project, if approved, would be subject to the 2020 LRDP Update. Pursuant to the University of California's constitutional autonomy, UC Davis is the only agency with land use jurisdiction over Sacramento Campus projects. The project would not involve the expansion of the existing campus boundary, and as such, the project would not involve the potential acquisition of lands currently subject to the Sacramento's municipal planning efforts for their *2040 General Plan Update*.

Under the proposed 2020 LRDP Update, existing campus land use designations for the project site would be modified to accommodate development of Aggie Square Phase I. Figures 2-6 and 2-7 in Volume 1 of this Supplemental EIR show existing and proposed land uses for the Aggie Square Phase I project site, respectively. The Education and Research land use designation would change to Education, Research, and Housing, which would allow classrooms, lecture halls, research laboratories, associated support space, residential housing and related uses, and offices. This land use designation also includes facilities to support daily student life such as food services and dining, a bookstore, lounges and recreation facilities, such as a Recreation/Wellness Center. This project serves to achieve the 2020 LRDP Update goals and objectives for Aggie Square Phase I, which include creating facilities for science, technology, engineering, and research; providing housing that meets affordability goals; developing structures that support regional workforce development; reducing waste and improving sustainability; facilitating easy access from Aggie Square to the Hospital and nearby UC Davis clinics; expressing a diverse architectural character responsive to climate change and sun orientation; and a rich network of public spaces. Although these land use

changes associated with the project represent an intensification of existing University-related uses on the Sacramento Campus, they would further the goals of the 2020 LRDP Update.

However, the types of land use changes (primarily education, research, and residential uses) that would occur with the project would remain consistent with, and complementary to, the current types of land uses on the campus and immediately adjacent to the campus. Stockton Boulevard, along the western boundary of the campus, is lined mostly with one- to three-story office buildings and a small amount of retail. The addition of Aggie Square Phase I would be complementary to and not conflict with these existing uses. Two primary public spaces, the Market Plaza and the Aggie Square public plaza, would connect the Aggie Square Phase I project to the surrounding communities and would provide for interaction among occupants of Aggie Square. The Market Plaza is intended to host a permanent farmer's market pavilion, as well as an outdoor gathering space to complement the healthy food offerings and programs in the community-serving storefronts. The Aggie Square public plaza would be a dynamic urban gathering and events space, fronted by entrances to all of the Aggie Square Phase I project buildings and first floor activities. The Aggie Square public plaza would be also situated to capture frontages of the next phase of buildings contemplated to be located south of 3rd Avenue. Accordingly, within the Sacramento Campus boundaries, the proposed Aggie Square Phase I project would not conflict with any applicable land use plan and this impact would be less than significant.

Aggie Square Phase I includes construction of four new buildings, including a housing/community building, and three buildings dedicated to classroom, science, technology, and engineering space. The project also includes several public plazas. The addition of on-campus housing would not conflict with any goals or objectives of the 2010 LRDP or the planning principles of the 2020 LRDP Update identified in Chapter 2, *Project Description*. The Lifelong Learning Tower, LSTE East and LSTE West buildings also further the goals and objectives of the 2010 LRDP and the 2020 LRDP Update. Therefore, development under the 2020 LRDP Update is not anticipated to result in land use conflicts within the Sacramento Campus. While the Sacramento Campus is not subject to municipal land use regulations when using property under its control in furtherance of its educational mission, implementation of the project would not be in conflict with existing plans, policies, and regulations set forth by local jurisdictions for the purposes of reducing or mitigating environmental impacts (such as the Sacramento 2035 General Plan [City of Sacramento 2015]), nor would it result in land use conflicts. The Aggie Square Phase I project is planned to occur within the campus boundary, which is owned by UC Davis. The 2020 LRDP seeks to combine like structures and land uses to improve campus efficiency and compatibility. All of the buildings associated with Aggie Square Phase I will be located in the Education, Research, and Housing land use designation. Height limits associated with the 2020 LRDP Update will ensure that the new Aggie Square Phase I buildings are consistent with the commercial corridor along Stockton Boulevard. The 2020 LRDP Update would not result in any changes in City land use designations or land use patterns. Therefore, this impact would be **less than significant**.

## 3.11 Noise

This section describes the regulatory and environmental setting for noise in the Aggie Square Phase I project area, analyzes effects of noise sources that would result from implementation of Aggie Square Phase I, and provides mitigation measures to reduce the effects of any potentially significant impacts, if applicable.

### 3.11.1 Existing Conditions

#### Regulatory Setting

Regulations, laws, policies, and plans applicable to and/or considered for Aggie Square Phase I are provided in Volume 1 of this Supplemental EIR. As the regulatory setting provided in Volume 1 considers potential development, including Aggie Square Phase I, within the entirety of the UC Davis Sacramento Campus as envisioned through the 2020 LRDP Update, no additional regulatory setting is provided for Aggie Square Phase I.

#### Environmental Setting

Refer to Section 3.11, *Noise*, Section 3.11.1, *Existing Conditions*, in Volume 1 of this Supplemental EIR for a discussion of the regional environmental setting for the UC Davis Sacramento Campus, including the Aggie Square Phase I project area. The Aggie Square Phase I project area is within the boundaries of the campus; as such, Aggie Square Phase I has the same existing noise and vibration characteristics as the entire Sacramento Campus.

### 3.11.2 Environmental Impacts

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

#### Methods for Analysis

Potential noise and vibration effects resulting from the development of Aggie Square Phase I were estimated using standard and accepted modeling techniques and information provided by the University. The project is a part of the overall 2020 LRDP Update, which analyzed impacts of 2020 LRDP Update implementation at a program level.

#### Construction Noise

Construction noise levels resulting from development of the Aggie Square Phase I project were estimated based on information provided by UC Davis and the project engineer, and based on reference emission levels, and usage factors from the Federal Highway Administration *Road Construction Noise Model User's Guide* (Federal Highway Administration 2006). The methodology for the analysis of construction noise contained in Federal Transit Administration's (FTA) *Transit Noise*

*and Vibration Impact Assessment Manual* (Federal Transit Administration 2018) was used to evaluate estimated combined construction noise levels generated during various construction phases. Specifically, noise levels of the three loudest pieces of equipment proposed for use during each construction phase of the project were combined, and estimated levels were compared to applicable construction-noise standards.

Note that noise sources due to the construction (including excavation), demolition, alteration or repair of any building or structure between the hours of 7:00 a.m. and 6:00 p.m., on Monday through Saturday, and between 9:00 a.m. and 6:00 p.m. on Sunday are exempt from the numerical standards for noise in Sacramento, provided that the operation of an internal combustion engine is equipped with suitable exhaust and that intake silencers are in good working order. Most construction activities for Aggie Square Phase I would occur during these hours and would therefore not result in significant construction noise impacts (assuming equipment is outfitted with appropriate exhaust and intake silencers). However, since some nighttime construction may be required for some project components (Davis pers. comm.), the potential for construction noise impacts to occur during non-exempt hours is also considered.

Outside of these exempt daytime hours, construction noise in Sacramento is limited by the Exterior Noise Standards contained in the Sacramento City Code (55 dBA from 7:00 a.m. to 10:00 p.m. and 50 dBA from 10:00 p.m. to 7:00 a.m.). Therefore, outside of the daytime exempt hours, construction noise would be limited to 55 dBA between the hours of 6:00 p.m. and 10:00 p.m. and 50 dBA between the hours of 10:00 p.m. and 7:00 a.m.

### **Construction Haul Truck Noise**

Construction haul truck noise was also analyzed for the project. The Sacramento City Code does not include a specific threshold that pertains to construction haul truck noise. Therefore, anticipated loudest-hour haul truck noise was assessed by modeling Baseline (2019) and Baseline (2019) plus haul truck (estimated reasonable worst-case haul truck trip traffic noise during a peak hour with peak hour volumes provided by Fehr & Peers; Hananouchi pers. comm. [a]). Impacts are identified if haul truck trips associated with Aggie Square Phase I traveling on any roadway segments in the project area would result in a 3 dB increase (considered barely audible) in noise. UC Davis provided the anticipated construction schedule, number of daily construction personnel, number of vendor and haul truck trips, acres to be graded and paved, demolition quantities, and the amount of exported and imported material (Dulcich pers. comm.).

Based on the Aggie Square Phase I haul truck and construction schedule information, up to 88 daily haul truck trips would occur on a reasonable worst-case day with the most overlapping phases of construction. Typically, haul truck trips are spread out over the construction day. However, based on coordination with UC Davis and in order to provide a conservative assessment, this analysis assumes that approximately one-third of the average daily truck trips would occur during the worst-case hour (Dulcich pers. comm.). It is also conservatively assumed that up to two-thirds of the hourly truck trips could be using the same roadway segments, noting that in actuality approximately half would travel north and approximately half would travel south on Stockton Boulevard (Dulcich pers. comm.). This would result in just over one-fifth of daily haul trucks (or 20 trucks) using a given roadway segment during a reasonable worst-case hour.

## Operational Noise

Development of the project would result in increases in operational noise because the project would generate vehicular traffic, and require the installation and operation of noise-generating equipment (such as heating and cooling equipment and exhaust fans). In addition, the project includes Aggie Square, where events using amplified music or speech may occur. Each of these sources, as well as the methodology for how they are analyzed, is described below.

## Traffic Noise

To determine whether development of the project would result in a substantial permanent increase in traffic noise levels, vehicular traffic noise in the campus vicinity was modeled by using average daily traffic (ADT) volumes along roadway segments and vehicle mix assumptions (i.e., the proportion of heavy vehicles on a given segment) provided by the project traffic engineer (Hananouchi pers. comm. [a]). For vehicular traffic noise impacts, the following thresholds were applied to determine whether development under the project would result in significant traffic noise impacts: (1) in places where the Baseline (2019) and resulting (Baseline (2019) Plus Project) noise levels do not exceed the “Normally Acceptable” land use compatibility standard for the types of land uses located along the roadway segment (Table 3.11-6 in Section 3.11, *Noise*, in Volume 1 of this Supplemental EIR), an increase of more than 5 dB would be a significant vehicular traffic noise increase, and (2) in places where the Baseline (2019) or resulting (Baseline (2019) Plus Project conditions) noise levels *do exceed* the “Normally Acceptable” level, any noise increase greater than 3 dB would be a significant vehicular traffic noise increase.

Traffic noise modeling for Baseline (2019) and Baseline (2019) Plus Project conditions was conducted using a spreadsheet based on the FHWA Traffic Noise Model, version 2.5. This spreadsheet calculates the vehicular traffic noise level at a fixed distance, and considers the vehicular traffic volume, roadway speed, and vehicle mix that is predicted to occur under each condition. For the assessment of project-level traffic noise impacts, ADT volumes were used to determine if significant traffic noise increases would result from the project.

## Emergency Generator Noise

Although the exact make and models of generators for the project have not yet been selected, the potential for noise from emergency generator testing to exceed the City’s daytime and nighttime limits of 55 dBA and 50 dBA at the nearest noise sensitive receptor was analyzed. Source data from an example generator of similar size and capacity to those proposed was used to estimate noise levels. Since attenuation features such as enclosures, silencers or potential shielding are not known at this time, this analysis assumes no reduction in noise based on shielding or resulting from the incorporation of silencers/mufflers.

## Mechanical Equipment Noise

Potential noise impacts from the operation of heating and cooling equipment at the project site were analyzed based on information provided by the project engineers and standard acoustical modeling data and techniques. Although the exact make and models of heating, cooling, and ventilation equipment for the project have not yet been selected, the potential for noise from mechanical equipment to exceed the City’s daytime and nighttime limits of 55 dBA and 50 dBA at the nearest noise sensitive receptor was analyzed. Generic sound data for similar types of equipment was used in this analysis to demonstrate the likelihood of potential noise exceedances. Since attenuation features, such



as the incorporation of shielding, enclosures, and mufflers, are not known at this time, this analysis assumes no reduction in noise based on the incorporation of attenuation features.

### **Amplified Music of Speech**

The potential for amplified music or speech at events held at Aggie Square to exceed applicable noise limits was also analyzed based on information about expected future events provided by UC Davis.

### **Loading Activity Noise**

In general, the loading and unloading of goods is a common occurrence in cities and urban environments. The Sacramento Campus is in an urban environment near major thoroughfares (e.g., Stockton Boulevard and Broadway) and close to U.S. Route 50 (US 50). The potential for loading activity at the project to result in increases in ambient noise was analyzed based on information provided by UC Davis.

### **Helicopter Noise**

Noise impacts from emergency helicopter increases resulting from implementation of the 2020 LRDP Update are evaluated in Volume 1 of this Supplemental EIR. The project would not result in the increase in emergency helicopter operations to the campus. Helicopter noise is therefore not evaluated in this Volume of the Supplemental EIR.

### **Vibration Impacts**

The discussion below summarizes the methodology applied in this assessment of potential annoyance- and damage-related vibration impacts from construction of the project. Operations associated with the project are not anticipated to generate perceptible levels of vibration at either onsite or offsite receptors. No major sources of vibration are anticipated within any of the proposed new structures. The *Sacramento 2035 General Plan* Environmental Constraints section provides requirements for interior vibration standards and damage to historic or archaeological structures, but does not provide specific vibration thresholds. In the absence of significance thresholds for vibration from construction, the general plan states that the FTA vibration criteria can be used.

### **Vibration-Related Annoyance**

The FTA's general assessment criteria for evaluating potential construction-generated vibration impacts related to annoyance is included as Table 3.11-12 in Section 3.11 in Volume 1 of this Supplemental EIR. This table parses out potential annoyance effects related to interference with interior operations, sleep, and institutional daytime use as a function of the frequency of the vibration event according to three land use categories.

- Category 1: Buildings where vibration would interfere with interior operations
- Category 2: Residences and buildings where people normally sleep
- Category 3: Institutional land uses with primarily daytime uses

Refer to Table 3.11-12 in Volume 1 of this Supplemental EIR for the FTA general assessment criteria for groundborne vibration.

Except for long-term occupational exposure, vibration levels rarely affect human health. Instead, most people consider vibration to be an annoyance that can affect concentration or disturb sleep.

People may tolerate infrequent, short-duration vibration levels, but human annoyance related to vibration becomes more pronounced if the vibration is continuous or occurs frequently.

### Vibration-Related Structural Damage

To determine if construction activities have the potential to damage nearby buildings, vibration levels at nearby receptors are calculated using FTA source vibration levels and the attenuation equation of  $PPV = PPV_{ref} \times (25/Distance)^{1.5}$  (Federal Transit Administration 2018). These calculated values are then compared to structural damage criteria. For the purposes of this analysis, the California Department of Transportation (Caltrans) provided guidelines regarding vibration damage effects are used. Table 3.11-4 in Section 3.11, in Volume 1 of this Supplemental EIR provides the Caltrans vibration guidelines for potential damage to different types of structures, such as: “historic and some old buildings,” “older residential structures,” “new residential structures,” and “modern industrial/commercial buildings.” Although “extremely fragile historic buildings” and “fragile buildings” categories are also included in the Caltrans guidelines, it is uncommon for buildings in urban environments, such as the project site, to be more sensitive than those in the “historic and some old buildings” category.

A structure’s susceptibility to vibration-induced damage depends on its age, condition, distance from the vibration source, and the vibration level. Vibration impacts on structures are usually significant if construction vibration could result in structural or cosmetic damage or, in the case of a historic resource, materially alter the resource pursuant to CEQA Guidelines section 15064.5. Depending on a structure’s condition, potential vibration-induced damage may be cosmetic (e.g., plaster or wood ornamentation may be damaged) or structural, in which case the integrity of the building may be threatened.

## Thresholds of Significance

Refer to Section 3.11 in Volume 1 of this Supplemental EIR for a discussion of applicable significance criteria.

## Impacts and Mitigation Measures

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

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Aggie Square Phase I could involve the use of construction equipment outside of the daytime exempt hours in Sacramento. During evening, nighttime, or early morning hours, construction activity could generate noise levels in excess of the City of Sacramento’s Exterior Noise Standards at the nearest sensitive uses. Mitigation Measure LRDP-NOI-1 would reduce the severity of this impact, but the impact would remain **significant and unavoidable**.

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As discussed in Section 3.11 in Volume 1 of this Supplemental EIR, construction of future projects as part of implementation of the 2020 LRDP Update, including the Aggie Square Phase I project, would involve the use of heavy equipment in use and would generate construction noise in the vicinity of the campus. Construction equipment would vary day to day depending on the particular phase of construction and the specific activities occurring. Construction phases for the Aggie Square Phase I project would include site demolition and preparation, plazas and site completion, and construction

of Life Science Technology Engineering (LTSE) East, LTSE West, Lifelong Learning (LLL) Tower, podium and parking, residential uses, and PS6. Each of these phases of construction involve the use of different types and numbers of equipment. Typical noise levels generated by various types of construction equipment likely to be used are identified in Table 3.11-1.

**Table 3.11-1. Typical Construction Equipment Noise Levels**

Construction Equipment	Noise Level at 50 Feet (dB, $L_{max}$ )	Noise Level at 100 Feet (dB, $L_{max}$ )
Impact pile driver	101 (intermittent)	95 (intermittent)
Hoe ram (impact hammer)	90	84
Concrete saw	90	84
Crusher	87	81
Jackhammer	89	83
Grader	85	79
Auger drill rig	84	78
Tractor	84	78
Bulldozer	82	76
Concrete pump truck	81	75
Excavator	81	75
Crane	81	75
Roller	80	74
Front-end loader	79	73
Air compressor	78	72
Backhoe	78	72
Paver	77	71
Dump truck	76	70

Source: Federal Highway Administration 2006.

dB = decibels;  $L_{max}$  = maximum sound level.

As shown in Table 3.11-1, noise levels from individual pieces of construction equipment at 100 feet are typically in the range of 70 dBA to 95 dBA  $L_{max}$ . Noise from the operation of construction equipment would generally be expected to result in increases in ambient noise in the project vicinity, as typical baseline noise levels in the project area were measured to be between 52 and 68 dBA  $L_{eq}$  during daytime hours (based on the measurement information presented in the 2010 LRDP Final EIR [University of California 2010]).

Combined noise levels from multiple pieces of construction equipment operating simultaneously are typically louder than noise from individual equipment. Table 3.11-2 shows estimated combined construction noise levels for certain types of construction activities.

**Table 3.11-2. Typical Construction Activity Noise Levels**

Construction Activity <sup>a</sup>	Assumes the Following Equipment	Combined L <sub>max</sub> at 100 Feet	Combined L <sub>eq</sub> at 100 Feet
Demolition	Tractor, Concrete Saw, Excavator	85	79
Site Preparation	Excavator, Dump Truck, Backhoe	78	74
Grading	Dozer, Grader, Compactor	82	78
Foundations	Impact Pile Driver, Excavator	95	88
Building and Utilities	Crane, Forklift, Concrete Pump	81	76
Architectural Coating	2 Air Compressors	75	71
Paving	2 Pavers, Roller	77	72

Source: Federal Highway Administration 2006.

L<sub>max</sub> = maximum sound level; L<sub>eq</sub> = equivalent sound level.

<sup>a</sup> Includes up to three pieces of typical equipment used for each type of activity.

As shown in Table 3.11-2, noise from activities at a distance of 100 feet could be in the range of approximately 71 to 79 dBA L<sub>eq</sub>, assuming the construction phase does not involve pile driving. If a phase involves pile driving, noise levels could be approximately 88 dBA L<sub>eq</sub> or 95 dBA L<sub>max</sub> at a distance of 100 feet.

As described in Volume 1 of this Supplemental EIR, the University is a State entity and is exempt under the State constitution from compliance with local land use regulations, including general plans, zoning, and ordinances whenever using property under its control in furtherance of its educational mission. However, the University seeks to develop its property in a manner that minimizes potential conflicts with the land use policies and plans of local jurisdictions to the extent feasible. The Sacramento Campus is in the city of Sacramento, and it is a policy for the University to typically observe the local thresholds in the city related to noise.

Construction noise in Sacramento during the daytime hours of 7:00 a.m. and 6:00 p.m. Monday through Saturday and between 9:00 a.m. and 6:00 p.m. on Sunday is exempt from the numerical noise standards, provided that the operation of an internal combustion engine is equipped with suitable exhaust and intake silencers in good working order. Therefore, during these daytime exempt hours, construction noise impacts from development of the project would be less than significant. Outside of these exempt daytime hours, construction noise in the Sacramento is limited by the Exterior Noise Standards contained in the Sacramento City Code (55 dBA from 7:00 a.m. to 10:00 p.m. and 50 dBA from 10:00 p.m. to 7:00 a.m.). Thus, outside of the daytime exempt hours, construction noise must be limited to 55 dBA between the hours of 6:00 p.m. and 10:00 p.m. and 50 dBA between the hours of 10:00 p.m. and 7:00 a.m.

Project construction would typically be limited to the daytime hours described above. However, some construction activities for the project may occur outside of these specific daytime hours (Davis pers. comm.), when the Exterior Noise Standards described above would apply to construction noise. For example, it is possible that concrete pour activities would occur during nighttime hours or during earlier hours of the morning (e.g., before 7:00 a.m. on weekdays and Saturdays or before 9:00 a.m. on Sundays) or after 6:00 p.m. In addition, depending on the specific construction subphase, other construction activities may need to begin before 7:00 a.m. on weekdays and Saturdays or before 9:00 a.m. on Sundays.

The nearest offsite residential land uses where people typically sleep are over 200 feet to the west of project construction areas, west of Stockton Boulevard. Note that some shielding may occur from intervening buildings. However, attenuation due to potential shielding is not considered in this analysis to ensure a conservative assessment.

Concrete pour activities could generate combined noise levels of approximately 67 dBA  $L_{eq}$  at a distance of 200 feet, as shown in Table 3.11-16 in Volume 1 of this Supplemental EIR, based on an assumption of two concrete mixer trucks and a concrete pump truck operating simultaneously. Should other construction activities occur outside of daytime hours, they could result in greater noise levels at offsite residences. For example, construction noise from demolition preparation activities using a tractor, concrete saw, and excavator could generate noise of 79 dBA  $L_{eq}$  at 100 feet (as shown in Table 3.11.2), which would equate to approximately 73 dBA  $L_{eq}$  at 200 feet. Since specific details about which construction activities for the project may occur outside of exempt hours are unknown, noise levels at the nearest noise-sensitive receptors resulting from project construction may be in excess of the City's allowable daytime (55 dBA) and nighttime (50 dBA) noise limits. As was the case for the 2020 LRDP Update, as presented in Volume 1 of this Supplemental EIR, construction noise impacts from the Aggie Square Phase I project would be significant and mitigation would be required.

Implementation of Mitigation Measure LRDP-NOI-1 would reduce construction noise levels at nearby noise-sensitive land uses and would therefore reduce the severity of construction noise impacts. However, it may not be possible to reduce construction noise occurring outside of the daytime exempt hours to below the allowable levels defined in the Sacramento City Code. Therefore, and as was the case for the 2020 LRDP Update, construction noise impacts from the Aggie Square Phase I project would be **significant and unavoidable**.

#### **Mitigation Measure LRDP-NOI-1: Implementation of Measures to Reduce Construction Noise**

Refer to Section 3.11 in Volume 1 of this Supplemental EIR.

#### ***Haul Truck Noise***

In addition to noise generated by construction activity on the project site, noise is also generated by haul trucks traveling to and from project construction areas. Detailed construction information was provided for the project by Wexford, including the number of total haul truck trips expected for the Aggie Square Phase I project by construction phase. Construction for this project would occur between the years 2021 and 2023. Based on the Aggie Square Phase I haul truck and construction schedule information, it is expected that during the time period with the most overlapping phases of construction (which, for Aggie Square Phase I, was determined to be November of 2021), up to 88 daily haul truck trips would occur. Note that on most days of Aggie Square Phase I construction, there would be fewer than 88 total daily haul truck trips. However, modeling based on the period with the most overlapping construction phases provides a more conservative assessment.

This analysis therefore assumes there could be up to 88 total haul truck trips per day entering or exiting the campus during Aggie Square Phase I construction as a reasonable worst case, and (based on consultation with UC Davis [Dulcich pers. comm.]) that approximately one-third of the average daily truck trips would occur during a reasonable worst-case hour. To provide a more conservative analysis, it is then also assumed that up to two-thirds of the hourly truck trips could be using the same roadway segments, noting that in actuality approximately half would travel north and

approximately half would travel south on Stockton Boulevard. This would result in just over one-fifth of daily haul trucks (or 20 trucks) using a given roadway segment during a reasonable worst-case hour.

Baseline (2019) average peak hour noise was modeled to determine existing noise along roadway segments in the vicinity of the Campus. Baseline conditions plus haul truck trip modeling was then conducted to determine the noise increase along these roadway segments that could be attributable to construction haul truck noise. Refer to Table 3.11-3 for the results of the haul truck noise analysis.

**Table 3.11-3. Construction Haul Truck Noise Increases**

Roadway	Segment	Baseline Average Peak Hour Noise Levels	Baseline + Haul Truck Trip Average Peak Hour Noise Levels	Increase Attributable to LRDP Haul Trucks	Increase over 3 dB?
Stockton Boulevard	T Street to 39th Street/ Miller Way	67.1	68.5	1.4	No
Stockton Boulevard	39th Street/Miller Way to X Street	68.1	69.4	1.3	No
Stockton Boulevard	X Street to 2nd Avenue	66.8	68.3	1.5	No
Stockton Boulevard	2nd Avenue to Broadway	67.9	69.3	1.4	No
Stockton Boulevard	South of Broadway	68.5	69.8	1.3	No
Broadway	West of Stockton Boulevard	67.5	68.9	1.5	No
Broadway	Stockton Boulevard to 49th Street	65.1	66.9	1.8	No
Broadway	49th Street to 50th Street	63.9	66.0	2.1	No
Broadway	50th Street to 59th Street	64.9	66.7	1.9	No
Broadway	East of 59th Street	64.5	66.5	1.9	No

dB = decibels.

As shown in Table 3.11-3, construction haul truck trips for the Aggie Square Phase I project would not be expected to result in a greater than 3 dB (considered barely audible) increase along any roadway segment in the campus vicinity based on the reasonably conservative assumptions outlined above. Therefore, noise from construction haul truck activity for the project would be **less than significant**.

In summary, although noise from construction haul trucks would be less than significant, the construction of Aggie Square Phase I could generate noise levels in excess of the City of Sacramento's Exterior Noise Standards at the nearest sensitive uses. Mitigation Measure LRDP-NOI-1 would reduce the severity of this impact, but the impact would remain **significant and unavoidable**.

**Impact AS-NOI-2: Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project from operations in excess of applicable standards**

Operational noise sources resulting from the implementation of the Aggie Square Phase I Project would include heating, cooling, and ventilation equipment at individual future buildings, emergency generator testing, operational loading activities, and events at Aggie Square (which would likely include amplified music or speech). Noise from mechanical equipment and emergency generator testing may exceed the allowable noise levels. Mitigation for impacts related to mechanical equipment noise and emergency generator testing would be required. With implementation of Mitigation Measures LRDP-NOI-2a and LRDP-NOI-2b, impacts from emergency generator testing and from heating, cooling and ventilation equipment for the Aggie Square Phase I project would be reduced. This impact would be **less than significant with mitigation**.

***Traffic Noise***

To determine whether development of Aggie Square Phase I would result in a substantial permanent increase in traffic noise levels, noise from the increased vehicle traffic expected to be generated by the project was analyzed using traffic data received by the project's traffic engineer. Vehicular traffic noise in the campus vicinity was modeled by using ADT volumes along roadway segments and vehicle mix assumptions (i.e., the proportion of heavy vehicles on a given segment) provided by the project traffic engineer. ADT volumes were provided for Baseline (2019) and Baseline (2019) Plus Project conditions. Table 3.11-4 shows Aggie Square Phase I-related traffic noise increases along roadway segments in the vicinity of the campus.

**Table 3.11-4. Project-Related Traffic Noise Increases**

Segment		Baseline (2019) Without Project (dB L <sub>dn</sub> )	Baseline (2019) Plus Project (dB L <sub>dn</sub> )	Project- Related Increase
Stockton Boulevard	T Street to 39th Street/Miller Way	69.3	69.8	0.5
Stockton Boulevard	39th Street/Miller Way to X Street	69.6	70.1	0.5
Stockton Boulevard	X Street to 2nd Avenue	68.4	69.0	0.6
Stockton Boulevard	2nd Avenue to 3rd Avenue	68.9	69.5	0.6
Stockton Boulevard	3rd Avenue to Broadway	68.9	69.8	0.9
Stockton Boulevard	South of Broadway	69.7	70.0	0.4
Broadway	West of Stockton Boulevard	68.6	69.1	0.5
Broadway	Stockton Boulevard to 49th Street	67.1	67.1	0.0
Broadway	49th Street to 50th Street	65.9	66.1	0.2
Broadway	50th Street to 59th Street	66.8	67.3	0.5
Broadway	East of 59th Street	66.4	66.9	0.5
V Street	West of 49th Street	58.3	58.5	0.2
V Street	East of 49th Street	59.7	60.7	1.0
50th Street	North of Broadway	62.3	63.2	0.9
2nd Avenue	West of Stockton Boulevard	61.3	61.8	0.4
2nd Avenue	East of Stockton Boulevard	63.0	63.7	0.7

dB L<sub>dn</sub> = day night average noise level.

As shown in Table 3.11-4, the project would result in a maximum increase of 1 dB on any analyzed roadway segment. As discussed above, a project-related increase of at least 3 dB would be necessary to trigger a significant project traffic noise impact in areas that exceed the “Normally Acceptable” criteria. Since all project-related increases were modeled to be 1 dB or less, the project would not result in a 3 dB or greater increase in noise along any segment and would not result in any significant traffic noise impacts in the campus vicinity. Traffic noise impacts from the Aggie Square Phase I project would be **less than significant**.

### ***Emergency Generator Testing***

Six new emergency generators (two 1,500 kilowatt [kW] generators and four 1,000 kW generators) would be installed at the Aggie Square Phase I project site. As described in Volume 1 of this Supplemental EIR, generator noise is typically exempt from local noise regulations during emergency situations. However, noise resulting from the regular testing of emergency generators generally does need to comply with applicable noise standards.

The project emergency generators would be tested for approximately 30 minutes at a time once per month (Conant Gilles pers. comm.). Noise during generator testing in Sacramento must comply with the noise limits outlined in Section 8.68.060, *Exterior Noise Standards*, of the Sacramento City Code. Although the University is exempt under the State constitution from compliance with local land use regulations, including general plans, zoning, and ordinances whenever using property under its control in furtherance of its educational mission, the University elects to typically ensure compliance with local regulations. The exterior noise limit in the city between the hours of 7:00 a.m. and 10:00 p.m. is 55 dBA at the nearest residential or agricultural land use. The exterior noise limit between the hours of 10:00 p.m. and 7:00 a.m. is 50 dBA at the nearest residential or agricultural land use. Although the code also includes modifiers to allow more noise if the duration of the noise is very short term (e.g., between 1 and 15 minutes out of an hour), the standards cited above would apply to a 30-minute generator test.

The nearest residential land use to the proposed generator location would be the onsite (future) residences affiliated with the Aggie Square Phase 2 development, at least 230 feet from the nearest generator. Note that the generators would likely be somewhat shielded from these residences, but no shielding is accounted for in this analysis to ensure a conservative assessment. As described in Section 3.11 in Volume 1 of this Supplemental EIR, the Language Academy of Sacramento is also near the Sacramento Campus, and schools are often considered to be noise sensitive. This school is approximately 340 feet from the nearest generator location.

Although the exact makes and models of the project generators have not yet been selected, noise levels from a Cummins Model 1500DQGAB (1,500 kW) Generator are used in this analysis to provide estimated noise levels from generator testing at the Aggie Square Phase I site. According to the sound data contained in the specifications sheet for this generator, combined engine and exhaust noise from this generator could be up to approximately 104 dBA at a distance of 50 feet. Depending on the actual models of generators selected and any attenuation features incorporated into the design (e.g., enclosures, silencers, solid walls, etc.), noise levels could be greater or lower than this level (Cummins, Inc. 2020).

Based on the information cited above for a Cummins 1,500 kW emergency generator, a noise level of approximately 104 dBA  $L_{eq}$  from the generator at 50 feet (without the inclusion of any noise attenuating features) would be reduced to approximately 90 dBA at a distance of 230



feet without accounting for any shielding. At the nearby school located at least 340 feet from the nearest generator location, unshielded generator noise could be approximately 87 dBA. Although noise would be reduced at a rate of 6 dB per doubling of distance, it is likely noise from generator testing would exceed the Exterior Noise Standards at receptors located even farther away than these distances. Additional attenuating features, such as a weather enclosure and/or exhaust silencers or filters could also reduce noise from generator operations, but specific attenuating features have not been selected at this time, therefore, noise from testing of the project emergency generators at Aggie Square Phase I could result in noise levels in excess of the Sacramento City Code standards at nearby noise-sensitive land uses.

As described previously, generator testing for emergency generators would be temporary and intermittent, occurring for a period of 30 minutes at a time approximately one time per month. However, because noise from the testing would be expected to exceed the quantitative criteria from the Sacramento City Code, impacts are conservatively considered to be significant, and mitigation would be required.

Implementation of Mitigation Measure LRDP-NOI-2a (described in Volume 1 of this Supplemental EIR) would require that installed emergency generators are oriented, located, and designed in such a way to reduce noise exposure during testing to below the applicable City of Sacramento criteria. The incorporation of methods to reduce generator noise (such as enclosing the generator, incorporating the use of exhaust mufflers or silencers, selecting quieter generator models, etc.) could reduce generator noise to below the applicable City of Sacramento noise criterion at nearby sensitive uses. Therefore, with implementation of mitigation, emergency generator noise at Aggie Square Phase I would comply with the applicable local noise criteria. This impact would be **less than significant with mitigation**.

#### **Mitigation Measure LRDP-NOI-2a: Reduce Noise Exposure from Emergency Generators**

Refer to Section 3.11 in Volume 1 of this Supplemental EIR.

#### ***Mechanical Equipment Noise***

The Aggie Square Phase I Project would not rely upon the Sacramento Campus Central Cogeneration Plant for heating and cooling. Rather, building-specific heating and cooling equipment would be installed to provide heating and cooling for the Aggie Square buildings. The project buildings would also include the use of exhaust fans and lab fans (expected to exhaust to the roof), which also generate noise.

A packaged air handling unit can produce sound levels in the range of about 70 to 75 dBA at 50 feet, depending on the size of the equipment (Hoover and Keith 2000). A large exhaust or ventilation fan can generate noise in the range of 79 dBA at 50 feet. In addition, depending on the cooling capacity, a chiller can generate a noise level of approximately 65 to 71 dBA at 50 feet. Other mechanical equipment that may be used for future projects would generate similar noise levels. Each building within the Aggie Square Phase I project site would include numerous pieces of noise-generating mechanical equipment. For example, in the LLL tower, at least four air cooled chillers and six air handling units are proposed, along with numerous exhaust fans and water pumps. The LSTE East and LSTE West buildings would also include numerous air handling units, exhaust fans, chillers, and pumps.

In order to not exceed applicable thresholds, mechanical equipment must not result in noise levels of greater than 50 dBA  $L_{eq}$  at nearby noise-sensitive receptors during nighttime hours and 55 dBA  $L_{eq}$  at noise-sensitive receptors during daytime hours. Since heating and cooling equipment may, at times, be operational 24 hours per day, the more stringent nighttime threshold is applied.

Noise from equipment located in mechanical equipment rooms is typically attenuated by the room itself, and noise levels audible outside such a room are often much less than the noise level inside the room. Mechanical equipment that is not located in an equipment room (e.g., rooftop equipment) is often shielded with a solid wall or screen which can result in slight reductions in noise. However, it is not known if all heating and equipment and exhaust fans would be fully enclosed.

Equipment for Aggie Square buildings could be as close as 130 feet from the nearest Language Academy of Sacramento (the approximate distance between the edge of the LLL building and this school building). In addition, equipment at the residential building, in the western portion of the site, could be as close as 230 feet from offsite residential land uses across Stockton Boulevard. In addition, it is possible that equipment could be located within 65 feet of proposed Aggie Square residential land uses based on estimated distances between the residential building for Aggie Square Phase I and the nearest nonresidential Aggie Square building.

As previously mentioned, mechanical equipment that may be installed at the site could generate noise levels in the range of about 70 to 79 dBA at 50 feet, depending on the size of the equipment (Hoover and Keith 2000). At a distance of 65 feet, individual equipment noise levels would be in the range of 68 to 77 dBA. At approximately 130 feet (the estimated distance between the LLL building and the nearest Language Academy of Sacramento building), noise from individual equipment would be in the range of 62 to 71 dBA. At a distance of 230 feet, this would be reduced to approximately 57 to 66 dBA, depending on the size and type of equipment.

Note that combined noise levels from multiple pieces of equipment operating simultaneously would be higher. Noise could be reduced somewhat by a solid screen and would be reduced further should the equipment be located inside of a mechanical equipment room. However, since screening features are not known at this time, the information cited above demonstrates that noise from mechanical equipment at equipment Aggie Square buildings may exceed 50 dBA  $L_{eq}$  at during nighttime hours and 55 dBA  $L_{eq}$  during daytime hours at nearby noise-sensitive receptors. Noise impacts from heating, cooling, and ventilation equipment for the project would be considered significant, and mitigation would be required.

Implementation of Mitigation Measure LRDP-NOI-2b would require that all stationary noise sources are oriented, located, and designed in such a way that reduces noise exposure to below the City of Sacramento criteria. The incorporation of methods to reduce mechanical equipment noise (such as locating equipment inside equipment rooms or enclosures, incorporating exhaust and intake silencers, selecting quieter equipment models, etc.) could reduce mechanical equipment noise to below the applicable City of Sacramento noise criteria at nearby sensitive uses. Therefore, impacts related to mechanical equipment noise at the Aggie Square Phase I Project would be **less than significant with mitigation**.

#### **Mitigation Measure LRDP-NOI-2b: Reduce Noise Exposure from New Stationary Noise Sources**

Refer to Section 3.11 in Volume 1 of this Supplemental EIR.

### ***Loading Activity Noise***

Three loading docks are proposed to serve the Aggie Square Phase I buildings. One loading dock would be located near the northwest corner of the Retail Residential building (for the food hub and kitchen), one would be located on the east side of LSTE East, and one would be located on the north side of the residential portion of the Retail and Residential building. There would be approximately 12 deliveries per day at the LSTE East and residential loading docks, and approximately 15 deliveries per day at the kitchen loading dock (Tremblay pers. comm.). In general, the primary vehicles accessing project loading areas are medium-sized (e.g., Fed Ex, UPS) trucks and delivery vans (e.g., Amazon vans), although some larger or semi-trucks also load or unload at the campus. Based on the assumptions incorporated into the air quality analysis, it is expected that fewer than one-fifth of these daily truck trips would be made by larger diesel trucks and even fewer would be made by semi-trucks.

Loading can generate noise from the actual process of loading and unloading of vehicles or trucks (noting that smaller vans and medium size trucks typically result in less loading and unloading noise), from vehicle idling, and from backup alarms. Although backup alarms can be a source of annoyance, and although loading activities do generate noise, commercial loading would typically occur during daytime hours and would be located at least 350 feet from the nearest off-campus noise-sensitive receptors, including residences across Stockton Boulevard and the nearest school building at the Sacramento Language Academy.

In general, the loading and unloading of goods is a common occurrence in cities and urban environments. The campus is in an urban environment near major thoroughfares (e.g., Stockton Boulevard and Broadway) and close to the US 50 freeway. Modeled existing noise levels due to traffic activity alone along Stockton Boulevard were in the range of 68 and 70 dBA  $L_{dn}$ , and modeled existing traffic noise levels along Broadway were in the range of 66 and 69 dBA  $L_{dn}$  (refer to Table 3.11-11 in Volume 1 of this Supplemental EIR). In addition, even if half of the daily deliveries at each of these loading docks (or between six and eight deliveries) occurred during a single worst-case hour, noise from loading and unloading would be temporary and intermittent, and largely overshadowed by the existing traffic noise nearby.

Because loading docks associated with Aggie Square Phase I would be approximately 350 feet or more from offsite noise-sensitive land uses, because the project site is in an urban area with elevated existing noise levels, and because loading activities are relatively infrequent (12 to 15 per day per dock) temporary, intermittent, and occur primarily during daytime hours, noise impacts from intermittent loading activities for Aggie Square Phase I would be **less than significant**.

### ***Amplified Music and Sound***

As discussed in Volume 1 of this Supplemental EIR, Aggie Square Phase I would be expected to have events that may involve amplified speech or music. Specifically, UC Davis estimates that there could be up to 1 event per week on weekday afternoons in Aggie Square outdoor uses areas with up to 150 people, and up to 1 larger monthly event with a maximum of 1,800 people in attendance. Weekday (Sunday through Thursday) events involving amplified music would not begin before 4:50 p.m. (after the typical school day is over) and would not extend past 10:00 p.m. Weekend (Friday and Saturday, and the day before certain holidays) events would not extend past 11:00 p.m. (Davis pers. comm.).

Noise from amplified music and speech occurring at entertainment events or concerts is limited per the Sacramento City Code to approximately 96 dBA (depending on the season) at a distance of 150 feet. In addition, the Sacramento City Code also contains time limits for amplified noise on weekdays and weekends. Based on the analysis contained in Volume 1, estimated noise levels from human speech amplified by a single loud speaker may be in the range of approximately 58 to 59 dBA  $L_{eq}$  at 100 feet,<sup>1</sup> whereas noise levels from a small live band (which included a guitar and vocalists with a single amplifier) would be slightly louder, and have been measured to be in the range of 65 dBA  $L_{eq}$  at 100 feet.<sup>2</sup> Noise levels from a larger outdoor live music venue were also cited in Volume 1 of this Supplemental EIR, and measured noise was in the range of 79 dBA at 200 feet (which equates to 85 dBA at 100 feet or 82 dBA at 150 feet).<sup>3</sup>

Measured concert noise levels from an event similar to the larger events expected to be held at Aggie Square, with an estimated noise level of approximately 82 dBA at 150 feet, demonstrates that it is unlikely for noise from amplified music at Aggie Square to exceed the allowable level of 96 dBA at a distance of 150 feet. In addition, events with amplified music would abide by the time limits outlined in the Sacramento City code. Weekday (Sunday through Thursday) events involving amplified music would not extend past 10:00 p.m., and weekend (Friday and Saturday, and the day before certain holidays) events would not extend past 11:00 p.m. For these reasons, noise impacts from amplified music for events at Aggie Square Phase I would be **less than significant**.

### ***Parking Structure Noise***

Activity at PS6, the new parking structure associated with the project, would have the potential to result in noise increases in the vicinity of the structure. According to the project traffic engineer (Hananouchi pers. comm. [b]), a total of up 1,049 vehicles would enter or exit (e.g., both inbound and outbound trips) PS6 during the morning peak hour, and 1,088 enter or exit the parking structure during the evening peak hour. Because the peak hours are expected to have the most vehicles per hour utilizing the parking structure during a given day, an analysis of the peak-hour parking garage noise provides a reasonable worst-case assessment of daytime parking garage noise.

Parking lot activity was analyzed as a stationary source of noise and resulting noise levels are compared to Exterior Noise Standards (Sacramento City Code Section 8.68.060) of 55 dBA from 7:00 a.m. to 10:00 p.m. and 50 dBA from 10:00 p.m. to 7:00 a.m. Although these standards technically apply to residential or agricultural land uses, the daytime exterior noise standard cited above is applied to the nearby school land use (the Language Academy of Sacramento) to ensure a conservative assessment of potential noise effects during school hours.

The Language Academy of Sacramento is approximately 70 feet south of the southern perimeter of the parking structure. According to the FTA *Transit Noise and Vibration Impact Assessment Manual* (Federal Transit Administration 2018), 1,000 cars in a peak activity hour would generate a Sound Equivalent Level (SEL) of 92 dBA at 50 feet. This value was converted to an hourly  $L_{eq}$  (average) noise level and used to calculate the  $L_{eq}$  noise level of a maximum of 1,088 vehicles per hour utilizing

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<sup>1</sup> Wedding Noise: Noise measured from an individual officiating over a wedding (single speaker) was measured to be between approximately 55 and 56 dBA  $L_{eq}$  at approximately 140 feet, equating to a noise level of approximately 58 to 59 dBA  $L_{eq}$  at approximately 100 feet.

<sup>2</sup> Acoustic Band Noise: Noise measured at approximately 73 feet from a small live band with a single amplifier that included a guitar and vocals was measured to be 67.5 dBA  $L_{eq}$ , equating to 64.8 dBA  $L_{eq}$  at 100 feet.

<sup>3</sup> Measurements were obtained at the Irvine Regional Park Amphitheater which has a permanent band shell for live music or entertainment.

the garage. At a standard distance of 50 feet, 1,088 vehicles using the garage per hour would result in an hourly  $L_{eq}$  noise level of approximately 56.6 dBA  $L_{eq}$ . At 70 feet (the distance to the nearest sensitive receptor), this would be reduced to 54 dBA  $L_{eq}$ . At greater distances (such as school buildings located south of the school property perimeter), this would be even more reduced.

This noise level of 54 dBA  $L_{eq}$  is below the daytime threshold for stationary noise of 55 dBA  $L_{eq}$ . Since the noise level generated from parking garage activity during the peak hours would be below the daytime exterior noise standard for the City of Sacramento, noise impacts from parking structure activity at PS6 would be **less than significant**.

### **Impact AS-NOI-3: Generation of excessive groundborne vibration or groundborne noise levels**

Construction activities for Aggie Square Phase I would have the potential to generate groundborne vibration that could result in annoyance effects to nearby sensitive land uses. There is also the potential that vibration could occur close enough to nearby buildings to result in potential damage-related effects. Implementation of Mitigation Measures LRDP-NOI-1, LRDP-NOI-3a, LRDP-NOI-3b, and Mitigation Measure AS-NOI-1 would reduce these impacts. This impact would be **less than significant with mitigation**.

#### ***Vibration-Related Annoyance***

FTA provides guidance on evaluating effects of vibration levels on humans from various vibration-inducing events, including construction activities and vibration from railroads. The impact criteria, which are based on the frequency of events occurring in 1 day and on receptor categories (such as buildings where vibration would interfere with interior operations, residences/buildings where people sleep, and institutional land uses with primarily daytime use) are summarized in Table 3.11-3 in Volume 1 of this Supplemental EIR, and provided in this section as Table 3.11-5. Note that, although temporary, construction activity is considered to be a “frequent event.”

**Table 3.11-5. Federal Transit Administration General Assessment Criteria for Groundborne Vibration**

Land Use Category	GBV Impact Levels (VdB; relative to 1 micro-inch/second)		
	Frequent Events <sup>a</sup>	Occasional Events <sup>b</sup>	Infrequent Events <sup>c</sup>
Category 1: Buildings where vibration would interfere with interior operations	65 <sup>d</sup>	65 <sup>d</sup>	65 <sup>d</sup>
Category 2: Residences and buildings where people normally sleep	72	75	90
Category 3: Institutional land uses with primarily daytime uses	75	78	83

Source: Federal Transit Administration 2018.

GBV = groundborne vibration; VdB = vibration decibels.

<sup>a</sup> “Frequent events” is defined as more than 70 vibration events from the same source per day.

<sup>b</sup> “Occasional events” is defined as 30 to 70 vibration events from the same source per day.

<sup>c</sup> “Infrequent events” is defined as fewer than 30 vibration events from the same source per day.

<sup>d</sup> This criterion limit is based on levels that are acceptable for most moderately sensitive equipment, such as optical microscopes. Vibration-sensitive manufacturing or research would require detailed evaluation to define the acceptable vibration levels.

The potential for annoyance-related vibration impacts from construction to occur depends on the proximity of construction activities to sensitive receptors, the number and types of construction equipment, the duration of construction equipment use, and the time of use.

The nearest existing offsite structures to project construction areas are the nonresidential buildings directly west of Stockton Boulevard at an approximate distance of 90 feet (or more), and the existing two-story classroom building at the Language Academy of Sacramento, southeast of the proposed LLL Tower and south of PS6, at a distance of at least 70 feet from Aggie Square Phase I construction areas. In addition, an on-campus research building is approximately 70 feet northeast of the construction areas. The nearest residential land use is over 200 feet from project construction areas, across Stockton Boulevard. Typical vibration levels associated with heavy-duty construction equipment are shown in Table 3.11-6 at various distances, based on the attenuation equation discussed in the Section 3.11.1, *Overview of Vibration and Groundborne Noise* in Volume 1 of this Supplemental EIR.

**Table 3.11-6. Vibration levels in VdB of Construction Equipment Used for Aggie Square Phase I Development**

Equipment	VdB at 25 Feet	VdB at 70 Feet	VdB at 90 Feet	VdB at 100 Feet	VdB at 200 Feet	VdB at 225 Feet	VdB at 500 Feet
Pile driver (impact) – Typical	104	91	87	86	77	75	65
Pile driver (vibratory) – Typical	93	80	76	75	66	64	54
Vibratory Roller	94	81	77	76	67	65	55
Large bulldozer	87	74	70	69	60	58	48
Caisson drilling	87	74	70	69	60	58	48
Loaded trucks	86	73	69	68	59	57	47
Jackhammer	79	66	62	61	52	50	40
Small bulldozer	58	45	41	40	31	29	19

VdB = vibration decibels.

With regard to potential on-campus Category 1 land uses, the nearest research building is approximately 70 feet from project construction areas. This research building may include interior operations that would be sensitive to vibration (e.g., special equipment, microscopes), and therefore may qualify as a Category 1 land use. Vibration levels could be up to 91 VdB should pile driving activity occur in the northeast portion of the project site. Other equipment would result in lower vibration levels at this distance. For example, a large bulldozer, one of the most vibration-intensive pieces of non-impact equipment typically used for construction, would result in vibration level of 74 dBA at 70 feet. Because it is not yet known where pile driving would be used on the site, it is conservatively assumed that it could occur in this area. Vibration from pile driving activity could exceed the Category 1 (places where vibration would interfere with interior operations) vibration criterion of 65 VdB at distances of up to 500 feet, including at this building.

With regard to Category 2 land uses (places where people sleep), note that annoyance-related vibration effects are typically a concern if vibration levels in excess of applicable standards occur during nighttime hours. Most construction for the proposed project would occur during the standard daytime hours for construction outlined in the Sacramento City Code. However, limited nighttime construction may be required. At distances of 200 feet or more, the approximate distance

to the nearest offsite residential land uses across Stockton Boulevard, pile drivers could generate vibration of approximately 77 VdB. Non-impact equipment, such as a large bulldozer, could generate a vibration level up approximately 66 dBA at this distance. Therefore, most equipment would not result in vibration levels in excess of the applicable vibration criterion of 72 VdB for Category 2 land uses. However, should pile driving take place before 7:00 a.m. or after 6:00 p.m. Monday through Saturday or before 9:00 a.m. or after 6:00 p.m. on Sunday, vibration levels could exceed this criterion.

With regard to potential Category 3 land uses, the two-story school building affiliated with the Language Academy of Sacramento (considered a Category 3, or institutional land use with primarily daytime use) is at least 100 feet from LLL Tower construction areas and at least 70 feet from PS6 construction areas. At a distance of 70 feet, vibration levels from pile driving would exceed the applicable 75 VdB criterion. Specifically, at 70 feet, vibration levels from pile driving could be up to 91 VdB. Pile driving can exceed the criterion for Category 3 land uses at distances of up to 225 feet. The vibration level from a vibratory roller would be approximately 81 VdB at 100 feet, reducing to 75 VdB or less at 110 feet. Vibration levels from a large bulldozer at 70 feet would be 74 VdB, which is below the 75 VdB limit for Category 3 land uses. Therefore, it is possible that vibration generated by a vibration roller or pile driver at the project site could result in excessive vibration levels at the nearby school.

At a distance of 90 feet, the approximate distance from the closest project construction area to the nearest nonresidential structure across Stockton Boulevard (which may qualify as Category 3 land use if it is used for offices), vibration levels would be slightly lower than these numbers, but would be similar. Vibration from pile driving activity would still exceed the Category 3 criterion of 75 VdB at this distance, with an estimated vibration level of 87 VdB.

Since it is possible that vibration levels at nearby on-campus and off-campus uses could exceed the applicable criteria, potential vibration-related annoyance impacts to onsite and offsite uses would be significant, and mitigation would be required.

Implementation of Mitigation Measure LRDP-NOI-1 would ensure that pile driving would not occur outside of the daytime hours of 7:00 a.m. and 6:00 p.m. Monday through Saturday and between 9:00 a.m. and 6:00 p.m. on Sunday, reducing the potential for nighttime vibration-related annoyance effects. Implementation of Mitigation Measure LRDP-NOI-3a calls for the construction contractor to coordinate the timing of the vibration-intensive activities with hospital or research units that may be affected to reduce potential vibration-related annoyance effects on sensitive onsite hospital or research receptors. This would reduce vibration related annoyance impacts to on-campus uses. Implementation of Mitigation Measure LRDP-NOI-3b ensures that equipment will not operate within 100 feet of on-campus or off-campus residential (Category 2) land uses during nighttime hours, such that vibration levels at the nearest Category 2 land use will not exceed the applicable vibration criteria of 72 VdB. Implementation of this mitigation measure will ensure that nighttime vibration related annoyance effects to places where people sleep would be reduced. In addition, Implementation of Mitigation Measure AS-NOI-1 would require that the use of pile drivers and vibratory rollers would occur distant enough from Category 3 land uses (including the Language Academy of Sacramento) to ensure vibration levels below the applicable criteria for Category 3 land use. This impact would be **less than significant with mitigation** for both on-campus and off-campus land uses.

**Mitigation Measure LRDP-NOI-1: Implementation of Measures to Reduce Construction Noise**

Refer to Section 3.11 in Volume 1 of this Supplemental EIR.

**Mitigation Measure AS-NOI-1: Minimum Distances for the Operation of Pile Drivers and Vibratory Rollers**

Pile driving activity shall not occur within 225 feet of nearby Category 3 land uses, such as the Language Academy of Sacramento southeast of the project site, to ensure that vibration levels from pile driving do not exceed applicable vibration criteria for these uses. In addition, vibratory rollers shall not operate within 110 feet of nearby Category 3 land uses.

**Mitigation Measure LRDP-NOI-3a: Implement Measures to Reduce Vibration-Related Annoyance Impacts to Onsite Land Uses**

Refer to Section 3.11 in Volume 1 of this Supplemental EIR.

**Mitigation Measure LRDP-NOI-3b: Implement Measures to Reduce Vibration-Related Annoyance Impacts to Offsite Land Uses**

Refer to Section 3.11 in Volume 1 of this Supplemental EIR.

***Vibration-Related Structural Damage***

As noted above, construction of the Aggie Square Phase I project would require equipment that could generate groundborne vibration. Typical vibration levels associated with heavy-duty construction equipment at various distances are shown in Table 3.11-7.

**Table 3.11-7. Peak Particle Velocity Vibration Levels for Construction Equipment**

Equipment	PPV at 25 Feet	PPV at 50 Feet	PPV at 90 Feet	PPV at 100 Feet	PPV at 200 Feet
Pile driver (impact)	1.52	0.54	0.22	0.19	0.07
Pile driver (sonic)	0.73	0.26	0.11	0.09	0.03
Vibratory roller	0.09	0.03	0.01	0.01	0.00
Hoe ram	0.09	0.03	0.01	0.01	0.00
Drill	0.09	0.03	0.01	0.01	0.00
Large bulldozer	0.08	0.03	0.01	0.01	0.01
Loaded trucks	0.04	0.01	0.01	0.00	0.00
Jackhammer	0.21	0.07	0.03	0.03	0.01
Small bulldozer	0.00	0.00	0.00	0.00	0.00

Source: Federal Transit Administration 2018.

PPV = peak particle velocity.

As shown in Table 3.11-4 in Volume 1 of this Supplemental EIR, some building types (e.g., “historic and some old buildings”) are more susceptible to vibration-related damage effects. The nearest existing offsite structure to proposed Aggie Square Phase I construction areas is approximately 90 feet from the project site, across Stockton Boulevard. The buildings located across Stockton



Boulevard appear to fall into the categories of either “modern industrial/commercial buildings,” and potentially “new residential structures” or “older residential structures.”

This analysis conservatively assumes that construction could occur within 90 feet of the buildings most similar to “older residential structures.” Note that it is likely vibration-generating activities would occur farther than this distance from nearby structures, because only limited activities would take place near the project perimeter. However, as mentioned previously, this analysis utilizes these assumptions to ensure a conservative assessment. In addition, it is possible that construction activity could take place as close as 100 feet from an existing two-story building at the Language Academy of Sacramento, located southeast of the proposed LLL Tower. This building is assumed to be an “older residential structure” as well.

In addition to offsite uses, it is possible that some onsite uses could be affected by construction-related vibration. The nearest campus building to project construction areas is a research building located north of 2nd Avenue and east of 45th Street. This building is at least 70 feet from project construction areas.

As shown in Table 3.11-7 above, at a distance of 90 feet, the distance to the nearest offsite building, vibration levels from all equipment would be below the damage criterion for “older residential structures,” and similar buildings, or 0.3 PPV inches per second. At farther distances, such as 100 feet (the approximate distance to the nearest structure: the Language Academy of Sacramento), vibration levels would be even lower and would still be below the most appropriate damage criterion of “older residential structures,” or similar buildings. Therefore, vibration-related damage impacts to nearby on-campus and off-campus buildings from project construction equipment (including pile drivers) would be **less than significant**.

**Impact AS-NOI-4: Placement of project-related activities in the vicinity of a private airstrip or an airport land use plan or within 2 miles of a public airport or public use airport, resulting in exposure of people residing or working in the project area to excessive noise levels**

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There are no public or public use airport facilities in the vicinity of the Sacramento Campus. In addition, Aggie Square Phase I would not result in any increases in emergency helicopter operations, since no new hospital uses would be developed under the project. Although the project proposes the development of new residential land uses, all residential land uses associated with Aggie Square Phase I would be located outside of the estimated 65 CNEL contour for year 2040 (full build out of the LRDP) emergency helicopter operations. Under California Division of Aeronautics and FAA noise compatibility criterion, single- or multi-family residences are considered compatible with exterior aircraft noise exposures of 65 dB CNEL or less. For these reasons, impacts related to aircraft noise from public use airports or private airstrips resulting from the project would be **less than significant**.

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As discussed in Volume 1 of this Supplemental EIR, there are no public or public use airport facilities in the vicinity of the Sacramento Campus, and there would be no noise impacts related to aircraft activity at public airports. There are also no private airstrips within 2 miles of the campus, but there is an on-campus emergency helipad. Implementation of the 2020 LRDP Update would result in approximately 1 additional emergency helicopter landing and take-off cycle per day at the on-campus helipad. However, because no emergency hospital uses would be developed under the project, Aggie Square Phase I would not result in any increases in emergency helicopter activity.

Therefore, the project would not result in increased noise from emergency helicopter operations at nearby sensitive uses.

In accordance with *CBIA v. BAAQMD*,<sup>4</sup> the effects of the environment on a project are not considered impacts unless the project exacerbates the hazard or, in this case, worsens the ambient noise environment. Since LRDP implementation (as discussed in Volume 1 of this EIR) would result in an increase in emergency helicopter noise in the project area, potential impacts of helicopter noise to Aggie Square Phase I residential uses are assessed.

Although the project proposes the development of new residential land uses, all residential land uses associated with Aggie Square Phase I would be located outside of the estimated 65 CNEL contour for year 2040 (full build out of the LRDP) emergency helicopter operations. Under California Division of Aeronautics and FAA noise compatibility criterion, single- or multi-family residences are considered compatible with exterior aircraft noise exposures of 65 dB CNEL or less. Refer to Figure 3.11-3 from Volume 1 of this EIR for the location of the 65 CNEL contour for year 2040. Therefore, since the Project would not result in an increase in emergency helicopter operations and since all project residences would be located outside of the 65 CNEL contour for the campus helipad, impacts related to aircraft noise from public use airports or private airstrips resulting from the project would be **less than significant**.

### **Mitigation Measures**

No mitigation measures are necessary.

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<sup>4</sup> *California Building Industry Association [CBIA] v. Bay Area Air Quality Management District*, Supreme Court Case No. S213478

## 3.12 Population and Housing

This section describes the regulatory and environmental setting for population and housing in the Aggie Square Phase I project area, analyzes effects on population and housing that would result from implementation of Aggie Square Phase I, and provides mitigation measures to reduce the effects of any potentially significant impacts, if applicable.

In response to the Notice of Preparation for this Supplemental EIR, commenters expressed the following concerns related to population and housing.

- Recommendations to consider the potential for displacement of nearby residents in the form of increased housing costs and increasing housing inequality through gentrification.
- Concerns about affordable housing being included in new residential development.

As described in Volume 1, Section 3.12, *Population and Housing*, the issue of gentrification is not a California Environmental Quality Act (CEQA) issue. However, the local and regional effects of population increase are discussed below and within Volume 1, Section 3.12. Furthermore, as described in Volume 1 of this Supplemental EIR, the University of California President's Policy aims to increase student housing. The City of Sacramento's *2035 General Plan* (City of Sacramento 2015) has a policy to locate residential uses near transit corridors and transit lines. Aggie Square Phase I is consistent with these policies.

### 3.12.1 Existing Conditions

#### Regulatory Setting

Regulations, laws, policies, and plans applicable to and/or considered for Aggie Square Phase I are provided in Volume 1 of this Supplemental EIR. As the regulatory setting provided in Volume 1 considers potential development, including Aggie Square Phase I, within the entirety of the UC Davis Sacramento Campus as envisioned through the 2020 LRDP Update, no additional regulatory setting information is provided for Aggie Square Phase I.

#### Environmental Setting

This section identifies all pertinent changes to the environmental setting relevant to population and housing in the Aggie Square Phase I project area. As of 2019, the total average daily patient-related population (i.e., patients and visitors) of the Sacramento Campus was approximately 4,615 persons, and there were about 7,030 staff and 1,902 students present on campus for a total daily population of approximately 13,547 people. For additional regional and campus population and housing information reference Section 3.12, *Population and Housing*, in Volume 1 of this Supplemental EIR.

#### Study Area

The project site is a 9.55-acre parcel within the UC Davis Sacramento Campus in Sacramento. The entire parcel is owned by the University and is currently used as a surface parking lot (Figure 2-2). The Aggie Square Phase I site is adjacent to the Central Energy Plant to the east, 2nd Avenue to the

north, the UC Davis Clinical and Translational Science Center to the south, and Stockton Boulevard to the west.

### 3.12.2 Environmental Impacts

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

#### Methods for Analysis

The effects of population growth are evaluated below by comparing the population growth that would be induced through implementation of the Aggie Square Phase I project to the existing and projected regional population.

#### Thresholds of Significance

Refer to Section 3.12 in Volume 1 of this Supplemental EIR for a discussion of applicable significance criteria.

#### Issues Not Evaluated Further

No housing is located on the project site. The implementation of Aggie Square Phase I project would be accommodated within the current campus boundary and would not displace any existing housing or people as described in Volume 1, Section 3.12. No additional project-level analysis of this issues is required for the Aggie Square Phase I project.

#### Impacts and Mitigation Measures

##### **Impact AS-POP-1: Induce substantial unplanned population growth either directly or indirectly**

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Implementation of Aggie Square Phase I would increase the daily population of the Sacramento Campus through increased student enrollment, community partnerships, and UC Davis Health faculty and staff. However, this addition to the Sacramento region would not result in a substantial increase to the population. Therefore, this impact would be **less than significant**.

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The Aggie Square Phase I project would add approximately 1,384,500 gross square feet (gsf) of building space to the Sacramento Campus. The proposed implementation would include space for offices, classrooms, co-working space, research space, multi-family apartments, community-serving store fronts, and parking. Aggie Square Phase I is projected to increase the Sacramento Campus average onsite daily population by approximately 4,552 persons. By 2040, the average daily campus population is projected to be approximately 21,200 persons; the project would account for approximately 21 percent of that population. The population growth induced by Aggie Square Phase I would represent 0.29 percent of Sacramento County's current population and 0.89 percent of the city of Sacramento's current population.

The project, if approved, would be subject to the 2020 LRDP Update for the Sacramento Campus. The Aggie Square Phase I project has been planned for in the 2020 LRDP Update and would create a unique live/learn/work/play environment to foster collaboration and creativity. Impact LRDP-POP-1 in Volume 1 of this Supplemental EIR finds that the proposed 2020 LRDP Update would not induce substantial population growth in the Sacramento metropolitan region. The increase in population resulting from the implementation of Aggie Square Phase I was evaluated as part of the total population growth proposed by the 2020 LRDP Update. While the implementation of Aggie Square Phase I would increase the overall population of the Sacramento metropolitan region, it would not represent a substantial increase, and the impact would be **less than significant**.

### **Mitigation Measures**

No mitigation measures are necessary.

## 3.13 Public Services

This section describes the regulatory and environmental setting for public services in the Aggie Square Phase I project area, analyzes effects on public services that would result from implementation of Aggie Square Phase I, and provides mitigation measures to reduce the effects of any potentially significant impacts, if applicable.

### 3.13.1 Existing Conditions

#### Regulatory Setting

Regulations, laws, policies, and plans applicable to and/or considered for Aggie Square Phase I are provided in Volume 1 of this Supplemental EIR. As the regulatory setting provided in Volume 1 considers potential development, including Aggie Square Phase I within the entirety of the UC Davis Sacramento Campus as envisioned through the 2020 LRDP Update, no additional regulatory setting information is provided for Aggie Square Phase I.

#### Environmental Setting

Existing public services for the Sacramento Campus, including the Aggie Square Phase I site, are discussed in Section 3.13, *Public Services* of Volume 1 of this Supplemental EIR.

The Aggie Square Phase I site is a 9.55-acre parcel on the western edge of the Sacramento Campus, adjacent to Stockton Boulevard. As stated in Volume 1, the project site is served by the City of Sacramento Fire Department (SFD) and the nearest station is approximately 0.6 mile southwest of the Aggie Square Phase I site at 3301 Martin Luther King Jr Boulevard. UC Davis Police Department provides police services for the Sacramento Campus, including the Aggie Square Phase I site.

School services at the Aggie Square Phase I site are provided by the Sacramento City Unified School District (SCUSD). The Aggie Square Phase I site is in the assignment area of the following schools: David Lubin Elementary, Tahoe Elementary, Kit Carson International Academy, Hiram Johnson High School, and American Legion Continuation High School, as well as several independent charter schools.

The closest library branch location to the Aggie Square Phase I site is the Colonial Heights branch at 4799 Stockton Boulevard, approximately 1.2 miles south. The Ella K. McClatchy branch, at 2112 22nd Street, is approximately 1.7 miles northwest of the Aggie Square Phase I site.

### 3.13.2 Environmental Impacts

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

## Methods for Analysis

This analysis evaluates the potential for adverse physical impacts to occur as a result of the provision of new or altered public service facilities due to the proposed Aggie Square Phase I project, including facilities or facility expansions needed to accommodate increases in demand for services and service personnel, or to enable service providers to maintain level of service standards. Increased demand for public services that would result from implementation of the Aggie Square Phase I project is determined by comparing projected population growth resulting from Aggie Square Phase I with existing service ratios, response times, capacities, and/or other performance objectives identified for each service to determine whether there would be unmet need. An unmet need for services could indicate that new facilities would be needed or that additional staff would be needed, which could result in a need for expanded facilities, this construction of which could cause significant environmental impacts.

## Thresholds of Significance

Refer to Section 3.13 in Volume 1 of this Supplemental EIR for a discussion of applicable significance criteria.

## Impacts and Mitigation Measures

### **Impact AS-PS-1: Creation of a need for new or physically altered governmental facilities to maintain acceptable service ratios, response times, or other performance objectives for fire protection facilities**

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Aggie Square Phase I would be designed to comply with current building and fire codes and include appropriate fire safety measures and equipment. Aggie Square Phase I would not expand the geographic extent of the campus or increase the population such that an increase the demand for additional fire protection facilities would be necessary. The impact would be **less than significant**.

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The UC Davis Sacramento Campus is currently served by the SFD with an average emergency response time of approximately 6 minutes (Sacramento Fire Department 2018). Potential new or expanded land uses under Aggie Square Phase I would increase campus population. People who move to the campus as a result of Aggie Square Phase I would move into an area that is already within the campus boundary and already served by a fire station (Fire Station 6). The project would not increase the service area of the SFD and would be located immediately adjacent to existing structures. According to the SFD, the trigger for additional resources, including services, equipment, personnel, or facilities, is 16,000 residents. The residential population associated with Aggie Square Phase I would be approximately 411, which is less than the amount that would require the need for additional facilities (Kunson pers. comm.). Furthermore, development of Aggie Square Phase I would be designed to comply with current building and fire codes, including the California Fire Code, and would include appropriate fire safety measures and equipment. Aggie Square Phase I is not anticipated to increase demand for additional fire protection facilities. Therefore, the impact on fire facilities resulting from the implementation of Aggie Square Phase I would be **less than significant**.

### **Mitigation Measures**

No mitigation measures are necessary.

**Impact AS-PS-2: Creation of a need for new or physically altered governmental facilities to maintain acceptable service ratios, response times, or other performance objectives for police protection facilities**

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Implementation of a facility upgrade project to provide increased space for police functions at the UC Davis Sacramento Campus would be consistent with the land use designations and planning principles identified in Aggie Square Phase I. Therefore, this impact would be **less than significant**.

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Implementation of Aggie Square Phase I would increase the UC Davis Sacramento Campus population and building square footage. The increase in the onsite daily population and building space would result in increased demand for police services at the campus that are provided by the UC Davis Police Department. By 2040, the onsite daily population of Aggie Square Phase I is projected to be approximately 4,552 individuals. Of this population, approximately 411 would be residents of the new on-campus housing located in the Housing/Community building. To meet the increased service demand, additional police staffing may be required, and additional staffing could necessitate additional building space for the police functions on campus. The additional space to house campus police is a component of the additional square footage that is proposed under Aggie Square Phase I, and therefore the impacts of such construction are included in the various impact discussions in this volume of the Supplemental EIR, including Sections 3.1 *Aesthetics*, 3.2 *Air Quality*, 3.3 *Biological Resources*, 3.4 *Archaeological, Historical, and Tribal Cultural Resources*, and 3.11, *Noise*. Implementation of a facility upgrade project to provide increased space for police functions at the UC Davis Sacramento Campus would be consistent with the land use designations and planning principles identified in Aggie Square Phase I. Funding and planning for additional staff members is carried out through UC Davis' capital planning process. Therefore, this impact would be **less than significant**.

**Mitigation Measures**

No mitigation measures are necessary.

**Impact AS-PS-3: Creation of a need for new or physically altered governmental facilities to maintain acceptable service ratios, response times, or other performance objectives for school facilities**

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Schools would not be significantly affected by a minor increase in enrollment related to anticipated population growth and new residents associated with Aggie Square Phase I, and no new facilities would be needed. Therefore, this impact would be **less than significant**.

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Implementation of Aggie Square Phase I would increase the number of students, faculty, and staff at the UC Davis Sacramento Campus. Onsite housing would increase by approximately 324 multi-family apartment units available for University-affiliated populations. These units are expected to house approximately 411 people. SCUSD's student generation rate analysis finds that a new multi-family unit would generate an average of 0.19 students in K–6th grade, 0.03 students in 7th–8th grade, and 0.04 students in 9th–12th grade (Board of Education Sacramento City Unified School District 2012). Using these student generation rates, the housing associated with the 2020 LRDP Update would generate approximately 87 students in grades K–6, 13 students in grades 7–8, and 18 students in high school. The increase in school-age students affiliated with residents, and new staff, faculty, and Graduate students on campus with implementation of the 2020 LRDP Update would not result in a need for new or expanded school facilities at any one district.



As shown in Table 3.13-1, the total number of students that could utilize the SCUSD is approximately 85, or 62 elementary students, 10 middle school students, and 13 high school students.

**Table 3.13-1. Student Generation**

Housing Type	Units	K-6		7-8		9-12	
		Rate	Enrollment	Rate	Enrollment	Rate	Enrollment
Multi-family housing for student families	324	0.19	62	0.03	10	0.04	13

Source: Generation rates from SCUSD (Board of Education Sacramento City Unified School District 2012).

Note: The Aggie Square residential areas are expected to be predominantly undergraduate student housing, which is expected to be lower than an average family; therefore, this estimate is conservative.

Aggie Square Phase I is in the Sacramento City Unified School District, which contains approximately 47,900 students in 81 schools and has a trend of declining enrollment (Sacramento City Unified School District 2016). The 85 additional students represent less than 0.2 percent of the district's student population. These potential students would be located within the assignment area of the following schools: David Lubin Elementary, Tahoe Elementary, Kit Carson International Academy, Hiram Johnson High School, and American Legion Continuation High School. Within SCUSD, students are assigned to a designated neighborhood school based on the student's geographic boundary. However, SCUSD is an open enrollment district, and parents are able to open enroll their school in other district schools based on a first-come, first-served basis. Furthermore, generation rates used above represent a conservative estimation of the numbers of students that would utilize local schools. As discussed in Section 3.13 in Volume 1 of this Supplemental EIR, these schools would not be significantly affected by a minor increase in enrollment. No new facilities would be needed. Therefore, this impact would be **less than significant**.

### Mitigation Measures

No mitigation measures are necessary.

### **Impact AS-PS-4: Creation of a need for new or physically altered governmental facilities to maintain acceptable service ratios, response times, or other performance objectives for other public facilities**

The need for construction of additional library facilities as the result of an increase in the Sacramento Campus population related to anticipated population growth and new residents associated with Aggie Square Phase I is not anticipated, and this impact would be **less than significant**.

The increase in campus population that is expected to occur with the implementation of Aggie Square Phase I could result in an increased demand for public facilities such as libraries. However, this increase in demand is not expected to result in the need for new or expanded public facilities. Aggie Square Phase I would not substantially affect population levels in Sacramento (refer to Impacts AS-PS-1 and AS-PS-2 above). Substantial increased demand for library services in Sacramento is not anticipated to the extent that new library facilities in the city would be necessary. Therefore, the need for construction of additional library facilities as the result of an increase in the UC Davis Sacramento Campus population is not anticipated and this impact would be **less than significant**.

### **Mitigation Measures**

No mitigation measures are necessary.

## 3.14 Recreation

This section describes the regulatory and environmental setting for recreation in the Aggie Square Phase I project area, analyzes effects on recreation that would result from implementation of Aggie Square Phase I, and provides mitigation measures to reduce the effects of any potentially significant impacts, if applicable.

### 3.14.1 Existing Conditions

#### Regulatory Setting

Regulations, laws, policies, and plans applicable to and/or considered for Aggie Square Phase I are provided in Volume 1 of this Supplemental EIR. As the regulatory setting provided in Volume 1 considers potential development, including Aggie Square Phase I, within the entirety of the UC Davis Sacramento Campus as envisioned through the 2020 LRDP Update, no additional regulatory setting is provided for Aggie Square Phase I.

#### Environmental Setting

This section discusses the environmental setting relevant to recreation in the Aggie Square Phase I project area. For existing and surrounding land uses refer to Volume 1 of this Supplemental EIR.

##### Study Area

The project site is a 9.55-acre parcel within the UC Davis Sacramento Campus, approximately 2.5 miles southeast of downtown Sacramento, 17 miles east of the UC Davis main campus in Davis, and 90 miles northeast of San Francisco. The parcel is owned by the University and is currently a surface parking lot and campus fleet services facility (Figure 2-2).

The Aggie Square Phase I site is on the western edge of the Sacramento Campus, adjacent to Stockton Boulevard. The campus does not contain park facilities for organized, active recreation. An open space area consisting of naturalized landscaping, walking paths, seating areas, and other forms of passive recreation is located in the middle of the Aggie Square Phase I site to the west of the campus fleet services facility and south of 2nd Avenue. The Cancer Survivors Park, which was completed in 2002, is located directly north of the Aggie Square Phase I site at the intersection of 2nd Avenue and Stockton Boulevard. It includes native plantings, grassy areas, seating, and sculptures. The Sacramento Campus also has courtyards, landscaped walkways, and outdoor art pieces dispersed throughout the campus. These areas are used by employees, patients, and visitors to the hospital, as well as residents from surrounding neighborhoods. In addition, a small Student Fitness Center on the campus at 2501 Stockton Boulevard (approximately 0.1 mile north of the Aggie Square Phase I site) serves the campus's medical, nursing, PA, and part-time MBA students, as well as UCDHS Fitness Center Members affiliated with the medical campus.

The nearest City parks to the Aggie Square Phase I site are described in Table 3.14-1.

**Table 3.14-1. Parks near Aggie Square Phase I**

Facility	Location	Distance from Sacramento Campus	Amenities
<b>Neighborhood Parks</b>			
Fourth Avenue Park	4th Avenue and San Jose Way	0.3 mile	Field, basketball court, play structure
McClatchy Park (15.42 acres)	3500 4th Avenue at 33rd Street	0.75 mile	Jogging path, play areas, disk golf course, gardens, basketball courts, baseball fields, tennis courts, skate park, water spray area, picnic areas
Jack Davis Park	15th Avenue and 44th Street	0.8 mile	Play structures and basketball court
Tahoe Park (17.82 acres)	3501 59th Street	0.9 mile	Basketball court, lighted playing fields, play structures, public pool, horseshoes, volleyball area, picnic areas
Greenfair Park	2950 57th Street	0.5 mile	Walking paths, tennis courts, picnic areas
Sierra Vista Park	T Street and 41st Street	0.5 mile	Walking paths
Coloma Park	4623 T Street	0.5 mile	Basketball court, community center, picnic area
<b>Regional Parks</b>			
American River Parkway	32-mile parkway along the American River in Sacramento County	2 miles	Consists of many smaller parks. Boating, picnic areas, nature centers, bicycle and pedestrian trails
Sutter's Landing Regional Park (166.83 acre)	20 28th Street	2.4 miles	Dog park, skate park, boat launch, basketball courts, multi-use trails

### 3.14.2 Environmental Impacts

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

#### Methods for Analysis

The following analysis assesses the environmental effects of Aggie Square Phase I with respect to the existing or currently proposed recreation uses and facilities in the plan area and in the city of Sacramento. This analysis is based on review of existing documents, policies, ordinances, and other regulations pertinent to recreation.

## Thresholds of Significance

Refer to Chapter 3, Section 3.14, *Recreation*, in Volume 1 of this Supplemental EIR for a discussion of applicable significance criteria.

## Impacts and Mitigation Measures

### **Impact AS-REC-1: Increased use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility that would occur or be accelerated**

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The increased population would be served by existing on-campus facilities and facilities in the surrounding communities and is not expected to substantially increase the use of existing park facilities or result in substantial physical deterioration of existing facilities. Therefore, this impact would be **less than significant**.

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The analysis in Chapter 3, Section 3.14.2, *Environmental Impacts*, in Volume 1, concluded that the implementation of the proposed 2020 LRDP Update would not substantially increase the demand for additional park and recreation facilities. The proposed project, if adopted, would be subject to the 2020 LRDP Update. Aggie Square Phase I would provide residential housing for on-campus population, as well as office space and research facilities that would increase the daytime population of the campus. Onsite housing would increase by 324 multifamily apartment units for University-affiliated populations. These units are expected to house approximately 411 people. These new residents and employees would rely on existing on-campus recreational facilities such as the open space area, which is located in between the proposed Life Science Technology Engineering (LSTE) East Building, the LSTE West Building, the Lifelong Learning (LLL) Tower, and proposed Parking Garage 6. They would also use the Student Fitness Center and Cancer Survivor Park, as well as other walking paths and other open spaces that currently exist on the Sacramento Campus and those proposed as part of the 2020 LRDP Update.

In addition to on-campus recreational facilities, it is anticipated that the new on-campus residents would also utilize parks and recreational facilities off-campus. The increased population of 411 residents associated with Aggie Square Phase I would not substantially increase use for any one park or recreational facility, but would be distributed throughout the community and would not result in increased physical deterioration of existing parks and recreational facilities or require new facilities to be built. As shown in Table 3.14-1 above, within 1 mile of the Aggie Square Phase I site there are 5 small neighborhood parks with various amenities, as well as 2 large neighborhood parks totaling over 30 acres of parkland in the immediate vicinity. The residents of Aggie Square Phase I will also be within 2 miles of two large regional parks, including the American Parkway, which is a 32-mile parkway filled with smaller individual parks, water-based recreation, miles of pedestrian and bicycle trails, and other activities. Sutter's Landing Park is also nearby and totals over 166 acres of parkland with a variety of amenities including river access. The new residents anticipated by 2040 would represent an incremental increase of the population using the many surrounding neighborhood and regional parks on a given day and would not result in substantial use or deterioration of these facilities.

Therefore, the impact related to demand for parks and recreational facilities and the potential for substantial physical deterioration of existing facilities would be **less than significant**.

### Mitigation Measures

No mitigation measures are necessary.

#### **Impact AS-REC-2: Construction or expansion of recreational facilities that might have an adverse physical effect on the environment**

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While Aggie Square Phase I includes several areas for open space, no construction or expansion of recreational facilities that might have an adverse effect on the environment is proposed. Therefore, there would be **no impact**.

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No dedicated recreation facilities are proposed as part of the Aggie Square Phase I development. The proposed project includes two plazas, Market Plaza and Aggie Square plaza, which are designed to serve as gathering spaces for the residents of Aggie Square, the campus population, and the residents of the surrounding communities. Market Plaza would contain a permanent farmer's market pavilion and outdoor gathering space. Aggie Square plaza would be a dynamic urban gathering and events space. These plazas would include amenities such as benches and shade to provide outdoor space for patients, visitors, faculty, students and staff. There would also be a Paseo between the LSTE West and LSTE East, which would contain a small gathering space and outdoor seating. Construction associated with these public spaces is analyzed throughout this volume of the Supplemental EIR, including Sections 3.1 *Aesthetics*, 3.2 *Air Quality*, 3.3 *Biological Resources*, 3.4 *Archaeological, Historical, and Tribal Cultural Resources*, and 3.11, *Noise*. However, no construction or expansion of dedicated recreational facilities is proposed and therefore there would be **no impact**.

### Mitigation Measures

No mitigation measures are necessary.

## 3.15 Transportation and Circulation

This section describes the regulatory and environmental setting for transportation and circulation in the Aggie Square Phase I project area, analyzes effects on transportation and circulation that would result from implementation of Aggie Square Phase I, and provides mitigation measures to reduce the effects of any potentially significant impacts, if applicable.

### 3.15.1 Existing Conditions

#### Regulatory Setting

Regulations, laws, policies, and plans applicable to and/or considered for Aggie Square Phase I are provided in Volume 1 of this Supplemental EIR. As the regulatory setting provided in Volume 1 considers potential development, including Aggie Square Phase I, within the entirety of the UC Davis Sacramento Campus as envisioned through the 2020 LRDP Update, no additional regulatory setting is provided for Aggie Square Phase I.

#### Environmental Setting

This section discusses the environmental setting relevant to transportation and circulation in the Aggie Square Phase I project area.

#### Roadway System

Access to the Aggie Square Phase I site is provided by Stockton Boulevard to the west, 2nd Avenue to the north, and a proposed easterly extension of 3rd Avenue from Stockton Boulevard to the south. These local roadways and regional roadway access to the site are described in further detail in Volume 1 of this Supplemental EIR.

#### Existing Travel Characteristics

The existing Aggie Square Phase I site consists primarily of paved and unpaved surface parking lots. The paved surface parking lots (Parking Lot 14 and Parking Lot 16) are primarily used by staff at the UC Davis Sacramento Campus, while the unpaved parking area is designated as a Contractor's Parking Lot.

Volume 1 of this Supplemental EIR summarizes the vehicle, bicycle, and pedestrian volumes traveling through campus gateways during the morning and evening peak hours. These data indicate vehicles make up more than 85 percent of trips through the campus gateways, while pedestrians make up about 12 percent; bicycles make up less than 3 percent of trips through campus gateways. While these data provide a snapshot of the travel mode for trips traversing the campus gateways, these should not be construed as an accurate representation of the mode share for trips generated by the Sacramento Campus. These data are not based on a comprehensive data set with count data for all modes at all campus gateways. Furthermore, some of the campus gateway locations serve pass-through traffic that are not traveling to or from the Sacramento Campus. Lastly, the pedestrian volumes are likely composed of people walking to transit stops, people walking to their personal vehicles that may be parked in an adjacent neighborhood, and recreational pedestrian

trips. Therefore, the higher pedestrian volume is likely not indicative of a higher pedestrian mode share, but a combination of transit, pedestrian, and vehicle trips.

## Vehicle Travel

Vehicle travel is evaluated using vehicle miles traveled (VMT) as the primary metric. The baseline VMT levels for the study area are provided in Volume 1 of this Supplemental EIR. As noted in Volume 1, the Sacramento Campus is located in a low-VMT generating area, where VMT per-capita levels measure between 50 and 85 percent of the Sacramento Area Council of Governments (SACOG) regional average. Volume 1 of this Supplemental EIR presents SACOG workplace-based VMT per job and total household VMT per capita data along with corresponding maps to demonstrate that the campus is in a low-VMT generating area of the SACOG region (Sacramento Area Council of Governments 2020a, 2020b).

## Bicycle Facilities

Existing bicycle facilities in the overall campus study area are described in Volume 1 of this Supplemental EIR. As noted in Volume 1, existing Class II bicycle lanes are provided on 2nd Avenue immediately north of the Aggie Square Phase I site. The Class II bicycle lanes on 2nd Avenue feature a striped buffer between the bicycle lane and adjacent vehicle travel lane. These buffered bicycle lanes provide additional space between bicyclists and adjacent vehicles, which increases comfort for bicyclists.

The segment of Stockton Boulevard immediately west of the Aggie Square Phase I site is identified as a primary “gap in the network” in the *City of Sacramento Bicycle Master Plan* (City of Sacramento 2018). The City of Sacramento proposes a Class IV separated bikeway on Stockton Boulevard from Broadway to T Street, which includes the project frontage, as a near-term priority project in the *City of Sacramento Bicycle Master Plan* to address this gap in the network. The City of Sacramento is currently conducting the Stockton Boulevard Corridor Study to envision transportation improvements to the corridor. These improvements would support increased transportation choices along the corridor, including promoting bicycling and walking.

## Pedestrian Facilities

Existing pedestrian facilities in the overall campus study area are described in Volume 1 of this Supplemental EIR. Sidewalks are present on 2nd Avenue and Stockton Boulevard surrounding the Aggie Square Phase I site. A marked crosswalk is provided across 2nd Avenue just west of 45th Street, providing a convenient pedestrian crossing from the Aggie Square Phase I site to the remainder of the Sacramento Campus.

## Transit Service and Facilities

Existing transit service and facilities in the overall campus study area are described in Volume 1 of this Supplemental EIR. This includes fixed-route bus transit and light-rail transit service provided by the Sacramento Regional Transit District (SacRT), the Causeway Connection, and courtesy on-site shuttle service at the Sacramento Campus.

Figure 3.15-1 shows the specific transit services and facilities surrounding the Aggie Square Phase I site. As noted in Volume 1 of this Supplemental EIR, SacRT is the primary transit operator in the study area. SacRT bus Route 38 has existing bus stops on Stockton Boulevard between 2nd Avenue



and 3rd Avenue adjacent to the Aggie Square Phase I site. In addition, the UC Davis Sacramento on-campus Blue Line shuttle serves the existing surface parking lots at the Aggie Square Phase I site. Additional details regarding these transit services are provided in Volume 1 of this Supplemental EIR.

As described in Volume 1 of this Supplemental EIR, the CEQA Guidelines and the *Technical Advisory on Evaluating Transportation Impacts in CEQA* (Technical Advisory) (Governor's Office of Planning and Research 2018) identifies several screening thresholds to quickly identify when a project should be expected to cause a less-than-significant impact without conducting a detailed study. One of the screening thresholds identified in the Technical Advisory are projects located within 0.5 mile of an existing major transit stop or an existing stop along a high quality transit corridor. The light-rail stations along SacRT's Gold Line light-rail transit service are the only transit stops in the study area that qualify as a "major transit stop" per the definition in the CEQA statute (i.e., Public Resources Code Section 21064.3). Figure 3.15-1 shows the areas that are within 0.5 mile of a major transit stop. As shown in Figure 3.15-1, the Aggie Square Phase I site is located just outside this .05-mile buffer.

### **Disruptive Trends in Travel**

Volume 1 of this Supplemental EIR describes several changes that are transforming overall transportation and mobility, ranging from new technologies to different personal preferences to the unique effects of the current coronavirus disease 2019 (COVID-19) pandemic. These trends will influence overall travel behavior but will also increase uncertainty in forecasting future travel conditions as described in Volume 1 of this Supplemental EIR. Since these trends would affect overall travel behavior (i.e., are not specific to the 2020 LRDP Update only), the information provided in Volume 1 of this Supplemental EIR would also apply to the Aggie Square Phase I project.

## **3.15.2 Environmental Impacts**

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

### **Significance Criteria**

Refer to Section 3.15, *Transportation and Circulation*, in Volume 1 of this Supplemental EIR for a discussion of applicable significance criteria and corresponding thresholds of significance.

### **Methods for Analysis**

The transportation impact analysis methodology includes a combination of quantitative and qualitative evaluations of the transportation system. The specific analysis methods are described below.

### **Project Travel Characteristics**

Access to Aggie Square Phase I would be provided via an easterly extension of 3rd Avenue from Stockton Boulevard and southerly extension of 45th Street from 2nd Avenue. The Aggie Square

Phase I project would displace existing surface parking lots (i.e., Parking Lot 14, the northern half of Parking Lot 16, and the unpaved Contractors Parking Lot). The remaining half of Parking Lot 16 south of 3rd Avenue would remain, with access provided via a driveway at the south leg of the proposed intersection of 3rd Avenue and 45th Street in addition to the existing driveway near the Stockton Boulevard and 4th Avenue intersection.

Those currently parking in Parking Lots 14 and 16 that would be displaced by the project would redistribute to other parking areas on the Sacramento Campus. The 2020 LRDP Update plans for an increase in parking supply on campus from the existing 7,676 spaces to 11,080 spaces by 2030 and increasing to 12,000 spaces at buildout of the 2020 LRDP Update. This increase is expected to occur as new parking structures are constructed and surface parking lots are replaced by new buildings or parking structures. Parking Structure 4 is the next parking structure expected to be constructed on the campus. It is projected to be open by 2022 and would provide additional parking supply for those that may be displaced from Parking Lots 14 and 16 by the Aggie Square Phase I project. A new parking structure (Parking Structure 6) immediately to the east of the Aggie Square Phase I site, would provide the most convenient parking location for vehicle trips to the Aggie Square Phase I project and would be constructed as part of the Aggie Square Phase I project.

The change in parking location of existing trips would result in localized trip pattern changes. Some trip lengths may be shortened slightly while others may be lengthened slightly, depending on the origin of the trip. Generally, many individual trip lengths are expected to change minimally in length, and most trips are not expected to change by more than 1 mile in magnitude. The net change in trip lengths resulting from displaced parking are expected to result in a negligible change in overall VMT.

### Aggie Square Phase I Land Use

The transportation analysis refers to detailed land use inputs that were compiled for the air quality analysis. Table 3.15-1 summarizes land use inputs associated with the Aggie Square Phase I project.

**Table 3.15-1. Aggie Square Phase I Land Use Inputs**

Land Use	Aggie Square Phase I	
	GSF	Units
Research and Development	777,000	–
General Office	162,000	–
University <sup>a</sup>	162,000	450
Residential <sup>b</sup>	283,500	324
Retail/Market	20,000	–
Restaurant	20,000	–
Total	1,384,500	

Source: Air Quality Analysis Inputs.

GSF = gross square feet, or the total floor area for a given land use.

<sup>a</sup> Units for University = student population accommodated by educational space at Aggie Square Phase I.

<sup>b</sup> Units for Residential = total dwelling units.

### Bicycle and Pedestrian Facilities

The impact assessment for bicycle and pedestrian travel considers existing and planned bicycle and pedestrian facilities and reviews the Aggie Square Phase I project to determine whether it would

physically disrupt an existing facility or prevent the implementation of a planned facility. This assessment also considers whether the project would increase conflicts between bicyclists and pedestrians and other modes of travel.

## Transit Service and Facilities

The impact assessment for transit considers existing and planned transit facilities and services and whether the Aggie Square Phase I project would physically disrupt an existing service or facility or prevent the implementation of a planned service or facility. This assessment also considers whether the project could conflict with transit performance standards established by transit operators.

Anticipated transit demand was estimated based on longitudinal employer-household dynamics data, journey-to-work census data, and estimates of student, employment, and resident population growth that would result from the Aggie Square Phase I project. Generally, transit demand is linked to the availability and quality of transit service in combination with travel distance and the cost of travel (i.e., passenger fare).

The estimated increase in transit demand presumes that future background travel conditions remain relatively constant and does not account for potential changes associated with emerging travel technologies and increased mobility choices. As noted earlier, these emerging travel trends are already contributing to changes in the traditional travel demand relationships, as exemplified in a 19 percent decline in bus and rail ridership on SacRT between 2015 and 2018<sup>1</sup>. Furthermore, the current COVID-19 pandemic and subsequent response by government agencies has reduced transit demand and shared mobility options; and its uncertain how this will translate into longer-term transit demand changes.

Transit performance is measured against performance standards outlined in the SacRT Service Standards document (Sacramento Regional Transit, 2013). The performance standards used in this analysis include:

- Vehicle loading standards
- Productivity standards (headway standard)
- On-time performance standards

## VMT Impact Assessment

The Regulatory Setting section of Volume 1 of this Supplemental EIR describes changes to transportation impact assessment with the passage of Senate Bill (SB) 743 and adoption of the amended CEQA Guidelines that implement SB 743 (see CEQA Guidelines Section 15064.3). With the adoption of the amended CEQA Guidelines, level of service can no longer be used as a metric for evaluating project traffic impacts under CEQA. Per CEQA Guidelines Section 15064.3, VMT is recommended as the primary metric for analyzing traffic impacts, and the guidance in CEQA Guidelines Section 15064.3 applies as of July 1, 2020.

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<sup>1</sup> Based on 2015 and 2018 annual agency profile data for SacRT from the Federal Transit Administration's National Transit Database. Accessed on July 29, 2020 from <https://www.transit.dot.gov/ntd/transit-agency-profiles/sacramento-regional-transit-district>.

2015 Annual Ridership = 25,768,473. 2018 Annual Ridership = 20,890,308.

2015 to 2018 Ridership Decline =  $1 - (20,890,308 / 25,768,473) = -18.9\%$

This analysis relies on guidance provided in the Technical Advisory to assess the project's VMT impact. Specifically, this analysis considers the following.

- Does the project meet one or more of the “screening thresholds” identified in the Technical Advisory, such that a detailed analysis is not necessary?
  - If so, what information or data are available to support the conclusion that the project meets the screening threshold and should be considered to have a less-than-significant transportation impact?
- If the project does not meet one or more of the “screening thresholds,” this analysis would proceed to a detailed analysis of the project's VMT impact. This includes quantifying the project's VMT generation and determining whether this VMT generation would exceed the recommended thresholds of significance in the Technical Advisory (i.e., 15 percent below existing regional VMT per capita/employee).

### **VMT Screening Analysis**

The Technical Advisory identifies “screening thresholds” to quickly identify when a project should be expected to cause a less-than-significant impact without conducting a detailed study. As described in the Regulatory Setting section of Volume 1 of this Supplemental EIR, the Technical Advisory suggests the following projects should be expected to have a less-than-significant impact on VMT.

- Small projects
- Projects near major transit stops
- Affordable residential development
- Local-serving retail
- Projects in low VMT areas

Of these project types, only the criterion for projects located near major transit stops are codified in the updated CEQA Guidelines. The remaining criteria for small projects, affordable residential development, local-serving retail, or projects in low-VMT areas are not codified in the CEQA Guidelines but are suggested by OPR based on research cited in the Technical Advisory.

For mixed-use projects, the Technical Advisory suggests evaluating each component independently and applying the screening threshold for the applicable land use type. The Technical Advisory alternatively suggests that the lead agency may consider only the project's dominant use.

Of these screening criteria, the following potentially apply to the Aggie Square Phase I project.

- Local-serving retail
- Projects in low-VMT areas

The Aggie Square Phase I project does not qualify as a small project for screening purposes, and it is unknown whether all residential units would be restricted as affordable units. Furthermore, the Aggie Square Phase I project site is just outside the 0.5-mile distance from an existing major transit stop that is specified in CEQA Guidelines Section 15064.3, subdivision (b)(1), as shown in Figure 3.15-1. Therefore, this Supplemental EIR does not rely on these screening criteria and does not discuss these criteria further.

***Presumption of Less Than Significant Impact for Local-Serving Retail***

The Technical Advisory states that “new retail development typically redistributes shopping trips rather than creating new trips,” and that “local-serving retail development tends to shorten trips and reduce VMT” by “adding retail opportunities into the urban fabric and thereby improving retail destination proximity.” On the other hand, the Technical Advisory notes that regional-serving retail development “can lead to substitution of longer trips for shorter ones” and “may tend to have a significant impact.” The Technical Advisory further states that “retail development including stores larger than 50,000 square feet might be considered regional-serving.”

The Aggie Square Phase I project includes 20,000 gross square feet of commercial retail and 20,000 gross square feet of restaurant space (see Table 3.15-1). The combined 40,000 square feet of retail and restaurant space is less than the 50,000 square feet store size cited in the Technical Advisory as a retail store that might be considered regional-serving (as opposed to local-serving).

It is anticipated that this limited amount of commercial retail and restaurant space will in large part serve the Sacramento Campus population and the immediate surrounding neighborhoods. The existing campus consists of approximately 3.7 million gross square feet of building area, which would increase to over 5 million gross square feet with the proposed Aggie Square Phase I project. In light of the overall size of the campus, the mostly residential composition of adjacent neighborhoods, and the relatively small amount of combined retail and restaurant space proposed as part of the Aggie Square Phase I project, it is reasonable to conclude that the commercial retail and restaurant components of the Aggie Square Phase I project would primarily be local-serving in nature.

***Presumption of Less Than Significant Impact for Projects in Low VMT Areas***

The OPR Technical Advisory states that “residential and office projects that locate in areas with low VMT, and that incorporate similar features (i.e., density, mix of uses, transit accessibility), will tend to exhibit similarly low VMT. Maps created with VMT data, for example from a travel survey or a travel demand model, can illustrate areas that are currently below threshold VMT.” The Technical Advisory goes on to state that “new development in such locations would likely result in a similar level of VMT” and “such maps can be used to screen out residential and office projects from needing to prepare a detailed VMT analysis.”

The SACOG 2020 *Metropolitan Transportation Plan/Sustainable Communities Strategy* (MTP/SCS) (Sacramento Area Council of Governments 2019) includes VMT per capita maps, showing locations in the region that are lower and higher VMT generating areas. Figure 3.15-2 and Figure 3.15-3 present the VMT generation for the base year (2016) and horizon year (2040) of the MTP/SCS, respectively. These maps show the Sacramento Campus is in a low-VMT generating area, where VMT per capita levels measure between 50 and 85 percent of the SACOG regional average in both the base year (2016) and horizon year (2040).

SACOG has also prepared draft workplace-based VMT per job and total household VMT per capita maps for the SACOG region. Using VMT outputs from SACOG’s SACSIM 2016 base year travel forecasting model, these maps present VMT per-capita data using “hex” geography, or hexagon shaped tiles. As noted in Volume 1, the hex geography does not follow jurisdictional boundaries, roadway alignments, or other political or geographic features. Therefore, this hex geography does not perfectly coincide with the Sacramento Campus boundaries. The hex that generally represents a large portion of the campus (i.e., east of Stockton Boulevard between V Street and 2<sup>nd</sup> Avenue) also

includes adjacent uses that are outside the Sacramento Campus (e.g., the California Department of Justice building north of Broadway between 49<sup>th</sup> and 50<sup>th</sup> Streets) while excluding portions of the Sacramento Campus that fall outside the hex.

These maps use a range of colors to compare the VMT characteristics of each hex to the regional average, with cooler colors (e.g., blue, green, and yellow) representing VMT values that are below the regional average and warmer colors (e.g., orange, pink, and red) representing VMT values that are above the regional average. Areas colored green and blue are 15 percent or more below the existing regional average VMT per capita/employee. Based on the Technical Advisory threshold recommendations for residential and employment uses, these blue and green hexes would be considered low-VMT areas. Figure 3.15-4 and Figure 3.15-5 present example screenshots of these maps illustrating existing (2016) workplace VMT per job and existing (2016) household VMT per capita.

Based on the data presented in these maps, the study area can generally be considered a low-VMT area. Further calculations and data to support this are presented in Volume 1 of this Supplemental EIR (see Tables 3.15-3 and 3.15-4 in Volume 1).

This VMT impact assessment methodology evaluates household VMT per capita for residential uses and work VMT per employee for employment uses per Technical Advisory guidance on identifying low-VMT areas for residential and employment uses, respectively. Household VMT and work VMT are VMT metrics that only capture specific users and/or trip purposes. A separate VMT metric, total VMT, which accounts for all vehicle trips generated by the project and their associated trip length, is used as an input into the air quality, GHG, and energy analyses to determine the impact of the project's mobile emissions, as described in these resource sections. Readers should refer to these other resource sections for more information about how the project's travel characteristics affect those specific topics. Since each chapter is focused on a specific environmental effect with its own specific metrics, thresholds, or significance criteria, it is possible to have a different conclusion for transportation impacts than other resource topics that also reference project-related travel.

## Other Impacts

Potential transportation impacts related to transportation hazards, emergency access, and construction activity are based on a review of project changes to the transportation network and a qualitative assessment of whether those changes would conflict with applicable standards or result in detrimental conditions based on the thresholds of significance.

## Impacts and Mitigation Measures

### **Impact AS-TRA-1: Conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities**

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Development of Aggie Square Phase I would increase bicycle and pedestrian travel but would not physically disrupt an existing pedestrian or bicycle facility or interfere with implementation of a planned pedestrian or bicycle facility. Growth associated with the development of Aggie Square Phase I would increase demand for transit serving the campus by approximately 400 new daily passenger boardings and would also increase peak hour delays for bus transit routes that operate on roadways surrounding the campus, which would adversely affect bus transit operations. This impact would be **significant and unavoidable**.

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#### ***Bicycle Travel***

The development of Aggie Square Phase I would include new space for employment (i.e., office and research and development space), education, housing, and supporting retail and restaurants, which would likely result in increased bicycle demand. However, bicycle use on existing bicycle facilities is relatively low and existing and planned bicycle facilities will be capable of accommodating increases in bicycle demand. The Aggie Square Phase I project would not physically disrupt an existing bicycle facility or interfere with implementation of a planned bicycle facility identified in the *City of Sacramento Bicycle Master Plan* (City of Sacramento 2018).

Increased bicycle travel demand generated by the Aggie Square Phase I project may result in additional bicycle trips on local roadways without existing bicycle facilities, such as Broadway and Stockton Boulevard. Additional automobile trips resulting from the development of Aggie Square Phase I would also use these roadways. This could increase potential for conflicts between automobiles and bicycles on these off-campus roadways without dedicated bicycle facilities.

The City of Sacramento is currently conducting the Stockton Boulevard Corridor Study to envision transportation improvements to the corridor. This study intends to propose improvements that support increased transportation choices along the corridor, including promoting walking and bicycling. Data in the *City of Sacramento Bicycle Master Plan* indicate that communities along the Stockton Boulevard corridor exhibit some of the lowest rates of auto ownership as well as some of the greatest bicycle commute mode share in the City of Sacramento, indicating a potential greater reliance and proclivity for bicycling. Therefore, the recommended improvements that are ultimately developed for the Stockton Boulevard Corridor Study are likely to improve bicycle safety and facilitate bicycle travel.

One of the gaps in the bicycling network is along Broadway west of Stockton Boulevard. The City of Sacramento is identifying near-term improvements for this stretch of Broadway as part of the *Vision Zero Top Five Corridor Study* (City of Sacramento 2017). The recommended near-term improvements for Broadway include striping improvements that would reduce the number of vehicle travel lanes on Broadway from four through-lanes to two through-lanes, add a center two-way left-turn lane, and add a separated/buffered bikeway from Stockton Boulevard to Martin Luther King Jr. Boulevard. This would likely reduce vehicle travel speeds and improve bicyclists comfort, resulting in greater facilitation of bicycle travel.

The timing for these planned improvements on Broadway and Stockton Boulevard is not clearly established by the City of Sacramento. However, the documentation from the *City of Sacramento*

*Bicycle Master Plan* (City of Sacramento 2018) and *Vision Zero Top Five Corridor Study* (City of Sacramento 2017) indicate that the City plans to implement these improvements in the near-term; and the SACOG 2020 MTP/SCS identifies the Stockton Boulevard Mobility Project as occurring between 2026 and 2030. Therefore, it is likely these bikeway improvements would be in place after Aggie Square Phase I is developed. These projects will be implemented at the discretion of the City of Sacramento, and since they are slated for near-term implementation, further actions by UC Davis are not likely to expedite their construction.

Initial increases in bicycle travel generated by the Aggie Square Phase I project may result in potential increased automobile and bicycle conflicts before bikeway improvements are constructed on Stockton Boulevard and Broadway. However, existing bikeways, such as the class II bicycle lanes on 2nd Avenue, T Street, 49th Street, and 50th Street and class III bicycle routes on V Street, 48th Street, and 51st Street create an interconnected bicycle network that bicyclists may use as alternate routes to Stockton Boulevard and Broadway prior to these forthcoming bikeway and corridor improvements. Furthermore, these planned improvements to Stockton Boulevard and Broadway would address these potential conflicts and complement UC Davis' efforts to increase bicycling as a viable travel option to and from the Sacramento Campus. Therefore, this impact would be **less than significant**.

### ***Pedestrian Travel***

The Aggie Square Phase I project would result in increased pedestrian activity generated by the proposed employment, education, housing, retail, and restaurant uses. Moreover, increases in transit and vehicle trips would generate additional pedestrian trips between Aggie Square Phase I and parking and transit facilities, as all transit and vehicle trips begin and end with a pedestrian trip. Pedestrian activity would be greatest near building accesses and between Aggie Square Phase I and adjacent parking areas. This pedestrian activity is likely to be most pronounced near the beginning and end of the typical workday and at midday. The Aggie Square Phase I project includes wide sidewalks and pedestrian plazas to support this activity. It would also connect to the existing adjacent pedestrian network, specifically sidewalks along 2nd Avenue, Stockton Boulevard, and the existing trail just east of the project site. It would not result in a physical disruption to these existing pedestrian facilities or interfere with the implementation of a planned pedestrian facility. Therefore, this impact would be **less than significant**.

### ***Transit***

The Aggie Square Phase I project would increase demand for transit service. An estimated 200 additional employees would use transit service to commute to the Aggie Square Phase I project, representing 400 new daily passenger boardings. The Aggie Square Phase I project does not propose any new or expanded transit service; as a result, new transit passenger demand generated by the Aggie Square Phase I project would rely on existing or planned transit serving the campus. Development of the Aggie Square Phase I project would increase peak hour delay on roadways surrounding the Sacramento Campus, including roadways used by existing fixed-route bus service. These potential increases in overall travel time could adversely affect bus transit operations (i.e., on-time performance). Potential degraded service quality could lead to losses of ridership if commuters decide to utilize other modes of travel (e.g., automobiles). This could result in environmental effects such as increased emissions. While uncertain, decreased ridership caused by degraded service quality could result from development of the Aggie Square Phase I project. Unless remedied,



degraded transit operations would not meet SacRT performance standards, which would exceed the threshold of significance.

The Aggie Square Phase I project does not propose any physical changes to existing SacRT transit service or facilities (e.g., bus stop relocation or route realignment). The Aggie Square Phase I project would not interfere with the implementation of planned transit service or facilities identified in the City of Sacramento's *2035 General Plan* (City of Sacramento 2015) or SacRT's *Short Range Transit Plan* (Sacramento Regional Transit District 2014). However, the Aggie Square Phase I project would require a modification to the on-campus courtesy shuttle Blue Line. The existing Blue Line shuttle service travels through Parking Lots 14 and 16, and has stops at each parking lot to shuttle people from the parking lot to destinations on the campus. The Aggie Square Phase I project would require modifying the routing and relocating these shuttle stops, which would be removed as part of the Aggie Square Phase I project.

The Aggie Square Phase I project is situated near existing SacRT bus stops on Stockton Boulevard and Broadway. Moreover, the SacRT Gold Line 39th Street and 48th Street stations are located less than 1 mile north of the project site. The on-campus courtesy shuttle Green Line provides service to the Gold Line 39th Street station, which would serve transit riders traveling to and from the Aggie Square Phase I project via the Gold Line light-rail service. It is anticipated that most new passenger demand generated by the Aggie Square Phase I project would be accommodated at existing SacRT bus stops and light rail stations. Additionally, passenger demand between the project site and Davis would be expected to use the Causeway Connection bus service. The bus stop for Route 38 on northbound Stockton Boulevard between 3rd and 2nd Avenues includes a shelter and bench. The bus stop on southbound Stockton Boulevard just north of 3rd Avenue currently consists of single bench.

The SacRT Service Standards establish vehicle loading standards for SacRT bus and light rail service based on maximum load factors (i.e., the ratio of total passenger capacity to total seats) for each vehicle type. The load factor standard for 40-foot standard fixed-route buses with a seated capacity of 34 passengers is 1.8 (equal to a maximum load of 60 passengers per bus) and the load factor standard for light rail vehicles is 2.0 (equal to a maximum load of 128 passengers per light rail car, or 512 passengers for a typical four-car light rail train). SacRT considers a route to be overloaded if 25 percent or more of one-way vehicle trips are regularly overloaded. In February 2020, the maximum peak load experienced by Routes 38 and 51 was 18 and 29 passengers, respectively, during a typical weekday.<sup>2</sup> Moreover, in February 2020, the maximum peak load experienced by the Gold Line was 224 passengers during a typical weekday. Zero percent of Route 38, Route 51, and Gold Line trips currently measure above the established load factor during a typical weekday. Thus, the three primary SacRT services that serve the project site currently meet the established SacRT loading standard.

The SacRT Service Standards also establish productivity standards for each service type, where routes exceeding SacRT's maximum productivity standards are recommended for service increases while corrective action is recommended for routes that fail to meet SacRT's minimum productivity standards. The maximum productivity standard for regular weekday bus service is 40 boardings per revenue hour while the maximum productivity standard for weekday light rail service is a maximum load of 400 passengers per train. In February 2020, SacRT Routes 38 and 51 generated 12.6 and

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<sup>2</sup> Based on February 2020 average weekday ridership data provided by SacRT.

25.9 weekday boardings per revenue hour, respectively.<sup>3</sup> Moreover, in February 2020, the Gold Line experienced a maximum peak load of 224 passengers during a typical weekday. Thus, the three primary SacRT services that serve the project site currently meet the established SacRT productivity standard.

Based on existing ridership and service levels, Routes 38 and 51 could accommodate an additional 1,520 and 1,750 weekday passenger boardings, respectively, before meeting the SacRT productivity standard of 40 boardings per revenue hour. As described previously, the Aggie Square Phase I project would generate an additional 400 daily passenger boardings from employees commuting to and from the Aggie Square Phase I project. Therefore, relative to existing SacRT ridership and service levels, transit passenger demand generated by the Aggie Square Phase I project alone would not be expected to cause Routes 38 and 51 to exceed the SacRT productivity standard.

The SacRT Service Standards establish on-time performance standard as indicators for service reliability. On-time performance for SacRT is measured at time points. A vehicle is considered on-time if it leaves its time point between 0 and 5 minutes late. SacRT's target is for the bus system to be 85 percent on-time or better. SacRT's target is for the light rail system to be 97 percent on-time or better. SacRT's target is for individual bus routes to be within one standard deviation of 85 percent on-time or better (equal to 76.7 percent or better based on October 2019 data). In October 2019, systemwide on-time performance for SacRT was 73.3 percent, with 3.2 percent early departures and 23.5 percent late departures. SacRT bus routes operating near the Sacramento Campus currently fall below both the systemwide and individual route reliability targets. Route 38 operates at 76.4 percent on-time and Route 51 operates at 73 percent on-time. Additional peak hour vehicle trips and, in turn, vehicle delay generated by the Aggie Square Phase I project could further exacerbate service reliability issues for existing SacRT bus services that operate on roadways surrounding the Sacramento Campus.

An exceedance of established on-time performance standards would cause transit services to operate below acceptable service level, quality, and/or performance targets, which could be deleterious to the transit passenger experience (i.e., poor reliability, long travel times, crowding on buses, etc.). For passengers who are sensitive to these factors, a degradation of service quality could cause them to choose other modes of transportation that generally cause greater adverse effects on the environment (e.g., driving). Passengers choose to use transit due to a variety of factors and personal preferences, including community context (e.g., urban versus suburban), accessibility, convenience, travel time, and costs of modal options. Because transit passenger expectations regarding service quality will vary, the extent to which a degradation of service quality would affect existing and prospective transit ridership, as well as associated adverse environmental effects, is uncertain.

Additional automobile, transit, bicycle, and pedestrian trips to and from the Sacramento Campus resulting from the development of the Aggie Square Phase I project would be accommodated on existing transportation facilities on and surrounding campus. Additional travel activity could result in the competition for physical space between the modes (e.g., at Stockton Boulevard and Broadway, which currently lack contiguous on-street bicycle facilities), which in turn would increase the potential for collisions, including those involving transit vehicles.

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<sup>3</sup> Based on February 2020 average weekday ridership data provided by SacRT.

Implementation of Mitigation Measures LRDP-TRA-1a, LRDP-TRA-1b, and LRDP-TRA-1c would reduce the significance of this impact. However, the improvements that are necessary to improve transit performance identified in Mitigation Measure LRDP-TRA-1b would require implementation by other entities, including SacRt, the City of Sacramento and Caltrans. Moreover, the effectiveness of the transportation demand management strategies identified in Mitigation Measure LRDP-TRA-1a are not known and subsequent vehicle trip reduction effects and, in turn, reductions to delays to transit, cannot be guaranteed. Since UC Davis cannot guarantee that these improvements would be implemented and/or effective, this impact would remain **significant and unavoidable**.

**Mitigation Measure LRDP-TRA-1a: Monitor transit service on-time performance and implement strategies to minimize delays to transit service**

Refer to Section 3.15 in Volume 1 of this Supplemental EIR.

**Mitigation Measure LRDP-TRA-1b: Monitor transit service performance and implement transit service and/or facility improvements**

Refer to Section 3.15 in Volume 1 of this Supplemental EIR.

**Mitigation Measure LRDP-TRA-1c: Monitor transit-related collisions and implement countermeasures to minimize potential conflicts with transit service and facilities**

Refer to Section 3.15 in Volume 1 of this Supplemental EIR.

**Impact AS-TRA-2: Conflict or be inconsistent with CEQA Guidelines Section 15064.3, subdivision (b)**

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Development of the Aggie Square Phase I project would result in additional population and vehicle travel. However, the project is located in a low VMT-generating area of the Sacramento region with access to mass transit and multiple travel options. Additionally, the Aggie Square Phase I project would result in increased land use diversity that would increase internal trip capture and reduce VMT per employee. This impact would be **less than significant**.

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The Aggie Square Phase I project is located in a low-VMT area of the Sacramento region as demonstrated in all the mapping analyses conducted by SACOG for the 2020 MTP/SCS. The 2020 MTP/SCS acknowledges that “location within the region is very likely the most important variable in determining how much time people spend in their vehicles. Communities within existing urban areas, and with a mix and density of uses, tend to produce less VMT per resident than places that are farther away and spread out.”

The Aggie Square Phase I project proposes development that is similar to existing characteristics of the study area (i.e., density, mix of uses, transit accessibility, etc.). The Aggie Square Phase I project also proposes an increase in employment, housing, retail, and restaurant land uses, which would complement existing land uses on the Sacramento Campus and surrounding neighborhood, which would increase land use diversity, increase internal trip capture, and reduce VMT generation. Per the Technical Advisory, projects “that locate in areas with low VMT and incorporate similar features (i.e., density, mix of uses, transit accessibility) will tend to exhibit similarly low VMT.” Therefore, this impact would be **less than significant**.

The Technical Advisory identifies recommended thresholds for three project types: office, residential, and retail. The Technical Advisory further recommends that each component of a mixed-use project be evaluated independently and apply the significance threshold for each project type. Since the employment and education uses are most similar to office uses in that they are places of employment, this analysis relies on the recommendations for office projects for the employment and education uses collectively.

### ***Employment Uses—Medical, Education, and Office***

As shown in Figure 3.15-4, the Aggie Square Phase I project generally is located in an area that currently generates work VMT per employee that is 19 percent below the regional average. The Technical Advisory suggests office projects exceeding a level of 15 percent below existing regional work VMT per employee may indicate a significant impact. Since the Sacramento Campus is located in an area that generates work VMT per employee below this 15 percent threshold, it is considered a low-VMT area.

As shown in Figure 3.15-4, both the hex highlighted in the figure and the adjacent hex to the west, which includes the main hospital section of the Campus (i.e., immediately east of Stockton Boulevard and north of X Street), are green indicating that workplace VMT per employee for these locations are 15 percent or more below the existing regional average VMT per employee. Almost the entire Sacramento Campus is within these two hexes. A small sliver of the Sacramento Campus fronting Stockton Boulevard north of Broadway is in a third hex. This hex includes the portion of the Aggie Square Phase I project that fronts Stockton Boulevard. However, this hex largely represents the area west of Stockton Boulevard between 2nd Avenue and 8th Avenue to the southwest of the campus. While this hex is pink in Figure 3.15-4, indicating a workplace VMT per employee greater than the regional average VMT per employee, this hex primarily consists of uses outside the Sacramento Campus that generate higher workplace VMT per employee, according to the SACOG data. Since the Aggie Square Phase I project is more similar to the existing uses at the Sacramento Campus, it is reasonable to rely on the two hexagons that represent the vast majority of the Sacramento Campus when determining whether the project is located in a low VMT area. These two hexagons generate workplace VMT per employee at a rate 15 percent or more below the regional average VMT per employee. Therefore, the SACOG data demonstrates that the project site is generally in a low-VMT generating area for workplace VMT per employee.

The Aggie Square Phase I project largely consists of employment uses, including a combined total of 939,000 gross square feet of research and development and general office space. An additional 162,000 gross square feet are identified for higher education (i.e., university) use. The Aggie Square Phase I project also includes uses that complement these employment uses as well as existing uses on the Sacramento Campus, specifically residential units that could be marketed to students and campus employees as well as limited commercial retail and restaurant space to serve the campus population. The Aggie Square Phase I project results in increased land use diversity that would increase internal trip capture and reduce VMT per employee. While the Aggie Square Phase I project introduces new complementary land uses, the overall mix of the uses and character of the campus will be similar in features (i.e., density, mix of uses, transit accessibility) to the existing campus and surrounding area.

Per the Technical Advisory, office projects “that locate in areas with low VMT and incorporate similar features (i.e., density, mix of uses, and transit accessibility) will tend to exhibit similarly low VMT.” The Technical Advisory further states that “because new development in such locations

would likely result in a similar level of VMT, such maps can be used to screen out residential and office projects from needing to prepare a detailed VMT analysis.”

Based on this guidance from the Technical Advisory, the employment uses planned in the Aggie Square Phase I project are expected to have a **less-than-significant** VMT impact since the project is located in a low VMT area.

### ***Residential Uses***

As shown in Figure 3.15-5, the Sacramento Campus is located in an area that currently generates household VMT per capita that is 37 percent below the regional average and 21 percent below the city average. The Technical Advisory suggests residential projects exceeding a level of 15 percent below existing region or city VMT per capita may indicate a significant impact. Since the Sacramento Campus is in an area that generates total household VMT per capita below this 15 percent threshold, it is considered a low-VMT area.

As noted in the employment uses discussion above, the Aggie Square Phase I project includes residential units that would add housing opportunities for the student and campus employee population. This increase in land use diversity would increase the internal trip capture and reduce VMT per capita compared to existing uses. While the Aggie Square Phase I project introduces residential uses to the campus, the overall mix of the uses and character of the campus will be similar in features (i.e., density, mix of uses, transit accessibility) to the existing campus and surrounding area.

Per the Technical Advisory, residential projects “that locate in areas with low VMT and incorporate similar features (i.e., density, mix of uses, transit accessibility) will tend to exhibit similarly low VMT.” The Technical Advisory further states that “because new development in such locations would likely result in a similar level of VMT, such maps can be used to screen out residential and office projects from needing to prepare a detailed VMT analysis.”

Based on this guidance from the Technical Advisory, the residential uses planned in the Aggie Square Phase I project are expected to have a **less-than-significant** VMT impact because the project is located in a low-VMT area.

### ***Commercial Retail Uses***

The Aggie Square Phase I project includes 20,000 gross square feet of commercial retail and 20,000 gross square feet of restaurant space (see Table 3.15-1). Per the Technical Advisory, “new retail development typically redistributes shopping trips rather than creating new trips,” and “local-serving retail development tends to shorten trips and reduce VMT” by “adding retail opportunities into the urban fabric and thereby improving retail destination proximity.” On the other hand, regional-serving retail development “can lead to substitution of longer trips for shorter ones” and “may tend to have a significant impact.” The Technical Advisory further states that “retail development including stores larger than 50,000 square feet might be considered regional-serving.” The combined 40,000 square feet of retail and restaurant space is less than the 50,000 square feet store size cited in the Technical Advisory as a retail establishment that might be considered regional-serving (as opposed to local-serving).

It is anticipated that this limited amount of commercial retail and restaurant space will in large part serve the Sacramento Campus population and the immediate surrounding neighborhoods. The existing Sacramento Campus consists of approximately 3.7 million gross square feet of building area,

most of which is medical, education, and employment uses. This total gross building area would increase to over 5 million gross square feet with the proposed Aggie Square Phase I project. In light of the overall size of the campus, the mostly residential composition of adjacent neighborhoods, and the relatively small amount of combined retail and restaurant space proposed as part of the Aggie Square Phase I project, it is reasonable to conclude that the commercial retail and restaurant components of the Aggie Square Phase I project would primarily be local-serving in nature. Per the Technical Advisory, this local-serving commercial retail and restaurant space included in the Aggie Square Phase I project would have a **less-than-significant** VMT impact.

### ***Additional VMT Considerations***

#### ***Emerging Trends and SACSIM Model Limitations***

This analysis concludes that the Aggie Square Phase I project would have a less-than-significant impact on VMT based on the recommended screening analysis methodology presented in the Technical Advisory. This includes reliance on VMT screening maps prepared by SACOG based on data from the SACSIM travel forecasting model. While the SACSIM model represents state of the practice or advance practice, travel behavior and the transportation systems are changing quickly in response to emerging trends, new technologies, and different preferences, as noted in the Environmental Setting section on page 3.15-3. These changes combined with the current effects of the COVID-19 pandemic increase uncertainty about how VMT generation rates may change at the time the Aggie Square Phase I project is constructed and after it is occupied.

The trajectory of deployment, market acceptance, and government regulation of these new travel options and technologies is difficult to predict and these elements directly influence the inputs and algorithms for the SACSIM model. As such, SACSIM as a travel forecasting model has limitations in the ability to capture the full range of potential travel effects from emerging travel options and technologies.

The SACSIM model does include some scenario testing capabilities that can begin to test different hypotheses of these impacts, but until more research is done about the likely behavioral responses to new modes and technologies is completed, travel models cannot fully capture these changes in a reliable way. Initial testing of automated vehicles effects using SACSIM, such as lowering costs to use vehicles and making them more convenient by eliminating parking at trip ends, does generate increases in overall vehicle travel and reductions in transit ridership with all else being equal. The information suggests the model is sensitive to how cost and convenience influence travel behavior but within the limits of the observed data used to develop the model.

#### ***2018 Progress Report***

The California Air Resources Board (CARB) is tasked with preparing a report every 4 years analyzing the progress made under SB 375 pursuant to SB 150. While metropolitan planning organizations have consistently produced sustainable community strategies that contain forecasts demonstrating compliance with SB 375 greenhouse gas (GHG) reduction targets, observed data related to VMT and GHG mobile emission trends tell a different story. CARB's *2018 Progress Report California's Sustainable Communities and Climate Protection Act* (California Air Resources Board 2018) shows VMT per capita and GHG per capita rates increased from 2012 to 2018. According to the report, "California—at the state, regional, and local levels—has not yet gone far enough in making the systemic and structural changes to how we build and invest in communities that are

needed to meet state climate goals.” Local agencies have not changed land use patterns or housing amounts consistent with SCS expectations. Further, improved economic activity (prior to the COVID-19 pandemic), new vehicle travel options (i.e., Uber and Lyft), internet shopping, higher visitation, and low fuel prices contributed to increased vehicle travel that was not fully accounted for in SCS forecasts.

#### *VMT Effects of COVID-19 Pandemic*

The COVID-19 pandemic decreased VMT as a result of government orders that curtailed mobility and suppressed economic activity. While this sudden decline in VMT is expected to be temporary, it is uncertain what long-term effects the COVID-19 pandemic will have on travel behavior. By necessity, sizable portions of the public adapted to a notable increase in teleworking, distance learning, telemedicine, internet shopping, and home delivery. The current physical distancing recommendations have also reduced demand for mass transit and shared mobility options. The combination of these effects could result in increased or decreased VMT per capita levels in the future, depending on how permanent these behavioral changes become.

Since the VMT effects of emerging trends and the COVID-19 pandemic are uncertain, and because the COVID-19 pandemic has disrupted the VMT trends documented in the 2018 Progress Report, any definitive conclusions for how these other VMT considerations will affect project VMT-generation is speculative.

#### ***Conclusion***

The Aggie Square Phase I project proposes development that is similar to existing characteristics of the study area (i.e., density, mix of uses, and transit accessibility). The Aggie Square Phase I project also would add complementary land uses to the Sacramento Campus, which increase land use diversity, increase internal trip capture, and reduce VMT per capita. Per the Technical Advisory, projects “that locate in areas with low VMT and incorporate similar features (i.e., density, mix of uses, transit accessibility) will tend to exhibit similarly low VMT.” Therefore, this impact would be **less than significant**.

#### **Mitigation Measures**

No mitigation measures are required.

#### **Impact AS-TRA-3: Result in changes to the transportation system that would create hazardous features or incompatible traffic uses.**

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The Aggie Square Phase I project does not propose any new roadways or transportation facilities that would be inconsistent with applicable design standards. This impact would be **less than significant**.

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The Aggie Square Phase I project would result in increased travel activity, including bicycle, pedestrian, transit, and vehicle trips, as discussed in Impacts AS-TRA-1, and AS-TRA-2. These trips would be served by existing and planned facilities that are constructed to applicable design standards to serve these travel modes. To reduce potential conflicts and increase the feeling of safety and comfort for pedestrians and cyclists, major vehicular movement is focused on the outer roads, specifically X Street, 48th and 49th Streets, and 2nd Avenue to Broadway. Other streets on

campus, while open to vehicular traffic, will be designed to support a pedestrian and bike network in the campus core.

Consequently, the Aggie Square Phase I project would not result in a change to the volume, mix, or speed of traffic that is not compatible with the design of existing roadways and transportation facilities. Therefore, this impact would be **less than significant**.

#### **Mitigation Measures**

No mitigation measures are required.

#### **Impact AS-TRA-4: Result in inadequate emergency access**

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The Aggie Square Phase I roadway and transportation network is designed to maintain high levels of accessibility and includes multiple emergency vehicle access facilities that can be used when necessary. This ensures emergency response vehicles have the necessary access when responding to an emergency. This impact would be **less than significant**.

---

The Aggie Square Phase I project would include roadway and transportation facilities designed to maintain high levels of accessibility and personal mobility. Specifically, the southerly extension of 45th Street from 2nd Avenue and easterly extension of 3rd Avenue from Stockton Boulevard into Aggie Square would both provide access for emergency response vehicles and expand the existing grid network of streets on the Sacramento Campus to provide redundant connectivity. Therefore, this impact would be **less than significant**.

#### **Mitigation Measures**

No mitigation measures are required.

#### **Impact AS-TRA-5: Result in construction activity that could cause temporary impacts to transportation and traffic**

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Development of Aggie Square Phase I would involve construction activities that could cause temporary impacts to transportation facilities. However, mitigation measure AS-TRA-5 would reduce this impact. Therefore, this impact would be **less than significant with mitigation**.

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Construction of the Aggie Square Phase I project would involve construction activities that could cause temporary impacts to transportation facilities, including temporary roadway, bikeway, and sidewalk closures, degrading roadway pavement conditions, temporary degradation in traffic operations, temporary relocation or displacement of transit or shuttle stops, closure of parking lots resulting in displaced parking, and increasing potential for conflicts between construction vehicles and bicyclists and pedestrians. Therefore, this impact would be **significant**.

Construction of the Aggie Square Phase I project would occur over several years. During this construction period, construction-related trips would include construction employee trips to and from the project site as well as delivery trucks for materials and equipment. In addition to construction activity at the project site, construction activity may require the use of adjacent transportation facilities (i.e., sidewalks, bikeways, roadways) and/or parking areas for staging of equipment or material. Construction activity could also temporarily close certain roadways and



transportation facilities, resulting in the need for temporary detours for bicyclists, pedestrians, buses, shuttles, and vehicles.

Implementation of Mitigation Measure AS-TRA-5 would reduce this impact and ensure that construction activity would not significantly impact transportation and traffic. Therefore, this impact would be **less than significant with mitigation**.

**Mitigation Measure AS-TRA-5: Prior to the issuance of any grading or building permits, a Construction Traffic Management Plan (TMP) shall be prepared to the satisfaction of UC Davis Health and the City of Sacramento Department of Public Works for City-owned roadways**

The Construction TMP shall include items such as the following.

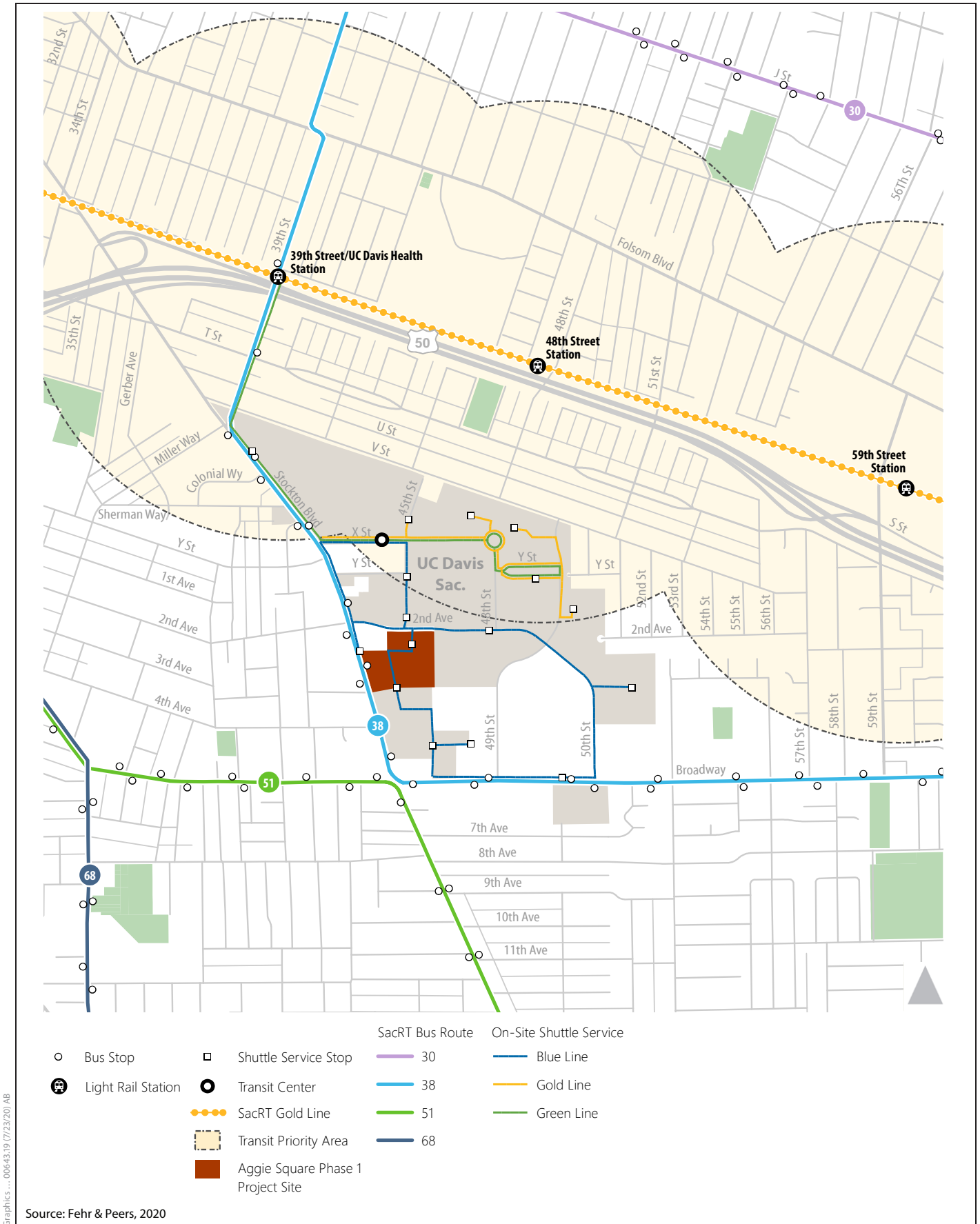
- Preserving emergency vehicle access routes to existing buildings on the Sacramento Campus
- Providing truck circulation routes/patterns that minimizes effects on existing vehicle traffic during peak travel periods and maintains safe bicycle circulation
- Monitoring for roadbed damage and timing for completing repairs
- Preserving safe and convenient passage for bicyclists and pedestrians through/around construction areas
- Creating methods for partial (i.e., single lane)/complete street closures (e.g., timing, signage, location and duration restrictions), if necessary
- Identifying detour routes for roadways subject to partial/complete street closures
- Identifying temporary UC Davis shuttle stops and detoured shuttle routes if existing stops or routes are affected
- Identifying temporary SacRT bus stops and detoured bus routes, if existing stops or routes are affected
- Developing criteria for use of flaggers and other traffic controls
- Providing a point of contact for nearby residents, Sacramento Campus staff, students, and visitors, and other stakeholders to contact to obtain construction information and have questions answered

The Construction TMP shall be developed so that the following performance standards are achieved throughout project construction.

- Maintain emergency vehicle access to all buildings on the Sacramento Campus at all times.
- Maintain identified emergency vehicle routes to UC Davis Health medical facilities at all times. Notify appropriate contacts for UC Davis Health and/or emergency responders at least 24 hours prior to any construction-related partial/complete closures that may affect emergency vehicle routes, and provide clear identification of detours when necessary.
- Minimize construction traffic during morning and evening peak periods when street traffic on local and campus streets are highest.
- Close (i.e., partially or fully) any construction-related public roadways only during off-peak periods and provide appropriate construction signage, including detour routing.

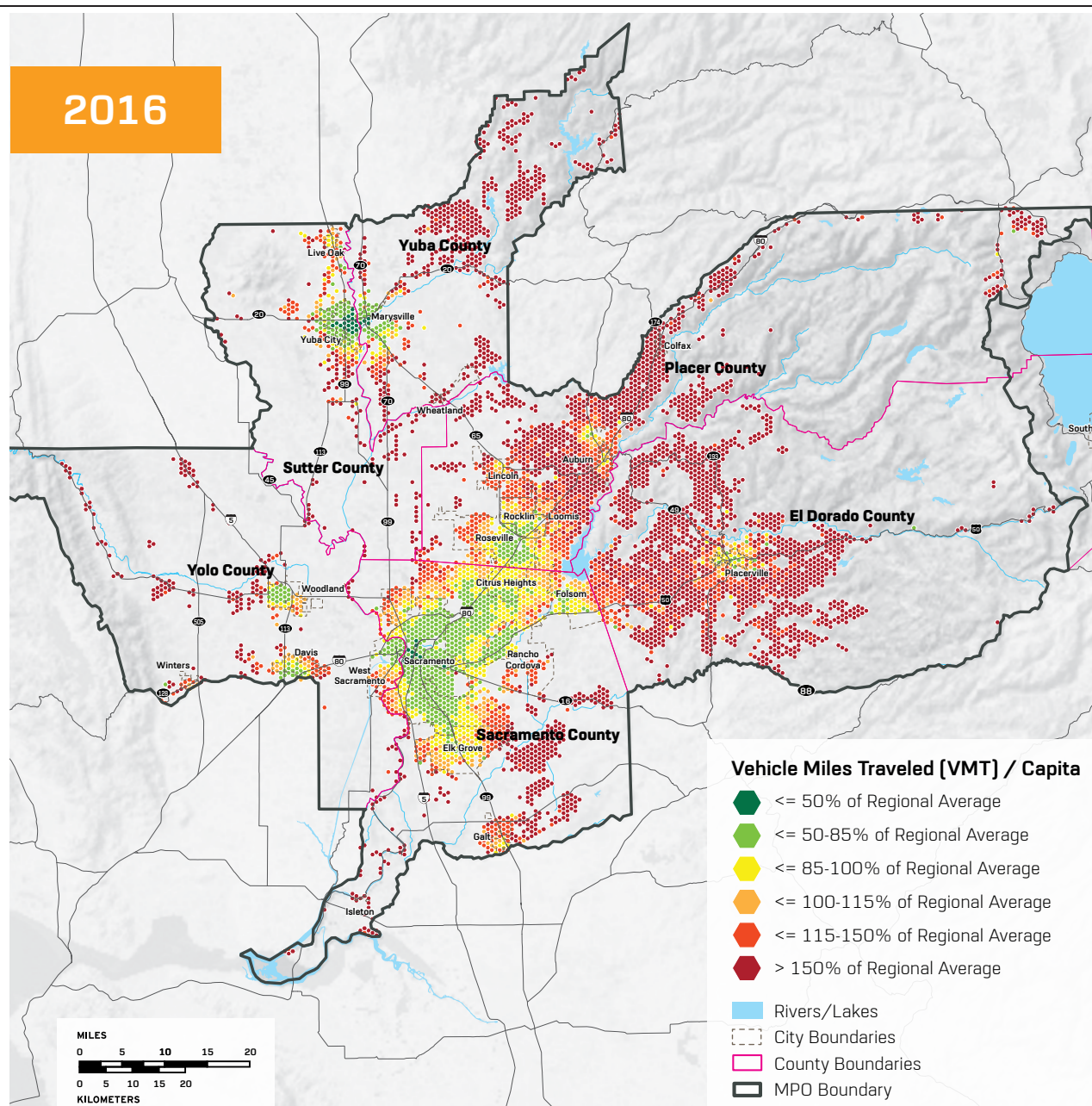
- Limit detour routing to campus roadways or City collector and arterial roadways, such as Stockton Boulevard and Broadway, to the extent feasible. Include measures to minimize traffic increases on local residential roadways; this may include signage and law enforcement presence during partial/complete closures to discourage through-traffic use of local residential roadways.
- Clear roadways, sidewalks, crosswalks, and bicycle facilities of debris (e.g., rocks) that could otherwise impede travel and impact public safety, and maintain them in this condition.

UC Davis shall also consider any concurrent construction activity and other active Construction TMPs when reviewing the Construction TMP for the Aggie Square Phase I project. This review shall verify consistency across the Construction TMPs address the effects of simultaneous construction activity.

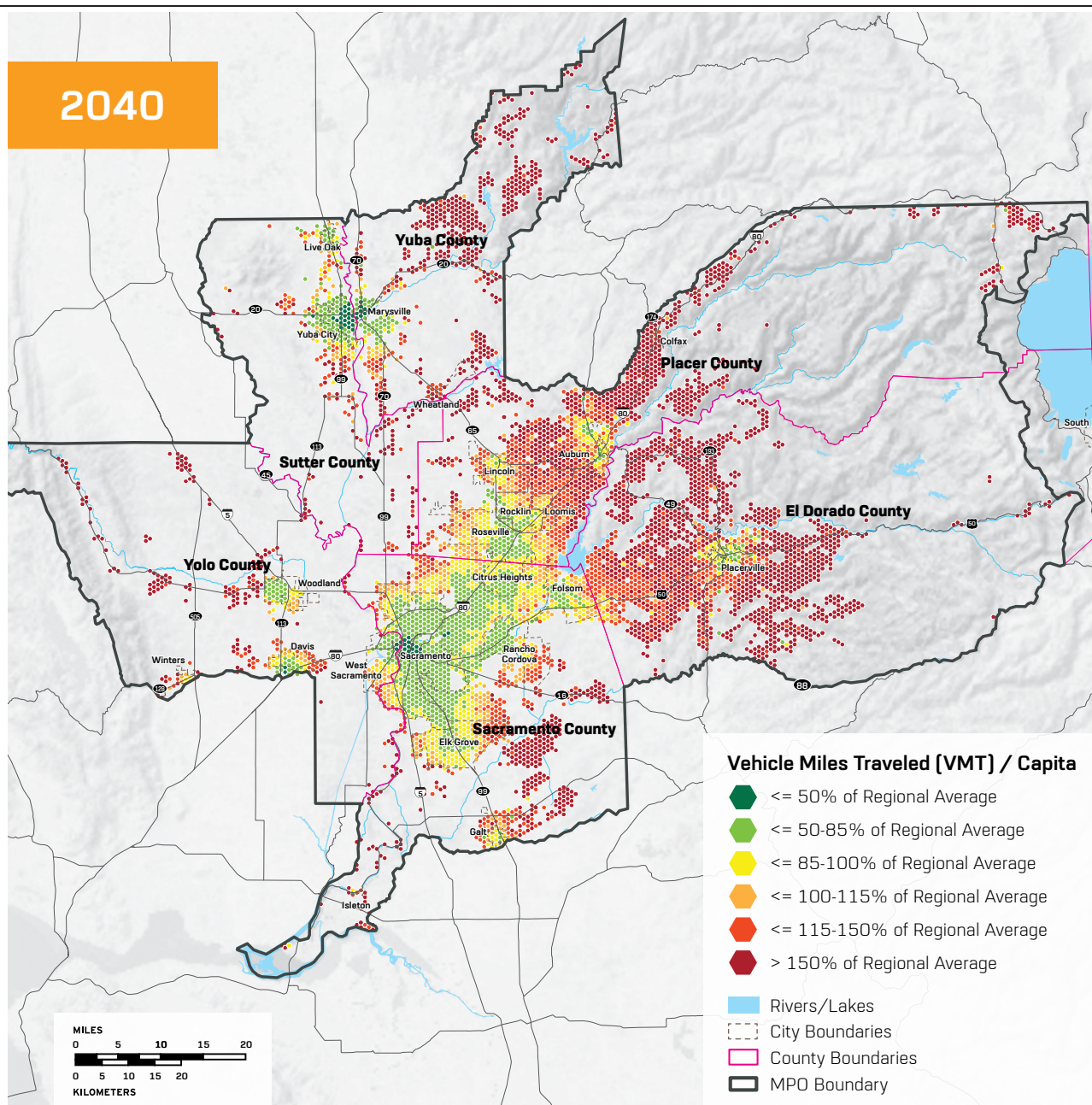


**UC DAVIS**

**Figure 3.15-1**  
**Existing Transit Facilities and Transit Priority Areas (TPA)**

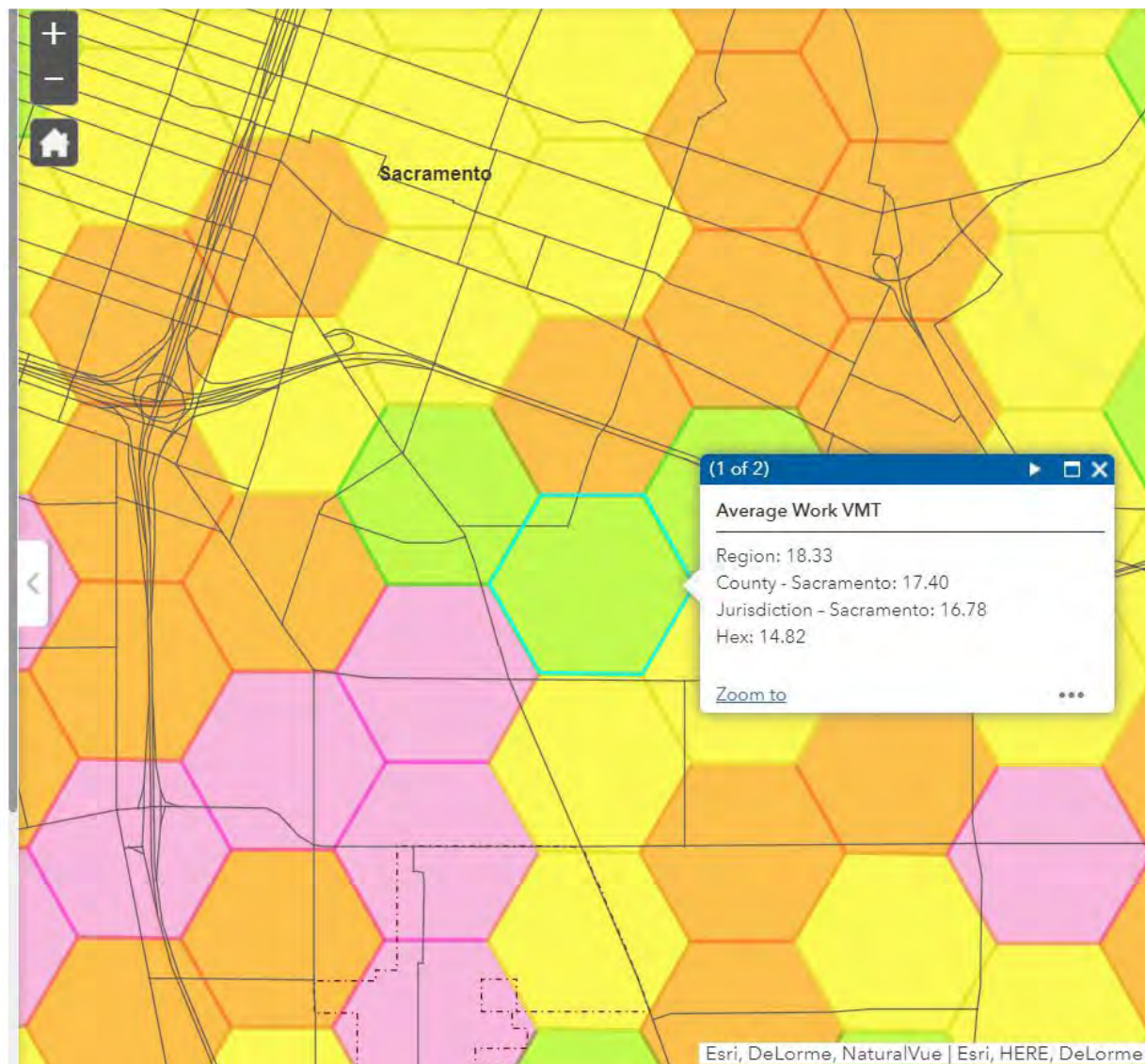
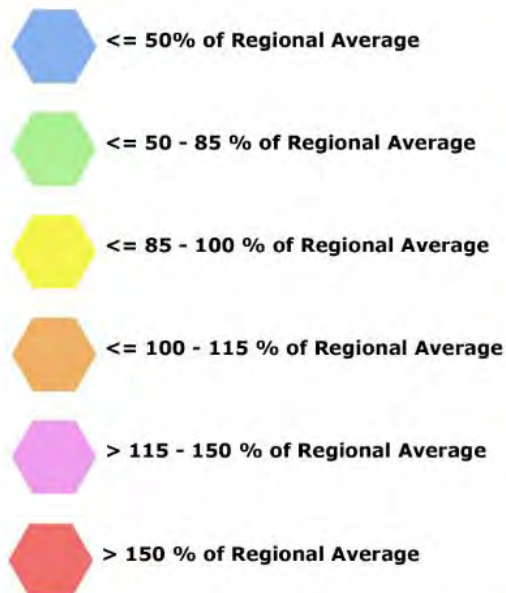






For OFFICE project, the threshold is defined as Workplace-based VMT per job achieving 15% of reduction comparing to regional (or any appropriate sub-area) average.

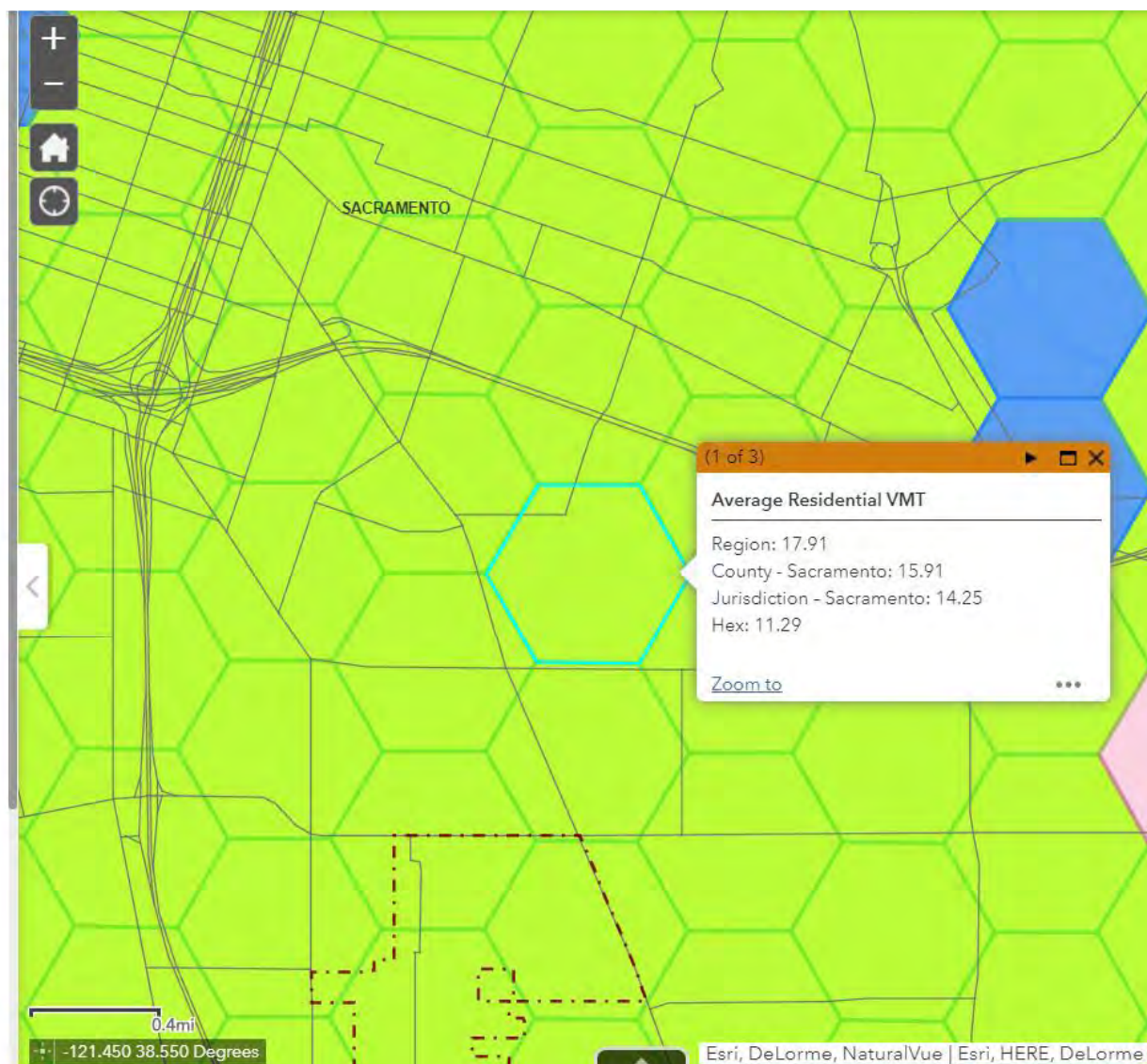
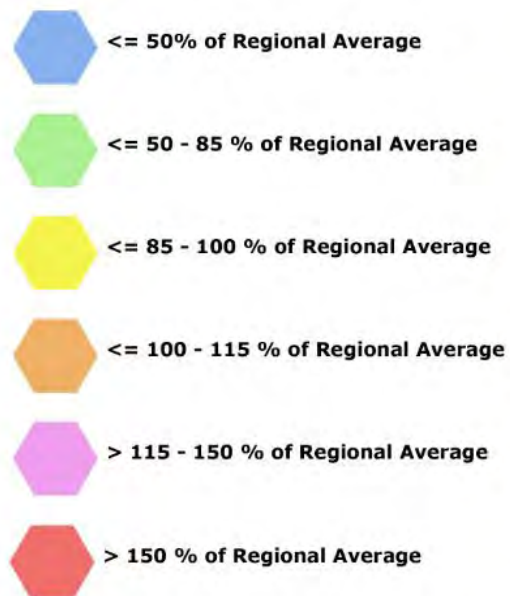
Average workplace VMT per job at a Hex is computed by summing VMTs from all work-based tours (trips 1,2 and 5 in the diagram) and sub-tours (trips 4 and 5 in the diagram) at workplace in the Hex and divided by the jobs in the Hex available for residents inside SACOG region.



Source: SACOG, 2020



For RESIDENTIAL projects, threshold is defined as total household VMT per capita achieving 15% of reduction comparing to regional (or any appropriate sub-area) average. The map uses HEX geography. Household VMT per capita per HEX is calculated by tallying all household VMTs generated by the residents living at the HEX and divided by the total population in the HEX.



Source: SACOG, 2020

## 3.16 Utilities and Service Systems

This section describes the regulatory and environmental setting for utilities and service systems in the Aggie Square Phase I project area, analyzes effects on utilities and service systems that would result from implementation of Aggie Square Phase I, and provides mitigation measures to reduce the effects of any potentially significant impacts, if applicable.

### 3.16.1 Existing Conditions

#### Regulatory Setting

Regulations, laws, policies, and plans applicable to and/or considered for Aggie Square Phase I are provided in Volume 1 of this Supplemental EIR. As the regulatory setting provided in Volume 1 considers potential development, including Aggie Square Phase I, within the entirety of the UC Davis Sacramento Campus as envisioned through the 2020 LRDP Update, no additional regulatory setting is provided for Aggie Square Phase I.

#### Environmental Setting

The relevant utilities and service systems considered for Aggie Square Phase I are provided in Volume 1 of this Supplemental EIR. The environmental setting provided in Volume 1 considers the utilities and service systems within the entirety of the UC Davis Sacramento Campus, which includes Aggie Square Phase I.

#### Study Area

The project site is an 9.55-acre parcel within the UC Davis Sacramento Campus, approximately 2.5 miles southeast of downtown Sacramento, 17 miles east of the UC Davis main campus in Davis, and 90 miles northeast of San Francisco. The parcel is owned by the University and is currently a surface parking lot and campus fleet services facility (see Figure 2-2).

### 3.16.2 Environmental Impacts

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

#### Methods for Analysis

This analysis evaluates the potential for adverse physical impacts to occur as a result of the provision of new or altered utilities and service systems due to the proposed Aggie Square Phase I project. This analysis is based on review of existing policies, ordinances, and other regulations pertinent to utilities and service systems. Refer to Section 3.16, *Utilities and Service Systems*, in Volume 1 of this Supplemental EIR for a discussion of applicable regulations and campus-wide utilities and service systems.



According to the *University of California, Davis Sacramento Campus, Utility Master Plan Update* (Utility Master Plan) for the Sacramento Campus (Affiliated Engineers, Inc. 2019), the existing campus-wide site utility systems (domestic water, fire water, sanitary sewer, and storm sewer) have the capacity to serve future improvements. Therefore, the Utility Master Plan recommends relocating utilities around future building footprints and providing civil utility services to each future building as the buildings are constructed. Figure 3.16-1 shows the draft utilities plan for Aggie Square Phase I. New water points of connection would occur on both sides of Life Science Technology Engineering (LSTE) East and LSTE West running north-south to the existing city public water main line in 2nd Avenue and from 3rd Avenue (proposed) to the existing city public water main in Stockton Boulevard per city standards. A new sanitary sewer point of connection would connect to the existing city combined storm-sewer main line in Stockton Boulevard at 3rd Avenue per city standards. New fire hydrants would be installed throughout the project site per city standards.

## Thresholds of Significance

Refer to Section 3.16, *Utilities and Service Systems*, in Volume 1 of this Supplemental EIR for a discussion of applicable significance criteria.

## Impacts and Mitigation Measures

### **Impact AS-UT-1: Relocation or construction of new or expanded water, wastewater treatment, stormwater drainage, electric power, natural gas, or telecommunications facilities, with the potential to cause significant environmental effects**

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While the implementation of Aggie Square Phase I would increase the amount of built space and campus population and generate a corresponding increase in demand for utilities, the campus and surrounding area have adequate facilities to accommodate this demand and would not require the relocation or construction of new facilities, the construction or relocation of which could cause significant environmental effects. This impact would be **less than significant**.

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The analysis in Chapter 3, Section 3.16.2, *Environmental Impacts*, in Volume 1, concluded that the implementation of the 2020 LRDP Update would not generate a corresponding increase in demand for utilities given that the campus and surrounding area have adequate facilities to accommodate this demand and would not require the relocation or construction of new facilities. Aggie Square Phase I is included in that analysis, and if implemented, would be subject to the 2020 LRDP Update.

### **Potable and Non-Potable Water**

Implementation of Aggie Square Phase I would require more water for domestic use and fire water than under existing conditions. However, as stated in the UMP, the existing water systems have sufficient supply to meet the increased demand associated with future campus improvements (Affiliated Engineers, Inc. 2019:1-11). The existing water infrastructure throughout the Sacramento Campus would provide the distribution infrastructure necessary to provide water service for future uses, including Aggie Square Phase I. Individual distribution water pipes would be needed as shown in Figure 3.16-1. New water points of connection would occur on both sides of LSTE East and LSTE West running north-south to the existing city public water main line in 2nd Avenue and from 3rd Avenue (proposed) to the existing city public water main in Stockton Boulevard per city standards.

Additionally, off-campus water infrastructure may require routine modification or replacement to support Aggie Square Phase I.

Construction of new water pipes would require demolition of surface improvements and excavation activities, which includes the surface parking lot and campus fleet services facility. These activities are typically done during the construction of any new building/structure. Future construction of water infrastructure for Aggie Square Phase I would adhere to existing laws and regulations and City of Sacramento standards, and the water conveyance infrastructure would be appropriately sized for the project, which includes potable water, landscape irrigation, and fire flow demands. These improvements would occur on the Sacramento Campus, and are not anticipated to disturb neighboring communities or result in other significant environmental effects. The environmental effects of constructing these types of improvements on the project site, which is currently surface parking and the campus fleet services facility, are addressed in other sections of this Supplemental EIR, including Section 3.2, *Air Quality*; Section 3.3, *Biological Resources*; Section 3.4, *Cultural Resources*; and Section 3.11, *Noise*. Connections and extensions of these water systems would occur primarily within roadways or other areas that are already developed or disturbed, and which are unlikely to have sensitive biological or cultural resources. Additionally, due to the limited ground disturbance needed for connections and extensions, construction-phase air quality and noise impacts would be **less than significant**.

### ***Wastewater and Stormwater***

As stated in Volume 1 of this Supplemental EIR, no major improvements to the City's combined storm-sewer lines would be required to serve Aggie Square Phase I, but new connections would be required. Combined storm-sewer lines from Aggie Square Phase I would connect to the existing combined storm-sewer main line in Stockton Boulevard per city standards (Figure 3.16-1). A new sewer main line would be installed along 3rd Avenue (proposed) from Stockton Boulevard east with a new sewer stub to the south. Such upgrades are not expected to result in significant environmental effects due to the urban context (all improvements would be within existing road rights-of-way or surface parking in areas that have been previously disturbed in conjunction with other utilities and roadway construction). Furthermore, Government Code Section 54999 authorizes public utilities to charge the University a limited capital facilities fee under certain circumstances (i.e., a nondiscriminatory charge to defray the actual cost of that portion of a public utilities facility actually serving the University). In the event that there are any costs incurred by the City associated with the provision of water or wastewater facilities to serve the campus, the University will comply with its obligations as authorized under Section 54999. Construction of wastewater conveyance facilities would not result in significant environmental effects. The impact would be **less than significant**.

The environmental effects of constructing the onsite storm drain system on the project site are addressed in other sections of this EIR, including but not limited to Section 3.2, *Air Quality*; Section 3.3, *Biological Resources*; Section 3.4, *Cultural Resources*; and Section 3.1, *Noise*. Connections and extensions of the onsite storm drain system to the City's system would occur primarily within roadways or other areas that are already developed or disturbed, and which are unlikely to have sensitive biological or cultural resources. Additionally, due to the limited ground disturbance needed for connections and extensions, construction-phase air quality and noise impacts would also be less than significant. The effects of increased stormwater runoff from Aggie Square Phase I are also evaluated in Section 3.9, *Hydrology and Water Quality*, and are found to be less than significant. In addition, implementation of Aggie Square Phase I would not result in the need for off-site improvements to the City's storm drain facilities, with the exception of connecting to the existing

combined storm-sewer main in Stockton Boulevard. The impact related to the construction of storm drainage improvements would be **less than significant**.

### ***Electricity and Natural Gas***

Aggie Square Phase I would be developed with independent utility systems, including dedicated Sacramento Metropolitan Utility District (SMUD) transformers and dedicated emergency power systems. Electricity use for Aggie Square Phase I is estimated to be 27.5 million kilowatt hours (kWh) per year. To maximize energy efficiency, a new central plant will be constructed to serve Aggie Square Phase I to provide chilled water and hot water. The central plant would utilize water-cooled chillers for summertime cooling, combined with heat-recovery chillers and supplemental air-source heat pumps for the winter and shoulder seasons, coupled with chilled water and hot water thermal energy storage. The environmental effects of constructing these systems are addressed in other sections of this Supplemental EIR, including Section 3.2, *Air Quality*; Section 3.3, *Biological Resources*; Section 3.4, *Cultural Resources*; and Section 3.1, *Noise*.

Per UC Davis' Sustainable Practices Policy (University of California 2019), there would be no new buildings (other than On-Campus Partner Buildings) constructed under the 2020 LRDP Update that would purchase natural gas from Pacific Gas and Electric (PG&E).

Utility systems would be installed primarily within roadways and surface parking or other areas that are already developed or disturbed, and which are unlikely to have sensitive biological or cultural resources and would be installed per National Electrical Code and California Electrical Code standards. Construction impacts related to biological and cultural resources are discussed in Sections 3.3 and 3.4, respectively. Additional analysis regarding electricity use and energy efficiency is provided in Section 3.5, *Energy*.

### ***Telecommunications***

The UC Davis Sacramento Campus owns and operates its own telecommunications infrastructure (e.g., telecommunications lines and conduits, utility boxes, and electronic equipment located within existing buildings). Some expansion of the existing telecommunications infrastructure would be necessary to serve Aggie Square Phase I. However, the telecommunications infrastructure necessary to serve the new facilities are evaluated throughout this document as part of the analysis of the new facilities, including construction impacts, and will not result in any additional substantial physical changes. Therefore, the impact would be **less than significant**.

### **Mitigation Measures**

No mitigation measures are necessary.

### **Impact AS-UT-2: Creation of a need for new or expanded entitlements or resources for sufficient water supply to serve the project and reasonably foreseeable future development during normal, dry, and multiple dry years**

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While Aggie Square Phase I would increase the campus population and generate a corresponding increase in demand for water, water conservation strategies are expected to partially offset the increased demand. The increased demand for water would not require new or expanded entitlements. Therefore, this impact would be **less than significant**.

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Development of Aggie Square Phase I would increase demand for potable water for domestic uses, fire protection, and energy from its new facilities. The use of domestic and fire protection water would increase commensurate with building space. When implementing Aggie Square Phase I, the Campus would implement sustainability strategies consistent with the UC Sustainable Practices Policy and the *UC Davis 2009–2010 Climate Action Plan* (CAP) (University of California, Davis 2010). The CAP lists strategies to minimize campus water consumption, including water-efficient landscaping, fixture retrofits, efficient fixtures in new buildings, education, and energy conservation initiatives that would minimize water use.

Existing water use at the Sacramento Campus in 2019 was approximately 147,746,000 gallons of potable water and 28,342,000 gallons of non-potable water per year. Aggie Square would consume approximately 4,860,000 gallons of potable water and 377,000 gallons of non-potable water per year. With the continued and expanded water conservation efforts described in the UWMP, the City has sufficient water supplies to meet projected water demands during a normal year with the use of both surface and groundwater entitlements (City of Sacramento 2015). The *Sacramento 2035 General Plan* (City of Sacramento 2015) found that the City's water entitlements are sufficient to serve the entire city (including future expansions of the city limits) and also provide water to other local providers in need of water supply. Further expansion of the City's water treatment plants will occur as needed to support future water demands. Thus, Aggie Square Phase I would not trigger the need for any such expansions.

While the implementation of Aggie Square Phase I would create an increase in the Sacramento Campus's demand for water, it is an incremental increase above what was analyzed in the 2010 LRDP Final EIR. According to the UWMP, the City has a sufficient water supply to meet this demand. As described in the UWMP and the *Sacramento 2035 General Plan*, the City has adequate water supplies to meet the projected increases in water demand through the year 2040. The increase in demand as a result of implementation of the 2020 LRDP Update, which includes Aggie Square Phase I, would compute to approximately 15 acre-feet of potable water, which is approximately 0.005 percent of the City of Sacramento's annual water supply of 326,800 acre-feet per year. Furthermore, Aggie Square Phase I would comply with the strategies to minimize water consumption described in the UC Sustainable Practices Policy. For these reasons, the increased water demand would not result in the need for the City of Sacramento to obtain additional entitlements to serve Aggie Square Phase I. The impact would be **less than significant**.

### Mitigation Measures

No mitigation measures are necessary

### **Impact AS-UT-3: A determination by the wastewater treatment provider that serves or may serve the project that it does not have adequate capacity to serve the project's projected demand in addition to the provider's existing commitments**

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Development associated with Aggie Square Phase I would increase wastewater but would not require any substantial infrastructure improvements at the Sacramento Regional Wastewater Treatment Plant (SRWTP). Therefore, this impact would be **less than significant**.

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The majority of the campus, which includes the Aggie Square Phase I project site, is served by a network of combined sewer pipes maintained by the City of Sacramento. These pipes convey a combination of stormwater and sanitary sewage from the campus to public wastewater treatment

plants. The largest combined sewer main has a size of up to 72 inches in diameter (Affiliated Engineers, Inc. 2019). The combined sewer mains are not near planned Aggie Square Phase I buildings.

As discussed in Section 3.16, *Utilities and Service Systems*, in Volume 1 of this Supplemental EIR, development associated with implementation of the 2020 LRDP Update, which includes Aggie Square Phase I, would increase wastewater use but would not require any substantial improvements at SRWTP. The impact would be less than significant.

All existing project site utilities would be demolished, and new sewer pipes and sewer mains would be replaced or installed to serve Aggie Square Phase I per City of Sacramento standards. As shown in Figure 3.16-1, a new sanitary sewer point of connection to the existing combined storm-sewer main would occur at Stockton Boulevard and 3rd Avenue (proposed). New sewer mains would be installed along 3rd Avenue (proposed) from Stockton Boulevard and between and around the buildings comprising Aggie Square Phase I.

The development of Aggie Square Phase I would increase the volume of wastewater conveyed to the City of Sacramento combined sewer and storm water facilities. The wastewater would be treated at the SRWTP. The SRWTP did not experience any major sanitary sewer overflows in 2019 and Aggie Square Phase I would not require any infrastructure improvements to the SRWTP. As stated under Impact LRDP UT-1, Existing and proposed treatment facilities were designed for gradual expansion as future wastewater flows increase. No additional improvements that are not already planned would be necessary as a result of the project. This impact would be **less than significant**.

### **Mitigation Measures**

No mitigation measures are necessary.

### **Impact AS-UT-4: Project-related exceedance of state or local solid waste standards or of the capacity of local infrastructure, or other impediments to attaining solid waste reduction goals**

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While the implementation of Aggie Square Phase I would increase the campus population and generate a corresponding increase in solid waste, the UC Sustainable Practices Policy is expected to reduce waste and partially offset the increased demand for landfill capacity. The increased demand for landfill space would not require new or expanded entitlements. Therefore, this impact would be **less than significant**.

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Generation of solid waste is expected to increase as the number of facilities and on-campus population increases under Aggie Square Phase I. Similar to existing conditions, all non-recycled and nonhazardous solid waste would likely be disposed of at Republic Services Elder Creek Transfer Station in Sacramento, consistent with the rest of the Sacramento Campus. Approximately 4,374 tons of solid waste from the Sacramento Campus were disposed of at the landfill in 2019, and similar quantities of waste from the campus were disposed of at the landfill in previous years. The new population added to the campus under the 2020 LRDP Update, which includes Aggie Square Phase I, would generate 2,292 additional tons of solid waste per year. With implementation of the 2020 LRDP Update, the Sacramento Campus would generate approximately 6,666 tons per year, or 18.26 tons per day. Aggie Square Phase I would generate approximately 870 tons of solid waste per year, which is approximately 7.6 percent of the total solid waste anticipated at the Sacramento Campus at full implementation of the 2020 LRDP Update.

Solid waste would continue to be separated into appropriate waste streams. Nonrecycled and nonhazardous wastes would continue to be disposed of at Republic Services Elder Creek Transfer Station in Sacramento through the year 2036.

Expansion is planned for the Forward Landfill in Manteca. The expansion would increase the total landfill capacity by approximately 32 million cubic yards to 54 million cubic yards and allow disposal at the landfill to continue until the year 2039, approximately (San Joaquin County Community Development Department 2018:II-2). Because Forward Landfill is anticipated to closed before implementation of the 2020 LRDP Update, it is assumed that waste will be transported to Foothill Landfill in San Joaquin County (Ocheltree pers. comm.)

Unlike the Sacramento Campus, the rest of the solid waste in the city is transported to the Sacramento Recycling and Transfer Station and the Sacramento County North Area Recovery Station, where it is then hauled to the Sacramento County Kiefer Landfill. Kiefer Landfill is the primary municipal solid waste disposal facility for private haulers in the Sacramento metropolitan area. Kiefer Landfill has a permitted capacity of over 17 million cubic yards and is anticipated to be able to serve the area until the year 2065 (City of Sacramento 2015:4-45). Another potential landfill is the Yolo County Central Landfill. The UC Davis Campus uses this landfill for solid waste disposal, and it is anticipated to close in 2081. These are just two potential landfills that the Sacramento Campus could use for solid waste services in the future.

Although it is not subject to the 1989 Integrated Waste Management Act (Assembly Bill [AB] 939), the University of California has adopted the UC Sustainable Practices Policy, which sets goals to reduce waste generation by 25 percent by 2025 and 50 percent by 2030. The policy states that the University will achieve zero waste by 2020 for locations other than medical centers. The UC Sustainable Practices Policy also encourages recycling of construction waste. Together these policies would minimize the amount of solid waste that would go to Forward Landfill in Manteca.

While Aggie Square Phase I would generate more solid waste than existing conditions, there is adequate capacity available in the Forward Landfill to serve the campus through the year 2036, and expansion for the landfill is already planned and has undergone environmental review. After the year 2036, other landfills in the area with capacity would serve the project (including Kiefer Landfill, which is anticipated to be open through the year 2065). The City of Sacramento has committed to achieving zero waste to landfills by 2040. In addition, compliance with the UC Sustainable Practices Policy would continue to reduce landfill contributions. The impact would be **less than significant**.

### **Mitigation Measures**

No mitigation measures are necessary.

### **Impact AS-UT-5: Inconsistency with federal, state, and local management and reduction statutes and regulations related to solid waste**

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While UC Davis is not subject to state and local regulations related to solid waste, Aggie Square Phase I would comply with the UC Sustainable Practices Policy which encourages waste reduction and diversion programs and is consistent with regulations related to the management and reduction regulations related to solid waste. Therefore, this impact would be **less than significant**.

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As discussed in Impact AS-UT-4, the solid waste generated by the Sacramento Campus with the implementation of the 2020 LRDP Update, which includes Aggie Square Phase I, is anticipated to be

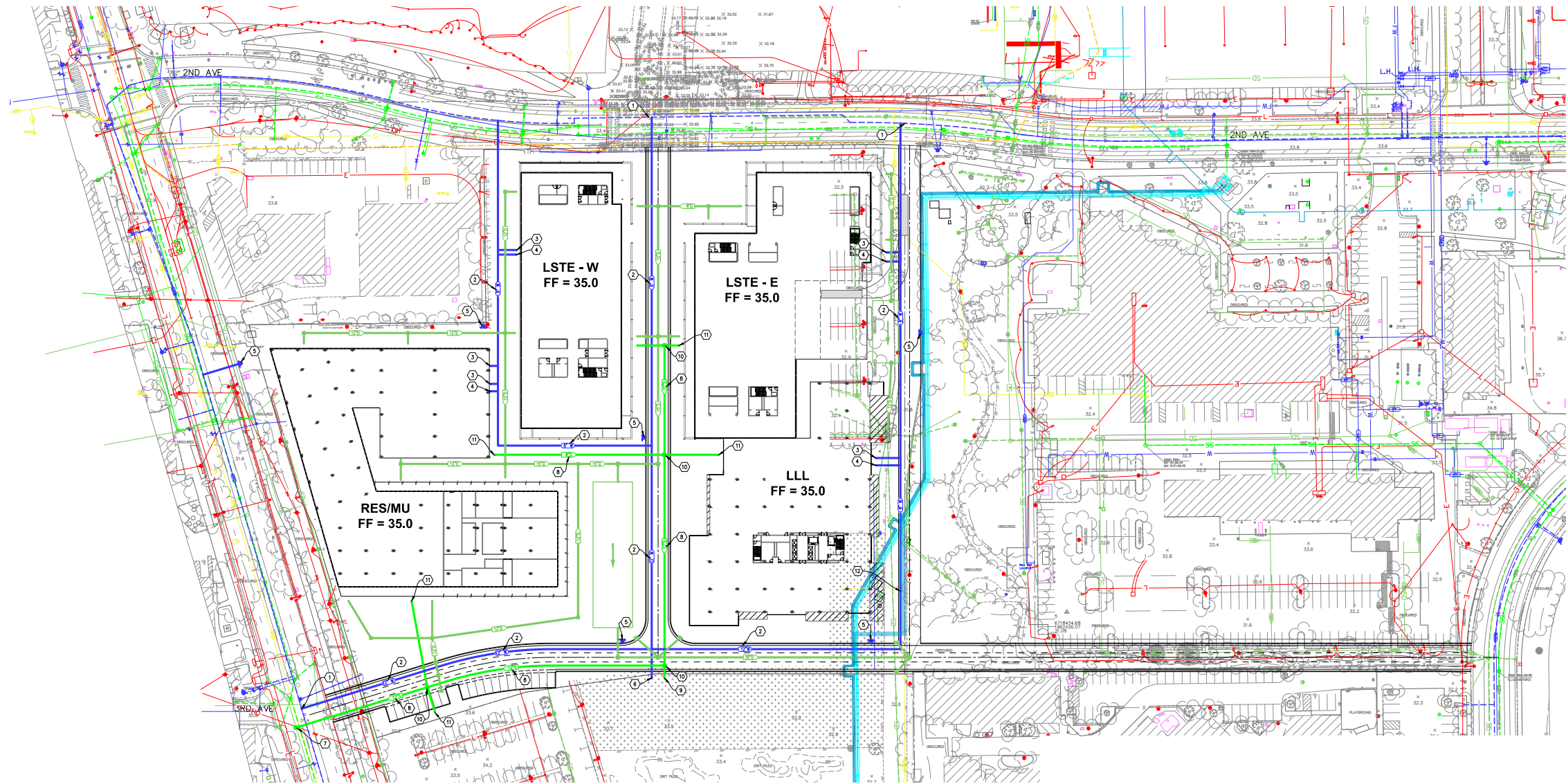
disposed of at the Forward Landfill in Manteca through the year 2036, and then the campus would need to use another landfill in the area that has sufficient capacity to serve the project through implementation of the 2020 LRDP Update. The University of California has adopted the UC Sustainable Practices Policy, which sets ambitious waste reduction targets that are consistent with the requirements of state mandated goals. Medical centers are exempt from these waste reduction targets.

As noted in Section 3.16.1, *Regulatory Setting*, in Volume 1 of this Supplemental EIR, the University, as a constitutionally created State entity, is not subject to local land use regulations for uses on property owned or controlled by the University that are in furtherance of the University's educational purposes.

Although the University is not subject to state and local regulations related to solid waste, Aggie Square Phase I would comply with the UC Sustainable Practices Policy, which encourages waste reduction and diversion programs and is consistent with the management and reduction regulations related to solid waste, such as AB 939, AB 341, SB 1374, and AB 1826. The impact would be **less than significant**.

#### **Mitigation Measures**

No mitigation measures are necessary.



## KEYNOTES

- 1 INSTALL NEW WATER POINT OF CONNECTION TO EXISTING CITY PUBLIC WATER MAIN LINE.
- 2 INSTALL NEW PUBLIC WATER MAIN PER CITY OF SACRAMENTO STANDARDS.
- 3 INSTALL NEW PRIVATE DOMESTIC WATER SERVICE PER CITY OF SACRAMENTO STANDARDS.
- 4 INSTALL NEW PRIVATE FIRE WATER SERVICE PER CITY OF SACRAMENTO STANDARDS.
- 5 INSTALL NEW FIRE HYDRANT PER CITY OF SACRAMENTO STANDARD DWG. NO. W-201.
- 6 INSTALL WATER STUB TO PROPOSED PHASE 2 PER CITY OF SACRAMENTO STANDARDS.
- 7 INSTALL NEW SANITARY SEWER POINT OF CONNECTION TO EXISTING CITY PUBLIC COMBINED STORM-SEWER MAIN LINE.
- 8 INSTALL NEW PUBLIC SEWER MAIN PER CITY OF SACRAMENTO STANDARDS.
- 9 INSTALL SEWER STUB TO PHASE 2 PER CITY OF SACRAMENTO STANDARDS.
- 10 INSTALL NEW SANITARY STANDARD SEWER MANHOLE No. 3 PER CITY OF SACRAMENTO STANDARD DWG. NO. S-70.
- 11 PROVIDE SANITARY SEWER SERVICE TO PROPOSED BUILDING PER CITY OF SACRAMENTO STANDARDS.
- 12 MECHANICAL UTILITIES TO BUILDING #41 TO BE RELOCATED.

## NOTES:

1. THIS CONCEPTUAL UTILITY EXHIBIT WAS PREPARED TO DEPICT PROPOSED UTILITY CONCEPTS AS REQUIRED FOR THE SCHEMATIC DESIGN PROCESS. ACTUAL FINAL DESIGN MAY VARY FROM THAT SHOWN HEREON AS THE DESIGN PROCESS PROGRESSES.
2. UTILITIES AND PIPE SIZES SHOWN ARE ESTIMATES ONLY. SIZES AND LOCATIONS MAY CHANGE DURING FINAL DESIGN.
4. TOPOGRAPHIC SURVEY PREPARED BY SYNERGY MAPPING, INC., DATED OCTOBER 26, 20186.
5. EXISTING UTILITY IMPROVEMENTS ARE BASED ON UTILITY DATA PROVIDED BY UC DAVIS. ACTUAL SIZES, TYPES AND LOCATIONS MAY VARY FROM INFORMATION SHOWN HEREON.
6. EXISTING SITE IMPROVEMENTS NOT SHOWN FOR CLARITY.

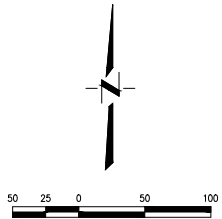


Figure 3.16-1  
Utility Plan



### 4.1 Introduction

EIRs must consider alternatives to the proposed project that could substantially reduce or avoid significant environmental impacts. Section 15126.6(b) of the California Environmental Quality Act (CEQA) Guidelines states the following.

Because an EIR must identify ways to mitigate or avoid the significant effects that a project may have on the environment (Pub. Resources Code § 21002.1), the discussion of alternatives shall focus on alternatives to the project or its location which are capable of avoiding or substantially lessening any significant effects of the project, even if these alternatives would impede to some degree the attainment of the project objectives, or would be more costly.

Section 15126.6(a) of the CEQA Guidelines requires EIRs to describe the following.

... a range of reasonable alternatives to the project, or to the location of the project, which would feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the project and evaluate the comparative merits of the alternatives. An EIR need not consider every conceivable alternative to a project. Rather it must consider a reasonable range of potentially feasible alternatives that will foster informed decision-making and public participation. An EIR is not required to consider alternatives that are infeasible. The lead agency is responsible for selecting a range of project alternatives for examination and must publicly disclose its reasoning for selecting those alternatives. There is no ironclad rule governing the nature or scope of the alternatives to be discussed other than the rule of reason.

See also CEQA Guidelines section 15126.6[f].

The CEQA Guidelines require that an EIR include sufficient information about each alternative to allow meaningful evaluation, analysis, and comparison with the project. If an alternative would cause one or more significant effects in addition to those that would be caused by the project, the significant effects of the alternative must be discussed, but in less detail than the significant effects of the project as proposed (per CEQA Guidelines Section 15126.6[d]). The CEQA Guidelines further require consideration of a “no project” alternative (per CEQA Guidelines Section 15126.6[e]).

In defining “feasibility” (e.g., “... feasibly attain most of the basic objectives of the project ...”), CEQA Guidelines Section 15126.6(f) (1) states, in part, the following.

Among the factors that may be taken into account when addressing the feasibility of alternatives are site suitability, economic viability, availability of infrastructure, general plan consistency, other plans or regulatory limitations, jurisdictional boundaries (projects with a regionally significant impact should consider the regional context), and whether the proponent can reasonably acquire, control or otherwise have access to the alternative site (or the site is already owned by the proponent). No one of these factors establishes a fixed limit on the scope of reasonable alternatives.

## 4.2 Project Overview

The Aggie Square Phase I project would consist of the following components at a scale of approximately 1,384,500 total square feet of building and parking structure space. Estimated square footages and unit counts are listed below, and reflect the upper range of development for purposes of project planning. Future development under the Aggie Square Phase I project would occur within the development envelope described.

- **Lifelong Learning (LLL) Tower.** Approximately 390,000 gross square feet (gsf) of office, classroom, and co-working space is proposed to be housed in a building up to 13 stories tall. The LLL Tower would house University programs and business partners interested in continuing education and workforce development, including training next-generation professionals across a range of science, technology, engineering, and mathematics and other disciplines.
- **Life Science Technology and Engineering (LSTE) Buildings.** Approximately 711,000 gsf of science, technology, and engineering space is proposed, housed in two science/technology/engineering buildings, LSTE East and LSTE West. LSTE East would be approximately 387,000 gsf and LSTE West would be approximately 324,000 gsf. Both buildings would be up to nine stories tall. Research activities at the Sacramento Campus currently generate investment and interest in co-location with businesses in the fields of cell and gene therapy, genomics and next-generation sequencing, and advanced imaging modalities. The Aggie Square Phase I project would provide space for investment and co-location of these businesses. In addition, UC Davis departments and research units currently located on the main Davis campus may explore expanding their research and teaching presence on the Sacramento Campus via space in these buildings.
- **Multi-family apartment units.** Approximately 324 multi-family apartment units in 283,000 gsf targeted toward University-affiliated populations are proposed to be housed in a building between four and six stories tall over a mixed use/community-serving first floor. Undergraduates, medical students, and nursing students are expected to be the primary occupants, and University faculty, staff and affiliates may also be potential tenants.
- **Community serving space.** Approximately 40,000 gsf of community serving space is proposed for the first floor of the multi-family apartment units building. This floor would be dedicated to amenities for tenants and Aggie Square users. It would also have community serving storefronts with a focus on food and health.
- **Business incubator and accelerator space.** The Aggie Square Phase I project would include business incubator and accelerator spaces, which may be housed in the LSTE East or West buildings and the LLL Tower. The University would work with selected developer(s) to define the amount of incubator and accelerator space needed, and select one or more non-University entities to lease and manage these spaces.
- **Public spaces.** Two primary public spaces would connect the Aggie Square Phase I project to surrounding communities. The Market Plaza would host a permanent farmer's market pavilion and an outdoor gathering space. The Aggie Square public plaza would be a gathering and events space fronted by entrances to the Aggie Square Phase I project buildings and first floor activities.
- **Parking facilities and transportation programs.** Parking facilities and transportation programs are proposed to support the project's uses. A combination of transportation demand management (TDM) measures and new parking facilities would help meet project access demands. These efforts may include expanded TDM strategies, constructing a roughly 1,400-

space parking structure (Parking Structure 6), identifying additional parking facilities to be built, and setting applicable monthly parking rates. Parking Structure 6 would be a six-story parking structure located east of the LLL Tower and open space area. Additionally, a Housing/Community Garage would provide approximately 90 spaces (i.e., 2.55 spaces per 1,000 gsf) in approximately 31,500 gsf, and would be associated with the multi-family apartment units and community serving space.

### 4.2.1 Project Objectives

When determining what alternatives should be considered in an EIR, project objectives must be considered, as attainment of those objectives forms one of the tests of whether an alternative is feasible. UC Davis identified the following project objectives for Aggie Square Phase I as previously described in Chapter 2, *Project Description*.

- Create, within the University, a place where University and non-University people are working together.
- Create state-of-the-art facilities for science, technology, engineering, and research as well as office space and education.
- Provide housing that meets affordability goals for students in the professional schools.
- Develop physical structures to support the University's involvement in enhancing regional workforce development, addressing food access and security, and supporting a diversity of people working at Aggie Square.
- Reduce waste and improve sustainability by making efficient use of existing infrastructure and land resources.
- Facilitate easy access from Aggie Square to UC Davis Hospital and nearby UC Davis clinics.
- Express a diverse architectural character reflective of the role of Aggie Square as an innovation district, with a special emphasis on planning and design strategies that are responsive to climate challenges and sun orientation.
- Embrace a character of architectural diversity and vitality, linked together by a rich network of public spaces and collective commitment of environmental sustainability.
- Establish public spaces for a wide range of public activities that serve UC Davis Sacramento Campus employees and residents, as well as the broader community to provide venues for people from diverse communities of interest to meet, interact, share ideas, and spark new partnerships.

## 4.3 Significant and Unavoidable Impacts

According to CEQA Guidelines Section 15126.6, an EIR must describe a range of reasonable alternatives to the project, or the location of the project, which would feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the project, and evaluate the comparative merits of the alternatives.

Implementation of the Aggie Square Phase I project would result significant and unavoidable environmental impacts related to air quality, noise, and transportation. The following impacts have

been identified as significant and unavoidable following implementation of all feasible mitigation measures.

- Impact AS-AQ-1: Conflict with or obstruction of implementation of the applicable air quality plan
- Impact AS-NOI-1: Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project from operations in excess of applicable standards
- Impact AS-TRA-1: Conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities

## 4.4 Alternatives Considered but Dismissed

In addition to factors described previously, the CEQA Guidelines state that an EIR should also identify any alternatives that were considered by the lead agency but were rejected during the planning or scoping process and briefly explain the reasons underlying the lead agency's determination. This section addresses those alternatives.

When considering a location for the Aggie Square Phase I project, the following alternative sites were considered but were ultimately dismissed in favor of the proposed location on the existing Sacramento Campus.

### 4.4.1 Downtown/Riverfront (Railyards)

One alternative site location was the Sacramento Railyards property in Downtown Sacramento. This area has been heavily studied and prepared for development opportunities. This downtown location near the State Capitol could promote the relationship between UC Davis experts and Policy makers and Elected Representatives. The high-density residential opportunities and other economic development could be attractive to students. The site's transportation benefits include close proximity to the Central Valley Station and Capitol Corridor Amtrak line.

This alternative was dismissed from further consideration because it does not meet several of the project objectives such as creating a place where people are working together and facilitating easy access from Aggie Square to UC Davis Hospital and nearby UC Davis clinics. The Railyards area is approximately 3.5 miles northwest of the Sacramento Campus. Locating the Aggie Square Phase I project in the Downtown/Riverfront area would result in the project being separated and disjointed from the Sacramento Campus. Residents, students, faculty, and employees would be required to travel a substantial distance to and from the Sacramento Campus and Railyards rather than walk short distances between different locations on the Sacramento Campus, not meeting the objective of improving sustainability by making efficient use of existing infrastructure and land resources. As shown in Volumes 1 and 2 of this Supplemental EIR, there is a significant and unavoidable impact on transit due to increased delay associated with the 2020 LRDP Update, including the Aggie Square Phase I project. It is likely that this alternative would further contribute to this significant and unavoidable impact because there would be more trips to and from the Sacramento Campus to the off-site location of Aggie Square Phase I site.

## 4.4.2 Sacramento Center for Innovation

A specific plan has been adopted for the Sacramento Center for Innovation (SCI) (adopted by the City of Sacramento on December 10, 2013, amended on January 23, 2018 [City of Sacramento 2013]) that establishes planning and design standards for the 240 acres generally bound by U.S. Highway 50 on the north, Union Pacific rail lines on the west, Power Inn Road on the east, and the Union Pacific rail crossing at Power Inn Road on the south. The site is zoned for General Commercial, Manufacturing Research and Development Zone and Light Industrial. At implementation, the plan estimates a total of 650,000 square feet in office, 110,495 square feet in retail, approximately 1 million square feet of industrial, and 14,200 square feet in public/civic uses. Residential housing would be located in the surrounding neighborhoods. The SCI site is well served by transit and is approximately 3.5 miles by road from the Sacramento Campus.

This alternative was dismissed from further consideration because it does not meet several of the project objectives such as creating a place where people work together and facilitating easy access from Aggie Square to UC Davis Hospital and nearby UC Davis clinics. The SCI site is approximately 3.5 miles by road east of the Sacramento Campus. While the Aggie Square Phase I project would fit in well with the anticipated uses in the SCI site, and would provide housing where the SCI site would not, it would be separated and disjointed from the Sacramento Campus. Residents would be required to take different modes of transportation to and from the Sacramento Campus and SCI site rather than walk between different locations on the Sacramento Campus, not meeting the objective of facilitating access. In addition, residents may opt to drive as opposed to taking different modes of transportation, resulting in air quality and transportation impacts and not meeting the objective of improving sustainability by making efficient use of existing infrastructure and land resources. As shown in Volumes 1 and 2 of this Supplemental EIR, there is a significant and unavoidable impact on transit due to increased delay associated with the 2020 LRDP Update because there would be more trips to and from the Sacramento Campus to the off-site location of Aggie Square Phase I site. It is likely that this alternative would further contribute to this significant and unavoidable impact. This alternative could also result in increased VMT from increased commute trips.

## 4.4.3 North Natomas

North Natomas was considered as it has many large vacant parcels available in North Natomas that could accommodate development. North Natomas is a major area for new construction in the City of Sacramento and is situated in the Interstate 5 (I-5) corridor close to Highway 99 and Interstate 80 (I-80). There has been significant recent development in retail, commercial and offices as well as residential housing for over 60,000 people. The North Natomas area is largely accessible by freeway although there are some transit options, including Sacramento Regional Transit buses and the Flyer Shuttle that operates between North Natomas and Downtown Sacramento.

This alternative was dismissed from further consideration because it does not meet several of the project objectives such as creating a place where people are working together and facilitating easy access from Aggie Square to UC Davis Hospital and nearby UC Davis clinics. The North Natomas area is approximately 7.5 miles northwest of the Sacramento Campus. While the Aggie Square Phase I project could benefit North Natomas's residents and economy with a mixed-use project on currently vacant and available land, it would be separated and disjointed from the Sacramento Campus. Residents would be required to take different modes of transportation to and from the Sacramento Campus and North Natomas rather than walk between different locations on the Sacramento

Campus, not meeting the objective of improving sustainability by making efficient use of existing infrastructure and land resources. This would result in more trips to and from the Sacramento Campus to the off-site location of Aggie Square Phase I site

## 4.5 Alternatives Considered in Detail

The following alternatives were considered for the Aggie Square Phase I project. See Volume 1, Chapter 6, *Alternatives*, for alternatives to the 2020 LRDP Update that relate to Aggie Square Phase I.

**Alternative 1: No Project.** Under the No Project Alternative, the Aggie Square Phase I project would not be included in the 2020 LRDP Update, and the area of the campus where it is proposed would continue to be used as a surface parking lot and campus fleet services facility until such time as a new parking structure and Education and Research uses are constructed (Figure 2-4 in Volume I of this Supplemental EIR).

**Alternative 2: Reduced Intensity Development.** Under the Reduced Intensity Development Alternative, a four-story limit would be placed on building heights in Aggie Square Phase I. The height limit would reduce the overall square footage of new buildings and would reduce the number of units in the housing component of the project.

### 4.5.1 Evaluation of Alternatives

#### Alternative 1: No Project

Under the No Project Alternative, Aggie Square Phase I would not be included in the 2020 LRDP Update, and the area of campus where it is proposed would continue to be used as a surface parking lot and for other support uses including the campus fleet services facility. until such time that it is developed. An alternative that assumes continued implementation of the 2010 LRDP is considered at a program level in Volume 1 of this document. The analysis here assumes the continuation of existing conditions at the Aggie Square Phase I project site.

#### Aesthetics

The No Project Alternative assumes that the Aggie Square Phase I site would remain in its existing condition, as a surface parking lot and campus fleet services facility until such time as a new parking structure and Education & Research uses are constructed (Figure 2-4 in Volume I of this Supplemental EIR). The aesthetic impacts of the project, including impacts to visual character and quality, would not occur with the No Project Alternative. Therefore, new visual impacts would not occur under the No Project Alternative. (Less impact)

#### Air Quality

The impacts related to air quality under the No-Project Alternative would be less than those under the proposed Aggie Square Phase I. There would be no ground-disturbing or construction activities and thus no potential to generate short-term emissions or expose receptors to substantial pollutant concentrations or health risks. Existing operations at the project site (i.e., surface parking) would continue and there would be no change in long-term operational emissions. Transportation emissions could increase because under the No Project Alternative no housing would be

constructed. Consequently, commute trips could increase and generate additional VMT. However, because there would be reduced construction and operational emissions, under the No Project Alternative, there would be no new impacts to air quality. (Less impact)

## **Biological Resources**

Under the No Project Alternative, Aggie Square Phase I would not be constructed, and the area of the campus where it is proposed would continue to be used as a surface parking lot and for other support uses.

Under the No Project Alternative, there would be no new impacts on sensitive biological resources. (Less impact)

## **Archaeological, Historical, and Tribal Cultural Resources**

Under the No Project Alternative, Aggie Square Phase I would not be constructed, and the area of the campus where it is proposed would continue to be used as a surface parking lot and for other support uses.

Therefore, there would be no new impacts on archeological, historical, or tribal cultural resources. (Less impact)

## **Energy**

The impacts related to energy under the No Project Alternative would be less than those under Aggie Square Phase I. There would be no ground-disturbing or construction activities and thus no use of energy. Existing operations at the project site (i.e., surface parking and campus fleet services facility) would continue and there would be no building energy usage, just transportation.

Operational energy related to transportation could increase under the No Project Alternative. No housing would be constructed and consequently commute trips could increase and generate additional VMT. Therefore, under the No Project Alternative, there would be no new energy impacts. (Less impact)

## **Geology, Soils, and Seismicity**

Under the No Project Alternative, Aggie Square Phase I would not be built. The project site would continue in its current use, which is a surface parking lot and a fleet vehicle area. No earth-moving activities associated with construction would affect geology and soils. There would be no new impacts related to geology, soils, and seismicity. (Less impact)

## **Greenhouse Gas Emissions**

The impacts related to greenhouse gas (GHG) emissions under the No-Project Alternative would be less than those under Aggie Square Phase I. There would be no ground-disturbing or construction activities and thus no potential to generate short-term emissions. Existing operations at the project site (i.e., surface parking) would continue and there would be no change in long-term operational emissions. Transportation emissions could increase because under the No Project Alternative no housing would be constructed. Consequently, commute trips could increase and generate additional VMT and GHG emissions. However, because there would be reduced construction and operational

emissions, under the No Project Alternative, there would be no new impacts to GHG emissions. (Less impact)

## **Hazards and Hazardous Materials**

The impacts related to hazards and hazardous materials under the No Project Alternative would be less than those under Aggie Square Phase I. There would be no ground-disturbing activities that would lead to fewer overall construction impacts related to the potential for hazardous material releases compared to Aggie Square Phase I. The risk to construction workers of exposure to soil and/or groundwater contaminants would be less under the No Project Alternative than under Aggie Square Phase I because no construction is proposed.

The No Project Alternative would not include construction of additional research facility space that might lead to an increase in the use and transport of hazardous materials. Risks to University staff and the general public of encountering hazardous materials would be slightly less under the No Project Alternative than under Aggie Square Phase I because there would be fewer facilities requiring transport of hazardous materials.

The No Project Alternative would not require temporary traffic controls, detours, or any change in flightpaths, and would not be expected to result in significant impacts on emergency response or evacuation plans. Even though evacuation routes could be affected more than under proposed project conditions, it is expected that impacts would still be less than significant because the campus would continue to comply with the provisions of the *Emergency Action & Evacuation Plan* (UC Davis Health Education & Research 2019). (Less impact)

## **Hydrology and Water Quality**

Under the No Project Alternative, Aggie Square Phase I would not be built. The project site would remain in its current use, which is a surface parking lot and campus fleet services facility. There would be no changes to drainage or water usage. There would be no new impacts related to hydrology and water quality; however, implementation of Aggie Square Phase I could result in less polluted runoff than under existing conditions. (Greater impact)

## **Land Use and Planning**

Under the No Project Alternative, there would be no changes associated with existing land use and planning. The No Project Alternative would involve continuing the existing land uses at the Aggie Square Phase I site. The potential for impacts would be less under the No Project Alternative because there would not be the potential for land use conflicts between new and existing land uses. (Less impact)

## **Noise**

The impacts related to noise and vibration under the No-Project Alternative would be less than those under Aggie Square Phase I. There would be no ground-disturbing or construction activities and thus no potential to generate short-term vibration or noise impacts. Existing operations at the project site (i.e., surface parking) would continue and operational sources of noise such as amplified music at Aggie Square, mechanical heating, cooling and ventilation equipment, and emergency generators would not be introduced in the area. Therefore, under the No Project Alternative, there would be no new impacts related to noise and vibration. (Less impact)



## Population and Housing

Under the No Project Alternative, Aggie Square Phase I would not be built. The project site would remain in its current use, which is a surface parking lot and the campus fleet services facility. No housing would be constructed on the Sacramento Campus. Therefore, there would be no impacts related to population and housing under this alternative. (Similar impact)

## Public Services

Under the No Project Alternative, Aggie Square Phase I would not be built. The project site would remain in its current use, which is a surface parking lot and the campus fleet services facility. There would be no changes public services. (Less impact)

## Recreation

Under the No Project Alternative, the Aggie Square Phase I development would not be built. The project site would remain a surface parking lot and the campus fleet services facility. There would be no changes to the central campus open space area. In addition, no new landscaping or public amenities like benches and gathering areas would be provided. No new recreational facilities would be constructed or expanded under the No Project Alternative. Therefore, the No Project Alternative would have a less-than-significant impact. (Less impact)

## Transportation and Circulation

Under the No Project Alternative, there could be some additional vehicle trips associated with potential incremental increases in employees as planned under the existing 2010 LRDP. Overall, there would be fewer vehicles trips associated with students and employees, compared to Aggie Square Phase I project. The No Project Alternative would generate fewer trips overall due to lower daily on-site population levels. However, because no on-campus housing would be constructed, increased commutes could result in an increase in VMT. However due to the reduction in population, overall impacts on intersections, transit, local roadways would be less under this alternative. (Less impact)

## Utilities and Service Systems

Under the No Project Alternative, Aggie Square Phase I would not be built. The project site would remain in its current use, which is a surface parking lot and the campus fleet services facility. There would be no changes to utilities and service systems. (Less impact)

## Alternative 2: Reduced Intensity Development

Under the Reduced Intensity Development Alternative, the intensity of the Aggie Square Phase I project would be reduced through a four-story building height limit. Aggie Square Phase I would be 1,384 gsf of buildings space between the four buildings of various heights. Limiting the buildings to no more than four stories would reduce the square footage by approximately 786,8000 gsf<sup>1</sup> for a

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<sup>1</sup> Gsf reduction was estimated using the gsf presented in Table 2-1 in the Project Description. Gsf were assumed to be evenly distributed across the total number of floors for each building. The gsf per floor estimate was then used to estimate the gsf of a four-story building.

total of 598,000 gsf. The associated on-site daily population of the project would be reduced by more than half, and result in a corresponding reduction in associated impacts.

## **Aesthetics**

The Reduced Intensity Development Alternative reduces the overall amount of development on the Aggie Square Phase I site by limiting building heights to four stories. This alternative would reduce impacts related to the scale of development onsite, which would remain less than significant with mitigation. This evaluation assumes that Mitigation Measures AS-AES-3a, and AS-AES-3b, would be required and implemented for the Reduced Intensity Development Alternative. Mitigation Measure AS-AES-4 would not be required due to limited building heights because substantial shading of existing landscaping would not occur. Therefore, the Reduced Intensity Development Alternative would reduce visual effects to a less-than-significant level with implementation of the mitigation measures above, with regard to visual quality, visual character, and light and glare. (Less impact)

## **Air Quality**

The types of air quality impacts under the Reduced Intensity Development Alternative would be similar to those described for Aggie Square Phase I, but of a lesser magnitude. The Reduced Intensity Development Alternative would include less development, and buildings would be limited to four stories, which would result in fewer overall emissions during construction. Nonetheless, as with the Aggie Square Phase I project, construction of the Reduced Intensity Development Alternative could generate PM<sub>10</sub> that may exceed the Sacramento Metropolitan Air Quality Management District's (SMAQMD's) significance thresholds. As with the proposed project, Mitigation Measures LRDP-AQ-2a through LRDP-AQ-2d would reduce construction emissions to less than significant with mitigation.

Long-term operational emissions would be fewer than the Aggie Square Phase I project due to reductions in square footage (and thus energy consumption) and vehicle trips. Nevertheless, PM<sub>10</sub> emissions may still exceed SMAQMD's thresholds, even with implementation of UC' Sustainable Practices Policy (University of California 2019) and Mitigation Measure LRDP-AQ-2e. Accordingly, like the Aggie Square Phase I project, the Reduced Intensity Development Alternative would result in a significant and unavoidable long-term PM<sub>10</sub> impact.

Like the Aggie Square Phase I project, additional growth under the Reduced Intensity Development Alternative may conflict with SMAQMD's air quality attainment plans. Mitigation Measure LRDP-AQ-1 would reduce the severity of this impact, but not to a less-than-significant level. Accordingly, like the Aggie Square Phase I project, the Reduced Intensity Development Alternative would result in a significant and unavoidable impact with respect to consistency with air quality plans. (Similar impact)

## **Biological Resources**

Under the Reduced Intensity Development Alternative, the intensity of the Aggie Square Phase I project would be reduced through a four-story building height limit. Because the proposed extent of ground disturbance under the Reduced Intensity Development Alternative would be the same as under Aggie Square Phase I, impacts under the Reduced Intensity Development Alternative on vegetation-nesting migratory birds and raptors and protected trees would be similar to those under Aggie Square Phase I. No additional impacts on sensitive biological resources would be anticipated under the Reduced Intensity Development Alternative. (Similar impact)

## **Archaeological, Historical, and Tribal Cultural Resources**

Under the Reduced Intensity Development Alternative, the intensity of the Aggie Square Phase I project would be reduced through a four-story building height limit. Because the proposed extent of ground disturbance under the Reduced Intensity Development Alternative would be the same as under Aggie Square Phase I, impacts under the Reduced Intensity Development Alternative on archeological, historical and tribal cultural resources would be similar to those under Aggie Square Phase I. No additional impacts on archeological, historical and tribal cultural resources would be anticipated under the Reduced Intensity Development Alternative. (Similar impact)

## **Energy**

The Reduced Intensity Development Alternative would result in an incremental increase in demand for energy as a result of increased campus employment, although not to the degree of Aggie Square Phase I due to the lower level of development. Under Aggie Square Phase I, impacts were determined to be less than significant because the project would exceed Title 24 Building Energy Efficiency Standards, strive to attain U.S. Green Building Council Leadership in Energy and Environmental Design (LEED) Silver standards and implement the UC Sustainable Practices Policy and other efficiency programs and initiatives. The Reduced Intensity Development Alternative would also result in less-than-significant energy impacts similar to Aggie Square Phase I but to a lesser degree. (Less impact)

## **Geology, Soils, and Seismicity**

Earth-moving activities associated with construction of Aggie Square Phase I and the Reduced Intensity Development Alternative have the potential to affect geology and soils. The types of impacts that could occur from development on the Aggie Square Phase I site include geotechnical issues, increased erosion, and exposure of buildings and people to seismic hazards. Existing regulations and permitting requirements, such as California Building Code (CBC) requirements, National Pollutant Discharge Elimination System (NPDES) permit conditions, and best management practices (BMPs) would reduce potentially significant impacts to a less-than-significant level. Similarly, the Reduced Intensity Development Alternative impacts would be less than significant. Even though this alternative involves a lesser overall level of development, the general areas where development would occur would be subject to similar geologic impacts. Thus, impacts would be of similar type and magnitude. (Similar impact)

## **Greenhouse Gas Emissions**

Due to the lower level of development on campus under the Reduced Intensity Development Alternative, there would be fewer GHG emissions associated with new development during construction. With respect to operation, the Reduced Intensity Development Alternative would result in a smaller project, which translates into fewer operational emissions associated with building use including electricity, natural gas, and water. Additionally, the Reduced Intensity Development Alternative would reduce the daily onsite population, which would further reduce emissions associated with vehicle trips. (Less impact)

## **Hazards and Hazardous Materials**

Under the Reduced Intensity Development Alternative, impacts related to hazards and hazardous materials are primarily the same as under Aggie Square Phase I. The main difference between Aggie

Square Phase I and the Reduced Intensity Development Alternative regarding hazards and hazardous materials is the construction period. Under the Reduced Intensity Development Alternative, buildings would be limited to four stories. This would reduce the duration of construction, thereby reducing the potential for inadvertent spills and accidents that might occur during construction. However, limiting the number of stories for buildings would not affect the area of ground disturbance. As such, the potential for encountering contaminated soil and groundwater remains the same. Because all other hazard-related impacts under the Reduced Intensity Development Alternative are similar to those under Aggie Square Phase I, the same mitigation measures (i.e., Mitigation Measure LRDP-HAZ-2) would be still required under this alternative.

Operation-related impacts would be similar to Aggie Square Phase I. The same applicable laws and regulations enforced by UC Davis Sacramento Campus, the Certified Unified Program Agency and the California Division of Occupational Safety and Health would be implemented for the Reduced Intensity Development Alternative.

Construction of the Reduced Intensity Development Alternative would not be expected to cause significant impacts on emergency response or evacuation plans. The same *Emergency Action & Evacuation Plan* (UC Davis Health 2019) would be implemented. (Similar impact)

## Hydrology and Water Quality

Earth-moving activities associated with construction of Aggie Square Phase I and the Reduced Intensity Development Alternative have the potential to affect hydrology and water quality on the project site. The types of impacts that could occur from development under the Reduced Intensity Development Alternative include adverse effects on water quality, reduced groundwater recharge, and alterations to existing drainage systems. Existing regulations and permitting requirement, such as NPDES permit conditions and a stormwater pollution prevention plan (SWPPP), would reduce potentially significant impacts to a less-than-significant level. In addition, development of additional ambulatory care, education and research, hospital and support space would be required to comply with existing regulations that would reduce impacts to a less-than-significant level. Because the Reduced Intensity Development Alternative would require less development, the severity of impacts would be lesser when compared to Aggie Square Phase I. (Less impact)

## Land Use and Planning

Implementation of Aggie Square Phase I would result in less than significant impacts with respect to land use and planning. Since the Reduced Intensity Development Alternative would develop at the same site with reduced square footage and intensity, it would also not result in any land use and planning impacts. (Similar impact)

## Noise

The types of noise and vibration impacts under the Reduced Density Alternative would be similar to those described for the Aggie Square Phase I project, but of a lesser magnitude. The Reduced Intensity Development Alternative would entail less development than Aggie Square Phase I, and thus, would potentially result in a shorter or less intensive construction period.

There may be fewer operational sources of noise under the Reduced Intensity Development Alternative. For example, less rooftop heating, cooling and ventilation equipment may be required, or fewer emergency generators may need to be installed.

For these reasons, implementation of the Reduced Intensity Development Alternative would result in similar impacts to the Aggie Square Phase I project. (Similar impact)

### **Population and Housing**

Growth under the Reduced Intensity Development Alternative would increase population at the site but would not result in a substantial population growth in the Sacramento metropolitan area. The population and housing impacts under Aggie Square Phase I would be less than significant. The Reduced Intensity Development Alternative would reduce population growth at the site in comparison to Aggie Square Phase I by limiting development to four stories, and the impacts associated with population and housing would be reduced and would remain less than significant. (Less impact)

### **Public Services**

The Reduced Intensity Development Alternative would result in an incremental increase in demand for public services as a result of increased campus employment, although not to the degree of Aggie Square Phase I due to the lower level of development. Under Aggie Square Phase I, impacts were determined to be less than significant because the campus is currently located within the service area of, and is served by, local public service providers. The Reduced Intensity Development Alternative would also result in less-than-significant public service impacts similar to Aggie Square Phase I but to a lesser degree. (Less impact)

### **Recreation**

Impacts on recreation under the Reduced Intensity Development Alternative would be similar to those of Aggie Square Phase I. However, with reduced development, there would be a corresponding reduction in population, and therefore the need for recreational facilities would be less. The population associated with the Reduced Intensity Development Alternative would use parks and recreational facilities in the surrounding region, new residents would be fewer, and this would result in an even lesser impact on the on-campus recreational facilities such as the health center, Cancer Survivor Park, and central campus open space area. This impact would be less than significant. (Less impact)

### **Transportation and Circulation**

The Reduced Intensity Development Alternative would result in reduced development space, and would decrease the level of on-campus activity and associated vehicle commute trips. The daily onsite population would also be reduced; as a result, there would be fewer vehicle commute trips. The Reduced Intensity Development Alternative's projected impacts on transit ridership and vehicle miles traveled would be less than those associated with Aggie Square Phase I. (Less impact)

### **Utilities and Service Systems**

The Reduced Intensity Development Alternative would result in an incremental increase in demand for utilities and service systems as a result of increased campus employment, although not to the degree of Aggie Square Phase I due to the lower level of development. Under Aggie Square Phase I, impacts were determined to be less than significant because the campus includes existing utilities and service systems. The Reduced Intensity Development Alternative would also result in less-than-

significant public service impacts similar to Aggie Square Phase I but to a lesser degree. (Less impact)

## 4.6 Comparison of Alternatives

Table 4-1 summarizes the environmental evaluations provided above for the project alternatives.

**Table 4-1. Comparison of the Environmental Impacts of the Alternatives in Relation to Aggie Square Phase I**

Environmental Topic	Aggie Square Phase I	No Project Alternative	Reduced Intensity Development Alternative
Aesthetics	LTS/M	<	<
Air Quality	SU	<	=
Archaeological, Historical, and Tribal Cultural Resources	LTS/M	<	=
Biological Resources	LTS/M	<	=
Energy	LTS	<	<
Geology, Soils, and Seismicity	LTS/M	<	=
Greenhouse Gas Emissions	LTS/M	<	<
Hazards and Hazardous Materials	LTS/M	<	=
Hydrology and Water Quality	LTS/M	>	<
Land Use and Planning	LTS	<	=
Noise	SU	<	<
Population and Housing	LTS	=	<
Public Services	LTS	<	<
Recreation	LTS	<	<
Transportation and Circulation	SU	<	<
Utilities and Service Systems	LTS	<	<

Source: Data compiled by ICF in 2020.

Impact Status:

LTS = Less than Significant Impact.

LTS/M = LTS with Mitigation.

SU = Significant and Unavoidable.

= – Impacts would be similar to those of the project.

< – Impacts would be less than those of the project.

> – Impacts would be greater than those of the project.

## 4.7 Environmentally Superior Alternative

CEQA Guidelines Section 15126.6 states that an EIR should identify the “environmentally superior” alternative: “If the environmentally superior alternative is the ‘no project’ alternative, the EIR shall also identify an environmentally superior alternative among the other alternatives.” There would be significant and unavoidable impacts associated with Aggie Square Phase I. These impacts are related to air quality, noise, and transportation. Each of the alternatives presented here would result in lesser or similar environmental impacts than the 2020 LRDP Update in most areas, and greater

impacts to hydrology under Alternative 1, primarily due to differences in the level and type of development.

When considering objectives, Aggie Square Phase I would best meet the purpose and need. In contrast, the No Project Alternative would not provide additional housing to accommodate University-affiliated populations, lifelong learning space, science, technology and engineering space, and public space. The Reduced Intensity Development Alternative would not provide additional on-campus housing to the degree of Aggie Square Phase I and help the Sacramento Campus achieve 2020 LRDP Update goals. Because the No Project Alternative would represent the least amount of development compared to existing conditions and thus, the least potential physical environmental impacts, the No Project Alternative would be considered the environmentally superior alternative.

Consistent with CEQA Guidelines Section 15126.6 [e][2], because the environmentally superior alternative was identified as the No Project Alternative, another environmentally superior alternative shall be identified. Based on the environmental analysis contained in this Supplemental EIR, the Reduced Development Intensity Alternative would result in less impacts overall compared to Aggie Square Phase I. However, the Reduced Development Intensity Alternative would result in similar impacts to air quality; biological resources; archeological, historical, or tribal cultural resources; geology; soils and seismicity; hazards and hazardous materials, and land use.

In conclusion, the environmentally superior alternative would be the Reduced Development Intensity Alternative, depending on decisions about the priority of types of environmental benefits and adverse effects by UC Davis. Both the Reduced Development Intensity Alternative and Aggie Square Phase I would result in long-term, significant and unavoidable environmental impacts related to air quality, noise and traffic, and transportation. However, while the Reduced Development Intensity Alternative would have fewer impacts than Aggie Square Phase I, it would not provide a sufficient amount of infrastructure needed to facilitate continued growth of research and collaboration efforts on the Sacramento Campus. There would be fewer employment and partnership opportunities with less building space. The Reduced Development Intensity Alternative would not provide as much opportunity for growth in workforce development and lifelong learning.

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None

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