

# EXECUTIVE SUMMARY

## INTRODUCTION

This Executive Summary is provided in accordance with the California Environmental Quality Act (CEQA) Guidelines Section 15123 and contains an overview of the project-level analysis of Orchard Park Redevelopment component of the University of California, Davis (UC Davis) 2018 Long Range Development Plan (LRDP). 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 proposed Orchard Park Redevelopment and Orchard Park Redevelopment alternatives, and environmental impacts and mitigation. Table OPR ES-1 (at the end of this section) presents the summary of potential environmental impacts, their level of significance without mitigation measures, the mitigation measures, and their level of significance following the implementation of mitigation measures.

## SUMMARY DESCRIPTION OF THE 2018 LRDP ORCHARD PARK REDEVELOPMENT

The Orchard Park Redevelopment component is located within the approximately 5,300-acre UC Davis campus. The 19-acre Orchard Park site is located in Yolo County near similar student housing developments within the central campus (Exhibit 2-1). The Orchard Park site is bounded by Russell Boulevard to the north, Orchard Park Drive to the east, Orchard Park Circle to the south, and State Route 113 to the west.

Student housing was originally constructed at the Orchard Park site in 1963 and occupancy began in 1964. The Orchard Park Apartment Complex comprised 22 buildings with a total of 200 units. The complex ceased operation in July 2014 because of the need for substantial modifications to its utility lines and structural/safety features, including fire suppression and sprinklers (UC Davis 2014). As part of a separate project and to maintain safety/security on-campus, UC Davis prepared an Initial Study/Negative Declaration for the removal of on-site structures and initiated demolition of the existing structures at the Orchard Park site in November 2017. Demolition and site stabilization are anticipated to be complete in Spring 2018. Under the Orchard Park Redevelopment component of the 2018 LRDP, the 19-acre site would be redeveloped with approximately 642,000 square feet (sf) of student housing consisting of: 1) 200 student family housing units (apartments), and 2) up to 1,200 additional beds for graduate, transfer, and undergraduate students. Student family housing would generally be located in the southeastern portion of the site while student apartments would be located in the northern portion of the site, closer to Russell Boulevard. The new housing facilities would be up to six stories in height and designed to complement the surrounding multi-family housing, including across Russell Boulevard. Internal roadways within the Orchard Park site would be two lanes with shared bicycle access. Additionally, approximately 480 parking spaces would be provided for student vehicles, as well as 1,400 bicycle parking spaces (one per resident). It is anticipated that some students, who may reside at the Orchard Park site, could use existing, underutilized parking lots within UC Davis or the remote parking area evaluated as part of the West

Village Expansion in Volume 2 of this EIR. It is anticipated that solar photovoltaic panels would be provided on-site within available surface parking lots and could also be provided on rooftops of on-site structures.

## **OBJECTIVES OF THE ORCHARD PARK REDEVELOPMENT COMPONENT**

UC Davis has identified the following development-specific objectives for the Orchard Park Redevelopment component:

- ▲ optimize an underutilized site within existing UC Davis property based on the current needs of the campus;
- ▲ create an affordable and accessible residential community for students and student families;
- ▲ provide basic amenities and high-quality design to foster the creation of a vibrant, convenient, and well-served community;
- ▲ integrate open space and bicycle, pedestrian, and transit facilities to reduce the need for residents to bring vehicles to campus;
- ▲ enhance the sense of community enjoyed by current campus and community residents; and,
- ▲ provide opportunities for members of the campus to participate fully in the life of the campus and community.

## **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 of this volume of the Draft EIR describes in detail the significant environmental impacts that would result from implementation of the proposed Orchard Park Redevelopment Component. Table OPR ES-1 summarizes the environmental impacts and mitigation measures discussed in these chapters. Chapters 4 and 5 of Volume 1 of the Draft EIR provide a discussion of cumulative and growth-inducing impacts, respectively.

## **SIGNIFICANT AND UNAVOIDABLE ENVIRONMENTAL IMPACTS**

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

Chapter 3, “Existing Environmental Setting, Impacts, and Mitigation,” provides a description of the potential environmental impacts of the Orchard Park Redevelopment component and recommends various mitigation measures to reduce impacts, to the extent feasible. Chapter 4, “Cumulative Impacts,” of Volume 1 determines whether the incremental effects of this component 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 Orchard Park Redevelopment component would be reduced to a

less-than-significant level. The following impacts are considered significant and unavoidable; that is, no feasible mitigation is available or the mitigation measures available were not enough to reduce the impact to a less-than-significant level.

Implementation of the Orchard Park Redevelopment component would result in the following significant unavoidable environmental impacts, despite implementation of feasible mitigation measures:

- ▲ Impact 3.16-1: Freeway level of service impacts.
- ▲ Impact 3.16-4: Impacts to bicycle facilities.

The Orchard Park Redevelopment component is part of the growth program analyzed in the 2018 LRDP. Accordingly, the cumulative impact analysis of the 2018 LRDP, which is presented in Volume 1 of this EIR, encompasses the Orchard Park Redevelopment component.

## ALTERNATIVES TO THE ORCHARD PARK REDEVELOPMENT

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

- ▲ **Alternative 1: No Project.** Under this alternative, the Orchard Park Redevelopment site would not be developed, and the site would continue as undeveloped open space.
- ▲ **Alternative 2: Reduced Development.** Under this alternative, UC Davis would develop the Orchard Park Redevelopment site with student housing for up to 900 additional student beds, which would be consistent with the initial housing concept for the site identified in May 2017.
- ▲ **Alternative 3: Higher Density Student Housing.** This alternative would include additional development of the site to provide 500 additional student beds for a total of 1,900 student beds, of which 200 would be associated with student family apartments, at the Orchard Park Redevelopment site. This alternative would be consistent with Alternative 4 identified in Volume 1 for the 2018 LRDP.

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." Based on the environmental analysis in this Draft EIR, the No Project Alternative is environmentally superior because it would result in less impacts than the Orchard Park Redevelopment for the majority of resource areas. Consistent with State CEQA Guidelines Section 15126.6 (e)(2), another environmentally superior alternative (other than the No Project Alternative) was identified. The environmentally superior alternative would be either the proposed Orchard Park Redevelopment component or Alternative 2. In comparison to the Orchard Park Redevelopment, Alternative 2 would result in less construction related impacts, but greater impacts to population and housing. Each of these alternatives considered would result in long-term, significant and unavoidable environmental impacts. The differences between these two alternatives are not substantial enough that one is clearly superior over the other. Decision makers will weigh the relative importance of these impacts when considering approval of the Orchard Park Redevelopment.

## MITIGATION MONITORING AND REPORTING PROGRAM

CEQA and the State CEQA Guidelines (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 the Orchard Park Redevelopment component because the EIR identifies potential significant adverse impacts related to the project implementation, and mitigation measures have been identified to reduce those impacts. The MMRP, as presented in Table OPR ES-2 and in Volume 4 of the Final EIR, 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” which 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 Orchard Park Redevelopment component.

**Table OPR ES-1 Summary of Impacts and Mitigation Measures**

Impacts	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
<b>3.1 Aesthetics</b>			
<p><b>Impact 3.1-1: Degrade existing visual character or quality.</b> While the Orchard Park Redevelopment component would alter the visual character of the site from an undeveloped to developed use, the proposed Orchard Park Redevelopment would be consistent and similar in design to existing and surrounding housing development, as well as the previous developed condition of the site. Impacts to visual character or quality would be less than significant.</p>	LTS	No mitigation measures are necessary.	LTS
<p><b>Impact 3.1-2: Create a new source of light or glare.</b> Implementation of the Orchard Park Redevelopment component would introduce new sources of light and glare as a result of new buildings and facilities. New lighting would be similar in character of existing light sources, however, may introduce new sources of light and/or glare. This impact is considered potentially significant.</p>	PS	<p><b>OPR Mitigation Measure 3.1-2a: Building surfaces.</b> Implement 2018 LRDP Mitigation Measure 3.1-3a. <b>2018 LRDP Mitigation Measure 3.1-3a: Building surfaces.</b> UC Davis shall require the use of textured, non-reflective exterior surfaces and non-reflective (mirrored) glass during design review of all new/redeveloped structures.</p> <p><b>OPR Mitigation Measure 3.1-2b: Lighting fixtures.</b> Implement 2018 LRDP Mitigation Measure 3.1-3b. <b>2018 LRDP Mitigation Measure 3.1-3b: Lighting fixtures.</b> UC Davis shall require all new outdoor lighting to utilize directional lighting methods with shielded and cutoff type light fixtures to minimize glare and upward directed lighting such that light spillover onto adjacent structures does not occur. Verification of inclusion in project design shall be provided at the time of design review.</p>	LTS
<b>3.2 Agriculture and Forestry Resources</b>			
<p>There are no potentially significant impacts identified related to agriculture and forestry resources for the Orchard Park Redevelopment component of the 2018 LRDP beyond those identified and addressed as part of the 2018 LRDP's analysis in Volume 1. No additional project-specific mitigation is necessary.</p>			
<b>3.3 Air Quality</b>			
<p><b>Impact 3.3-1: Construction-generated emissions of ROG, NO<sub>x</sub>, PM<sub>10</sub>.</b> Construction-generated emissions would exceed YSAQMD's significance thresholds during construction. Therefore, this impact would be significant.</p>	LTS	<p><b>OPR Mitigation Measure 3.3-1: Reduce construction-generated emissions of ROG, NO<sub>x</sub>, and PM<sub>10</sub>.</b> Implement 2018 LRDP Mitigation Measure 3.3-1. Although prior to mitigation, the Orchard Park Redevelopment component would result in construction-related emissions that do not exceed NO<sub>x</sub> and ROG emissions thresholds, the implementation of 2018 LRDP Mitigation Measure 3.3-1 would further reduce ROG and NO<sub>x</sub> emissions along with PM<sub>10</sub> emissions under the construction engine and dust</p>	LTS

NI = No impact

B = Beneficial

LTS = Less than significant

PS = Potential significant

S = Significant

SU = Significant and unavoidable

**Table OPR ES-1 Summary of Impacts and Mitigation Measures**

Impacts	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
		<p>mitigation requirements. Engines with a minimum of a Tier 3 final rating or better are anticipated to decrease ROG, NO<sub>x</sub>, and PM emissions compared to the default engine rating which includes a mix of lower tiered engines.</p> <p><b>2018 LRDP Mitigation Measure 3.3-1: Reduce construction-generated emissions of ROG, NO<sub>x</sub>, and PM<sub>10</sub>.</b></p> <p>Land use development project implemented under the 2018 LRDP shall require its prime construction contractor to implement the following measures:</p> <ol style="list-style-type: none"> <li>1) Use construction equipment with engines rated at Tier 3 or better prior to 2025 and Tier 4 or better beginning in 2025.</li> <li>2) Use no- or low-solids content (i.e., no- or low-VOC) architectural coatings with a maximum VOC content of 50 g/L.</li> <li>3) Limit passenger vehicles (i.e., non-vendor and non-hauling vehicles) from being driven on extended unpaved portions of project construction sites. UC Davis shall provide off-site paved parking and compliant site-transport arrangements for construction workers, as needed.</li> <li>4) Water all active construction sites at least twice daily.</li> <li>5) Plant vegetative ground cover in disturbed areas as soon as possible.</li> <li>6) Apply soil stabilizers on unpaved roads and inactive construction areas (disturbed lands within construction projects that are unused for at least four consecutive days).</li> <li>7) Establish a 15 mile-per-hour speed limit for vehicles driving on unpaved portions of project construction sites.</li> </ol> <p>UC Davis shall ensure that the implementation of this mitigation measure is consistent with the UC Davis stormwater program and the California Stormwater Quality Association <i>Stormwater BMP Handbook for New Development/Redevelopment</i> and does not result in off-site runoff as a result of watering for dust control purposes.</p>	
<p><b>Impact 3.3-2: Operational emissions of criteria air pollutant and precursor emissions.</b> Routine activities at the Orchard Park Redevelopment would result in increased operational emissions of criteria air pollutants but would not exceed YSAQMD thresholds. This impact would be less than significant.</p>	LTS	<p><b>OPR Mitigation Measure 3.3-2: Reduce emissions of ROG and NO<sub>x</sub>.</b></p> <p>Implement 2018 LRDP Mitigation Measures 3.3-2.</p> <p>Although the project-level impact of operational emissions is less than significant, the Orchard Park Redevelopment component is still subject to 2018 LRDP Mitigation Measure 3.3-2 because the Orchard Park Redevelopment is part of the 2018 LRDP and the plan-level emissions are potentially significant under 2018 LRDP Impact 3.3-2. Reduction of</p>	LTS

NI = No impact      B = Beneficial      LTS = Less than significant      PS = Potential significant      S = Significant      SU = Significant and unavoidable

**Table OPR ES-1 Summary of Impacts and Mitigation Measures**

Impacts	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
		<p>project-level operational emissions will help reduce the impact of plan-level operational emissions.</p> <p><b>2018 LRDP Mitigation Measure 3.3-2: Reduce emissions of ROG and NO<sub>x</sub>.</b>                      UC Davis shall implement the following measures to reduce operational emissions to the extent feasible:</p> <ol style="list-style-type: none"> <li>1) Implement a program that incentivizes employees and students living off-campus to carpool, use EVs, or use public transit to commute to and from the campus. This program shall provide preferential parking to carpool vehicles, vanpool vehicles, and EVs. At a minimum, the program shall include 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. The program shall include, but is not limited to, the following features.                             <ol style="list-style-type: none"> <li>a) Limit parking capacity to meet on-site demand. Provide no more on-site 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) Non-residential land uses with 20 or more on-site parking spaces shall 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 shall 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 shall be clearly marked with signs and pavement markings. This measure shall 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.</li> </ol> </li> <li>2) Work with Unitrans to convert natural gas buses to electric or lower-emission fuels or implement emission control technologies to reduce criteria air pollutant emissions from existing conditions.</li> <li>3) Implement a program that incentivizes vendors to reduce the emissions associated with vehicles and equipment serving the campus. The goal of the program is to reduce ROG and NO<sub>x</sub> emissions from vendors trip by at least 50 percent by 2030 as compared to existing conditions. The program shall</li> </ol>	

NI = No impact      B = Beneficial      LTS = Less than significant      PS = Potential significant      S = Significant      SU = Significant and unavoidable

**Table OPR ES-1 Summary of Impacts and Mitigation Measures**

Impacts	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
		implement the following sub-measures to reduce vendor-related, mobile-source emissions. a) Incentivize the use of EVs or other clean fuels in their trucks and equipment to reduce ROG and NOX emissions. 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. 4) Convert landscaping equipment to electric or alternatively-fueled equipment.	
<p><b>Impact 3.3-3: Short-term construction emissions of toxic air contaminants.</b>                      Construction-related activities would result in temporary, short-term project-generated emissions of TACs, particularly diesel particulate matter (PM). Overall construction TAC emissions from the Orchard Park Redevelopment component would likely result health risks that are below YSAQMD thresholds. However, because of close proximity of the site to nearby sensitive receptors, and because TAC-emitting construction activity could occur adjacent to sensitive receptors, construction-related TAC emissions could expose sensitive receptors to an incremental increase in cancer risk that exceeds 10 in one million or a HI greater than 1.0. This impact would be potentially significant.</p>	PS	<p><b>OPR Mitigation Measure 3.3-3: Reduce short-term construction-generated TAC emissions.</b>                      Implement 2018 LRDP Mitigation Measure 3.3-4.</p> <p><b>2018 LRDP Mitigation Measure 3.3-4: Reduce short-term construction-generated TAC emissions.</b>                      UC Davis shall require construction activities under the 2018 LRDP to follow YSAQMD recommended mitigation measures for construction exhaust emissions. To ensure sensitive receptors are not exposed to substantial TAC concentrations, UC Davis shall require its prime construction contractor to implement the following measures prior to project approval:</p> <ol style="list-style-type: none"> <li>1) Locate operation of diesel-powered construction equipment as far away from sensitive receptors as possible;</li> <li>2) Limit excess equipment idling to no more than 5 minutes;</li> <li>3) Use construction equipment with engine ratings of Tier 3 or better (included in Mitigation Measure 3.3-1); and</li> <li>4) Use electric, compressed natural gas, or other alternatively fueled construction equipment instead of the diesel counterparts, where available.</li> </ol> <p>In addition, for any construction site located within 150 feet of a childcare center or park/recreation field, UC Davis shall schedule the use of heavy construction equipment to times when children are not present. Alternatively, UC Davis shall arrange for temporary relocation of childcare facilities to areas outside of a 150-foot buffer or temporarily close available park space within the 150-foot buffer during operation of heavy construction equipment.</p>	LTS
<p><b>3.4 Archaeological, Historical, and Tribal Cultural Resources</b></p>			
<p><b>Impact 3.4-1: Impacts to unique archaeological resources.</b></p>	PS	<p><b>OPR Mitigation Measure 3.4-1: Identify and protect archaeological resources.</b></p>	LTS

NI = No impact      B = Beneficial      LTS = Less than significant      PS = Potential significant      S = Significant      SU = Significant and unavoidable

**Table OPR ES-1 Summary of Impacts and Mitigation Measures**

Impacts	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
<p>Based on the results of the records search and the archaeological survey conducted for the demolition of the Orchard Park apartments, there are no known archaeological resources on the Orchard Park Redevelopment site. However, ground-disturbing activities could result in discovery or damage of as yet undiscovered archaeological resources as defined in CEQA Guidelines Section 15064.5. This would be a potentially significant impact.</p>		<p>Implement 2018 LRDP Mitigation Measure 3.4-1a(1) and 2018 LRDP Mitigation Measure 3.4-1a(3). If the site is determined to contain a unique archaeological resource(s), implement 2018 LRDP Mitigation Measure 3.4-1b.</p> <p><b>2018 LRDP Mitigation Measure 3.4-1a: Identify and protect unknown archaeological resources.</b></p> <p>During project-specific environmental review of development under the 2018 LRDP, the campus shall define each project's area of effect for archaeological resources. The campus shall determine the potential for the project to result in cultural resource impacts, based on the extent of ground disturbance and site modification anticipated for the proposed project. The campus shall determine the level of archaeological investigation that is appropriate for the project site and activity, as follows:</p> <ul style="list-style-type: none"> <li>▲ Minimum: excavation less than 18 inches deep and less than 1,000 sf of disturbance (e.g., a trench for lawn irrigation, tree planting, etc.). Implement Mitigation Measure 3.4-1a(1).</li> <li>▲ Moderate: excavation below 18 inches deep and/or over a large area on any site that has not been characterized as sensitive and is not suspected to be a likely location for archaeological resources. Implement Mitigation Measure 3.4-1a(1) and (2).</li> <li>▲ Intensive: excavation below 18 inches and/or over a large area on any site that is within the zone of archaeological sensitivity identified in Exhibit 3.4-1, or that is adjacent to a recorded archaeological site. Implement Mitigation Measure 3.4-1a(1), (2), and (3).</li> </ul> <p>UC Davis shall implement the following steps to identify and protect archaeological resources that may be present in the project's area of effects:</p> <ol style="list-style-type: none"> <li>1) For project sites at all levels of investigation, contractor crews shall be required to attend a training session prior to the start of earth moving, regarding how to recognize archaeological sites and artifacts and what steps shall be taken to avoid impacts to those sites and artifacts. In addition, campus employees whose work routinely involves disturbing the soil shall be informed how to recognize evidence of potential archaeological sites and artifacts. Prior to disturbing the soil, contractors shall be notified that they are required to watch for potential archaeological sites and artifacts and to notify the UC Davis Office of Campus Planning and Environmental Stewardship if any are found. In the event of a find, the campus shall implement item (5), below.</li> </ol>	

NI = No impact      B = Beneficial      LTS = Less than significant      PS = Potential significant      S = Significant      SU = Significant and unavoidable

**Table OPR ES-1 Summary of Impacts and Mitigation Measures**

Impacts	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
		<p>2) For project sites requiring a moderate or intensive level of investigation, a surface survey shall be conducted by a qualified archaeologist once the area of ground disturbance has been identified and prior to soil disturbing activities. For sites requiring moderate investigation, in the event of a surface find, intensive investigation will be implemented, as per item (3), below. Irrespective of findings, the qualified archaeologist shall, in consultation with the UC Davis Office of Campus Planning and Environmental Stewardship, develop an archaeological monitoring plan to be implemented during the construction phase of the project. If the project site is located within the zone of archaeological sensitivity or it is recommended by the archaeologists, the campus shall notify the appropriate Native American tribe and extend an invitation for monitoring. The frequency and duration of monitoring shall be adjusted in accordance with survey results, the nature of construction activities, and results during the monitoring period. A written report of the results of the monitoring will be prepared and filed with the appropriate Information Center of the California Historical Resources Information System. In the event of a discovery, the campus shall implement item (5), below.</p> <p>3) For project sites requiring intensive investigation, irrespective of surface finds, the campus shall retain a qualified archaeologist to conduct a subsurface investigation of the project site, to ascertain whether buried archaeological materials are present and, if so, the extent of the deposit relative to the project's area of effects. If an archaeological deposit is discovered, the archaeologist will prepare a site record and a written report of the results of investigations and filed with the appropriate Information Center of the California Historical Resources Information System.</p> <p>If it is determined that the resource extends into the project's area of effects, the resource will be evaluated by a qualified archaeologist, who will determine whether it qualifies as a historical resource or a unique archaeological resource under the criteria of CEQA Guidelines § 15064.5. If the resource does not qualify, or if no resource is present within the project's area of effects, this will be noted in the environmental document and no further mitigation is required unless there is a discovery during construction. In the event of a discovery item (5), below shall be implemented.</p> <p>4) If archaeological material within the project's area of effects is determined to qualify as an historical resource or a unique archaeological resource (as defined by CEQA), the UC Davis Office of Campus Planning and Environmental</p>	

NI = No impact      B = Beneficial      LTS = Less than significant      PS = Potential significant      S = Significant      SU = Significant and unavoidable

**Table OPR ES-1 Summary of Impacts and Mitigation Measures**

Impacts	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
		<p>Stewardship shall consult with the qualified archaeologist to consider means of avoiding or reducing ground disturbance within the site boundaries, including minor modifications of building footprint, landscape modification, the placement of protective fill, the establishment of a preservation easement, or other means that will permit avoidance or substantial preservation in place of the resource. If avoidance or substantial preservation in place is not possible, the campus shall implement Mitigation Measure 3.4-1b.</p> <p>5) If archaeological material is discovered during construction (whether or not an archaeologist is present), all soil disturbing work within 100 feet of the find shall cease. The UC Davis Office of Campus Planning and Environmental Stewardship shall contact a qualified archaeologist to provide and implement a plan for survey, subsurface investigation as needed to define the deposit, and assessment of the remainder of the site within the project area to determine whether the resource is significant and would be affected by the project. Mitigation Measure 3.4-1a, steps (3) and (4) shall be implemented.</p> <p><b>2018 LRDP Mitigation Measure 3.4-1b: Protect known unique archaeological resources.</b></p> <p>For an archaeological site that has been determined by a qualified archaeologist to qualify as a unique archaeological resource through the process set forth under Mitigation Measure 3.4-1a, and where it has been determined under Mitigation Measure 3.4-1a that avoidance or preservation in place is not feasible, a qualified archaeologist, in consultation with the UC Davis Office of Campus Planning and Environmental Stewardship, and Native American tribes as applicable, shall:</p> <ol style="list-style-type: none"> <li>1) Prepare a research design and archaeological data recovery plan for the recovery that will capture those categories of data for which the site is significant, and implement the data recovery plan prior to or during development of the site.</li> <li>2) Perform appropriate technical analyses, prepare a full written report and file it with the appropriate information center, and provide for the permanent curation of recovered materials.</li> <li>3) If, in the opinion of the qualified archaeologist and in light of the data available, the significance of the site is such that data recovery cannot capture the values that qualify the site for inclusion on the CRHR, the UC Davis Office of Campus Planning and Environmental Stewardship shall reconsider project plans in light of the high value of the resource, and implement more substantial modifications to the proposed project that would allow the site to be preserved intact, such as</li> </ol>	

NI = No impact      B = Beneficial      LTS = Less than significant      PS = Potential significant      S = Significant      SU = Significant and unavoidable

**Table OPR ES-1 Summary of Impacts and Mitigation Measures**

Impacts	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
		project redesign, placement of fill, or project relocation or abandonment. If no such measures are feasible, the campus shall implement Mitigation Measure 3.4-1c.	

**3.5 Biological Resources**

<p><b>Impact 3.5-1: Impacts to Swainson's hawk and other nesting raptors.</b>                      Construction activities within the Orchard Park site such as tree removal, ground disturbance, construction vehicles, and presence of construction crews could disturb nesting Swainson's hawks or other special-status raptors potentially resulting in nest abandonment or failure, and mortality of chicks and eggs. This impact would be potentially significant.</p>	<p>PS</p>	<p><b>OPR Mitigation Measure 3.5-1: Avoidance of Swainson's hawk and other nesting raptors.</b>                      Implement 2018 LRDP Mitigation Measure 3.5-4a.</p> <p><b>2018 LRDP Mitigation Measure 3.5-4a: Avoidance of Swainson's hawk and other nesting raptors.</b>                      For any projects implemented under the 2018 LRDP that would require the removal of mature trees, the following measures will be implemented prior to initiation of construction to avoid, minimize, and fully mitigate impacts to Swainson's hawk, as well as other special-status raptors:</p> <ol style="list-style-type: none"> <li>1) Before tree removal occurs, a qualified biologist will determine whether it has been previously recorded or used as a Swainson's hawk or other special-status raptors nest tree. If it is not known to have supported Swainson's hawks or other special-status raptors in the past, the tree will be removed when no active nests are present, generally between September 2 and February 14 if feasible. If the tree to be removed is known to have supported nesting Swainson's hawk or other special-status raptors in the past, UC Davis will implement measures to prevent the potential the net loss of Swainson's hawk or other special-status raptors territories, which may include providing alternative nest trees or protected habitat. UC Davis will consult with CDFW prior to removal of the nest tree and obtain take authorization under Section 2081 of the Fish and Game Code if needed.</li> <li>2) For construction activities, including tree removal, that begin between February 15 and September 1, qualified biologists will conduct preconstruction surveys for Swainson's hawk and other nesting raptors to identify active nests on and within 0.5 mile of the project site. The surveys will be conducted before the beginning of any construction activities between February 15 and September 1.</li> <li>3) Impacts to nesting Swainson's hawks and other raptors will be avoided by establishing appropriate buffers around active nest sites identified during preconstruction raptor surveys. Project activity will not commence within the buffer areas until a qualified biologist has determined, in coordination with CDFW, that the young have fledged, the nest is no longer active, or that reducing the</li> </ol>	<p>LTS</p>
--	-----------	--	------------

NI = No impact    B = Beneficial    LTS = Less than significant    PS = Potential significant    S = Significant    SU = Significant and unavoidable

**Table OPR ES-1 Summary of Impacts and Mitigation Measures**

Impacts	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
		<p>buffer would not likely result in nest abandonment. CDFW guidelines recommend implementation of 0.25-mile-wide buffer for Swainson's hawk and 500 feet for other raptors, but the size of the buffer may be adjusted if a qualified biologist and UC Davis, in consultation with CDFW, determine that such an adjustment would not be likely to adversely affect the nest. Monitoring of the nest by a qualified biologist during and after construction activities will be required if the activity has potential to adversely affect the nest.</p> <p>4) Trees will not be removed during the breeding season for nesting raptors unless a survey by a qualified biologist verifies that there is not an active nest in the tree.</p>	
<p><b>Impact 3.5-2: Impacts to pallid bats.</b> Construction activities associated with the Orchard Park Redevelopment component, including conversion of agricultural land to urban uses and removal of trees, could result in loss of pallid bat roosts and individuals. This impact would be potentially significant.</p>	PS	<p><b>OPR Mitigation Measure 3.5-2: Preconstruction bat survey and exclusion.</b> Implement 2018 LRDP Mitigation Measure 3.5-8b.</p> <p><b>2018 LRDP Mitigation Measure 3.5-8b: Bat preconstruction surveys, exclusion, and mitigation.</b> The following mitigation measure will apply to construction of the project to reduce impacts on bats:</p> <ol style="list-style-type: none"> <li>1) Before commencing any structure or tree removal activities, a qualified biologist will conduct surveys for roosting bats. If evidence of bat use is observed, the species and number of bats using the roost will be determined. Bat detectors may be used to supplement survey efforts. If no evidence of bat roosts is found, then no further study and no mitigation will be required.</li> <li>2) If pallid bats are found, bats will be excluded from the roosting site before the tree or structure is removed. Exclusion efforts may be restricted during periods of sensitive activity (e.g., during hibernation or while females in maternity colonies are nursing young). Once, it is confirmed that bats are not present in the original roost site, the tree or structure may be removed. A mitigation program identifying exclusion methods and roost removal procedures will be developed by a qualified biologist in consultation with CDFW before implementation.</li> </ol>	LTS
<p><b>Impact 3.5-3: Conflict with local policies or ordinances related to the protection of biological resources.</b> Implementation of the Orchard Park Redevelopment component could result in the removal of trees recognized to meet UC Davis standards for important trees. Heritage Trees would not be removed during project implementation, resulting in no impact to Heritage Trees. However, removal of Specimen Trees within the Orchard Park site would be a potentially significant impact.</p>	PS	<p><b>OPR Mitigation Measure 3.5-3: Tree surveys and tree removal mitigation.</b> Implement 2018 LRDP Mitigation Measure 3.5-11.</p> <p><b>2018 LRDP Mitigation Measure 3.5-11: Tree surveys and tree removal mitigation.</b> Before a project is approved, UC Davis will perform a tree survey of the project site. The Office of Campus Planning and the Office of Environmental Stewardship and Design and Construction Management will provide input about tree classifications</p>	LTS

NI = No impact

B = Beneficial

LTS = Less than significant

PS = Potential significant

S = Significant

SU = Significant and unavoidable

**Table OPR ES-1 Summary of Impacts and Mitigation Measures**

Impacts	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
		and will modify project design to avoid important trees if feasible. If a project cannot avoid an important tree, the following measures will apply: <ol style="list-style-type: none"> <li>1) If a project would necessitate removal of a heritage tree, replacement plantings of the same species will be provided by UC Davis at a ratio of 3:1 within two years of removal.</li> <li>2) If a project would necessitate removal of a Specimen Tree, the project will relocate the tree if feasible, or will replace the tree with the same species or species of comparable value (relocation or replacement will occur within the project site if feasible).</li> </ol>	
<b>3.6 Energy</b>			
<p><b>Impact 3.6-1: Result in unnecessary, inefficient, and wasteful use of energy.</b>                      Although development of new student housing at the Orchard Park site would result in energy consumption during construction and operation, the Orchard Park Redevelopment component would exceed the most current energy-efficient standard (i.e., Title 24) by 20 percent and generate electricity through on-site solar photovoltaic panels. Therefore, the Orchard Park Redevelopment component would not result in wasteful, inefficient, and unnecessary consumption of energy. Thus, the impact would be less than significant.</p>	LTS	No mitigation measures are necessary.	LTS
<b>3.7 Geology, Soils, and Seismicity</b>			
<p><b>Impact 3.7-1: Potential for soil erosion associated with long-term operations and maintenance activities.</b>                      Development and occupancy of the Orchard Park site could change the pattern of surface runoff or stormwater management such that areas that are susceptible to erosion are exposed to more runoff and experience increased rates of erosion. Large quantities of overland flow could result in rill or gully erosion and decrease soil stability and productivity. This would be a potentially significant impact.</p>	PS	<p><b>OPR Mitigation Measure 3.7-1: Manage stormwater flows to reduce soil erosion.</b>                      Implement 2018 LRDP Mitigation Measure 3.7-4.</p> <p><b>2018 LRDP Mitigation Measure 3.7-4: Manage stormwater flows to reduce soil erosion.</b>                      Prior to approval of individual projects proposed under the 2018 LRDP, UC Davis shall conduct a drainage study in the vicinity of the site proposed for development to determine if the development could produce additional runoff that may exceed the capacity of campus stormwater infrastructure, cause localized ponding to worsen, or increase the potential for property damage from flooding. Recommendations identified in the drainage study shall be incorporated into project design such that any projected increase in surface water runoff is detained/retained in accordance with applicable requirements and does not exceed current flow rates. Measures may include, but are not limited to, installation of detention/retention basins to capture and manage water, installation of water-retaining landscaping or green-roof features,</p>	LTS

NI = No impact      B = Beneficial      LTS = Less than significant      PS = Potential significant      S = Significant      SU = Significant and unavoidable

**Table OPR ES-1 Summary of Impacts and Mitigation Measures**

Impacts	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
		modifications to existing stormwater capture/conveyance systems, and/or other measures at project-level or campus-wide to capture and manage stormwater.	
<b>3.8 Greenhouse Gas Emissions and Climate Change</b>			
Consistent with the GHG analysis in Volume 1 of this EIR, there are no potentially significant impacts identified related to greenhouse gas emissions for the Orchard Park Redevelopment component of the 2018 LRDP. No project-specific mitigation is necessary.			
<b>3.9 Hazards and Hazardous Materials</b>			
<p><b>Impact 3.9-1: Result in the release of hazardous materials from a site of known or potential contamination.</b></p> <p>Due to the proximity of documented contamination sites and proximity to a major roadway, there is potential for contamination to be encountered during construction. Because the Orchard Park site could be affected by undocumented contamination that has not been characterized or remediated, this would be a potentially significant impact.</p>	PS	<p><b>OPR Mitigation Measure 3.9-1a: Minimize Site-specific investigation and work plan implementation.</b> Implement 2018 LRDP Mitigation Measure 3.9-2a.</p> <p><b>2018 LRDP Mitigation Measure 3.9-2a: Site-specific investigation and work plan implementation.</b> Where initial investigations indicate the potential for contamination, UC Davis shall conduct soil sampling within the boundaries of the plan area prior to initiation of grading or other groundwork. This investigation will follow the American Society for Testing and Materials standards for preparation of a Phase II Environmental Site Assessment and/or other appropriate testing guidelines. If the results indicate that contamination exists at levels above regulatory action standards, then the site will be remediated in accordance with recommendations made by applicable regulatory agencies, including YCEHD, RWQCB, and DTSC. The agencies involved shall depend on the type and extent of contamination. Based on the results and recommendations of the investigation described above, UC Davis shall prepare a work plan that identifies any necessary remediation activities, including excavation and removal of on-site contaminated soils, and redistribution of clean fill material within the plan area. The plan shall include measures that ensure the safe transport, use, and disposal of contaminated soil removed from the site.</p> <p><b>OPR Mitigation Measure 3.9-1b: Hazardous Materials Contingency Plan.</b> Implement 2018 LRDP Mitigation Measure 3.9-2b.</p> <p><b>2018 LRDP Mitigation Measure 3.9-2b: Hazardous materials contingency plan.</b> Prior to initiation of grading or other groundwork, UC Davis shall provide a hazardous materials contingency plan to Campus Safety Services and YCEHD, as appropriate. The plan will describe the necessary actions that would be taken if evidence of contaminated soil or groundwater is encountered during construction. The</p>	LTS

NI = No impact      B = Beneficial      LTS = Less than significant      PS = Potential significant      S = Significant      SU = Significant and unavoidable

**Table OPR ES-1 Summary of Impacts and Mitigation Measures**

Impacts	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
		<p>contingency plan shall identify conditions that could indicate potential hazardous materials contamination, including soil discoloration, petroleum or chemical odors, and presence of underground storage tanks or buried building material.</p> <p>If at any time during the course of construction, evidence of soil and/or groundwater contamination with hazardous material is encountered, UC Davis shall immediately halt construction and contact Campus Safety Services and YCEHD. Work shall not recommence until the discovery has been assessed/treated appropriately (through such mechanisms as soil or groundwater sampling and remediation if potentially hazardous materials are detected above threshold levels) to the satisfaction of YCEHD, RWQCB, and DTSC (as applicable).</p> <p>The plan, and obligations to abide by and implement the plan, shall be incorporated into the construction and contract specifications of the project.</p>	
<p><b>Impact 3.9-2: Impair implementation of, or physically interfere with, an adopted emergency response plan or emergency evacuation plan.</b></p> <p>Implementation of the Orchard Park Redevelopment component of the 2018 LRDP could result in short-term, temporary impacts to street traffic because of roadway improvements and 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 street segments. Any such impacts would be limited to the construction period and would affect only adjacent streets or intersection. However, this could interfere with implementation of the campus' Emergency Operations Plan, which would be a potentially significant impact.</p>		<p><b>OPR Mitigation Measure 3.9-2: Prepare and implement site-specific construction traffic management plan.</b></p> <p>Implement 2018 LRDP Mitigation Measure 3.9-6.</p> <p><b>Mitigation Measure 3.9-6. Prepare and implement site-specific construction traffic management plans.</b></p> <p>UC Davis shall prepare and implement site-specific construction traffic management plans for any construction effort that would require work within existing roadways. To the extent feasible, the campus shall maintain at least one unobstructed lane in both directions on campus roadways during construction activities. At any time only a single lane is available due to construction-related road closures, the campus shall provide a temporary traffic signal, signal carriers (i.e., flag persons), or other appropriate traffic controls to allow travel in both directions. If construction activities require the complete closure of a roadway, the campus shall provide appropriate signage indicating alternative routes. To ensure adequate access for emergency vehicles when construction projects would result in temporary lane or roadway closures, the campus shall inform emergency services, including the UC Davis Police Department, UC Davis Fire Department, and American Medical Response, of the closures and alternative travel routes.</p>	
<p><b>3.10 Hydrology and Water Quality</b></p>			
<p><b>Impact 3.10-1: Impacts to the deep aquifer groundwater supply and recharge.</b></p> <p>Development and occupancy of the Orchard Park site would increase the amount of water extracted from the deep aquifer. However, this increase in demand is not anticipated to</p>	LTS	No mitigation measures are necessary.	LTS

NI = No impact      B = Beneficial      LTS = Less than significant      PS = Potential significant      S = Significant      SU = Significant and unavoidable

**Table OPR ES-1 Summary of Impacts and Mitigation Measures**

Impacts	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
result in a net deficit in the aquifer or a continued lowering of the groundwater table. This impact would be less than significant.			
<p><b>Impact 3.10-2: On-site and off-site flood-related impacts.</b> Development and occupancy of the Orchard Park site would result in an overall increase in impervious surfaces and produce changes to site-specific stormwater infrastructure. If new stormwater infrastructure is not appropriately designed to accommodate site runoff, or existing campus infrastructure cannot accommodate increased flows, impacts related to local and off-site flooding would be significant.</p>	S	<p><b>OPR Mitigation Measure 3.10-2: Manage stormwater flows to reduce soil erosion.</b> Implement 2018 LRDP Mitigation Measure 3.7-4.</p>	LTS
<b>3.11 Land Use and Planning</b>			
There are no potentially significant impacts identified related to land use and planning for the Orchard Park Redevelopment component of the 2018 LRDP beyond those identified and addressed as part of the 2018 LRDP's analysis in Volume 1. No additional project-specific mitigation is necessary.			
<b>3.12 Noise</b>			
<p><b>Impact 3.12-1: Construction noise.</b> Implementation of the Orchard Park Redevelopment component would result in construction-related noise impacts associated with the use of heavy-duty construction equipment. Based on construction noise modeling conducted, noise levels would not exceed applicable noise limits, including those established by the City of Davis for off-site receptors. However, if construction were to occur during the more sensitive nighttime hours, nearby receptors could be exposed to disruptive noise levels. This impact would be significant.</p>	S	<p><b>OPR Mitigation Measure 3.12-1: Reduce construction noise.</b> Implement 2018 LRDP Mitigation Measure 3.12-1.</p> <p><b>2018 LRDP Mitigation Measure 3.12-1: Reduce construction noise.</b> For all construction activities, UC Davis shall 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 activity shall be limited to the daytime hours between 7:00 a.m. and 7:00 p.m. on weekdays and between 8:00 a.m. and 8:00 p.m. on weekends and holidays, where possible.</li> <li>2) All construction equipment and equipment staging areas shall be located as far as possible from nearby noise-sensitive land uses, and/or located to the extent feasible such that existing or constructed noise attenuating features (e.g., temporary noise wall or blankets) block line-of-site between affected noise-sensitive land uses and construction staging areas.</li> <li>3) All construction equipment shall be properly maintained and equipped with noise-reduction intake and exhaust mufflers and engine shrouds, in accordance with manufacturer recommendations. Equipment engine shrouds shall be closed during equipment operation.</li> </ol>	LTS

NI = No impact

B = Beneficial

LTS = Less than significant

PS = Potential significant

S = Significant

SU = Significant and unavoidable

**Table OPR ES-1 Summary of Impacts and Mitigation Measures**

Impacts	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
		<p>4) Individual operations and techniques shall be replaced with quieter procedures (e.g., using welding instead of riveting, mixing concrete off-site instead of on-site) where feasible and consistent with building codes and other applicable laws and regulations.</p> <p>5) Stationary noise sources such as generators or pumps shall be located 100 feet away or more from noise-sensitive land uses, as feasible.</p> <p>6) Loud construction activity (i.e., construction activity such as jackhammering, concrete sawing, asphalt removal, and large-scale grading operations) shall not be scheduled during finals week and preferably during holidays, summer/winter break, Thanksgiving break, and spring break.</p> <p>7) No less than one week prior to the start of construction activities at a particular location, notification shall be provided to academic, administrative, and residential uses located within 100 feet of the construction site.</p> <p>8) When construction would occur within 100 feet of sensitive receptors and may result in temporary noise levels in excess of 86 dBA <math>L_{max}</math> at the exterior of the adjacent receptor, temporary noise barriers (e.g., noise-insulating blankets or temporary plywood structures) shall be erected that reduce construction-related noise levels to less than 86 dBA <math>L_{max}</math> at the receptor.</p> <p>9) For any construction activity that must extend beyond the daytime hours of 7:00 a.m. and 7:00 p.m. on weekdays and between 8:00 a.m. and 8:00 p.m. on weekends and occur within 1,120 feet of a building where people sleep, UC Davis shall ensure that interior noise levels of 45 dBA <math>L_{max}</math> are not exceeded at any receiving land use by not exceeding 65 dBA <math>L_{max}</math> at the receiving land use property line. Typical residential structures with windows closed achieve a 25-30 dBA exterior-to-interior noise reduction (Caltrans 2002). Thus, using the lower end of this range, an exterior noise level of 70 dBA <math>L_{max}</math> would ensure interior noise levels do not result in an increased risk for sleep disturbance. To achieve this performance standard, the following measures shall be implemented:</p> <p>a) Use of noise-reducing enclosures and techniques around stationary noise-generating equipment (e.g., concrete mixers, generators, compressors).</p> <p>b) Installation of temporary noise curtains installed as close as possible to the boundary of the construction site within the direct line of sight path of the nearby sensitive receptor(s) and consist of durable, flexible composite material featuring a noise barrier layer bounded to sound-absorptive material on one</p>	

NI = No impact      B = Beneficial      LTS = Less than significant      PS = Potential significant      S = Significant      SU = Significant and unavoidable

**Table OPR ES-1 Summary of Impacts and Mitigation Measures**

Impacts	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
		<p>side. The noise barrier layer shall consist of rugged, impervious, material with a surface weight of at least one pound per square foot.</p> <p>c) 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 exterior noise levels of 70 dBA <math>L_{max}</math>. Exceedances of noise standards shall result in immediate halt of construction until additional noise-reduction measures are implemented.</p>	
<p><b>Impact 3.12-2: Increase in non-transportation noise sources.</b> Implementation of the Orchard Park Redevelopment component would result in the development of apartment buildings that would include new stationary sources such as heating ventilation and air condition units (HVAC) equipment and emergency backup generators. Because locations of new noise sources are unknown and could expose existing or new receptors to excessive noise levels, this impact would be significant.</p>	S	<p><b>OPR Mitigation Measure 3.12-2: Reduce noise exposure from new stationary noise sources.</b> Implement 2018 LRDP Mitigation Measure 3.12-2.</p> <p><b>2018 LRDP Mitigation Measure 3.12-2: Reduce noise exposure from new stationary noise sources.</b> During project design of individual projects proposed under the 2018 LRDP, UC Davis shall review and ensure that external mechanical equipment, including HVAC units associated with new/renovated buildings, incorporates features designed to reduce noise to below 63 dB <math>L_{eq}</math> at any nearby building where people sleep. Design features may include, but are not limited to, locating equipment within equipment rooms or enclosures that incorporate noise reduction features, such as acoustical louvers, and exhaust and intake silencers. Equipment enclosures shall be oriented so that major openings (i.e., intake louvers, exhaust) are directed away from nearby noise-sensitive receptors.</p>	LTS
<p><b>Impact 3.12-3: Exposure of sensitive receptors to existing noise levels.</b> Implementation of the Orchard Park Redevelopment component would include new sensitive receptors, but the Orchard Park Redevelopment component is located well beyond distances that could result in excessive noise levels from the UC Davis Airport, the UC Davis Aggie Stadium, and the nearby Union Pacific Railroad. This impact would be less than significant.</p>	LTS	No mitigation measures are necessary.	LTS
<p><b>Impact 3.12-4: Exposure of new and existing sensitive receptors to operational project-generated traffic noise.</b> Implementation of the 2018 LRDP would result in new vehicle trips generated from increases in the student, faculty, and staff population on the UC Davis campus. As a result of these new trips, traffic-related noise levels would increase along roadways near the Orchard Park site, specifically along Russell Boulevard directly north of the site. Based on</p>	LTS	No mitigation measures are necessary.	LTS

NI = No impact

B = Beneficial

LTS = Less than significant

PS = Potential significant

S = Significant

SU = Significant and unavoidable

**Table OPR ES-1 Summary of Impacts and Mitigation Measures**

Impacts	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
<p>traffic noise modeling conducted for the 2018 LRDP, traffic-related noise increases would remain below established roadway noise thresholds. This impact would be less than significant.</p>			
<p><b>3.13 Population and Housing</b></p>			
<p>There are no potentially significant impacts identified related to population and housing for the Orchard Park Redevelopment component of the 2018 LRDP beyond those identified and addressed as part of the 2018 LRDP's analysis in Volume 1. No additional project-specific mitigation is necessary.</p>			
<p><b>3.14 Public Services</b></p>			
<p><b>Impact 3.14-1: Impacts on fire facilities.</b> Increased population and redevelopment at the Orchard Park site could increase demand for fire services. However, this development would not increase response times and thus is not anticipated to increase the demand for additional fire protection facilities. Therefore, this impact would be less than significant.</p>	LTS	No mitigation measures are necessary.	LTS
<p><b>Impact 3.14-2: Impacts on police facilities.</b> The increase in population that is expected to occur at the Orchard Park site could result in an increased demand for police officers, however, it is not expected to result in the need for new or expanded police facilities. This increase in demand is covered as part of the 2018 LRDP and the campus's capital planning process. Therefore, this impact would be less than significant.</p>	LTS	No mitigation measures are necessary.	LTS
<p><b>Impact 3.14.3: Impacts on schools.</b> The increase in campus population that is expected to occur under at the Orchard Park site would result in an increased demand for schools. However, enrollment for DJUSD has declined in 7 of the last 11 years and existing schools would have adequate capacity to accommodate the increase in students. Therefore, this impact would be less than significant.</p>	LTS	No mitigation measures are necessary	LTS

NI = No impact      B = Beneficial      LTS = Less than significant      PS = Potential significant      S = Significant      SU = Significant and unavoidable

**Table OPR ES-1 Summary of Impacts and Mitigation Measures**

Impacts	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
<b>3.15 Recreation</b>			
<p><b>Impact 3.15-1: Impacts on-campus recreation facilities.</b>                      The Orchard Park Redevelopment component would increase demand for on-campus recreation facilities. However, maintenance of existing on-campus recreation facilities would be increased as needed, and several new recreation facilities would be constructed as part of the 2018 LRDP to off-set increases in demand for recreational facilities. Therefore, this impact would be less than significant.</p>	LTS	No mitigation measures are necessary.	LTS
<b>3.16 Transportation, Circulation, and Parking</b>			
<p><b>Impact 3.16-1: Freeway level of service impacts.</b>                      Construction of the Orchard Park Redevelopment would increase local and regional vehicle travel, which would contribute unacceptable LOS F conditions on I-80. This impact would therefore be significant.</p>	S	<p><b>OPR Mitigation Measure 3.16-1: Implement TDM strategies to reduce peak hour vehicle trips on I-80.</b>                      Implement 2018 LRDP Mitigation Measure 3.16-1.  <b>2018 LRDP Mitigation Measure 3.16-1: Implement TDM strategies to reduce peak hour vehicle trips on I-80.</b>                      UC Davis shall use the 2016-2017 academic year as the baseline by which to determine 2018 LRDP-related growth in peak hour student and employee commute vehicle trips on I-80. During the 2018-2019 academic year and every two years thereafter, UC Davis shall determine the number of peak hour student and employee commute vehicle trips that utilize I-80. In instances where this figure exceeds baseline levels, UC Davis shall institute TDM strategies to reduce campus-related peak hour vehicle trips on I-80. This figure could be estimated from the results of the annual Campus Travel Survey administered by the UC Davis Institute of Transportation Studies. The implementation of TDM strategies shall reduce peak hour student and employee commute vehicle trips on I-80 equal to or below baseline levels.                      TDM strategies that would reduce peak hour vehicle trips on I-80 include strategies to reduce commute and business vehicle trips to and from campus using I-80. Specific potential TDM strategies include, but are not limited to, the following:</p> <ul style="list-style-type: none"> <li>▲ expand public transit service, including additional regional service for UC Davis students and employees living off-campus and outside of Davis,</li> <li>▲ support alternative congestion management policies/projects on I-80, including a toll for all vehicles utilizing I-80 across the Yolo Causeway,</li> <li>▲ implement a fair value commuting program, where fees charged to SOV commuters (e.g., through parking pricing) are tied to UC Davis vehicle trip</li> </ul>	SU

NI = No impact      B = Beneficial      LTS = Less than significant      PS = Potential significant      S = Significant      SU = Significant and unavoidable

**Table OPR ES-1 Summary of Impacts and Mitigation Measures**

Impacts	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
		reduction targets and fee revenue is rebated to non-SOV commuters, or other pricing of vehicle travel and parking, ▲ provide carpool and/or vanpool incentive programs, ▲ allow flexible work hours and schedule classes to reduce arrivals/departures during peak hours, and ▲ offer remote working options.  The TDM strategies implemented to reduce peak hour vehicle trips on I-80 will be consistent with existing and planned TDM programs on campus, including the UC Davis TDM Plan currently in development. If these TDM strategies are not sufficient to reduce peak hour trips to baseline levels, additional TDM measures or adjustments to the measures above shall be implemented, as needed to reduce peak hour trips to baseline levels.	
<p><b>Impact 3.16-2: Intersection level of service impacts.</b>                      Construction of the Orchard Park Redevelopment would increase local and regional vehicle travel, but not to the extent that would cause unacceptable LOS conditions at study intersections. This impact would therefore be less than significant.</p>	LTS	No mitigation measures are necessary.	LTS
<p><b>Impact 3.16-3: Impacts to transit service and facilities.</b>                      The Orchard Park Redevelopment component would not physically disrupt an existing transit facility/service or interfere with the implementation of a planned transit facility/service. This impact would therefore be less than significant.</p>	LTS	No mitigation measures are necessary.	LTS
<p><b>Impact 3.16-4: Impacts to bicycle facilities.</b>                      The Orchard Park Redevelopment component would increase bicycle, pedestrian, and automobile trips on the UC Davis campus and within the vicinity of the Orchard Park site, which could generate bicycle volumes that physically disrupt the use of existing facilities, increase the competition for physical space between the modes, and increase the risk of collisions. This impact would therefore be significant.</p>	S	<p><b>OPR Mitigation Measure 3.16-4a: Improve the east-west bicycle connection across the Orchard Park site between the SR 113 bike/pedestrian overcrossing and Orchard Park Drive.</b>                      UC Davis shall improve the east-west bicycle connection across the Orchard Park site between the SR 113 bike/pedestrian overcrossing and Orchard Park Drive to accommodate project-generated bicycle and vehicle trips. Potential improvement alternatives include:                      1) Install a shared-use path on the south side of Orchard Park Circle between the SR 113 bike/pedestrian overcrossing and Orchard Park Drive, either as a conversion of the existing sidewalk facility or a new parallel facility south of the existing sidewalk. Realign the east overcrossing approach with the new shared-use path and retrofit the existing overcrossing access at Orchard Park Circle to form a 90-degree angle. Install a new bicycle crossing on Orchard Park Circle to connect the proposed internal north-south bike path with the new Orchard Park Circle shared-use path. Design of the path should</p>	SU

NI = No impact      B = Beneficial      LTS = Less than significant      PS = Potential significant      S = Significant      SU = Significant and unavoidable

**Table OPR ES-1 Summary of Impacts and Mitigation Measures**

Impacts	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
		<p>consider potential effects on established vegetation on the south side of Orchard Park Circle.</p> <ol style="list-style-type: none"> <li>2) Provide on-street bicycle facilities (e.g., bike lanes, protected bike lanes, etc.) along Orchard Park Circle. Design the transition of Orchard Park Circle at the west entrance to the proposed parking lot to prioritize bicycle access and safety. Use of a roundabout, slip ramp, t-intersection for cars, or other type of mode separation may be appropriate.</li> <li>3) Replace the existing bike lanes with a two-way Class IV cycletrack on the south side of Orchard Park Circle. This option may require reconstruction of the north or south curb and gutter to ensure adequate right-of-way for two travel lanes and the cycletrack.</li> <li>4) Modify the site plan to close Orchard Park Circle to vehicle traffic. Remove the existing speeds humps and convert Orchard Park Circle to bicycle-only. Restructure the internal circulation network to allow for a centralized vehicle loading and parking access configuration, including an internal east-west vehicle connection between Orchard Park Drive and the proposed large resident parking lot. For internal roadways, consider utilizing shared-space design principles to encourage low vehicle speeds and activate use of the roadways as a communal space.</li> <li>5) Close Orchard Park Circle to vehicle traffic. Remove the existing speeds humps and convert Orchard Park Circle to bicycle-only.</li> <li>6) UC Davis shall modify the existing traffic control along Orchard Road/Orchard Park Circle, including at the Orchard Road/Orchard Park Drive intersection, as the volume and mix of traffic changes to provide a desirable environment for walking and bicycling.</li> </ol> <p>Implementation of any one of alternatives 1 through 5, together with the implementation of alternative 6, would enhance the east-west bicycle connection across the Orchard Park site between the SR 113 bike/pedestrian overcrossing and Orchard Park Drive. New shared-use paths should be sufficiently sized to prevent crowding and minimize the potential for conflicts between bicyclists and pedestrians. The bicycle facility improvements described above should be constructed prior to the occupancy of new Orchard Park dwelling units.</p> <p><b>OPR Mitigation Measure 3.16-4b: Improve the Russell Boulevard shared-use path between the SR 113 northbound ramps and La Rue Road.</b></p> <p>UC Davis shall improve the Russell Boulevard shared-use path between the SR 113 northbound ramps and La Rue Road to accommodate project-generated bicycle and pedestrian trips traveling to central campus. Potential improvement alternatives include:</p> <ol style="list-style-type: none"> <li>1) Widen the existing shared-use path to accommodate bicyclists and pedestrians within a shared facility. Consider installing special pavement treatment or striping to clearly demarcate pedestrian and bicycle zones.</li> </ol>	

NI = No impact      B = Beneficial      LTS = Less than significant      PS = Potential significant      S = Significant      SU = Significant and unavoidable

**Table OPR ES-1 Summary of Impacts and Mitigation Measures**

Impacts	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
		<p>2) Physically separate bicyclists and pedestrians by constructing new pedestrian pathways parallel to the existing shared-use path.</p> <p>3) Install pedestrian-scale lighting to improve visibility.</p> <p>4) Reconfigure the Russell Boulevard bike path east approach to Orchard Park Drive so that the bike path approach intersects Orchard Park Drive at a 90-degree angle. The reconfiguration should maintain horizontal curves to slow bicyclists approaching Orchard Park Drive.</p> <p>Implementation of any one of alternatives 1 through 3, together with the implementation of alternative 4, would enhance the Russell Boulevard shared-use path between the SR 113 northbound ramps and La Rue Road. New shared-use paths should be sufficiently sized to prevent crowding and minimize the potential for conflicts between bicyclists and pedestrians. The bicycle facility improvements described above should be constructed prior to the occupancy of new Orchard Park dwelling units.</p> <p><b>OPR Mitigation Measure 3.16-4c: Improve the north-south bicycle connection between the Orchard Park site and the Health Sciences District.</b></p> <p>UC Davis shall improve the north-south bicycle connection between the Orchard Park site and the Health Sciences District. Potential improvement alternatives include:</p> <p>1) Install new bicycle facilities on Orchard Park Drive between Orchard Park Circle and Extension Center Drive, on Extension Center Drive between Orchard Park Drive and the UC Davis Student Farm, and on the connecting unnamed road between Extension Center Drive and Hutchison Drive. New bicycle facilities could include a mixture of on-street bike lanes and off-street shared-use paths, as feasible. From Hutchison Drive, bicyclists would connect with the existing bike lanes on Health Science Drive into the Health Sciences District.</p> <p>2) Install new bicycle facilities on Orchard Park Drive between Orchard Park Circle and Extension Center Drive and on Extension Center Drive between Orchard Park Drive and Hutchison Drive. From Hutchison Drive, bicyclists would connect with the existing shared-use path on La Rue Road. New bicycle facilities could include a mixture of on-street bike lanes and off-street shared-use paths, as feasible.</p> <p>3) Install new shared-use path from Orchard Park Circle to the Hutchison Drive/Health Science Drive intersection. The path could parallel the SR 113 frontage or traverse through the student farms.</p> <p>Implementation of any one of alternatives 1 through 3 would provide a contiguous north-south bicycle route for project-generated bicycle trips traveling to the Health Sciences District. The bicycle facility improvements described above should be constructed prior to the occupancy of new Orchard Park dwelling units.</p>	

NI = No impact      B = Beneficial      LTS = Less than significant      PS = Potential significant      S = Significant      SU = Significant and unavoidable

**Table OPR ES-1 Summary of Impacts and Mitigation Measures**

Impacts	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
<p><b>Impact 3.16-5: Impacts to pedestrian facilities.</b> The Orchard Park Redevelopment component would increase bicycle, pedestrian, and automobile trips on the UC Davis campus and within the vicinity of the Orchard Park site, which could generate pedestrian volumes that physically disrupt the use of existing facilities, increase the competition for physical space between the modes, and increase the risk of collisions. This impact would therefore be significant.</p>	S	<p><b>OPR Mitigation Measure 3.16-5: Construct new pedestrian facilities to close existing pedestrian network gaps.</b> UC Davis shall construct new pedestrian facilities and close pedestrian network gaps in the following locations: 1) The north side of Orchard Road between Orchard Park Drive and La Rue Road. 2) One or both sides of Orchard Park Drive between Orchard Road and Extension Center Drive. 3) One or both sides of Extension Center Drive between Orchard Park Drive and Hutchison Drive. The pedestrian facility improvements described above shall be constructed prior to the occupancy of new Orchard Park dwelling units.</p>	LTS
<b>3.17 Utilities and Service Systems</b>			
<p><b>Impact 3.17-1: Require construction of new/expanded wastewater infrastructure.</b> Development and occupancy of the Orchard Park site would increase the amount of wastewater generated in the immediate area. The existing wastewater pipe located within Orchard Road has limited available capacity to accommodate additional wastewater flows under peak conditions. This would be a potentially significant impact.</p>	PS	<p><b>OP Mitigation Measure 3.17-1: Upsize Sewer Line within Orchard Road.</b> Prior to operation of student housing at the Orchard Park site, UC Davis shall replace the existing 8-inch sewer line currently within Orchard Road with a 12-inch sewer line. The length of the line to be replaced is approximately 1,050 feet and extends between the Orchard Park site and the 12-inch sewer line within La Rue Road.</p>	LTS

NI = No impact

B = Beneficial

LTS = Less than significant

PS = Potential significant

S = Significant

SU = Significant and unavoidable

**Table OPR ES-2 Orchard Park Redevelopment Mitigation Monitoring and Reporting Program**

Impact	Mitigation Measure	Monitoring and Reporting Procedure	Timing	Verification
<p><b>Project stage at which implementation of the measure is required</b> - SS=site selection; DE=detailed project planning or project design prior to project approval; CO=construction; OC=occupancy; OP=operation</p>				
<p><b>3.1 Aesthetics and Visual Resources</b></p>				
<p><b>Impact 3.1-2: Create a new source of light or glare.</b></p>	<p><b>OPR Mitigation Measure 3.1-2a: Building surfaces.</b> Implement 2018 LRDP Mitigation Measure 3.1-3a. <b>2018 LRDP Mitigation Measure 3.1-3a: Building surfaces.</b> UC Davis shall require the use of textured, non-reflective exterior surfaces and non-reflective (mirrored) glass during design review of all new/redeveloped structures.</p>	<p>Review project design for use of non-reflective exterior surfaces and glass. Revise design, if necessary.</p>	<p>DE</p> <p>Prior to final design approval.</p>	<p>UC Davis Design Review Committee; UC Davis Campus Planning and Environmental Stewardship</p>
	<p><b>OPR Mitigation Measure 3.1-2b: Lighting fixtures.</b> Implement 2018 LRDP Mitigation Measure 3.1-3b. <b>2018 LRDP Mitigation Measure 3.1-3b: Lighting fixtures.</b> UC Davis shall require all new outdoor lighting to utilize directional lighting methods with shielded and cutoff type light fixtures to minimize glare and upward directed lighting such that light spillover onto adjacent structures does not occur. Verification of inclusion in project design shall be provided at the time of design review.</p>	<p>Review project design for use of directional lighting.</p>	<p>DE</p> <p>Prior to final design approval.</p>	<p>UC Davis Design Review Committee; UC Davis Campus Planning and Environmental Stewardship</p>
<p><b>3.3 Air Quality</b></p>				
<p><b>Impact 3.3-1: Construction-generated emissions of ROG, NO<sub>x</sub>, and PM<sub>10</sub>.</b></p>	<p><b>OPR Mitigation Measure 3.3-1: Reduce construction-generated emissions of ROG, NO<sub>x</sub>, and PM<sub>10</sub>.</b> Implement 2018 LRDP Mitigation Measure 3.3-1. Although prior to mitigation, the Orchard Park Redevelopment component would result in construction-related emissions that do not exceed NO<sub>x</sub> and ROG emissions thresholds, the implementation of 2018 LRDP Mitigation Measure 3.3-1 would further reduce ROG and NO<sub>x</sub> emissions along with PM<sub>10</sub> emissions under the construction engine and dust mitigation requirements. Engines with a minimum of a Tier 3 final rating or better are anticipated to decrease ROG, NO<sub>x</sub>, and PM emissions compared to the default engine rating which includes a mix of lower tiered engines. <b>2018 LRDP Mitigation Measure 3.3-1: Reduce construction-generated emissions of ROG, NO<sub>x</sub>, and PM<sub>10</sub>.</b> Land use development project implemented under the 2018 LRDP shall require its prime construction contractor to implement the following measures: 1) Use construction equipment with engines rated at Tier 3 or better prior to 2025 and Tier 4 or better beginning in 2025. 2) Use no- or low-solids content (i.e., no- or low-VOC) architectural coatings with a maximum VOC content of 50 g/L.</p>	<p>Incorporation of measures as part of construction specifications documentation and inspect construction site at regular intervals during construction to verify compliance with specified construction-generated emissions reduction measures.</p>	<p>CO</p> <p>Regular intervals throughout construction period.</p>	<p>UC Davis Design and Construction Management</p>

NI = No impact      B = Beneficial      LTS = Less than significant      PS = Potential significant      S = Significant      SU = Significant and unavoidable

**Table OPR ES-2 Orchard Park Redevelopment Mitigation Monitoring and Reporting Program**

Impact	Mitigation Measure	Monitoring and Reporting Procedure	Timing	Verification	
<p><b>Project stage at which implementation of the measure is required</b> - SS=site selection; DE=detailed project planning or project design prior to project approval; CO=construction; OC=occupancy; OP=operation</p>					
	<p>3) Limit passenger vehicles (i.e., non-vendor and non-hauling vehicles) from being driven on extended unpaved portions of project construction sites. UC Davis shall provide off-site paved parking and compliant site-transport arrangements for construction workers, as needed.</p> <p>4) Water all active construction sites at least twice daily.</p> <p>5) Plant vegetative ground cover in disturbed areas as soon as possible.</p> <p>6) Apply soil stabilizers on unpaved roads and inactive construction areas (disturbed lands within construction projects that are unused for at least four consecutive days).</p> <p>7) Establish a 15 mile-per-hour speed limit for vehicles driving on unpaved portions of project construction sites.</p> <p>UC Davis shall 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>Impact 3.3-2: Operational emissions of criteria air pollutants and precursor emissions.</b></p>	<p><b>OPR Mitigation Measure 3.3-2: Reduce emissions of ROG and NO<sub>x</sub> from mobile sources.</b>                      Implement 2018 LRDP Mitigation Measures 3.3-2.                      Although the project-level impact of operational emissions is less than significant, the Orchard Park Redevelopment component is still subject to 2018 LRDP Mitigation Measure 3.3-2 because the Orchard Park Redevelopment is part of the 2018 LRDP and the plan-level emissions are potentially significant under 2018 LRDP Impact 3.3-2. Reduction of project-level operational emissions will help reduce the impact of plan-level operational emissions.</p> <p><b>2018 LRDP Mitigation Measure 3.3-2: Reduce emissions of ROG and NO<sub>x</sub>.</b>                      UC Davis shall implement the following measures to reduce operational emissions to the extent feasible:</p> <p>1) Implement a program that incentivizes employees and students living off-campus to carpool, use EVs, or use public transit to commute to and from the campus. This program shall provide preferential parking to carpool vehicles, vanpool vehicles, and EVs. At a minimum, the program shall include 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. The program shall include, but is not limited to, the following features.</p> <p>a) Limit parking capacity to meet on-site demand. Provide no more on-site parking spaces than necessary to accommodate the number of employees</p>	<p>Develop policy to ensure low-polluting vehicles, as specified, are considered and purchased when feasible.</p>	<p>OP</p>	<p>Adoption within one-year of approval of 2018 LRDP;                      Implemented on a continuing basis.</p>	<p>UC Davis Campus Planning and Environmental Stewardship</p>

NI = No impact      B = Beneficial      LTS = Less than significant      PS = Potential significant      S = Significant      SU = Significant and unavoidable

**Table OPR ES-2 Orchard Park Redevelopment Mitigation Monitoring and Reporting Program**

Impact	Mitigation Measure	Monitoring and Reporting Procedure	Timing		Verification
<b>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=occupancy; OP=operation</b>					
	<p>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) Non-residential land uses with 20 or more on-site parking spaces shall 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 shall 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 shall be clearly marked with signs and pavement markings. This measure shall 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>2) Work with Unitrans to convert natural gas buses to electric or lower-emission fuels or implement emission control technologies to reduce criteria air pollutant emissions from existing conditions,</p>	<p>Coordinate with and contribute funds to Unitrans re: conversion of existing fleet to electric or other clean fuel.</p>	<p>OP</p>	<p>On a continuing basis with annual reporting.</p>	<p>UC Davis Campus Planning and Environmental Stewardship</p>
	<p>3) Implement a program that incentivizes vendors to reduce the emissions associated with vehicles and equipment serving the campus. The goal of the program is to reduce ROG and NO<sub>x</sub> emissions from vendors trip by at least 50 percent by 2030 as compared to existing conditions. The program shall implement the following sub-measures to reduce vendor-related, mobile-source emissions.</p> <p>a) Incentivize the use of EVs or other clean fuels in their trucks and equipment to reduce ROG and NO<sub>x</sub> emissions.</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>	<p>Develop and implement program in conjunction with vendors and appropriate UC Davis campus services to reduce/consolidate vendor trips and incentivize the use of alternative fuel vehicles.</p>	<p>OP</p>	<p>Adoption within one-year of approval of 2018 LRDP; Implemented on a continuing basis.</p>	<p>UC Davis Campus Planning and Environmental Stewardship</p>
	<p>4) Convert landscaping equipment to electric or alternatively-fueled equipment.</p>	<p>Transition from gasoline/diesel-powered landscaping equipment to electric/alternative-fueled equipment by 2025 or sooner.</p>	<p>OP</p>	<p>On a continuing basis with annual reporting.</p>	<p>UC Davis Campus Planning and Environmental Stewardship</p>

NI = No impact      B = Beneficial      LTS = Less than significant      PS = Potential significant      S = Significant      SU = Significant and unavoidable

**Table OPR ES-2 Orchard Park Redevelopment Mitigation Monitoring and Reporting Program**

Impact	Mitigation Measure	Monitoring and Reporting Procedure	Timing		Verification
<p><b>Project stage at which implementation of the measure is required</b> - SS=site selection; DE=detailed project planning or project design prior to project approval; CO=construction; OC=occupancy; OP=operation</p>					
<p><b>Impact 3.3-3: Short-term construction emissions of toxic air contaminants.</b></p>	<p><b>OPR Mitigation Measure 3.3-3: Reduce short-term construction-generated TAC emissions.</b> Implement 2018 LRDP Mitigation Measure 3.3-4. <b>2018 LRDP Mitigation Measure 3.3-4: Reduce short-term construction-generated TAC emissions.</b> UC Davis shall require construction activities under the 2018 LRDP to follow YSAQMD recommended mitigation measures for construction exhaust emissions. To ensure sensitive receptors are not exposed to substantial TAC concentrations, UC Davis shall require its prime construction contractor to implement the following measures prior to project approval:</p> <ol style="list-style-type: none"> <li>1) Locate operation of diesel-powered construction equipment as far away from sensitive receptors as possible;</li> <li>2) Limit excess equipment idling to no more than 5 minutes;</li> <li>3) Use construction equipment with engine ratings of Tier 3 or better (included in Mitigation Measure 3.3-1); and</li> <li>4) Use electric, compressed natural gas, or other alternatively fueled construction equipment instead of the diesel counterparts, where available.</li> </ol> <p>In addition, for any construction site located within 150 feet of a childcare center or park/recreation field, UC Davis shall schedule the use of heavy construction equipment to times when children are not present. Alternatively, UC Davis shall arrange for temporary relocation of childcare facilities to areas outside of a 150-foot buffer or temporarily close available park space within the 150-foot buffer during operation of heavy construction equipment.</p>	<p>Inspect construction site at regular intervals during construction to verify compliance with specified construction-generated emissions reduction measures.</p>	<p>CO</p>	<p>Regular intervals throughout construction period.</p>	<p>UC Davis Design and Construction Management; UC Davis Campus Planning and Environmental Stewardship</p>
<p><b>3.4 Archaeological, Historical, and Tribal Cultural Resources</b></p>					
<p><b>Impact 3.4-1: Impacts to unique archaeological resources.</b></p>	<p><b>OPR Mitigation Measure 3.4-1: Identify and protect archaeological resources.</b> Implement 2018 LRDP Mitigation Measure 3.4-1a(1) and 2018 LRDP Mitigation Measure 3.4-1a(3). If the site is determined to contain a unique archaeological resource(s), implement 2018 LRDP Mitigation Measure 3.4-1b. <b>2018 LRDP Mitigation Measure 3.4-1a: Identify and protect unknown archaeological resources.</b> During project-specific environmental review of development under the 2018 LRDP, the campus shall define each project's area of effect for archaeological resources. The campus shall determine the potential for the project to result in cultural resource impacts, based on the extent of ground disturbance and site modification anticipated for</p>	<p>Define area of potential effects. Determine appropriate level of archaeological investigation. Include specified avoidance and control measures in construction specifications. Contractors and employees shall be</p>	<p>DE</p>	<p>During project design, prior to construction.</p>	<p>UC Davis Campus Planning and Environmental Stewardship</p>

NI = No impact      B = Beneficial      LTS = Less than significant      PS = Potential significant      S = Significant      SU = Significant and unavoidable

**Table OPR ES-2 Orchard Park Redevelopment Mitigation Monitoring and Reporting Program**

Impact	Mitigation Measure	Monitoring and Reporting Procedure	Timing	Timing	Verification
<p><b>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=occupancy; OP=operation</b></p>					
	<p>the proposed project. The campus shall determine the level of archaeological investigation that is appropriate for the project site and activity, as follows:                      Minimum: excavation less than 18 inches deep and less than 1,000 sf of disturbance (e.g., a trench for lawn irrigation, tree planting, etc.). Implement Mitigation Measure 3.4-1a(1).                      Moderate: excavation below 18 inches deep and/or over a large area on any site that has not been characterized as sensitive and is not suspected to be a likely location for archaeological resources. Implement Mitigation Measure 3.4-1a(1) and (2).                      Intensive: excavation below 18 inches and/or over a large area on any site that is within the zone of archaeological sensitivity identified in Exhibit 3.4-1, or that is adjacent to a recorded archaeological site. Implement Mitigation Measure 3.4-1a(1), (2), and (3).                      UC Davis shall implement the following steps to identify and protect archaeological resources that may be present in the project's area of effects:                      1) For project sites at all levels of investigation, contractor crews shall be required to attend a training session prior to the start of earth moving, regarding how to recognize archaeological sites and artifacts and what steps shall be taken to avoid impacts to those sites and artifacts. In addition, campus employees whose work routinely involves disturbing the soil shall be informed how to recognize evidence of potential archaeological sites and artifacts. Prior to disturbing the soil, contractors shall be notified that they are required to watch for potential archaeological sites and artifacts and to notify the UC Davis Office of Campus Planning and Environmental Stewardship if any are found. In the event of a find, the campus shall implement item (5), below.</p>	<p>notified when they are required to watch for potential archaeological sites and attend a training session to be provided by a qualified archaeologist.</p>			
	<p>2) For project sites requiring a moderate or intensive level of investigation, a surface survey shall be conducted by a qualified archaeologist once the area of ground disturbance has been identified and prior to soil disturbing activities. For sites requiring moderate investigation, in the event of a surface find, intensive investigation will be implemented, as per item (3), below. Irrespective of findings, the qualified archaeologist shall, in consultation with the UC Davis Office of Campus Planning and Environmental Stewardship, develop an archaeological monitoring plan to be implemented during the construction phase of the project. If the project site is located within the zone of archaeological sensitivity or it is recommended by the archaeologists, the campus shall notify the appropriate Native American tribe and extend an invitation for monitoring. The frequency and duration of monitoring</p>	<p>A surface survey shall be conducted by a qualified archaeologist.</p>	<p>DE</p>	<p>During project design, prior to construction.</p>	<p>UC Davis Campus Planning and Environmental Stewardship</p>

NI = No impact

B = Beneficial

LTS = Less than significant

PS = Potential significant

S = Significant

SU = Significant and unavoidable

**Table OPR ES-2 Orchard Park Redevelopment Mitigation Monitoring and Reporting Program**

Impact	Mitigation Measure	Monitoring and Reporting Procedure	Timing	Verification	
<p><b>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=occupancy; OP=operation</b></p>					
	<p>shall be adjusted in accordance with survey results, the nature of construction activities, and results during the monitoring period. A written report of the results of the monitoring will be prepared and filed with the appropriate Information Center of the California Historical Resources Information System. In the event of a discovery, the campus shall implement item (5), below.</p>				
	<p>3) For project sites requiring intensive investigation, irrespective of surface finds, the campus shall retain a qualified archaeologist to conduct a subsurface investigation of the project site, to ascertain whether buried archaeological materials are present and, if so, the extent of the deposit relative to the project's area of effects. If an archaeological deposit is discovered, the archaeologist will prepare a site record and a written report of the results of investigations and filed with the appropriate Information Center of the California Historical Resources Information System. If it is determined that the resource extends into the project's area of effects, the resource will be evaluated by a qualified archaeologist, who will determine whether it qualifies as a historical resource or a unique archaeological resource under the criteria of CEQA Guidelines § 15064.5. If the resource does not qualify, or if no resource is present within the project's area of effects, this will be noted in the environmental document and no further mitigation is required unless there is a discovery during construction. In the event of a discovery item (5), below shall be implemented.</p>	<p>A qualified archaeologist shall conduct a subsurface investigation for projects needing intensive investigation.</p>	<p>DE</p>	<p>During project design, prior to construction.</p>	<p>UC Davis Campus Planning and Environmental Stewardship</p>
	<p>4) If archaeological material within the project's area of effects is determined to qualify as an historical resource or a unique archaeological resource (as defined by CEQA), the UC Davis Office of Campus Planning and Environmental Stewardship shall consult with the qualified archaeologist to consider means of avoiding or reducing ground disturbance within the site boundaries, including minor modifications of building footprint, landscape modification, the placement of protective fill, the establishment of a preservation easement, or other means that will permit avoidance or substantial preservation in place of the resource. If avoidance or substantial preservation in place is not possible, the campus shall implement Mitigation Measure 3.4-1b.</p>	<p>Coordination by UC Davis with a qualified archaeologist regarding appropriate treatment methods that will be incorporated into project design and construction.</p>	<p>DE</p>	<p>During project design, prior to construction.</p>	<p>UC Davis Campus Planning and Environmental Stewardship</p>
	<p>5) If archaeological material is discovered during construction (whether or not an archaeologist is present), all soil disturbing work within 100 feet of the find shall cease. The UC Davis Office of Campus Planning and Environmental Stewardship shall contact a qualified archaeologist to provide and implement a plan for survey,</p>	<p>If archaeological material is discovered during construction (whether or not an archaeologist is</p>	<p>CO</p>	<p>During construction activities</p>	<p>UC Davis Campus Planning and Environmental Stewardship</p>

NI = No impact      B = Beneficial      LTS = Less than significant      PS = Potential significant      S = Significant      SU = Significant and unavoidable

**Table OPR ES-2 Orchard Park Redevelopment Mitigation Monitoring and Reporting Program**

Impact	Mitigation Measure	Monitoring and Reporting Procedure	Timing	Verification	
<b>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=occupancy; OP=operation</b>					
	subsurface investigation as needed to define the deposit, and assessment of the remainder of the site within the project area to determine whether the resource is significant and would be affected by the project. Mitigation Measure 3.4-1a, steps (3) and (4) shall be implemented.	present), all soil disturbing work within 100 feet of the find shall cease.			
	<p><b>2018 LRDP Mitigation Measure 3.4-1b: Protect known unique archaeological resources.</b>                      For an archaeological site that has been determined by a qualified archaeologist to qualify as a unique archaeological resource through the process set forth under Mitigation Measure 3.4-1a, and where it has been determined under Mitigation Measure 3.4-1a that avoidance or preservation in place is not feasible, a qualified archaeologist, in consultation with the UC Davis Office of Campus Planning and Environmental Stewardship, and Native American tribes as applicable, shall:</p> <ol style="list-style-type: none"> <li>1) Prepare a research design and archaeological data recovery plan for the recovery that will capture those categories of data for which the site is significant, and implement the data recovery plan prior to or during development of the site.</li> <li>2) Perform appropriate technical analyses, prepare a full written report and file it with the appropriate information center, and provide for the permanent curation of recovered materials.</li> <li>3) If, in the opinion of the qualified archaeologist and in light of the data available, the significance of the site is such that data recovery cannot capture the values that qualify the site for inclusion on the CRHR, the UC Davis Office of Campus Planning and Environmental Stewardship shall reconsider project plans in light of the high value of the resource, and implement more substantial modifications to the proposed project that would allow the site to be preserved intact, such as project redesign, placement of fill, or project relocation or abandonment. If no such measures are feasible, the campus shall implement Mitigation Measure 3.4-1c.</li> </ol>	Retain qualified archaeologist who shall perform work as specified.	SS DE	During site selection and/or project design.	UC Davis Campus Planning and Environmental Stewardship
<b>3.5 Biological Resources</b>					
<b>Impact 3.5-1: Impacts to Swainson's hawk and other nesting raptors.</b>	<p><b>OPR Mitigation Measure 3.5-1: Avoidance of Swainson's hawk and other nesting raptors.</b>                      Implement 2018 LRDP Mitigation Measure 3.5-4a.</p> <p><b>2018 LRDP Mitigation Measure 3.5-4a: Avoidance of Swainson's hawk and other nesting raptors.</b>                      For any projects implemented under the 2018 LRDP that would require the removal of mature trees, the following measures will be implemented prior to initiation of construction to avoid, minimize, and fully mitigate impacts to Swainson's hawk, as well as other special-status raptors:</p>	Conduct survey of potential active nest trees on and adjacent to the project site during breeding season, prior to construction. If active nests are found in a tree that must be	SS DE	During breeding season, prior to commencement of construction; and outside of nesting season.	UC Davis Campus Planning and Environmental Stewardship

NI = No impact      B = Beneficial      LTS = Less than significant      PS = Potential significant      S = Significant      SU = Significant and unavoidable

**Table OPR ES-2 Orchard Park Redevelopment Mitigation Monitoring and Reporting Program**

Impact	Mitigation Measure	Monitoring and Reporting Procedure	Timing	Verification	
<p><b>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=occupancy; OP=operation</b></p>					
	<ol style="list-style-type: none"> <li>1) Before tree removal occurs, a qualified biologist will determine whether it has been previously recorded or used as a Swainson’s hawk or other special-status raptors nest tree. If it is not known to have supported Swainson’s hawks or other special-status raptors in the past, the tree will be removed when no active nests are present, generally between September 2 and February 14 if feasible. If the tree to be removed is known to have supported nesting Swainson’s hawk or other special-status raptors in the past, UC Davis will implement measures to prevent the potential the net loss of Swainson’s hawk or other special-status raptors territories, which may include providing alternative nest trees or protected habitat. UC Davis will consult with CDFW prior to removal of the nest tree and obtain take authorization under Section 2081 of the Fish and Game Code if needed.</li> <li>2) For construction activities, including tree removal, that begin between February 15 and September 1, qualified biologists will conduct preconstruction surveys for Swainson’s hawk and other nesting raptors to identify active nests on and within 0.5 mile of the project site. The surveys will be conducted before the beginning of any construction activities between February 15 and September 1.</li> <li>3) Impacts to nesting Swainson’s hawks and other raptors will be avoided by establishing appropriate buffers around active nest sites identified during preconstruction raptor surveys. Project activity will not commence within the buffer areas until a qualified biologist has determined, in coordination with CDFW, that the young have fledged, the nest is no longer active, or that reducing the buffer would not likely result in nest abandonment. CDFW guidelines recommend implementation of 0.25-mile-wide buffer for Swainson’s hawk and 500 feet for other raptors, but the size of the buffer may be adjusted if a qualified biologist and UC Davis, in consultation with CDFW, determine that such an adjustment would not be likely to adversely affect the nest. Monitoring of the nest by a qualified biologist during and after construction activities will be required if the activity has potential to adversely affect the nest.</li> <li>4) Trees will not be removed during the breeding season for nesting raptors unless a survey by a qualified biologist verifies that there is not an active nest in the tree.</li> </ol>	<p>removed, document findings. Remove the tree outside of the nesting season.</p>			
<p><b>Impact 3.5-2: Impacts to palid bats</b></p>	<p><b>OPR Mitigation Measure 3.5-2: Preconstruction bat survey and exclusion.</b> Implement 2018 LRDP Mitigation Measure 3.5-8b. <b>2018 LRDP Mitigation Measure 3.5-8b: Bat preconstruction surveys, exclusion, and mitigation.</b></p>	<p>Conduct survey and document findings. Prepare and implement a plan to avoid and protect</p>	<p>SS DE</p>	<p>During project siting or design state, prior to final project approval</p>	<p>UC Davis Campus Planning and Environmental Stewardship</p>

NI = No impact      B = Beneficial      LTS = Less than significant      PS = Potential significant      S = Significant      SU = Significant and unavoidable

**Table OPR ES-2 Orchard Park Redevelopment Mitigation Monitoring and Reporting Program**

Impact	Mitigation Measure	Monitoring and Reporting Procedure	Timing	Verification	
<p><b>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=occupancy; OP=operation</b></p>					
	<p>The following mitigation measure will apply to construction of the project to reduce impacts on bats:</p> <ol style="list-style-type: none"> <li>1) Before commencing any structure or tree removal activities, a qualified biologist will conduct surveys for roosting bats. If evidence of bat use is observed, the species and number of bats using the roost will be determined. Bat detectors may be used to supplement survey efforts. If no evidence of bat roosts is found, then no further study and no mitigation will be required.</li> <li>2) If pallid bats are found, bats will be excluded from the roosting site before the tree or structure is removed. Exclusion efforts may be restricted during periods of sensitive activity (e.g., during hibernation or while females in maternity colonies are nursing young). Once, it is confirmed that bats are not present in the original roost site, the tree or structure may be removed. A mitigation program identifying exclusion methods and roost removal procedures will be developed by a qualified biologist in consultation with CDFW before implementation.</li> </ol>	<p>potential bat roosting sites.</p>		<p>not more than 30 days prior to the start of construction.</p>	
<p><b>Impact 3.5-3: Conflict with local policies or ordinances related to the protection of biological resources.</b></p>	<p><b>OPR Mitigation Measure 3.5-3: Tree surveys and tree removal mitigation.</b> Implement 2018 LRDP Mitigation Measure 3.5-11. <b>2018 LRDP Mitigation Measure 3.5-11: Tree surveys and tree removal mitigation.</b> Before a project is approved, UC Davis will perform a tree survey of the project site. The Office of Campus Planning and the Office of Environmental Stewardship and Design and Construction Management will provide input about tree classifications and will modify project design to avoid important trees if feasible. If a project cannot avoid an important tree, the following measures will apply:</p> <ol style="list-style-type: none"> <li>1) If a project would necessitate removal of a heritage tree, replacement plantings of the same species will be provided by UC Davis at a ratio of 3:1 within two years of removal.</li> <li>2) If a project would necessitate removal of a Specimen Tree, the project will relocate the tree if feasible, or will replace the tree with the same species or species of comparable value (relocation or replacement will occur within the project site if feasible).</li> </ol>	<p>Conduct surveys and document findings. Include specified avoidance and control measures in construction specifications.</p>	<p>DE</p>	<p>Prior to construction.</p>	<p>UC Davis Campus Planning and Environmental Stewardship</p>
		<p>Identify appropriate location to relocate or replace tree with specified ratio.</p>	<p>CO</p>	<p>Relocate during construction activities; replace within two years of removal.</p>	<p>UC Davis Design and Construction Management</p>
<p><b>3.7 Geology, Soils, and Seismicity</b></p>					
<p><b>Impact 3.7-1: Potential for soil erosion associated with long-term operations and maintenance activities.</b></p>	<p><b>OPR Mitigation Measure 3.7-1: Manage stormwater flows to reduce soil erosion.</b> Implement 2018 LRDP Mitigation Measure 3.7-4. <b>2018 LRDP Mitigation Measure 3.7-4: Manage stormwater flows to reduce soil erosion.</b></p>	<p>Prepare drainage study and document findings. If runoff would exceed capacity of existing</p>	<p>DE</p>	<p>During project design and prior to project approval.</p>	<p>UC Davis Design and Construction Management; UC Davis Campus</p>

NI = No impact

B = Beneficial

LTS = Less than significant

PS = Potential significant

S = Significant

SU = Significant and unavoidable

**Table OPR ES-2 Orchard Park Redevelopment Mitigation Monitoring and Reporting Program**

Impact	Mitigation Measure	Monitoring and Reporting Procedure	Timing		Verification
<p><b>Project stage at which implementation of the measure is required</b> - SS=site selection; DE=detailed project planning or project design prior to project approval; CO=construction; OC=occupancy; OP=operation</p>					
	<p>Prior to approval of individual projects proposed under the 2018 LRDP, UC Davis shall conduct a drainage study in the vicinity of the site proposed for development to determine if the development could produce additional runoff that may exceed the capacity of campus stormwater infrastructure, cause localized ponding to worsen, or increase the potential for property damage from flooding. Recommendations identified in the drainage study shall be incorporated into project design such that any projected increase in surface water runoff is detained/retained in accordance with applicable requirements and does not exceed current flow rates. Measures may include, but are not limited to, installation of detention/retention basins to capture and manage water, installation of water-retaining landscaping or green-roof features, modifications to existing stormwater capture/conveyance systems, and/or other measures at project-level or campus-wide to capture and manage stormwater.</p>	<p>campus storm drainage system, implement necessary and feasible improvements.</p>			<p>Planning and Environmental Stewardship</p>
<p><b>3.9 Hazards and Hazardous Materials</b></p>					
<p><b>Impact 3.9-1: Result in the release of hazardous materials from a site of known or potential contamination.</b></p>	<p><b>OPR Mitigation Measure 3.9-1a: Minimize Site-specific investigation and work plan implementation.</b>                      Implement 2018 LRDP Mitigation Measure 3.9-2a.  <b>2018 LRDP Mitigation Measure 3.9-2a: Site-specific investigation and work plan implementation.</b>                      Where initial investigations indicate the potential for contamination, UC Davis shall conduct soil sampling within the boundaries of the plan area prior to initiation of grading or other groundwork. This investigation will follow the American Society for Testing and Materials standards for preparation of a Phase II Environmental Site Assessment and/or other appropriate testing guidelines. If the results indicate that contamination exists at levels above regulatory action standards, then the site will be remediated in accordance with recommendations made by applicable regulatory agencies, including YCEHD, RWQCB, and DTSC. The agencies involved shall depend on the type and extent of contamination.                      Based on the results and recommendations of the investigation described above, UC Davis shall prepare a work plan that identifies any necessary remediation activities, including excavation and removal of on-site contaminated soils, and redistribution of clean fill material within the plan area. The plan shall include measures that ensure the safe transport, use, and disposal of contaminated soil removed from the site.</p>	<p>Conduct survey and document findings. Conduct remediation activities as necessary.</p>	<p>DE</p>	<p>During project planning phase. Remediation prior to ground-disturbing construction.</p>	<p>UC Davis Campus Planning and Environmental Stewardship, UC Davis Safety Services</p>

NI = No impact      B = Beneficial      LTS = Less than significant      PS = Potential significant      S = Significant      SU = Significant and unavoidable

**Table OPR ES-2 Orchard Park Redevelopment Mitigation Monitoring and Reporting Program**

Impact	Mitigation Measure	Monitoring and Reporting Procedure	Timing		Verification
<p><b>Project stage at which implementation of the measure is required</b> - SS=site selection; DE=detailed project planning or project design prior to project approval; CO=construction; OC=occupancy; OP=operation</p>					
	<p><b>OPR Mitigation Measure 3.9-1b: Hazardous Materials Contingency Plan.</b>                      Implement 2018 LRDP Mitigation Measure 3.9-2b.  <b>2018 LRDP Mitigation Measure 3.9-2b: Hazardous materials contingency plan.</b>                      Prior to initiation of grading or other groundwork, UC Davis shall provide a hazardous materials contingency plan to Campus Safety Services and YCEHD, as appropriate. The plan will describe the necessary actions that would be taken if evidence of contaminated soil or groundwater is encountered during construction. The contingency plan shall identify conditions that could indicate potential hazardous materials contamination, including soil discoloration, petroleum or chemical odors, and presence of underground storage tanks or buried building material.                      If at any time during the course of construction, evidence of soil and/or groundwater contamination with hazardous material is encountered, UC Davis shall immediately halt construction and contact Campus Safety Services and YCEHD. Work shall not recommence until the discovery has been assessed/treated appropriately (through such mechanisms as soil or groundwater sampling and remediation if potentially hazardous materials are detected above threshold levels) to the satisfaction of YCEHD, RWQCB, and DTSC (as applicable).                      The plan, and obligations to abide by and implement the plan, shall be incorporated into the construction and contract specifications of the project.</p>	<p>Prepare hazardous materials contingency plan.</p>	<p>DE</p>	<p>During project design before project approval.</p>	<p>UC Davis Campus Planning and Environmental Stewardship; UC Davis Safety Services</p>
		<p>Monitor construction site, perform testing, and consult with Campus Safety Services and YCEHD, as necessary.</p>	<p>CO</p>	<p>Inspect construction site during earth moving activities.</p>	<p>UC Davis Campus Planning and Environmental Stewardship; UC Davis Safety Services</p>
<p><b>Impact 3.9-2: Impair implementation of, or physically interfere with, an adopted emergency response plan or emergency evacuation plan.</b></p>	<p><b>OPR Mitigation Measure 3.9-2: Prepare and implement site-specific construction traffic management plan.</b>                      Implement 2018 LRDP Mitigation Measure 3.9-6.  <b>2018 LRDP Mitigation Measure 3.9-6. Prepare and implement site-specific construction traffic management plans.</b>                      UC Davis shall prepare and implement site-specific construction traffic management plans for any construction effort that would require work within existing roadways. To the extent feasible, the campus shall maintain at least one unobstructed lane in both directions on campus roadways during construction activities. At any time only a single lane is available due to construction-related road closures, the campus shall provide a temporary traffic signal, signal carriers (i.e., flag persons), or other appropriate traffic controls to allow travel in both directions. If construction activities require the complete closure of a roadway, the campus shall provide appropriate signage indicating alternative routes. To ensure adequate access for emergency vehicles when construction projects would result in temporary lane or roadway closures, the campus shall inform emergency services,</p>	<p>Develop and implement a traffic management plan.</p>	<p>CO</p>	<p>Prior to construction.</p>	<p>UC Davis Design and Construction Management; UC Davis Campus Planning and Environmental Stewardship</p>

NI = No impact      B = Beneficial      LTS = Less than significant      PS = Potential significant      S = Significant      SU = Significant and unavoidable

**Table OPR ES-2 Orchard Park Redevelopment Mitigation Monitoring and Reporting Program**

Impact	Mitigation Measure	Monitoring and Reporting Procedure	Timing		Verification
<p><b>Project stage at which implementation of the measure is required</b> - SS=site selection; DE=detailed project planning or project design prior to project approval; CO=construction; OC=occupancy; OP=operation</p>					
<p>including the UC Davis Police Department, UC Davis Fire Department, and American Medical Response, of the closures and alternative travel routes.</p>					
<p><b>3.10 Hydrology and Water Quality</b></p>					
<p><b>Impact 3.10-2: On-site and off-site flood-related impacts.</b></p>	<p><b>OPR Mitigation Measure 3.10-2: Manage stormwater flows to reduce soil erosion.</b> Implement 2018 LRDP Mitigation Measure 3.7-4.</p>	<p>See OPR Mitigation Measure 3.7-1.</p>	<p>See OPR Mitigation Measure 3.7-1.</p>	<p>See OPR Mitigation Measure 3.7-1.</p>	<p>See OPR Mitigation Measure 3.7-1.</p>
<p><b>3.12 Noise</b></p>					
<p><b>Impact 3.12-1: Construction noise.</b></p>	<p><b>OPR Mitigation Measure 3.12-1: Reduce construction noise.</b> Implement 2018 LRDP Mitigation Measure 3.12-1. <b>2018 LRDP Mitigation Measure 3.12-1: Reduce construction noise.</b> For all construction activities, UC Davis shall 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 activity shall be limited to the daytime hours between 7:00 a.m. and 7:00 p.m. on weekdays and between 8:00 a.m. and 8:00 p.m. on weekends and holidays, where possible.</li> <li>2) All construction equipment and equipment staging areas shall be located as far as possible from nearby noise-sensitive land uses, and/or located to the extent feasible such that existing or constructed noise attenuating features (e.g., temporary noise wall or blankets) block line-of-site between affected noise-sensitive land uses and construction staging areas.</li> <li>3) All construction equipment shall be properly maintained and equipped with noise-reduction intake and exhaust mufflers and engine shrouds, in accordance with manufacturer recommendations. Equipment engine shrouds shall be closed during equipment operation.</li> <li>4) Individual operations and techniques shall be replaced with quieter procedures (e.g., using welding instead of riveting, mixing concrete off-site instead of on-site) where feasible and consistent with building codes and other applicable laws and regulations.</li> <li>5) Stationary noise sources such as generators or pumps shall be located 100 feet away or more from noise-sensitive land uses, as feasible.</li> <li>6) Loud construction activity (i.e., construction activity such as jackhammering, concrete sawing, asphalt removal, and large-scale grading operations) shall not be</li> </ol>	<p>Include measures in contract specifications. Inspect construction site to verify that measures are being implemented.</p>	<p>CO</p>	<p>During construction.</p>	<p>UC Davis Design and Construction Management; UC Davis Campus Planning and Environmental Stewardship</p>

NI = No impact      B = Beneficial      LTS = Less than significant      PS = Potential significant      S = Significant      SU = Significant and unavoidable

**Table OPR ES-2 Orchard Park Redevelopment Mitigation Monitoring and Reporting Program**

Impact	Mitigation Measure	Monitoring and Reporting Procedure	Timing	Verification
<p><b>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=occupancy; OP=operation</b></p>				
	<p>scheduled during finals week and preferably during holidays, summer/winter break, Thanksgiving break, and spring break.</p> <p>7) No less than one week prior to the start of construction activities at a particular location, notification shall be provided to academic, administrative, and residential uses located within 100 feet of the construction site.</p> <p>8) When construction would occur within 100 feet of sensitive receptors and may result in temporary noise levels in excess of 86 dBA L<sub>max</sub> at the exterior of the adjacent receptor, temporary noise barriers (e.g., noise-insulating blankets or temporary plywood structures) shall be erected that reduce construction-related noise levels to less than 86 dBA L<sub>max</sub> at the receptor.</p> <p>9) For any construction activity that must extend beyond the daytime hours of 7:00 a.m. and 7:00 p.m. on weekdays and between 8:00 a.m. and 8:00 p.m. on weekends and occur within 1,120 feet of a building where people sleep, UC Davis shall ensure that interior noise levels of 45 dBA L<sub>max</sub> are not exceeded at any receiving land use by not exceeding 70 dBA L<sub>max</sub> at the receiving land use property line. Typical residential structures with windows closed achieve a 25-30 dBA exterior-to-interior noise reduction (Caltrans 2002). Thus, using the lower end of this range, an exterior noise level of 70 dBA L<sub>max</sub> would ensure interior noise levels do not result in an increased risk for sleep disturbance. To achieve this performance standard, the following measures shall be implemented:</p> <p>a) Use of noise-reducing enclosures and techniques around stationary noise-generating equipment (e.g., concrete mixers, generators, compressors).</p> <p>b) Installation of temporary noise curtains installed as close as possible to the boundary of the construction site within the direct line of sight path of the nearby sensitive receptor(s) and consist of durable, flexible composite material featuring a noise barrier layer bounded to sound-absorptive material on one side. The noise barrier layer shall consist of rugged, impervious, material with a surface weight of at least one pound per square foot.</p> <p>c) 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 exterior noise levels of 70 dBA L<sub>max</sub>. Exceedances of noise standards shall result in immediate halt of construction until additional noise-reduction measures are implemented.</p>			

NI = No impact

B = Beneficial

LTS = Less than significant

PS = Potential significant

S = Significant

SU = Significant and unavoidable

**Table OPR ES-2 Orchard Park Redevelopment Mitigation Monitoring and Reporting Program**

Impact	Mitigation Measure	Monitoring and Reporting Procedure	Timing		Verification
<p><b>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=occupancy; OP=operation</b></p>					
<p><b>Impact 3.12-2: Increases in non-transportation noise sources.</b></p>	<p><b>OPR Mitigation Measure 3.12-2: Reduce noise exposure from new stationary noise sources.</b>                      Implement 2018 LRDP Mitigation Measure 3.12-2.  <b>2018 LRDP Mitigation Measure 3.12-2: Reduce noise exposure from new stationary noise sources.</b>                      During project design of individual projects proposed under the 2018 LRDP, UC Davis shall review and ensure that external mechanical equipment, including HVAC units associated with new/renovated buildings, incorporates features designed to reduce noise to below 63 dB Leq at any nearby building where people sleep. Design features may include, but are not limited to, locating equipment within equipment rooms or enclosures that incorporate noise reduction features, such as acoustical louvers, and exhaust and intake silencers. Equipment enclosures shall be oriented so that major openings (i.e., intake louvers, exhaust) are directed away from nearby noise-sensitive receptors.</p>	<p>Review project design for compliance with standards.</p>	<p>DE</p>	<p>Throughout project design and no later than project construction</p>	<p>UC Davis Design and Construction Management; UC Davis Campus Planning and Environmental Stewardship</p>
<p><b>3.16 Transportation and Circulation</b></p>					
<p><b>Impact 3.16-1: Freeway level of service impacts.</b></p>	<p><b>OPR Mitigation Measure 3.16-1: Implement TDM strategies to reduce peak hour vehicle trips on I-80.</b>                      Implement 2018 LRDP Mitigation Measure 3.16-1.  <b>2018 LRDP Mitigation Measure 3.16-1: Implement TDM strategies to reduce peak hour vehicle trips on I-80.</b>                      UC Davis shall use the 2016-2017 academic year as the baseline by which to determine 2018 LRDP-related growth in peak hour student and employee commute vehicle trips on I-80. During the 2018-2019 academic year and every two years thereafter, UC Davis shall determine the number of peak hour student and employee commute vehicle trips that utilize I-80. In instances where this figure exceeds baseline levels, UC Davis shall institute TDM strategies to reduce campus-related peak hour vehicle trips on I-80. This figure could be estimated from the results of the annual Campus Travel Survey administered by the UC Davis Institute of Transportation Studies. The implementation of TDM strategies shall reduce peak hour student and employee commute vehicle trips on I-80 equal to or below baseline levels. TDM strategies that would reduce peak hour vehicle trips on I-80 include strategies to reduce commute and business vehicle trips to and from campus using I-80. Specific potential TDM strategies include, but are not limited to, the following:                      ▲ expand public transit service, including additional regional service for UC Davis students and employees living off-campus and outside of Davis,</p>	<p>Document implementation of campus TDM strategies and progress. Detail any needed improvements to program.</p>	<p>OP</p>	<p>At least every three years.</p>	<p>UC Davis Transportation and Parking Services; UC Davis Campus Planning and Environmental Stewardship</p>

NI = No impact      B = Beneficial      LTS = Less than significant      PS = Potential significant      S = Significant      SU = Significant and unavoidable

**Table OPR ES-2 Orchard Park Redevelopment Mitigation Monitoring and Reporting Program**

Impact	Mitigation Measure	Monitoring and Reporting Procedure	Timing	Verification	
<p><b>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=occupancy; OP=operation</b></p>					
	<ul style="list-style-type: none"> <li>▲ support alternative congestion management policies/projects on I-80, including a toll for all vehicles utilizing I-80 across the Yolo Causeway,</li> <li>▲ implement a fair value commuting program, where fees charged to SOV commuters (e.g., through parking pricing) are tied to UC Davis vehicle trip reduction targets and fee revenue is rebated to non-SOV commuters, 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 peak hour vehicle trips on I-80 will be consistent with existing and planned TDM programs on campus, including the UC Davis TDM Plan currently in development. If these TDM strategies are not sufficient to reduce peak hour trips to baseline levels, additional TDM measures or adjustments to the measures above shall be implemented, as needed to reduce peak hour trips to baseline levels.</p>				
<p><b>Impact 3.16-4: Impacts to bicycle facilities</b></p>	<p><b>OPR Mitigation Measure 3.16-4a: Improve the east-west bicycle connection across the Orchard Park site between the SR 113 bike/pedestrian overcrossing and Orchard Park Drive.</b></p> <p>UC Davis shall improve the east-west bicycle connection across the Orchard Park site between the SR 113 bike/pedestrian overcrossing and Orchard Park Drive to accommodate project-generated bicycle and vehicle trips. Potential improvement alternatives include:</p> <ol style="list-style-type: none"> <li>1) Install a shared-use path on the south side of Orchard Park Circle between the SR 113 bike/pedestrian overcrossing and Orchard Park Drive, either as a conversion of the existing sidewalk facility or a new parallel facility south of the existing sidewalk. Realign the east overcrossing approach with the new shared-use path and retrofit the existing overcrossing access at Orchard Park Circle to form a 90-degree angle. Install a new bicycle crossing on Orchard Park Circle to connect the proposed internal north-south bike path with the new Orchard Park Circle shared-use path. Design of the path should consider potential effects on established vegetation on the south side of Orchard Park Circle.</li> <li>2) Provide on-street bicycle facilities (e.g., bike lanes, protected bike lanes, etc.) along Orchard Park Circle. Design the transition of Orchard Park Circle at the west entrance to</li> </ol>	<p>Improve facilities/operations as needed.</p>	<p>OC</p>	<p>Prior to occupancy of new Orchard Park dwelling units</p>	<p>UC Davis Campus Planning and Environmental Stewardship; UC Davis Design and Construction Management</p>

NI = No impact      B = Beneficial      LTS = Less than significant      PS = Potential significant      S = Significant      SU = Significant and unavoidable

**Table OPR ES-2 Orchard Park Redevelopment Mitigation Monitoring and Reporting Program**

Impact	Mitigation Measure	Monitoring and Reporting Procedure	Timing	Verification	
<p><b>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=occupancy; OP=operation</b></p>					
	<p>the proposed parking lot to prioritize bicycle access and safety. Use of a roundabout, slip ramp, t-intersection for cars, or other type of mode separation may be appropriate.</p> <p>3) Replace the existing bike lanes with a two-way Class IV cycletrack on the south side of Orchard Park Circle. This option may require reconstruction of the north or south curb and gutter to ensure adequate right-of-way for two travel lanes and the cycletrack.</p> <p>4) Modify the site plan to close Orchard Park Circle to vehicle traffic. Remove the existing speeds humps and convert Orchard Park Circle to bicycle-only. Restructure the internal circulation network to allow for a centralized vehicle loading and parking access configuration, including an internal east-west vehicle connection between Orchard Park Drive and the proposed large resident parking lot. For internal roadways, consider utilizing shared-space design principles to encourage low vehicle speeds and activate use of the roadways as a communal space.</p> <p>5) Close Orchard Park Circle to vehicle traffic. Remove the existing speeds humps and convert Orchard Park Circle to bicycle-only.</p> <p>6) UC Davis shall modify the existing traffic control along Orchard Road/Orchard Park Circle, including at the Orchard Road/Orchard Park Drive intersection, as the volume and mix of traffic changes to provide a desirable environment for walking and bicycling. Implementation of any one of alternatives 1 through 5, together with the implementation of alternative 6, would enhance the east-west bicycle connection across the Orchard Park site between the SR 113 bike/pedestrian overcrossing and Orchard Park Drive. New shared-use paths should be sufficiently sized to prevent crowding and minimize the potential for conflicts between bicyclists and pedestrians. The bicycle facility improvements described above should be constructed prior to the occupancy of new Orchard Park dwelling units.</p>				
	<p><b>OPR Mitigation Measure 3.16-4b: Improve the Russell Boulevard shared-use path between the SR 113 northbound ramps and La Rue Road.</b></p> <p>UC Davis shall improve the Russell Boulevard shared-use path between the SR 113 northbound ramps and La Rue Road to accommodate project-generated bicycle and pedestrian trips traveling to central campus. Potential improvement alternatives include:</p> <p>1) Widen the existing shared-use path to accommodate bicyclists and pedestrians within a shared facility. Consider installing special pavement treatment or striping to clearly demarcate pedestrian and bicycle zones.</p> <p>2) Physically separate bicyclists and pedestrians by constructing new pedestrian pathways parallel to the existing shared-use path.</p>	<p>Improve facilities/operations as needed.</p>	<p>OC</p>	<p>Prior to occupancy of new Orchard Park dwelling units</p>	<p>UC Davis Campus Planning and Environmental Stewardship; UC Davis Design and Construction Management</p>

NI = No impact      B = Beneficial      LTS = Less than significant      PS = Potential significant      S = Significant      SU = Significant and unavoidable

**Table OPR ES-2 Orchard Park Redevelopment Mitigation Monitoring and Reporting Program**

Impact	Mitigation Measure	Monitoring and Reporting Procedure	Timing	Verification	
<p><b>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=occupancy; OP=operation</b></p>					
	<p>3) Install pedestrian-scale lighting to improve visibility.                      4) Reconfigure the Russell Boulevard bike path east approach to Orchard Park Drive so that the bike path approach intersects Orchard Park Drive at a 90-degree angle. The reconfiguration should maintain horizontal curves to slow bicyclists approaching Orchard Park Drive.                      Implementation of any one of alternatives 1 through 3, together with the implementation of alternative 4, would enhance the Russell Boulevard shared-use path between the SR 113 northbound ramps and La Rue Road. New shared-use paths should be sufficiently sized to prevent crowding and minimize the potential for conflicts between bicyclists and pedestrians. The bicycle facility improvements described above should be constructed prior to the occupancy of new Orchard Park dwelling units.</p>				
	<p><b>OPR Mitigation Measure 3.16-4c: Improve the north-south bicycle connection between the Orchard Park site and the Health Sciences District.</b>                      UC Davis shall improve the north-south bicycle connection between the Orchard Park site and the Health Sciences District. Potential improvement alternatives include:                      1) Install new bicycle facilities on Orchard Park Drive between Orchard Park Circle and Extension Center Drive, on Extension Center Drive between Orchard Park Drive and the UC Davis Student Farm, and on the connecting unnamed road between Extension Center Drive and Hutchison Drive. New bicycle facilities could include a mixture of on-street bike lanes and off-street shared-use paths, as feasible. From Hutchison Drive, bicyclists would connect with the existing bike lanes on Health Science Drive into the Health Sciences District.                      2) Install new bicycle facilities on Orchard Park Drive between Orchard Park Circle and Extension Center Drive and on Extension Center Drive between Orchard Park Drive and Hutchison Drive. From Hutchison Drive, bicyclists would connect with the existing shared-use path on La Rue Road. New bicycle facilities could include a mixture of on-street bike lanes and off-street shared-use paths, as feasible.                      3) Install new shared-use path from Orchard Park Circle to the Hutchison Drive/Health Science Drive intersection. The path could parallel the SR 113 frontage or traverse through the student farms.                      Implementation of any one of alternatives 1 through 3 would provide a contiguous north-south bicycle route for project-generated bicycle trips traveling to the Health Sciences District. The bicycle facility improvements described above should be constructed prior to the occupancy of new Orchard Park dwelling units.</p>	<p>Improve facilities/operations as needed.</p>	<p>OC</p>	<p>Prior to occupancy of new Orchard Park dwelling units</p>	<p>UC Davis Campus Planning and Environmental Stewardship; UC Davis Design and Construction Management</p>

NI = No impact      B = Beneficial      LTS = Less than significant      PS = Potential significant      S = Significant      SU = Significant and unavoidable

**Table OPR ES-2 Orchard Park Redevelopment Mitigation Monitoring and Reporting Program**

Impact	Mitigation Measure	Monitoring and Reporting Procedure	Timing		Verification
<b>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=occupancy; OP=operation</b>					
<b>Impact 3.16-5: Impacts to pedestrian facilities.</b>	<b>OPR Mitigation Measure 3.16-5: Construct new pedestrian facilities to close existing pedestrian network gaps.</b> UC Davis shall construct new pedestrian facilities and close pedestrian network gaps in the following locations: 1) The north side of Orchard Road between Orchard Park Drive and La Rue Road. 2) One or both sides of Orchard Park Drive between Orchard Road and Extension Center Drive. 3) One or both sides of Extension Center Drive between Orchard Park Drive and Hutchison Drive. The pedestrian facility improvements described above shall be constructed prior to the occupancy of new Orchard Park dwelling units.	Construct new pedestrian facilities	OC	Prior to occupancy of new Orchard Park dwelling units	UC Davis Campus Planning and Environmental Stewardship; UC Davis Design and Construction Management
<b>3.17 Utilities and Service Systems</b>					
<b>Impact 3.17-1: Require construction of new/expanded wastewater infrastructure</b>	<b>OPR Mitigation Measure 3.17-1: Upsize Sewer Line within Orchard Road.</b> Prior to operation of student housing at the Orchard Park site, UC Davis shall replace the existing 8-inch sewer line currently within Orchard Road with a 12-inch sewer line. The length of the line to be replaced is approximately 1,050 feet and extends between the Orchard Park site and the 12-inch sewer line within La Rue Road.	Replace existing sewer line with upsized line.	OC	Prior to occupancy of new Orchard Park dwelling units	UC Davis Campus Planning and Environmental Stewardship; UC Davis Design and Construction Management

NI = No impact      B = Beneficial      LTS = Less than significant      PS = Potential significant      S = Significant      SU = Significant and unavoidable

This page intentionally left blank.