

3 MITIGATION MONITORING AND REPORTING PROGRAM

In accordance with the California Environmental Quality Act (CEQA) Public Resources Code Section 21000 et seq.), UC Santa Cruz prepared an Environmental Impact Report (EIR) (State Clearinghouse No. 2020029086) that identified significant impacts related to: Aesthetics; Air Quality; Archaeological, Historical, and Tribal Cultural Resources; Biological Resources; Geology, Soils, and Seismicity; Greenhouse Gas Emissions and Climate Change; Hazards and Hazardous Materials; Hydrology and Water Quality; Noise; Population and Housing; Public Services; Transportation; Utilities and Service Systems; and Wildfire. Significant cumulative impacts would occur with respect to Air Quality; Historical Resources; Noise; Population and Housing; and Water Supply. The EIR also identifies mitigation measures that would reduce the identified impacts to a less-than-significant level, where feasible.

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 for the proposed project because the EIR identifies potential significant adverse impacts related to the project implementation, and mitigation measure have been identified to reduce those impacts. Adoption of the MMRP would occur along with approval of the 2021 LRDP.

3.1 PURPOSE OF MITIGATION MONITORING AND REPORTING PROGRAM

This MMRP has been prepared to ensure that all required mitigation measures are implemented and completed in a satisfactory manner prior to implementation of the proposed ordinance. The attached table has been prepared to assist the responsible parties in implementing the mitigation measures. The table identifies the impact, mitigation measures (as amended through the Final EIR), monitoring responsibility, mitigation timing, and provides space to confirm implementation of the mitigation measures. The numbering of mitigation measures follows the numbering sequence found in the EIR. Mitigation measures that are referenced more than once in the Draft EIR are not duplicated in the MMRP table.

3.2 ROLES AND RESPONSIBILITIES

Unless otherwise specified herein, UC Santa Cruz 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 Santa Cruz, 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 Santa Cruz Physical and Environmental Services Department, or designee, is the custodian of such documents for the 2021 LRDP. Inquiries should be directed to:

Erika Carpenter
Senior Environmental Planner
Email: eircomment@ucsc.edu

The location of this information is:

University of California, Santa Cruz
Physical and Environmental Services Department
Physical Planning, Development, and Operations

1156 High Street
Santa Cruz, CA 95064

UC Santa Cruz is responsible for overall administration of the MMRP and for verifying that UC Santa Cruz staff and/or the construction contractor has completed the necessary actions for each measure. The responsible party for implementation of each item will identify the staff members responsible for coordinating with UC Santa Cruz on the MMRP.

3.3 REPORTING

UC Santa Cruz shall, or may require the contractor(s) to, maintain records documenting compliance of the activity with the required mitigation measures. Information regarding inspections and other requirements shall be compiled and explained in the report. The report shall be designed to simply and clearly identify whether mitigation measures have been adequately implemented. At a minimum, each report shall identify the mitigation measures or conditions to be monitored for implementation, whether compliance with the mitigation measures or conditions has occurred, the procedures used to assess compliance, and whether further action is required.

3.4 MITIGATION MONITORING AND REPORTING PROGRAM TABLE

The categories identified in the attached MMRP table are described below.

- ▶ Impact – This column provides the verbatim text of the identified impact.
- ▶ Mitigation Measure – This column provides the verbatim text of the adopted mitigation measure.
- ▶ Mitigation Procedure – This column summarizes the steps to implement the mitigation measure.
- ▶ Mitigation Timing – This column identifies the time frame in which the mitigation will be implemented.
- ▶ Mitigation Responsibility – This column identifies the party responsible for implementing the mitigation.
- ▶ Monitoring and Reporting Procedure – This column identifies discrete actions to be implemented as part of the broader mitigation measure.

The following list of abbreviations are found in the MMRP table:

PPDO: Physical Planning, Development & Operations,

DAB: Design Advisory Board,

EH&S: Environmental Health and Safety,

TAPS: Transportation and Parking Services,

OES: Office of Emergency Services,

Grounds: Grounds Services,

CNR: Campus Natural Reserve,

CDFW: California Department of Fish and Game, and

USFWS: U.S. Fish and Wildlife Service.

Table 3-1 Mitigation Monitoring and Reporting Program

Impact	Mitigation Measure	Mitigation Procedure	Mitigation Timing	Mitigation Responsibility	Monitoring and Reporting Procedure
Aesthetics					
Impact 3.1-2: Result in Adverse Effects on the Aesthetic Quality of the Cowell Lime Works Historic District	Mitigation Measure 3.4-4a: Protect Cowell Lime Works Historic District (See the mitigation below under Impact 3.4-4)	As specified below.	As specified below.	As specified below.	As specified below.
Impact 3.1-3: Degrade Existing Visual Character or Quality	Mitigation Measure 3.1-3a: Require Setback Distance from Empire Grade UC Santa Cruz shall require that development located north of the Arboretum and Botanic Garden entrance under the 2021 LRDP, which could be seen from Empire Grade, include a minimum setback of 200 feet from Empire Grade. If establishment of a 200-foot buffer is not feasible, a vegetated barrier or screen that prevents a direct line of site between a resource and developed structures shall be provided. Vegetation shall be native to California and selected to match existing vegetation located nearby.	Require either the described setback or, if the setback is not feasible, a vegetated barrier or screen as described.	Prior to construction.	PPDO	Include the setback or vegetated barrier or screen in the design and document site specific considerations in the project file
	Mitigation Measure 3.1-3b: Implement Design Measures for Protection of Views Along Empire Grade Development within 500 feet of Empire Grade and west of the Santa Cruz city limits and the Arboretum and Botanic Garden within the UC Santa Cruz main residential campus shall be subject to review by the Campus Design Advisory Board to ensure that design of new facilities shall be visually unobtrusive and not unduly interfere with existing views. Review of future development by the Campus Design Advisory Board shall occur upon initial selection of sites. Design shall comply with standards set forth in the UC Santa Cruz Campus Standards Handbook and be generally consistent with the Physical Design Framework and Physical Planning Principles and Guidelines in the 2021 LRDP.	Implement design measures, as specified.	Following initial selection of sites	PPDO and DAB	Document design measures in the project file.
	Mitigation Measure 3.1-3c: Implement Design Measures for Protection of Views within Scenic Areas For any development within primary campus viewsheds identified as scenic areas, UC Santa Cruz shall require that siting, development patterns, and architecture is consistent with the 2021 LRDP Physical Planning Principles and Guidelines, including those related to building height and massing, in order to ensure that the visual character and quality of scenic areas are not substantially degraded. Primary campus viewsheds include primary views of the main residential campus	Implement design measures, as specified.	Following initial selection of sites	PPDO and DAB	Document design measures in the project file.

Impact	Mitigation Measure	Mitigation Procedure	Mitigation Timing	Mitigation Responsibility	Monitoring and Reporting Procedure
	<p>including the Great Meadow, East Meadow, and three smaller meadows (Porter, Crown, and Kerr), as well as prominent scenic views from Cowell College Plaza, the Arts area in the Academic Core, University House, the knoll at Porter College, and the field at Oakes College. Review of future developments by the Campus Design Advisory Board shall occur upon initial selection of sites. Design shall also comply with standards set forth in the UC Santa Cruz Campus Standards Handbook and be generally consistent with the Physical Design Framework.</p>				
<p>Impact 3.1-4: Create a New Source of Light or Glare</p>	<p>Mitigation Measure 3.1-4: Minimize Light and Glare Resulting from New Development UC Santa Cruz shall incorporate site-specific consideration of the orientation of the building, use of landscaping materials, and choice of primary façade materials to minimize potential off-site spillover of lighting and glare from new development. As part of this measure and prior to project approval, UC Santa Cruz shall require the incorporation of site- and project-specific design considerations to minimize light and glare including, but not limited to, the following:</p> <ul style="list-style-type: none"> ▶ The use of non-reflective exterior surfaces and non-reflective (mirrored) glass. ▶ Safety lighting along proposed pedestrian/bicycle pathways shall be limited to non-glare, downlit, low-bollard style lights that focus illumination to the pathway surface, consistent with the exterior lighting standards identified in the UC Santa Cruz Campus Standards Handbook. ▶ All new outdoor lighting shall 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>Consistent with the Illuminating Engineering Society of North America (IESNA) Lighting Handbook, installation of new lighting sources shall comply with the recommended "light trespass" standards for light spillover specific to the lighting environment in the project area (e.g., dark, low brightness, medium district brightness, and high district brightness) identified in the Illuminating Engineering Society of North America (IESNA) Lighting Handbook.</p>	<p>Incorporate site-specific considerations to minimize light and glare associated with new development as specified.</p>	<p>At the time of design review; prior to design approval</p>	<p>PPDO</p>	<p>Document site-specific considerations in the project file.</p>

Impact	Mitigation Measure	Mitigation Procedure	Mitigation Timing	Mitigation Responsibility	Monitoring and Reporting Procedure
Air Quality					
<p>Impact 3.3-1: Construction-Generated Emissions of Criteria Air Pollutants and Precursors</p>	<p>Mitigation Measure 3.3-1: Reduce Construction-Generated Emissions of NO_x Per contract specification requirements, UC Santa Cruz shall require that the contractor(s) develop and implement a plan demonstrating that the off-road equipment used on-site to construct 2021 LRDP projects would achieve a fleet-wide average 45 percent reduction in NO_x exhaust emissions, compared to uncontrolled aggregate statewide emission rates for similar equipment. One feasible plan to achieve this reduction would include the following:</p> <ul style="list-style-type: none"> ▶ At least 80 percent of diesel-powered off-road equipment operating on the project site for more than two days continuously shall be equipped with engines meeting US EPA emissions standards for Tier 3 engines or equivalent, and use of Tier 4 engines shall be encouraged; ▶ Use of renewable diesel or other zero emissions alternative (e.g., electric) construction equipment to the degree available and feasible; ▶ Plan construction projects such that multiple project components (i.e., bridge or roadway construction) will not occur on the same days; and ▶ Alternatively, if UC Santa Cruz can demonstrate through preparation of an air quality assessment report prepared by an air quality specialist that large or contemporaneous 2021 LRDP construction projects would not exceed MBARD thresholds, then the above mitigation requirements may be waived. 	<p>Contractor(s) will develop and implement a plan to reduce NO_x exhaust emissions as specified.</p>	<p>Prior to and throughout construction.</p>	<p>PPDO and contractor(s)</p>	<p>Plan will be reviewed and approved by PPDO. Contractor(s) will document compliance in the project mitigation monitoring report.</p>
<p>Impact 3.3-2: Operational Emissions of Criteria Air Pollutants and Precursors</p>	<p>Mitigation Measure 3.3-2: Reduce Operational Emissions of ROG and PM₁₀ from All Sources The majority of ROG emissions are a result of aerosolized and evaporation of consumer products, which include cleaning solutions, personal care products, and pesticides. The calculation of ROG emissions from consumer products was based on the ability to control personal products over the use of consumer products, such as personal care products and household cleaners used off-campus. However, UC Santa Cruz is responsible for facility-related purchases, such as commercial cleaning and sanitizing solutions. Additional</p>	<p>Implement measures to reduce operational emissions of ROG and PM₁₀ as specified.</p>	<p>During project design, prior to design approval, and during project operation.</p>	<p>PPDO, Grounds, and Sustainability Office</p>	<p>Document measures in final project plans and specifications. Document the mitigation strategy for on an annual basis.</p>

Impact	Mitigation Measure	Mitigation Procedure	Mitigation Timing	Mitigation Responsibility	Monitoring and Reporting Procedure
	<p>measures should also be taken to reduce ROG emissions from other sectors, such as mobile sources, landscaping equipment, and architectural coatings.</p> <p>As such, UC Santa Cruz shall make every effort to reduce ROG emissions generated under the 2021 LRDP. With respect to the new construction and operations that would occur under the 2021 LRDP, UC Santa Cruz shall implement the following measures for on-campus activities:</p> <ul style="list-style-type: none"> ▶ Use zero or low-VOC consumer products and cleaning supplies that exceed CARB's consumer product VOC standards (as defined in CCR Title 17, Division 3, Chapter 1, Subchapter 8.5, Articles 1 through 5), such as those using electrolyzed water, where available. ▶ Use zero-VOC architectural coatings with a VOC content no greater than 5 grams per liter. ▶ Increase the level of zero emission landscaping equipment over time, such as electric lawnmowers, leaf blowers, and chainsaws, to attain 95-100 percent of zero emission landscaping equipment use on campus. ▶ Choose zero emission vehicles for all new light-duty fleet purchases. ▶ Choose zero or low emission vehicles for all new heavy-duty fleet purchases, where available and feasible. ▶ Encourage the use of zero emission vehicles by installing electric vehicle charging stations in parking facilities. ▶ Reduce campus vehicle speed limits to the extent feasible and install traffic calming or signal coordination to reduce the intensity of vehicle braking and acceleration. 				
	<p>Mitigation Measure 3.16-2: Implement Transportation Demand Management (TDM) Program and Monitoring (See the mitigation below under Impact 3.16-2)</p>	As specified below.	As specified below.	As specified below.	As specified below.
<p>Impact 3.3-3: Conflict with or Obstruct Implementation of an Applicable Air Quality Plan</p>	<p>Mitigation Measure 3.3-2: Reduce Operational Emissions of ROG and PM₁₀ from All Sources (See the mitigation above under Impact 3.3-2)</p>	As specified above.	As specified above.	As specified above.	As specified above.

Impact	Mitigation Measure	Mitigation Procedure	Mitigation Timing	Mitigation Responsibility	Monitoring and Reporting Procedure
Archaeological, Historical, and Tribal Cultural Resources					
<p>Impact 3.4-1: Impacts to Unique Archaeological Resources</p>	<p>Mitigation Measure 3.4-1: Identify and Protect Unknown Archaeological Resources As early as possible in the project planning process for individual projects under the 2021 LRDP, UC Santa Cruz shall define the project’s area of effect for archaeological resources. UC Santa Cruz shall determine the potential for the proposed project to result in cultural resource impacts, based on the extent of ground disturbance and site modifications anticipated for the proposed project. UC Santa Cruz shall also review confidential resource records to determine whether complete intensive archaeological survey utilizing current techniques and practices, including consultation with a culturally-affiliated Native American tribe, has been performed on the site and whether any previously recorded cultural resources are present. UC Santa Cruz shall implement the following steps to identify and protect archaeological resources that may be present in the project’s area of effects:</p> <p>1) For project sites that have not been subject to a prior complete intensive archaeological survey, UC Santa Cruz shall ensure that a complete intensive surface survey is conducted by a qualified archaeologist, who meets the Secretary of the Interior’s Professional Qualification Standards in Archaeology, once the area of ground disturbance has been identified and prior to soil disturbing activities. Additionally, UC Santa Cruz shall notify the Amah Mutsun Tribal Band of the area not subject to an intensive survey and a tribal representative shall be invited to participate. If an archaeological deposit is discovered, the archaeologist will prepare a site record and file it with the California Historical Resource Information System. In the event of a find within the area of potential effects, UC Santa Cruz shall consult with a qualified archaeologist to design and conduct an archaeological subsurface investigation and/or a construction monitoring plan of the project site to ascertain the extent of the deposit relative to the project’s area of potential effects, to ensure that impacts to potential buried resources are avoided. If the qualified archaeologist determines that the archaeological material is Native American in origin and the qualified archaeologist assigned to the surveying and monitoring process is not an authorized representative of the Amah Mutsun Tribal Band, UC</p>	<p>Define the area of potential effects. Conduct records search to determine whether the project site has been surveyed and whether known resources are present.</p> <p>For sites that have not been subject to prior complete intensive archaeological survey, a qualified archaeologist will conduct a complete intensive surface survey of and prepare a site record if an archaeological deposit is discovered. UC Santa Cruz will invite a tribal representative of the Amah Mutsun Tribal Band to participate in the survey to either manage or co-manage the survey. If a find is located in the area of potential effects, a qualified archaeologist will design and conduct an archaeological subsurface investigation and/or a construction monitoring plan.</p>	<p>During planning and environmental review.</p> <p>Prior to the start of earth moving.</p>	<p>PPDO</p> <p>PPDO and qualified archaeologist</p> <p>PPDO</p>	<p>Document in the project file that the records search was conducted.</p> <p>If a site record is prepared, file it with the California Historical Resources Information System.</p> <p>Include the construction monitoring plan in the project file.</p> <p>Document in the project file that the tribal band was contacted and whether a tribal representative</p>

Impact	Mitigation Measure	Mitigation Procedure	Mitigation Timing	Mitigation Responsibility	Monitoring and Reporting Procedure
	<p>Santa Cruz and/or archaeologist shall consult with the Amah Mutsun Tribal Band in the process of designing a survey and monitoring program.</p> <p>2) Where native soils will be disturbed, UC Santa Cruz shall require contractor crews to attend an informal training session provided by UC Santa Cruz prior to the start of earth moving, regarding how to recognize archaeological 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 UC Santa Cruz if any are found. In the event of a discovery, UC Santa Cruz shall implement item (4), below.</p> <p>3) If it is determined that a known archaeological site extends into the project’s area of potential effects, UC Santa Cruz shall ensure that the resource is 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 Section 15064.4. This evaluation may require additional research, including subsurface testing, or avoidance measures, as described in item (5) below. If the archaeological resources is determined to be Native American in origin, and the qualified archaeologist performing the evaluation is not an authorized representative of the Amah Mutsun Tribal Band, the archaeologist shall consult and partner with the Amah Mutsun Tribal Band in the process of evaluating the significance and eligibility of the resource. If the resource does not qualify, or if no resource is present within the project’s area of effect, this will be reported in the environmental document and no further mitigation will be required unless there is a discovery during construction.</p> <p>4) If an archaeological resource is discovered during construction (whether or not an archaeologist is present), all soil disturbing work within 100 feet of the find shall cease. UC Santa Cruz 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</p>	<p>Provide training session.</p> <p>Qualified archaeologist will assess each identified resource for California Register of Historical Resources (CRHR) eligibility through research or testing.</p> <p>Include a stop-work requirement in bid documents.</p> <p>In the event of a find, a qualified archaeologist will assess to determine the extent and significance and will carry out data recovery as described in Mitigation Measure 3.4-1(2) and (3).</p>	<p>Prior to the start of earth moving.</p> <p>Prior to the start of earth moving.</p> <p>Prior to the beginning of construction.</p> <p>During construction.</p>	<p>PPDO</p> <p>PPDO</p> <p>PPDO</p> <p>PPDO</p>	<p>managed or co-managed the survey.</p> <p>Confirm that training was conducted.</p> <p>Document results of evaluation in environmental document.</p> <p>Confirm that a stop-work requirement is included in bid documents.</p> <p>See Mitigation Measure 3.4-1(2) and (3).</p> <p>Confirm that consultation has been conducted and that the project has been modified to avoid impacts or that Mitigation Measure</p>

Impact	Mitigation Measure	Mitigation Procedure	Mitigation Timing	Mitigation Responsibility	Monitoring and Reporting Procedure
	<p>would be affected by the project. If the archeological resource is determined to be Native American in origin, and the qualified archaeologist performing the evaluation is not an authorized representative of the Amah Mutsun Tribal Band, the archaeologist shall consult and partner with the Amah Mutsun Tribal Band in the process of planning a survey program and evaluating the significance and eligibility of the resource. Mitigation Measure 3.4-1(2) and (3) shall also be implemented.</p> <p>5) If archaeological material within the project’s area of effects is determined to qualify as a historical resource or a unique archaeological resource (as defined by CEQA), UC Santa Cruz 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 more substantial modifications where feasible that will permit avoidance or substantial preservation in place of the resource. If the archeological resource is determined to be Native American in origin, and the qualified archaeologist performing the evaluation is not an authorized representative of the Amah Mutsun Tribal Band, the archaeologist shall consult and partner with the Amah Mutsun Tribal Band in the process of planning a survey program and evaluating the significance and eligibility of the resource. If avoidance or substantial preservation in place is not possible, UC Santa Cruz shall implement Mitigation Measure 3.4-1(6).</p> <p>6) If avoidance or preservation in place is not possible for an archaeological site that has been determined to meet CEQA significance criteria, before the property is excavated, damaged, or destroyed, UC Santa Cruz shall retain a qualified archaeologist who meets the Secretary of the Interior’s Professional Qualification Standards in Archaeology. UC Santa Cruz is aware that the Amah Mutsun Tribal Band (AMTB) maintains a staff of registered professional archaeologists and tribal monitors who engage in cultural resource management through the tribe’s nonprofit organization, the Amah Mutsun Land Trust (AMLT). When selecting a qualified archaeologist for work that relates to archaeological resources on campus lands that are determined to</p>	<p>Consult with the qualified archaeologist to consider means to avoid or reduce ground disturbance within the site boundaries for archaeological material determined to qualify as a historical resource or a unique archaeological resource.</p> <p>If avoidance or preservation in place is not possible, a qualified archaeologist, in consultation with UC Santa Cruz and Native American tribes as applicable, will prepare a research design and will plan and conduct archaeological data recovery and monitoring. Prepare and file a written report.</p>	<p>During construction.</p> <p>Before the property is excavated, damaged, or destroyed.</p>	<p>PPDO</p> <p>PPDO</p>	<p>3.4-1(6) has been implemented.</p> <p>Ensure that appropriate technical analyses are performed, file the report with the California Historical Resources Information System, and provide for the permanent curation of recovered materials.</p> <p>Ensure that appropriate technical analyses are performed, file the report with the California Historical Resources Information System, and provide for the permanent curation of recovered materials.</p>

Impact	Mitigation Measure	Mitigation Procedure	Mitigation Timing	Mitigation Responsibility	Monitoring and Reporting Procedure
	<p>be Native American in origin, UC Santa Cruz will include AMTB/AMLT in notifications regarding forthcoming opportunities and contracts. The qualified archaeologist, in consultation with UC Santa Cruz and Native American tribes as applicable, shall prepare a research design, and plan and conduct archaeological data recovery and monitoring that will capture those categories of data for which the site is significant. UC Santa Cruz shall also ensure that appropriate technical analyses are performed, and a full written report prepared and filed with the California Historical Resources Information System; UC Santa Cruz shall also provide for the permanent curation of recovered materials.</p>				
<p>Impact 3.4-2: Substantial Adverse Change in the Significance of a Tribal Cultural Resource</p>	<p>Mitigation Measure 3.4-2: Protect Tribal Cultural Resources No less than 2 weeks prior to ground disturbance within 400 feet of a known prehistoric archaeological deposit (eight prehistoric archaeological sites are currently known to exist on the main residential campus), UC Santa Cruz shall notify the Amah Mutsun Tribal Band of the potential ground disturbance. As part of the notification, a Native American monitor of the Amah Mutsun Tribal Band will be provided an opportunity to monitor during ground disturbance for potential archaeological materials and human remains within 400 feet of a known prehistoric archaeological deposit. In addition, as described in Mitigation Measure 3.4-1(1), if a previously unknown prehistoric archaeological deposit is uncovered during construction, a Native American monitor of the Amah Mutsun Tribal Band will be provided the opportunity to monitor grading within 400 feet of the find. If the find is Native American in origin, the Amah Mutsun Tribal Band shall coordinate with UC Santa Cruz regarding appropriate treatment, including preparation and implementation of a formal treatment plan. As described in Mitigation Measure 3.4-1(5), the preferred method of treatment is avoidance and preservation of the resources in place, including, but not limited to, planning and construction to avoid the resources and protect the cultural and natural context, or planning greenspace, parks, or other open space, to incorporate the resources with culturally appropriate protection and management criteria. If avoidance or preservation is not possible, potential curation or reinterment (either on-site or at an appropriate off-site location, as designated and previously approved by the tribe), of the encountered tribal cultural resources would be coordinated and approved by the tribe.</p>	<p>Contact Amah Mutsun Tribal Band before potential ground disturbance within 400 feet of a known prehistoric archaeological deposit as specified.</p> <p>Coordinate with the Amah Mutsun Tribal Band regarding any finds that are Native American in origin and prepare and implement a formal treatment plan.</p> <p>If avoidance or preservation in place is not possible, potential curation or reinterment of the tribal cultural resources would be</p>	<p>Prior to ground disturbance.</p> <p>During project design and project-level environmental review.</p> <p>Before the resource is excavated, damaged, or destroyed.</p>	<p>PPDO</p> <p>PPDO</p> <p>PPDO</p>	<p>Document in the project file that the tribal band was contacted and whether a tribal representative requested to participate as a monitor.</p> <p>Confirm that consultation has been conducted and that the project has been modified to avoid impacts or that curation or reinterment of the resource has been conducted.</p> <p>Include the formal treatment plan in the project file.</p> <p>Confirm coordination and approval by the tribe of curation or reinterment.</p>

Impact	Mitigation Measure	Mitigation Procedure	Mitigation Timing	Mitigation Responsibility	Monitoring and Reporting Procedure
		coordinated and approved by the tribe.			
<p>Impact 3.4-4: Impacts to Historical Resources</p>	<p>Mitigation Measure 3.4-4a: Protect Cowell Lime Works Historic District During project-specific environmental review of development under the 2021 LRDP, UC Santa Cruz shall define the project’s area of effect for historic buildings and structures as early as possible. If the project is located within or adjacent to the Cowell Lime Works Historic District, UC Santa Cruz shall take the following measures into account in project design to preserve the historic visual quality of the historic district:</p> <ul style="list-style-type: none"> ▶ To the greatest extent feasible, a buffer of at least 200 feet shall be maintained between the boundaries of the Cowell Lime Works Historic District and new building development that would be visible against the backdrop of historic buildings from significant campus viewpoints. ▶ Any development, including new buildings, structures, access improvements, within a 500-foot buffer or within the district boundaries shall be evaluated by an architectural historian prior to implementation and conducted in compliance with the "Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for Preserving, Rehabilitating, Restoring, and Reconstructing Historic Buildings" (Weeks and Grimmer 1995). ▶ New buildings or structures within 500 feet of the district boundaries shall be subject to design review by the Design Advisory Board, to ensure that design does not interfere with the historic aspect of the district and its buildings with respect to scale, massing, and materials, such that the rural historic visual character of the district is maintained. 	<p>Define the project’s area of effect for historic buildings and structures. If the project is located in or adjacent to the Cowell Lime Works Historic District, incorporate specified measures into the project design.</p> <p>To the greatest extent feasible, maintain a buffer as specified.</p> <p>A qualified architectural historian will carry out appropriate documentation and treatment as specified.</p> <p>DAB will review the project design of new buildings or structures within 500 feet of the district boundaries for compatibility as specified.</p>	<p>Prior to final design approval.</p> <p>During initial project siting.</p> <p>Prior to development.</p> <p>At the time of DAB review, prior to design approval.</p>	<p>PPDO</p> <p>PPDO</p> <p>PPDO</p> <p>PPDO</p>	<p>Include in documentation of plan review.</p> <p>Confirm during plan review, and document in the project file.</p> <p>Confirm that documentation has been included in the campus cultural resources database and in the project file.</p> <p>Include DAB agenda and meeting notes in the project file. Report results of the DAB assessment in the environmental document.</p>
	<p>Mitigation Measure 3.4-4b: Protect the Potential Campus Core Discontiguous Historic District During project-specific environmental review of development under the 2021 LRDP, UC Santa Cruz shall define the project’s area of effect for historic buildings and structures as early as possible. For projects affecting any building identified as a potential contributor to the potential Campus Core discontiguous historic district, UC Santa Cruz shall implement the following procedures:</p>	<p>Define the project’s area of effect for historic buildings and structures. If the project is located in or adjacent to the historic district, incorporate specified measures into the project design.</p>	<p>Prior to final design approval.</p>	<p>PPDO</p>	<p>Document in the project file.</p>

Impact	Mitigation Measure	Mitigation Procedure	Mitigation Timing	Mitigation Responsibility	Monitoring and Reporting Procedure
	<ul style="list-style-type: none"> ▶ For all buildings located within the potential Campus Core discontinuous historic district, projects involving interior alterations or routine maintenance work do not need review by an architectural historian. ▶ For minor exterior repairs that do not alter the visual appearance of the building-such as caused by water damage-to buildings that could be contributors to the potential Campus Core discontinuous historic district, if the repairs meet the "Secretary of the Interior's Standards for the Treatment of Historic Properties," then review by an architectural historian is not required. Buildings that contribute to the potential Campus Core discontinuous historic district are Classroom Unit 1, Cowell College, Cowell Student Health Center (original construction), Crown College, East Field House, Hahn Student Services, Jack Baskin Engineering Building, Kerr Hall, Kresge College, McHenry Library, Merrill College, Nat Sci 2 Annex, Nat Sci 2 Main Building, Porter College, Stevenson College, Student Music East-KZSC Radio Station, Theater Arts, Thimann Laboratories, Thimann Lecture Hall, Thimann Receiving Building, and the University House. ▶ For larger exterior repairs, building additions, or demolition of buildings that could be contributors to the potential Campus Core discontinuous historic district, UC Santa Cruz shall retain a qualified architectural historian to determine if the building, or group of buildings, could be contributors. If large repairs, alterations, or demolitions are proposed at Cowell, Crown, Merrill, Porter, or Stevenson colleges, those groups of buildings shall be evaluated for their potential to comprise separate, individual sub-districts. (Note: Kresge College is not included in this group because Kresge College has been previously been evaluated at a district level; due to lack of integrity, the college is not eligible for listing on the NRHP or CRHR.) The qualified architectural historian shall record the buildings on the appropriate California Department of Parks and Recreation DPR 523 forms and evaluate the buildings against NRHP and CRHR significance criteria. If the building or group of buildings does not meet the CEQA criteria for a historical resource, no further mitigation is required. If the buildings qualify as a historic resource, the architectural historian and UC Santa Cruz shall consult to 	<p>For larger exterior repairs, building additions, or demolition of buildings, retain a qualified architectural historian to determine if the building, or group of buildings, could be contributors to the potential historic district. The qualified architectural historian will record the buildings on the appropriate California Department of Parks and Recreation DPR 523 forms and evaluate the buildings against NRHP and CRHR significance criteria.</p>	<p>Prior to final design approval.</p>	<p>PPDO</p>	<p>Document in the project file.</p>

Impact	Mitigation Measure	Mitigation Procedure	Mitigation Timing	Mitigation Responsibility	Monitoring and Reporting Procedure
	<p>consider measures that would enable the project to avoid direct or indirect impacts to the potential Campus Core discontinuous historic district or contributing building.</p> <p>If the project cannot avoid modifications to the building, UC Santa Cruz shall ensure that documentation and treatment shall be carried out by a qualified architectural historian, as follows:</p> <ul style="list-style-type: none"> a) If the building or structure can be preserved on-site, but remodeling, renovation or other alterations are required, this work shall be conducted in compliance with the “Secretary of the Interior’s Standards for the Treatment of Historic Properties with Guidelines for Preserving, Rehabilitating, Restoring, and Reconstructing Historic Buildings” (Weeks and Grimmer 1995). b) If a significant historic building or structure is proposed for major alteration or renovation, or to be moved and/or demolished, UC Santa Cruz shall ensure that a qualified architectural historian thoroughly documents the building and associated landscaping and setting. Documentation shall include still and video photography and a written documentary record of the building to the standards of the Historic American Building Survey (HABS) or Historic American Engineering Record (HAER), including accurate scaled mapping, architectural descriptions, and scaled architectural plans, if available. A copy of the record shall be deposited in the McHenry Library Special Collections, and with the California Historical Resources Information System. The record shall be accompanied by a report containing site-specific history and appropriate contextual information. This information shall be gathered through site-specific and comparative archival research, and oral history collection as appropriate. c) If preservation and reuse at the site are not feasible, the historical building shall be documented as described in item (b) and, when it is physically and financially feasible, it shall be moved and preserved or reused. d) If, in the opinion of the qualified architectural historian, the nature and significance of the building is such that its 	<p>If the project cannot avoid modifications to the building, a qualified architectural historian will carry out appropriate documentation and treatment as specified.</p> <p>If a significant historic building or structure is proposed for major alteration or renovation, or to be moved and/or demolished, ensure that a qualified architectural historian thoroughly documents and submits the building and associated landscaping and setting.</p> <p>If preservation and reuse at the site are not feasible, the historical building shall be documented as described in item (b) and shall be moved and preserved or reused.</p>	<p>Prior to final design approval.</p> <p>Prior to final design approval.</p> <p>Prior to final design approval.</p>	<p>PPDO</p> <p>PPDO</p> <p>PPDO</p>	<p>Confirm documentation and treatment in the project file.</p> <p>Deposit a copy of the documentation in the McHenry Library Special Collections and with the California Historical Resources Information System. Include it also in the project file.</p> <p>Deposit a copy of the documentation in the McHenry Library Special Collections and with the California Historical Resources Information System. Include it also in the project file.</p>

Impact	Mitigation Measure	Mitigation Procedure	Mitigation Timing	Mitigation Responsibility	Monitoring and Reporting Procedure
	<p>demolition or destruction cannot be fully mitigated through documentation, UC Santa Cruz shall reconsider project plans in light of the high value of the resource, and implement more substantial modifications, where feasible, to the proposed project that would limit the degree of modification or allow the structure to be preserved intact. These could include project redesign, relocation, or abandonment. If no such measures are feasible, the historical building shall be documented as described in item (b).</p> <ul style="list-style-type: none"> ▶ For new infill construction within the potential historic district that does not involve building demolition: <ul style="list-style-type: none"> a) Infill projects outside Cowell, Crown, Merrill, Porter, or Stevenson colleges would not affect the potential college sub-districts or the potential Campus Core discontinuous historic district, and do not need review by an architectural historian; and b) Infill projects within Cowell, Crown, Merrill, Porter, or Stevenson College will require review by an architectural historian for elements such as form, massing, and scale, to ensure visual compatibility with the college, and the review shall be conducted in compliance with the “Secretary of the Interior’s Standards for the Treatment of Historic Properties with Guidelines for Preserving, Rehabilitating, Restoring, and Reconstructing Historic Buildings” (Weeks and Grimmer 1995). 	<p>If demolition or destruction of the building cannot be fully mitigated through documentation, reconsider project plans in light of the high value of the resource, and implement more substantial modifications, where feasible, to the proposed project. If no such measures are feasible, the historical building shall be documented as described in item (b).</p> <p>For infill construction within Cowell, Crown, Merrill, Porter, or Stevenson College that does not involve building demolition, retain an architectural historian to review the projects for compatibility with the college as specified.</p>	<p>Prior to final design approval.</p> <p>Prior to final design approval.</p>	<p>PPDO</p> <p>PPDO</p>	<p>Depending on approach, either revise project plans or, if plans are not revised, deposit a copy of the documentation in the McHenry Library Special Collections and with the California Historical Resources Information System.</p> <p>Document in the project file.</p> <p>Confirm that documentation has been included in the project file and campus cultural resources database.</p>
	<p>Mitigation Measure 3.4-4c: Conduct Project-Specific Surveys and Implement Measures to Protect Previously Unidentified Historic Resources</p> <p>For areas outside the Cowell Lime Works Historic District and the potential Campus Core discontinuous historic district, as early as possible in the project planning process, UC Santa Cruz shall define the project’s area of potential effect for historic structures. UC Santa Cruz shall determine the potential for the project to result in impacts to or alteration of historic structures, based on the extent of site and building modifications anticipated for the proposed project.</p> <p>Before altering or otherwise affecting a building or structure 50 years old or older that has not been evaluated previously, UC Santa Cruz shall retain a qualified architectural historian to record it at professional</p>	<p>Define the area of potential effects.</p> <p>Retain a qualified architectural historian to record buildings or</p>	<p>During planning and environmental review.</p> <p>Before the buildings or structures are</p>	<p>PPDO</p> <p>PPDO</p>	<p>Document in the project file.</p> <p>If a site record is prepared, file it with the California Historical</p>

Impact	Mitigation Measure	Mitigation Procedure	Mitigation Timing	Mitigation Responsibility	Monitoring and Reporting Procedure
	<p>standards and assess its significance under CEQA Guidelines Section 15064.4. The evaluation process shall include the development of appropriate historical background research as context for the assessment of the significance of the structure in the history of the UC system, the campus, and the region. For historic buildings, structures or features that do not meet the CEQA criteria for historical resource, no further mitigation is required, and the impact would be less than significant.</p> <p>For a building or structure that qualifies for listing on the CRHR, UC Santa Cruz shall consult with the architectural historian to consider measures that would enable the project to avoid direct or indirect impacts to the building or structure. These could include preserving a building on the margin of the project site, using it "as is," or other measures that would not alter the building.</p> <p>If the project cannot avoid modifications to a significant building or structure, UC Santa Cruz shall ensure that documentation and treatment shall be carried out by a qualified architectural historian, as described below:</p> <p>a) If the building or structure can be preserved on site, but remodeling, renovation or other alterations are required, this work shall be conducted in compliance with the "Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for Preserving, Rehabilitating, Restoring, and Reconstructing Historic Buildings" (Weeks and Grimmer 1995).</p> <p>b) If a significant historic building or structure is proposed for major alteration or renovation, or to be moved and/or demolished, UC Santa Cruz shall ensure that a qualified architectural historian thoroughly documents the building and associated landscaping and setting. Documentation shall include still and video photography and a written documentary record of the building to the standards of the Historic American Building Survey (HABS) or Historic American Engineering Record (HAER), including accurate scaled mapping, architectural descriptions, and scaled architectural plans, if available. A copy of the record shall be deposited in the McHenry Library Special Collections, and with the California Historical Resources Information System. The record shall be accompanied by a report containing site-specific history and appropriate contextual information. This information shall be</p>	<p>structures 50 years old or older that have not been evaluated previously, as specified.</p> <p>For a building or structure that qualifies for listing on the CRHR, consult with the architectural historian to consider measures that would enable the project to avoid direct or indirect impacts to the building or structure.</p> <p>If modifications to a significant building or structure would occur, ensure that documentation and treatment are carried out by a qualified architectural historian as specified.</p> <p>For significant historic buildings or structures proposed for major alteration or renovation, or to be moved and/or demolished, ensure that a qualified architectural historian thoroughly documents the buildings and associated landscaping and setting as specified.</p>	<p>altered or otherwise affected.</p> <p>Before the buildings or structures are altered or otherwise affected.</p> <p>Before the buildings or structures are altered or otherwise affected.</p> <p>Before the buildings or structures are altered or otherwise affected.</p>	<p>PPDO</p> <p>PPDO</p> <p>PPDO</p>	<p>Resources Information System.</p> <p>Document consultation in the project file.</p> <p>Include the documentation and confirmation of treatment in the project file.</p> <p>Confirm documentation in the project file.</p> <p>Deposit a copy of the documentation in the McHenry Library Special Collections and with the California Historical Resources Information System.</p>

Impact	Mitigation Measure	Mitigation Procedure	Mitigation Timing	Mitigation Responsibility	Monitoring and Reporting Procedure
	<p>gathered through site specific and comparative archival research, and oral history collection as appropriate.</p> <p>c) If preservation and reuse at the site are not feasible, the historical building shall be documented as described in item (b) and, when it is physically and financially feasible, it shall be moved and preserved or reused.</p> <p>d) If, in the opinion of the qualified architectural historian, the nature and significance of the building is such that its demolition or destruction cannot be fully mitigated through documentation, UC Santa Cruz shall reconsider project plans in light of the high value of the resource, and implement more substantial modifications to the proposed project that would limit the degree of modification or allow the structure to be preserved intact. These could include project redesign, relocation, or abandonment. If no such measures are feasible, the historical building shall be documented as described in item (b).</p>	<p>If preservation and reuse at the site are not feasible, the historical building shall be documented as described in item (b) and, when it is physically and financially feasible, it shall be moved and preserved or reused.</p> <p>If the qualified architectural historian believes that the nature and significance of the building are such that its destruction cannot be fully mitigated through documentation, UC Santa Cruz will reconsider project plans and implement more substantial modifications to the proposed project that would limit the degree of modification or allow the structure to be preserved intact.</p>	<p>Before and during construction.</p> <p>During project design.</p>	<p>PPDO</p> <p>PPDO</p>	<p>Include documentation and confirm activity in the project file.</p> <p>Document reconsideration in the project file.</p>
Biological Resources					
<p>Impact 3.5-1: Result in Disturbance or Loss of Special-Status Plant Species</p>	<p>Mitigation Measure 3.5-1a: Conduct Project-Level Biological Reconnaissance Sensitive Species and Habitats Survey</p> <p>During the early planning stages of projects under the 2021 LRDP, the following measure shall apply:</p> <ul style="list-style-type: none"> ▶ A data review and biological reconnaissance survey will be conducted within a particular project site by a qualified biologist prior to project activities (e.g., ground disturbance, vegetation removal, staging, construction) and will be conducted no more than one year prior to project implementation. The qualified biologist must be familiar with the life histories and ecology of species in Santa Cruz County and must have experience conducting field surveys of relevant species or resources, including protocol-level surveys for individual species, if applicable. The data 	<p>Retain a qualified biologist to assist with implementing the specified measures.</p> <p>Conduct a data review and biological reconnaissance survey as specified to determine whether special-status species and sensitive habitats are present on a particular project site.</p>	<p>Before project activities.</p> <p>Before project activities.</p>	<p>PPDO</p> <p>PPDO</p>	<p>Confirm that measures were implemented. Document in the project file.</p> <p>Confirm that the data review and survey were conducted. Document in the project file.</p> <p>Include the report in the project file.</p>

Impact	Mitigation Measure	Mitigation Procedure	Mitigation Timing	Mitigation Responsibility	Monitoring and Reporting Procedure
	<p>reviewed will include the biological resources setting, species tables, and habitat information in this EIR. It will also include review of the best available, current data for the area, including vegetation mapping data, species distribution/range information, CNDDDB, CNPS Inventory of Rare and Endangered Plants of California, consultation with appropriate campus experts (e.g. Campus Natural Reserve Manager) to obtain information on biological resources that may not be captured in other databases, relevant Biogeographic Information and Observation System (BIOS) queries, and relevant general and regional plans. BIOS is a web-based system that enables the management and visualization of biogeographic data collected by CDFW and partner organizations. The qualified biologist will assess the habitat suitability of the project site for all special-status plant and wildlife species as well as sensitive habitats identified as having potential to occur in the LRDP area (refer to Section 3.5.2, "Environmental Setting"), and will identify any wildlife nursery sites (e.g., heron rookeries, bat maternity roosts, monarch butterfly overwintering colonies, deer fawning areas) within the LRDP area and potential ESHAs within project sites that fall within the coastal zone. The qualified biologist will also conduct a preliminary delineation of sensitive habitats (e.g., wetlands, streams, seeps, sensitive natural communities, ESHAs) within the project site. The biologist will provide a report to UC Santa Cruz with evidence to support a conclusion as to whether special-status species and sensitive habitats are present or are likely to occur within the project site.</p> <ul style="list-style-type: none"> ▶ If the reconnaissance survey identifies no potential for special-status plant, wildlife species, or sensitive habitats to occur, UC Santa Cruz will not be required to apply any additional mitigation measures under Impact 3.5-1 through 3.5-4. ▶ If the qualified biologist determines that there is potential for special-status species or sensitive habitats to be present within the project site, the appropriate biological mitigation measures, identified herein shall be implemented. 	<p>Prepare and submit a report that supports a conclusion as to whether special-status species and sensitive habitats are present or are likely to occur within a particular project site.</p> <p>If the qualified biologist determines that special-status species or sensitive habitats may be present on a particular project site, the appropriate biological mitigation measures presented below will be implemented.</p>	<p>Before, during, and after project construction as specified for the various mitigation measures presented below.</p>	<p>PPDO</p>	<p>Confirm that the mitigation measures were implemented.</p>

Impact	Mitigation Measure	Mitigation Procedure	Mitigation Timing	Mitigation Responsibility	Monitoring and Reporting Procedure
	<p>Mitigation Measure 3.5-1b: Conduct Special-Status Plant Surveys and Implement Avoidance Measures and Mitigation</p> <p>If it is determined through implementation of Mitigation Measure 3.5-1a that habitat suitable for special-status plant species is present within a particular project site, the following measures shall be implemented:</p> <ul style="list-style-type: none"> ▶ Prior to implementation of project activities and during the blooming period for the special-status plant species with potential to occur in a particular project site, as determined during implementation of Mitigation Measure 3.5-1a, a qualified botanist will conduct protocol-level surveys for special-status plants within the project site following survey methods from CDFW's Protocols for Surveying and Evaluating Impacts on Special-Status Native Plant Populations and Natural Communities (CDFW 2018 or most recent version). The qualified botanist will: 1) be knowledgeable about plant taxonomy, 2) be familiar with plants of the Santa Cruz region, including special-status plants and sensitive natural communities, 3) have experience conducting floristic botanical field surveys as described in CDFW 2018, 4) be familiar with the California Manual of Vegetation (Sawyer et al. 2009 or current version, including updated natural communities data at http://vegetation.cnps.org/), and 5) be familiar with federal and state statutes and regulations related to plants and plant collecting. ▶ If special-status plants are not found, the botanist will document the findings in a report to UC Santa Cruz, and no further mitigation will be required. ▶ If special-status plant species are found, the plant will be avoided completely, if feasible (i.e., project objectives can still be met). This may include establishing a no-disturbance buffer around the plants and demarcation of this buffer by a qualified biologist or botanist using flagging or high-visibility construction fencing. The size of the buffer will be determined by the qualified biologist or botanist and will be large enough to avoid direct or indirect impacts on the plant. 	<p>If habitat suitable for special-status plant species is present on a particular project site, retain a qualified botanist to assist with implementing the specified measures.</p> <p>Conduct protocol-level surveys for special-status plants on a particular project site as specified.</p> <p>If special-status plants are not found, document the findings in a report.</p> <p>If special-status plant species are found, avoid</p>	<p>Prior to implementation of project activities and during the blooming period for the special-status plant species with potential to occur in a project site.</p> <p>Prior to implementation of project activities and during the blooming period for the special-status plant species with potential to occur in a particular project site.</p> <p>Prior to implementation of project activities and during the blooming period for the special-status plant species with potential to occur in a particular project site.</p> <p>Prior to implementation of</p>	<p>PPDO</p> <p>PPDO</p> <p>PPDO</p> <p>PPDO</p>	<p>Document in the project file.</p> <p>Confirm that the surveys were conducted. Document in the project file.</p> <p>Include a copy of the report in the project file.</p> <p>Confirm use of a buffer or other means.</p>

Impact	Mitigation Measure	Mitigation Procedure	Mitigation Timing	Mitigation Responsibility	Monitoring and Reporting Procedure
	<p>▶ If special-status plants are found during special-status plant surveys and cannot be avoided, UC Santa Cruz shall, in consultation with CDFW or USFWS as appropriate depending on the particular species, develop and implement a site-specific mitigation strategy to achieve no net loss of occupied habitat or individuals. Mitigation measures shall include, at a minimum, preserving and enhancing existing populations, establishing populations through seed collection or transplantation from the site that is to be affected, and/or restoring or creating habitat in sufficient quantities to achieve no net loss of occupied habitat or individuals. Potential mitigation sites could include suitable locations within or outside of the LRDP area, with a preference for on-site mitigation. Habitat and individual plants lost shall be mitigated at a minimum 1:1 ratio, considering acreage as well as function and value. Success criteria for preserved and compensatory populations will include:</p> <ul style="list-style-type: none"> ▪ The extent of occupied area and plant density (number of plants per unit area) in compensatory populations will be equal to or greater than the affected occupied habitat. ▪ Compensatory and preserved populations will be self-producing. Populations will be considered self-producing when: <ul style="list-style-type: none"> • plants reestablish annually for a minimum of five years with no human intervention such as supplemental seeding; and • reestablished and preserved habitats contain an occupied area and flower density comparable to existing occupied habitat areas in similar habitat types in the project vicinity. • If off-site mitigation includes dedication of conservation easements, purchase of mitigation credits, or other off-site conservation measures, the details of these measures will be included in the mitigation plan, including information on responsible parties for long-term management, conservation easement holders, long-term management requirements, success criteria such as those listed above and other details, as appropriate to target the preservation of long term viable populations. 	<p>them completely if feasible, possibly by establishing a no-disturbance buffer.</p> <p>If special-status plant species cannot be avoided, UC Santa Cruz will, in consultation with CDFW or USFWS as appropriate depending on the species, develop and implement a site-specific mitigation strategy to achieve no net loss of occupied habitat or individuals as specified.</p>	<p>project activities and during the blooming period for the special-status plant species with potential to occur in a particular project site.</p> <p>Prior to implementation of project activities and during the blooming period for the special-status plant species with potential to occur in a project site.</p>	<p>PPDO</p>	<p>Document in the project file.</p> <p>Document the agency consultation and the mitigation strategy in the project file.</p> <p>Confirm that the mitigation strategy was implemented.</p>

Impact	Mitigation Measure	Mitigation Procedure	Mitigation Timing	Mitigation Responsibility	Monitoring and Reporting Procedure
--------	--------------------	----------------------	-------------------	---------------------------	------------------------------------

Table MM3.5-1 Normal Blooming Period for Special-Status Plants That are Known to Occur or May Occur within the LRDP Area

Species	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Blasdale’s bent grass					X	X	X					
Bent-flowered fiddleneck			X	X	X	X						
Santa Cruz manzanita	X	X	X	X	X						X	X
Santa Cruz Mountains pussypaws					X	X	X	X				
Bristly sedge					X	X	X	X	X	X	X	X
Deceiving sedge						X						
Monterey spineflower				X	X	X						
Scott’s Valley spineflower				X	X	X	X					
Robust spineflower				X	X	X	X	X	X			
San Francisco collinsia			X	X	X							
Minute pocket moss ¹	-	-	-	-	-	-	-	-	-	-	-	-
Short-leaved evax			X	X	X	X						
Santa Cruz cypress ¹	-	-	-	-	-	-	-	-	-	-	-	-
Butano Ridge cypress ¹	-	-	-	-	-	-	-	-	-	-	-	-
Santa Cruz tarplant						X	X	X	X	X		
Point Reyes horkelia					X	X	X	X	X			
Arcuate bush-mallow				X	X	X	X	X	X			
Mt. Diablo cottonweed			X	X	X							
Marsh microseris				X	X	X						
Northern curly-leaved monardella					X	X	X					
Woodland woolythreads			X	X	X	X	X					
Kellman’s bristle moss	X	X										
Dudley’s lousewort				X	X	X						
Santa Cruz Mountains beardtongue					X	X						
White-rayed pentachaeta			X	X	X							

Impact	Mitigation Measure												Mitigation Procedure	Mitigation Timing	Mitigation Responsibility	Monitoring and Reporting Procedure
	Species	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov				
Monterey pine ¹	-	-	-	-	-	-	-	-	-	-	-	-	-			
White-flowered rein orchid					X	X	X	X	X							
Choris' popcornflower			X	X	X	X										
San Francisco popcornflower			X	X	X	X										
San Francisco campion			X	X	X	X										
Santa Cruz microseris				X	X											
Santa Cruz clover				X	X	X	X	X	X	X						
Pacific Grove clover				X	X	X										

¹ Non-blooming bryophyte or gymnosperm species

Source: Data compiled by Ascent Environmental in 2020; CNPS 2020

Impact	Mitigation Measure	Mitigation Procedure	Mitigation Timing	Mitigation Responsibility	Monitoring and Reporting Procedure
	<p>Mitigation Measure 3.5-1c: Implement Measures to Avoid Introduction or Spread of Invasive Plant Species and Plant Pathogens The following measures shall be implemented prior to vegetation removal and ground disturbance activities to avoid the introduction or spread of plants classified as invasive plant species by the California Invasive Plant Council and plant pathogens including Sudden Oak Death:</p> <ul style="list-style-type: none"> ▶ UC Santa Cruz shall develop educational information (e.g., brochures, pamphlets) regarding invasive plants and Sudden Oak Death, the implication of the spread of invasive plants and plant pathogens, and proper sanitation practices to prevent the spread of invasive plants and plant pathogens. Construction crews and crews conducting vegetation removal will be provided with this information and instruction from a qualified professional (e.g., arborist, biologist) prior to working in infested or potentially infested areas and will be required to abide by the sanitation practices therein. ▶ Prior to work within areas with species susceptible to Sudden Oak Death, UC Santa Cruz shall retain a qualified professional (e.g., arborist, biologist) who will assess the risk of project activities and will identify and implement measures to reduce or avoid the risk of pathogen spread, including quarantine areas and proper measures for disposal of infested materials (e.g., branches, split wood, wood chips). ▶ Sanitation and prevention measures implemented by UC Santa Cruz or by contractors as specified in contract specifications to reduce or avoid the risk of pathogen spread or proliferation of invasive plant species shall include, but not be limited to, the following and will be further developed and updated based on the best available science and project-specific conditions: <ul style="list-style-type: none"> ▪ Crews that will be working in infested or potentially infested areas will be provided with or required to carry sanitation kits. Sanitation kits will contain the following: Chlorine bleach [10/90 mixture bleach to water] or Clorox Clean-up or Lysol, scrub brush, metal scraper, boot brush, and plastic gloves. ▪ Shoes, pruning gear, and other equipment will be sanitized using the above-mentioned materials before and after working in areas with species susceptible to Sudden Oak Death. 	<p>Implement the measures listed below to avoid introducing or spreading invasive plant species and plant pathogens.</p> <p>Develop educational information (e.g., brochures, pamphlets) related to invasive plants and Sudden Oak Death, and provide it, along with instruction from a qualified professional (e.g., arborist, biologist), to construction crews and crews conducting vegetation removal.</p> <p>In areas with species susceptible to Sudden Oak Death, retain a qualified professional (e.g., arborist, biologist) to assess the risk of project activities and identify and implement measures to reduce or avoid the risk of pathogen spread as specified.</p>	<p>Prior to vegetation removal and ground disturbance activities.</p> <p>Before work is conducted in infested or potentially infested areas.</p> <p>Before work is conducted in areas with species susceptible to Sudden Oak Death.</p>	<p>PPDO, Grounds, and CNR</p> <p>PPDO, Grounds, and CNR</p> <p>PPDO, Grounds, and CNR.</p>	<p>Confirm that the measures were implemented.</p> <p>Retain education information in the project file and confirm that training was conducted.</p> <p>Document in the project file that the assessment was conducted, and measures were identified and implemented.</p>

Impact	Mitigation Measure	Mitigation Procedure	Mitigation Timing	Mitigation Responsibility	Monitoring and Reporting Procedure
	<ul style="list-style-type: none"> ▪ Clothing, footwear, and equipment used during project activities will be cleaned of soil, seeds, vegetation, or other debris or seed-bearing material before entering the project site or when leaving an area with infestations of invasive plants and noxious weeds. ▪ Heavy equipment and other machinery used in areas with infestations of invasive plant species or Sudden Oak Death will be inspected for the presence of invasive species before use on the project site and will be cleaned before entering the site, to reduce the risk of introducing invasive plant species or plant pathogens. ▪ Equipment will be staged in areas free of invasive plant infestations. 				
<p>Impact 3.5-2: Result in Disturbance to or Loss of Special-Status Wildlife Species and Habitat</p>	<p>California Red-Legged Frog Mitigation Measure 3.5-1a: Conduct Project-Level Biological Reconnaissance Sensitive Species and Habitats Survey (See the mitigation above under Impact 3.5-1.)</p>	<p>As specified above.</p>	<p>As specified above.</p>	<p>As specified above.</p>	<p>As specified above.</p>
	<p>Mitigation Measure 3.5-2a: Conduct Site-Specific Habitat Suitability Analysis for California Red-Legged Frog, Obtain Incidental Take Authorization through Consultation with USFWS, Implement Minimization Measures If it is determined through implementation of Mitigation Measure 3.5-1a that aquatic or upland habitat determined to be suitable for California red-legged frog migration, dispersal, foraging, or refuge is present within a particular project site, the following measures shall be implemented during the planning stages for each individual project under the 2021 LRDP:</p> <ul style="list-style-type: none"> ▶ A qualified biologist will conduct a site-specific habitat suitability verification analysis to confirm the likelihood of the species to be present. To be qualified, the biologist will: 1) be knowledgeable in California red-legged frog life history and ecology, 2) be able to correctly identify California red-legged frogs and habitats, 3) have experience conducting field surveys of relevant resources, 4) be knowledgeable about state and federal laws regarding the protection of special-status species, and 5) have experience using CDFW’s CNDDDB. The habitat assessment will include, but will not be limited to: 	<p>If habitat suitable for the species is present on a project site, retain a qualified biologist to assist with implementing the specified measures.</p>	<p>During the planning stages of a project.</p>	<p>PPDO</p>	<p>Retain results of analysis in the project file.</p>

Impact	Mitigation Measure	Mitigation Procedure	Mitigation Timing	Mitigation Responsibility	Monitoring and Reporting Procedure
	<ul style="list-style-type: none"> ▪ Identification or verification of the vegetation communities present in the project site. ▪ Consideration of known occurrences within the LRDP area; ▪ Description of the project, including proposed project construction activities; ▪ Analysis of the type and likelihood of impacts on California red-legged frog as a result of project implementation; and ▪ Potential project modifications or additional measures that may avoid and minimize mortality, injury, and disturbance of California red-legged frog and habitat. <ul style="list-style-type: none"> ▶ Results of the site-specific habitat suitability verification analysis will be submitted to UC Santa Cruz for review and consideration. ▶ Based on the results of the site-specific habitat suitability verification analysis, a qualified biologist will determine if any of the following would occur: injury or mortality of California red-legged frog; or disturbance of individuals or adverse effects on California red-legged frog breeding, upland refugia, or dispersal habitat. <ul style="list-style-type: none"> ▪ If a qualified biologist determines that the individual project would have no substantial adverse effect on red-legged frog or its habitat and would not result in any injury or mortality, implementation of that individual project may proceed. ▪ For those areas where adverse modification of critical habitat or disturbance, injury, or mortality of California red-legged frog cannot be avoided, UC Santa Cruz shall, in consultation with USFWS, implement impact minimization for construction-related impacts (e.g., installation of exclusion fencing around the project construction site) and compensatory actions for habitat impacts, including purchase of credits at a conservation bank or creation of additional habitat at a minimum 1:1 mitigation ratio, as well as adaptive management strategies to ensure long-term conservation of mitigation lands. No actions that could adversely affect California red-legged frog will be allowed if adverse effects would result, unless consultation with USFWS is completed and additional measures are implemented. 	<p>Submit results of analysis to UC Santa Cruz for review and consideration.</p> <p>Where disturbance, injury, or mortality of red-legged frog cannot be avoided, UC Santa Cruz will, in consultation with USFWS, implement impact minimization and compensatory actions as specified. No actions that could adversely affect the California red-legged frog will be allowed if adverse effects would result, unless consultation with USFWS is completed and additional measures, as required by USFWS, are implemented.</p>	<p>During the planning stages of a project.</p> <p>During the planning stages of a project.</p>	<p>PPDO</p> <p>PPDO</p>	<p>Include a copy in the project file.</p> <p>Document consultation with USFWS and the impact minimization and compensatory actions in the project file.</p>

Impact	Mitigation Measure	Mitigation Procedure	Mitigation Timing	Mitigation Responsibility	Monitoring and Reporting Procedure
	<p>To the extent the project may result in “take” of the species, UC Santa Cruz shall pursue incidental take coverage by either pursuing consultation and biological opinion under Section 7 of the federal ESA (where there is some federal nexus) or by developing a Habitat Conservation Plan (HCP), which would require authorization by USFWS under Section 10 of the ESA. Such an HCP could provide long-term conservation and incidental take coverage for species listed under ESA with potential to occur in the LRDP area: California red-legged frog and Ohlone tiger beetle. Typically, HCPs include the following:</p> <ul style="list-style-type: none"> ▶ Measures that UC Santa Cruz will undertake to monitor, minimize, and mitigate for such impacts, the funding available to implement such measures, and the procedures to deal with unforeseen or extraordinary circumstances. ▶ Alternative actions to the taking analyzed by UC Santa Cruz, and the reasons why the alternatives were not adopted. ▶ Biological goals and objectives, which would define the expected biological outcome for each species covered by the HCP. ▶ Adaptive management, which includes methods for addressing uncertainty and also monitoring and feedback to biological goals and objectives. ▶ Monitoring for compliance, effectiveness, and effects. ▶ Permit duration which is determined by the time-span of the project and designed to provide the time needed to achieve biological goals and address biological uncertainty. 	<p>If the project may result in “take,” pursue incidental take coverage through USFWS.</p>	<p>During the planning stages of a project.</p>	<p>PPDO</p>	<p>Confirm USFWS consultation. Document consultation with USFWS or include HCP in the project file.</p>
<p>Impact 3.5-2: Result in Disturbance to or Loss of Special-Status Wildlife Species and Habitat (Continued)</p>	<p><u>California Giant Salamander, Foothill Yellow-Legged Frog, Santa Cruz Black Salamander</u> Mitigation Measure 3.5-1a: Conduct Project-Level Biological Reconnaissance Sensitive Species and Habitats Survey (See the mitigation above.)</p> <p>Mitigation Measure 3.5-2b: Conduct Preconstruction Surveys for Special-Status Amphibians and Implement Avoidance Measures If it is determined through implementation of Mitigation Measure 3.5-1a that habitat suitable for California giant salamander, foothill yellow-legged frog, or Santa Cruz black salamander is present within a particular project site, the following measures shall be implemented no more than 48 hours prior to commencement of project activities (e.g.,</p>	<p>As specified for California red-legged frog, above.</p> <p>If habitat suitable for these species is present on a project site, retain a qualified biologist to assist with implementing the specified measures.</p>	<p>As specified for California red-legged frog, above.</p> <p>No more than 48 hours before project activities commence.</p>	<p>As specified for California red-legged frog, above.</p> <p>PPDO</p>	<p>As specified for California red-legged frog, above.</p> <p>Document in the project file.</p>

Impact	Mitigation Measure	Mitigation Procedure	Mitigation Timing	Mitigation Responsibility	Monitoring and Reporting Procedure
	<p>vegetation removal, ground disturbance, staging) of a project under the 2021 LRDP:</p> <ul style="list-style-type: none"> ▶ A qualified biologist familiar with the life cycle of California giant salamander, foothill yellow-legged frog, and Santa Cruz black salamander will conduct preconstruction surveys within the project site. Preconstruction surveys for special-status amphibian species will be conducted throughout the project site and a 400-foot buffer around the project site. Surveys will consist of "walk and turn" surveys of areas beneath surface objects (e.g., rocks, leaf litter, moss mats, coarse woody debris) for salamanders, and visual searches for frogs. Preconstruction surveys will be conducted within the appropriate season to maximize potential for observation for each species, and appropriate surveys will be conducted for the applicable life stages (i.e., eggs, larvae, adults). ▶ If special-status amphibians are not detected during the preconstruction survey, the qualified biologist will submit a report summarizing the results of the survey to UC Santa Cruz, and further mitigation will not be required. ▶ If special-status amphibians are detected during the preconstruction survey, UC Santa Cruz shall, in consultation with CDFW, develop and institute, at a minimum, project design modifications (e.g., specific building materials and surfacing requirements), relocation of individual animals, installation of exclusionary fencing, and/or other measures recommended by CDFW as necessary to ensure that no injury to or mortality of these species would occur. ▶ If "take" of foothill yellow-legged frog under CESA is unavoidable, UC Santa Cruz shall seek and obtain an incidental take permit from CDFW and implement any additional measures necessary to minimize, compensate for, and fully mitigate impacts on foothill yellow-legged frog. These additional measures shall include, at a minimum, some combination of the following measures: installation of exclusion fencing around project sites, purchase of credits at a conservation bank, creation of additional habitat, and/or adaptive management strategies. 	<p>Conduct preconstruction surveys for special-status amphibians as specified.</p> <p>If special-status amphibians are not detected during the survey, submit a report on the results of the analysis.</p> <p>If special-status amphibians are detected, in consultation with CDFW, develop and institute, at a minimum, project design modifications, relocate individual animals, install exclusionary fencing, and/or other measures recommended by CDFW.</p> <p>If the project may result in "take," obtain an incidental take permit from CDFW, and implement the additional required measures.</p>	<p>No more than 48 hours before project activities commence.</p> <p>No more than 48 hours before project activities commence.</p> <p>No more than 48 hours before project activities commence.</p> <p>No more than 48 hours before project activities commence.</p>	<p>PPDO</p> <p>PPDO</p> <p>PPDO</p> <p>PPDO</p>	<p>Confirm that surveys were conducted. Document in the project file.</p> <p>Include a copy in the project file.</p> <p>Confirm CDFW consultation. Document consultation with CDFW and measures in the project file. Confirm implementation of the measures.</p> <p>Confirm CDFW consultation. Retain a copy of the incidental take permit in the project file. Confirm implementation of the additional measures.</p>

Impact	Mitigation Measure	Mitigation Procedure	Mitigation Timing	Mitigation Responsibility	Monitoring and Reporting Procedure
	<p>Mitigation Measure 3.10-5a: Procedures for Building on Karst Where Groundwater is Encountered and Where Pressure Grouting is Considered (See the mitigation below under Impact 3.10-5)</p>	As specified below.	As specified below.	As specified below.	As specified below.
<p>Impact 3.5-2: Result in Disturbance to or Loss of Special-Status Wildlife Species and Habitat (Continued)</p>	<p><u>Southwestern Pond Turtle</u> Mitigation Measure 3.5-1a: Conduct Project-Level Biological Reconnaissance Sensitive Species and Habitats Survey (See the mitigation above under Impact 3.5-1)</p>	As specified above.	As specified above.	As specified above.	As specified above.
	<p>Mitigation Measure 3.5-2c: Conduct Preconstruction Surveys for Southwestern Pond Turtle, Implement Avoidance Measures, and Relocate Individuals If it is determined through implementation of Mitigation Measure 3.5-1a that aquatic or upland habitat suitable for southwestern pond turtle is present or that southwestern pond turtle was otherwise determined to be historically present within a particular project site, the following measures shall be implemented no more than 48 hours prior to commencement of project activities (e.g., vegetation removal, ground disturbance, staging) of a project under the 2021 LRDP:</p> <ul style="list-style-type: none"> ▶ A qualified biologist familiar with the life history of southwestern pond turtle and experienced in performing surveys for southwestern pond turtle will conduct a focused survey of habitat suitable for the species within the project site. If aquatic habitat potentially suitable for the species is present within a project site (e.g., streams, ponds, drainages), upland habitat within approximately 1,600 feet of this aquatic habitat will also be surveyed. The qualified biologist will inspect the project site for southwestern pond turtles as well as suitable burrow habitat. ▶ If southwestern pond turtles are not detected during the focused survey, the qualified biologist will submit a report summarizing the results of the survey to UC Santa Cruz, and further mitigation will not be required. ▶ If southwestern pond turtles are detected, a no-disturbance buffer of at least 100 feet will be established around any identified nest sites or overwintering sites. A qualified biologist with an appropriate CDFW Scientific Collecting Permit that allows handling of reptiles will be present during initial ground 	<p>If habitat suitable for the species is present on a project site, retain a qualified biologist to assist with implementing the specified measures.</p> <p>Conduct surveys as specified.</p> <p>If southwestern pond turtles are not detected, submit a report summarizing the results of the survey.</p> <p>If southwestern pond turtles are detected, establish a no-disturbance buffer around any identified nest sites or</p>	<p>No more than 48 hours prior to commencement of project activities.</p> <p>No more than 48 hours prior to commencement of project activities.</p> <p>No more than 48 hours prior to commencement of project activities.</p> <p>No more than 48 hours prior to commencement of project activities.</p>	<p>PPDO</p> <p>PPDO</p> <p>PPDO</p> <p>PPDO</p>	<p>Document in the project file.</p> <p>Confirm that surveys were conducted. Document in the project file.</p> <p>Submit the report to UC Santa Cruz, and include a copy in the project file.</p> <p>Confirm that the buffer was established. Document in the project file.</p>

Impact	Mitigation Measure	Mitigation Procedure	Mitigation Timing	Mitigation Responsibility	Monitoring and Reporting Procedure
	disturbance activities and will inspect the project site before initiation of project activities. If southwestern pond turtles are detected, the qualified biologist will move the turtles downstream and out of harm's way.	overwintering sites as specified. A qualified biologist may relocate turtles out of harm's way, as needed.	During initial ground disturbance activities.	PPDO	Document in the project file.
Impact 3.5-2: Result in Disturbance to or Loss of Special-Status Wildlife Species and Habitat (Continued)	Coast Horned Lizard Mitigation Measure 3.5-1a: Conduct Project-Level Biological Reconnaissance Sensitive Species and Habitats Survey (See the mitigation above.)	As specified above.	As specified above.	As specified above.	As specified above.
	Mitigation Measure 3.5-2d: Conduct Preconstruction Surveys for Coast Horned Lizard, Implement Avoidance Measures, and Relocate Individuals If it is determined through implementation of Mitigation Measure 3.5-1a that habitat suitable for coast horned lizard (e.g., chaparral, coyote brush) is present within a particular project site, the following measures shall be implemented no more than 48 hours prior to commencement of project activities (e.g., vegetation removal, ground disturbance, staging) of a particular project under the 2021 LRDP: <ul style="list-style-type: none"> ▶ A qualified biologist familiar with the life history of coast horned lizard and experienced in performing surveys for the species will conduct a focused visual survey of habitat suitable for the species within the project site, which will include walking linear transects of the project site. ▶ If coast horned lizards are not detected during the focused survey, the qualified biologist will submit a report summarizing the results of the survey to UC Santa Cruz, and further mitigation will not be required. ▶ If coast horned lizards are detected, a qualified biologist with an appropriate CDFW Scientific Collecting Permit that allows handling of reptiles will be present during initial ground disturbance activities and will inspect the project site before initiation of project activities. If coast horned lizards are detected, the qualified biologist will move the lizards into nearby habitat and out of harm's way. 	If habitat suitable for the species is present on a project site, retain a qualified biologist to assist with implementing the specified measures. Conduct a preconstruction survey as specified. If coast horned lizards are not detected, submit a report summarizing the results. If coast horned lizards are detected, a qualified biologist will be present and will inspect the project site before initiation of project activities. The biologist also will move the lizards out of harm's way.	No more than 48 hours prior to commencement of project activities. No more than 48 hours prior to commencement of project activities. No more than 48 hours prior to commencement of project activities. Before initial ground disturbance activities.	PPDO PPDO PPDO PPDO	Document in the project file. Confirm that the survey was conducted. Document in the project file. Submit the report to UC Santa Cruz, and include a copy in the project file. Document in the project file.

Impact	Mitigation Measure	Mitigation Procedure	Mitigation Timing	Mitigation Responsibility	Monitoring and Reporting Procedure
<p>Impact 3.5-2: Result in Disturbance to or Loss of Special-Status Wildlife Species and Habitat (Continued)</p>	<p><u>Burrowing Owl</u> Mitigation Measure 3.5-1a: Conduct Project-Level Biological Reconnaissance Sensitive Species and Habitats Survey (See the mitigation above.)</p>	<p>As specified above.</p>	<p>As specified above.</p>	<p>As specified above.</p>	<p>As specified above.</p>
	<p>Mitigation Measure 3.5-2e: Conduct Protocol-Level Surveys for Burrowing Owl, Implement Avoidance Measures, and Compensate for Loss of Occupied Burrows If it is determined through implementation of Mitigation Measure 3.5-1a that habitat suitable for burrowing owl is present within a project site, the following measures shall be implemented prior to and during construction of a particular project under the 2021 LRDP:</p> <ul style="list-style-type: none"> ▶ A qualified biologist will conduct focused breeding and nonbreeding season surveys for burrowing owls in areas of habitat suitable for the species identified during the reconnaissance-level survey (e.g., ruderal grassland, successional grassland, scrub habitat with sparse shrub cover) on and within 1,500 feet of the project site. Surveys will be conducted before the start of project activities and in accordance with Appendix D of the <i>CDFW Staff Report on Burrowing Owl Mitigation</i> (CDFW 2012, or most current version) (CDFW Staff Report). ▶ If no occupied burrows are found, the qualified biologist will submit a report documenting the survey methods and results to UC Santa Cruz, and no further mitigation will be required. ▶ If an active burrow is found within 1,500 feet of pending construction activities that would occur during the nonbreeding season (September 1 through January 31), UC Santa Cruz shall establish and maintain a minimum protection buffer of 165 feet around the occupied burrow throughout construction. The protection buffer may be adjusted if, in consultation with CDFW, a qualified biologist determines that an alternative buffer will not disturb burrowing owl use of the burrow because of particular site features or other buffering measures. If occupied burrows are present that cannot be avoided or adequately protected with a no-disturbance buffer, a burrowing owl exclusion plan will be developed, as described in Appendix E of the CDFW Staff Report. Burrowing owls will not be excluded from occupied burrows until the project burrowing owl exclusion plan is approved by CDFW. 	<p>If habitat suitable for the species is present on a project site, retain a qualified biologist to assist with implementing the specified measures.</p>	<p>Prior to and during construction of particular projects.</p>	<p>PPDO</p>	<p>Document in the project file.</p>
		<p>Conduct surveys as specified.</p>	<p>Before construction activities begin.</p>	<p>PPDO</p>	<p>Confirm that surveys were conducted. Document in the project file.</p>
<p>Submit a report documenting the survey methods and results.</p>	<p>Before construction activities begin.</p>	<p>PPDO</p>	<p>Submit the report to UC Santa Cruz, and include a copy in the project file.</p>		
<p>If an active burrow is found within 1,500 feet of pending construction activities that would occur during the nonbreeding season, establish and maintain a protection buffer as specified or as adjusted through consultation with CDFW. If occupied burrows cannot be avoided or adequately protected with a</p>	<p>Prior to ground disturbance.</p>	<p>PPDO</p>	<p>Document the use of a buffer or exclusion, as well as consultation with CDFW, in the project file. Document the protected area on the final grading plan.</p>		

Impact	Mitigation Measure	Mitigation Procedure	Mitigation Timing	Mitigation Responsibility	Monitoring and Reporting Procedure
	<p>The exclusion plan will include a compensatory habitat mitigation plan (see below).</p> <ul style="list-style-type: none"> ▶ If an active burrow is found during the breeding season (February 1 through August 31), occupied burrows will not be disturbed and will be provided with a protective buffer at a minimum of 650 feet unless a qualified biologist verifies through noninvasive means that either: (1) the birds have not begun egg laying, or (2) juveniles from the occupied burrows are foraging independently and are capable of independent survival. The size of the buffer may be adjusted depending on the time of year and level of disturbance as outlined in the CDFW Staff Report. The size of the buffer may be reduced if a broad-scale, long-term, monitoring program acceptable to CDFW is implemented so that burrowing owls are not adversely affected. Once the fledglings are capable of independent survival, the owls can be evicted and the burrow can be destroyed per the terms of a CDFW-approved burrowing owl exclusion plan developed in accordance with Appendix E of CDFW Staff Report. ▶ If burrowing owls are evicted from burrows and the burrows are destroyed by implementation of project activities, UC Santa Cruz will mitigate the loss of occupied habitat in accordance with guidance provided in the CDFW Staff Report, which states that permanent impacts on nesting, occupied and satellite burrows, and burrowing owl habitat (i.e., grassland habitat with suitable burrows) will be mitigated such that habitat acreage and number of burrows are replaced through permanent conservation of comparable or better habitat with similar vegetation communities and burrowing mammals (e.g., ground squirrels) present to provide for nesting, foraging, wintering, and dispersal. UC Santa Cruz will retain a qualified biologist to develop a burrowing owl mitigation and management plan that incorporates the following goals and standards: <ul style="list-style-type: none"> ▪ Mitigation lands will be selected based on comparison of the habitat lost to the compensatory habitat, including type and structure of habitat, disturbance levels, potential for conflicts with humans, pets, and other wildlife, density of burrowing owls, and relative importance of the habitat to the species throughout its range. 	<p>buffer, a burrowing owl exclusion plan will be developed as specified.</p> <p>If an active burrow is found during the breeding season, establish and maintain a protection buffer as specified or as adjusted through consultation with CDFW. After fledglings are capable of independent survival, the owls can be evicted and the burrow destroyed per the terms of a CDFW-approved burrowing owl exclusion plan.</p> <p>If burrowing owls are evicted from burrows and the burrows are destroyed by implementation of project activities, mitigate the loss of occupied habitat as specified. Retain a qualified biologist to develop a burrowing owl mitigation and management plan as specified.</p>	<p>Prior to ground disturbance.</p> <p>During and after project construction.</p>	<p>PPDO</p> <p>PPDO</p>	<p>Document the use of a buffer or exclusion, as well as consultation with CDFW, in the project file.</p> <p>Document the protected area on the final grading plan.</p> <p>Include the burrowing owl mitigation and management plan in the project file.</p>

Impact	Mitigation Measure	Mitigation Procedure	Mitigation Timing	Mitigation Responsibility	Monitoring and Reporting Procedure
	<ul style="list-style-type: none"> <li data-bbox="478 232 1083 418">▪ If feasible, mitigation lands will be provided adjacent or proximate to the project site so that displaced owls can relocate with reduced risk of injury or mortality. Feasibility of providing mitigation adjacent or proximate to the project site depends on availability of sufficient habitat to support displaced owls that may be preserved in perpetuity. <li data-bbox="478 431 1083 743">▪ If habitat suitable for burrowing owl is not available for conservation adjacent or proximate to the project site, mitigation lands can be secured off-site and will aim to consolidate and enlarge conservation areas outside of planned development areas and within foraging distance of other conservation lands. Mitigation may be also accomplished through purchase of mitigation credits at a CDFW-approved mitigation bank, if available. Alternative mitigation sites and acreages may also be determined in consultation with CDFW. <li data-bbox="478 756 1083 1260">▪ If burrowing owl habitat mitigation is completed through permittee-responsible conservation lands, the mitigation plan will include mitigation objectives, site selection factors, site management roles and responsibilities, vegetation management goals, financial assurances and funding mechanisms, performance standards and success criteria, monitoring and reporting protocols, and adaptive management measures (e.g., measures required if performance standards and success criteria are not met). Success will be based on the number of adult burrowing owls and pairs using the site and if the numbers are maintained over time. Measures of success, as suggested in the CDFW Staff Report, will include site tenacity, number of adult owls present and reproducing, colonization by burrowing owls from elsewhere, changes in distribution, and trends in stressors. 				

Impact	Mitigation Measure	Mitigation Procedure	Mitigation Timing	Mitigation Responsibility	Monitoring and Reporting Procedure
<p>Impact 3.5-2: Result in Disturbance to or Loss of Special-Status Wildlife Species and Habitat (Continued)</p>	<p><u>American Peregrine Falcon, Bald Eagle, Black Swift, Bryant’s Savannah Sparrow, Golden Eagle, Loggerhead Shrike, Northern Harrier, Olive-Sided Flycatcher, Purple Martin, Tricolored Blackbird, Vaux’s Swift, White-Tailed Kite, Yellow Warbler, Yellow-Breasted Chat, and Other Native Nesting Birds</u></p> <p>Mitigation Measure 3.5-1a: Conduct Project-Level Biological Reconnaissance Sensitive Species and Habitats Survey (See the mitigation above under Impact 3.5-1.)</p>	<p>As specified above.</p>	<p>As specified above.</p>	<p>As specified above.</p>	<p>As specified above.</p>
	<p>Mitigation Measure 3.5-2f: Conduct Focused Surveys for Special-Status Birds, Nesting Raptors, and Other Native Nesting Birds and Implement Protective Buffers If it is determined through implementation of Mitigation Measure 3.5-1a that habitat suitable for nesting birds is present within a project site, the following measures shall be implemented prior to and during construction of a project under the 2021 LRDP:</p> <ul style="list-style-type: none"> ▶ To minimize the potential for loss of special-status bird species, raptors, and other native birds, project activities (e.g., tree removal, other vegetation removal, ground disturbance, staging) will be conducted during the nonbreeding season (approximately September 1-January 31, as determined by a qualified biologist), if feasible. If project activities are conducted during the nonbreeding season, no further mitigation will be required. ▶ Within 14 days before the onset of project activities during the breeding season (approximately February 1 through August 31, as determined by a qualified biologist), a qualified biologist familiar with birds of California and with experience conducting nesting bird surveys will conduct focused surveys for special-status birds, other nesting raptors, and other native birds and will identify active nests within 0.5 mile of the project site. ▶ Because the nests of olive-sided flycatcher, yellow warbler, and yellow-breasted chat are small and difficult to find, occupancy of habitat suitable for these species (i.e., riparian woodland) for these species will be determined by a qualified biologist familiar with the life history of olive-sided flycatcher, yellow warbler, and yellow-breasted chat and with experience identifying the calls of these species. If olive-sided flycatcher, yellow warblers, or yellow-breasted chats are observed calling, exhibiting territorial displays, 	<p>If habitat suitable for nesting birds is present on a project site, retain a qualified biologist to assist with implementing the specified measures.</p> <p>Conduct project activities during the nonbreeding season if feasible.</p> <p>Conduct nesting bird surveys as specified.</p> <p>Conduct surveys as specified and determine occupancy of nests by determining occupancy in habitat suitable for the species.</p>	<p>Before and during construction.</p> <p>During construction.</p> <p>Within 14 days before construction activities begin.</p> <p>Before construction activities begin.</p>	<p>PPDO</p> <p>PPDO</p> <p>PPDO</p> <p>PPDO</p>	<p>Document in the project file.</p> <p>Document in the project file.</p> <p>Confirm that surveys were conducted. Document in the project file.</p> <p>Confirm that surveys were conducted. Document in the project file.</p>

Impact	Mitigation Measure	Mitigation Procedure	Mitigation Timing	Mitigation Responsibility	Monitoring and Reporting Procedure
	<p>carrying nest materials, carrying prey, or other signs of breeding behavior, the habitat will be considered occupied. This protocol for determining occupancy of a nest may be extended to other bird species with nests that are difficult to locate at the discretion of the qualified biologist.</p> <ul style="list-style-type: none"> ▶ Impacts on nesting birds will be avoided by establishing appropriate buffers around active nest sites identified during focused surveys to prevent disturbance to the nest. Project activity will not commence within the buffer areas until a qualified biologist has determined that the young have fledged, the nest is no longer active, or reducing the buffer will not likely result in nest abandonment. An avoidance buffer of a minimum of 0.25 mile will be implemented for American peregrine falcon, bald eagle, golden eagle, and white-tailed kite, in consultation with CDFW. For other species, a qualified biologist will determine the size of the buffer for non-raptor nests after a site- and nest-specific analysis. Buffers typically will be 500 feet for raptors (other than special-status raptors) and 100 feet for non-raptor species. Factors to be considered for determining buffer size will include presence of natural buffers provided by vegetation or topography, nest height above ground, baseline levels of noise and human activity, species sensitivity, and proposed project activities. The size of the buffer may be adjusted if a qualified biologist, determines that such an adjustment would not be likely to adversely affect the nest. Any buffer reduction for a special-status species will require consultation with CDFW. Periodic monitoring of the nest by a qualified biologist during project activities will be required if the activity has potential to adversely affect the nest, the buffer has been reduced, or if birds within active nests are showing behavioral signs of agitation (e.g., standing up from a brooding position, flying off the nest) during project activities, as determined by the qualified biologist. ▶ Removal of bald eagle and golden eagle nests is prohibited regardless of the occupancy status under the federal Bald and Golden Eagle Protection Act. If bald eagle or golden eagle nests are found during focused surveys, then the nest will not be removed. 	<p>Establish buffers around active nest sites as specified in consultation with CDFW. Nests will be periodically monitored during project activities if the activity has potential to adversely affect the nest, the buffer has been reduced, or birds within active nests are showing behavioral signs of agitation.</p>	<p>Before and during construction.</p>	<p>PPDO</p>	<p>Confirm that buffers were established and that nests were periodically monitored. Document in the project file.</p>

Impact	Mitigation Measure	Mitigation Procedure	Mitigation Timing	Mitigation Responsibility	Monitoring and Reporting Procedure
<p>Impact 3.5-2: Result in Disturbance to or Loss of Special-Status Wildlife Species and Habitat (Continued)</p>	<p><u>Cave Invertebrate Species</u> Mitigation Measure 3.5-1a: Conduct Project-Level Biological Reconnaissance Sensitive Species and Habitats Survey (See the mitigation above under Impact 3.5-1.)</p>	<p>As specified above.</p>	<p>As specified above.</p>	<p>As specified above.</p>	<p>As specified above.</p>
	<p>Mitigation Measure 3.5-2g: Limit Human Disturbance of Cave Ecosystems UC Santa Cruz shall continue to limit visitation of caves on campus and discourage activities by members of the public that could jeopardize the physical integrity, condition, or scientific value of the caves, through exclusion of access to the caves with bat-friendly fencing (i.e., fencing that allows unimpeded ingress and egress by bats), appropriate signage and educational literature, Campus Natural Reserve website information, or other appropriate measures.</p>	<p>Continue to limit visitation of caves on campus and discourage activities by members of the public that could jeopardize the physical integrity, condition, or scientific value of the caves, as specified.</p>	<p>Before, during, and after construction.</p>	<p>PPDO</p>	<p>Document in the project file.</p>
	<p>Mitigation Measure 3.10-5a: Procedures for Building on Karst Where Groundwater is Encountered and Where Pressure Grouting is Considered (See the mitigation above.)</p>	<p>As specified above.</p>	<p>As specified above.</p>	<p>As specified above.</p>	<p>As specified above.</p>
<p>Impact 3.5-2: Result in Disturbance to or Loss of Special-Status Wildlife Species and Habitat (Continued)</p>	<p><u>Monarch Butterfly</u> Mitigation Measure 3.5-1a: Conduct Project-Level Biological Reconnaissance Sensitive Species and Habitats Survey (See the mitigation above.)</p>	<p>As specified above.</p>	<p>As specified above.</p>	<p>As specified above.</p>	<p>As specified above.</p>
	<p>Mitigation Measure 3.5-2h: Conduct Focused Surveys for Monarch Overwintering Colonies and Implement Avoidance Measures If it is determined through implementation of Mitigation Measure 3.5-1a that a monarch overwintering colony or suitable overwintering habitat is present within a particular project site, the following measures shall be implemented:</p> <ul style="list-style-type: none"> ▶ To minimize the potential for loss of monarch overwintering colonies, project activities that include vegetation removal within suitable overwintering habitat (e.g., coniferous forest, eucalyptus forest) will be conducted from April through September to avoid the overwintering season (October through March), if feasible. If project activities are conducted outside of the overwintering season, no further mitigation will be required. ▶ Within 14 days before the onset of project activities that include vegetation removal between October 1st and March 31st, a qualified biologist familiar with monarchs and monarch 	<p>If a monarch overwintering colony or suitable overwintering habitat is present on a project site, retain a qualified biologist to assist with implementing the specified measures.</p> <p>Conduct project activities during the nonbreeding season if feasible.</p> <p>Conduct surveys for monarch colonies as specified.</p>	<p>Before and during construction.</p> <p>During construction.</p> <p>No more than 14 days before construction activities begin.</p>	<p>PPDO</p> <p>PPDO</p> <p>PPDO</p>	<p>Document in the project file.</p> <p>Document in the project file.</p> <p>Confirm that surveys were conducted. Document in the project file.</p>

Impact	Mitigation Measure	Mitigation Procedure	Mitigation Timing	Mitigation Responsibility	Monitoring and Reporting Procedure
	<p>overwintering habitat will conduct focused surveys for monarch colonies within habitat suitable for the species in the project site and will identify any colonies found within the project site.</p> <ul style="list-style-type: none"> ▶ Monarch overwintering colonies that are identified within a project site will be demarcated with flagging or high-visibility construction fencing to prevent removal of the stand of trees containing the overwintering colony and encroachment by heavy machinery, vehicles, or personnel. Monarch overwintering colonies shall be protected throughout the duration of their presence within a project site. ▶ If modification or removal of a where overwintering monarchs have been identified overwintering colony is required for project implementation, and the project cannot be redesigned to avoid modification or removal of the stand, then UC Santa Cruz will prepare and implement a site-specific plan for the stand with the goal of maintaining habitat function for the monarch overwintering colony, following recommendations from <i>Protecting California's Butterfly Groves Management Guidelines for Monarch Butterfly Overwintering Habitat</i> (Xerces 2017). Examples of management strategies that could be considered include: <ul style="list-style-type: none"> ▪ remove or trim hazard trees; ▪ selectively remove or trim of trees to create a heterogeneous habitat that provides access to sunlight and shade for monarchs; ▪ maintain suitable wind protection in the stand; and ▪ replace removed trees with native trees in strategic locations to provide additional wind protection. 	<p>Identify monarch overwintering colonies as specified.</p> <p>Prepare and implement a site-specific plan as specified to maintain habitat function for the monarch overwintering colony if it much be modified or removed for project implementation.</p>	<p>Before construction activities begin.</p> <p>Before construction activities begin.</p>	<p>PPDO</p> <p>PPDO</p>	<p>Document locations of colonies in the project file.</p> <p>Include a copy of the plan in the project file.</p> <p>Verify that the measures have been implemented.</p>
<p>Impact 3.5-2: Result in Disturbance to or Loss of Special-Status Wildlife Species and Habitat (Continued)</p>	<p><u>Ohlone Tiger Beetle</u> Mitigation Measure 3.5-1a: Conduct Project-Level Biological Reconnaissance Sensitive Species and Habitats Survey (See the mitigation above.)</p>	<p>As specified above.</p>	<p>As specified above.</p>	<p>As specified above.</p>	<p>As specified above.</p>
	<p>Mitigation Measure 3.5-2i: Conduct Site-Specific Habitat Suitability Analysis for Ohlone Tiger Beetle, Obtain Incidental Take Authorization through Consultation with USFWS, Implement Minimization Measures If it is determined through implementation of Mitigation Measure 3.5-1a that habitat suitable for Ohlone tiger beetle is present within a</p>	<p>If habitat suitable for the species is present on a project site, retain a qualified biologist to conduct a site-specific</p>	<p>During the planning stages of a project.</p>	<p>PPDO</p>	<p>Retain results of analysis in the project file.</p>

Impact	Mitigation Measure	Mitigation Procedure	Mitigation Timing	Mitigation Responsibility	Monitoring and Reporting Procedure
	<p>particular project site (i.e., grassland or coastal prairie with Watsonville soils, Figure 3.5-8), the following measures shall be implemented during the planning stages of a project under the 2021 LRDP:</p> <ul style="list-style-type: none"> ▶ A qualified biologist will conduct a site-specific habitat suitability verification analysis within a project site to determine the likelihood of the species to be present. To be qualified, the biologist will: 1) be knowledgeable in Ohlone tiger beetle life history and ecology, 2) be able to correctly identify Ohlone tiger beetles and habitats, 3) have experience conducting field surveys of relevant resources, 4) be knowledgeable about state and federal laws regarding the protection of special-status species, and 5) have experience using CDFW's CNDDDB. The habitat assessment will include, but will not be limited to: <ul style="list-style-type: none"> ▪ Identification or verification of the vegetation communities present in the project site. ▪ Consideration of known occurrences within the LRDP area; ▪ Description of the project, including proposed project construction activities; ▪ Analysis of the type and likelihood of impacts on Ohlone tiger beetle as a result of project implementation; and ▪ Potential project modifications or additional measures that may avoid and minimize mortality, injury, and disturbance of Ohlone tiger beetle and habitat. ▶ Results of the site-specific habitat suitability verification analysis will be submitted to UC Santa Cruz for review and consideration. ▶ Based on the results of the site-specific habitat suitability verification analysis, a qualified biologist will determine if any of the following would occur: loss of habitat function for Ohlone tiger beetle; injury or mortality of Ohlone tiger beetle; or disturbance of Ohlone tiger beetle that could substantially disrupt essential behavior patterns (e.g., breeding, feeding, or sheltering) to such an extent that injury or mortality is likely. <ul style="list-style-type: none"> ▪ If a qualified biologist determines that the individual project would have no substantial adverse effect on Ohlone tiger beetle or its habitat and would not result in any injury or 	<p>habitat suitability analysis to confirm the likelihood of the species to be present, as specified.</p> <p>Submit results of analysis to UC Santa Cruz for review and consideration.</p> <p>Where disturbance, injury, or mortality of Ohlone tiger beetle cannot be avoided, UC Santa Cruz will, in consultation with USFWS,</p>	<p>During the planning stages of a project.</p> <p>During the planning stages of a project.</p>	<p>PPDO</p> <p>PPDO</p>	<p>Submit results of analysis to UC Santa Cruz, and include a copy in the project file.</p> <p>Document consultation with USFWS and the impact minimization and</p>

Impact	Mitigation Measure	Mitigation Procedure	Mitigation Timing	Mitigation Responsibility	Monitoring and Reporting Procedure
	<p>mortality, implementation of that individual project may proceed.</p> <ul style="list-style-type: none"> ▪ For those areas where disturbance, injury, or mortality of Ohlone tiger beetle cannot be avoided, UC Santa Cruz shall, in consultation with USFWS, implement impact minimization (e.g., preconstruction surveys and biological monitoring) and compensatory actions, including purchase of credits at a conservation bank, creation of additional habitat, and adaptive management strategies. No actions that could adversely affect Ohlone tiger beetle will be allowed if adverse effects would result, unless consultation with USFWS is completed and additional measures, as required by USFWS, are implemented. <p>To the extent the project may result in “take” of the species, UC Santa Cruz may pursue incidental take coverage either by pursuing consultation and biological opinion under Section 7 of the federal ESA (where there is some federal nexus) or by developing an HCP, as described in Mitigation Measure 3.5-2a, which would require authorization by USFWS under Section 10 of the ESA. Such an HCP would provide incidental take coverage for species listed under ESA with potential to occur in the LRDP area: California red-legged frog and Ohlone tiger beetle. Typically, HCPs include the following elements, among others:</p> <ul style="list-style-type: none"> ▶ Measures that UC Santa Cruz will undertake to monitor, minimize, and mitigate for such impacts, the funding available to implement such measures, and the procedures to deal with unforeseen or extraordinary circumstances. ▶ Additional measures that USFWS may require. ▶ Biological goals and objectives, which would define the expected biological outcome for each species covered by the HCP. ▶ Adaptive management, which includes methods for addressing uncertainty and also monitoring and feedback to biological goals and objectives. ▶ Monitoring for compliance, effectiveness, and effects. ▶ Permit duration which is determined by the timespan of the project and designed to provide the time needed to achieve biological goals and address biological uncertainty. 	<p>implement impact minimization and compensatory actions as specified. No actions that could adversely affect the beetle will be allowed if adverse effects would result, unless consultation with USFWS is completed and additional measures, as required by USFWS, are implemented.</p> <p>If the project may result in “take,” pursue incidental take coverage through USFWS.</p>	<p>During the planning stages of a project.</p>	<p>PPDO</p>	<p>compensatory actions in the project file.</p> <p>Confirm USFWS consultation. Document consultation with USFWS or include HCP in the project file.</p>

Impact	Mitigation Measure	Mitigation Procedure	Mitigation Timing	Mitigation Responsibility	Monitoring and Reporting Procedure
<p>Impact 3.5-2: Result in Disturbance to or Loss of Special-Status Wildlife Species and Habitat (Continued)</p>	<p><u>American Badger</u> Mitigation Measure 3.5-1a: Conduct Project-Level Biological Reconnaissance Sensitive Species and Habitats Survey (See the mitigation above.)</p>	<p>As specified above.</p>	<p>As specified above.</p>	<p>As specified above.</p>	<p>As specified above.</p>
	<p>Mitigation Measure 3.5-2j: Conduct Focused American Badger Survey and Establish Protective Buffers If it is determined through implementation of Mitigation Measure 3.5-1a that habitat suitable for American badger is present within a particular project site, the following measures shall be implemented:</p> <ul style="list-style-type: none"> ▶ Within 30 days before commencement of project activities, a qualified wildlife biologist with familiarity with American badger and experience using survey methods for the species will conduct focused surveys of habitat suitable for the species within the project site to identify any American badger dens. ▶ If occupied dens are not found, the qualified biologist will submit a report summarizing the results of the survey to UC Santa Cruz, and further mitigation will not be required. ▶ If occupied dens are found, impacts on active badger dens will be avoided by establishing exclusion zones around all active badger dens, the size of which will be determined by the qualified biologist. No project activities (e.g., vegetation removal, ground disturbance, staging) will occur within the exclusion zone until denning activities are complete or the den is abandoned, as confirmed by a qualified biologist. The qualified biologist will monitor each den once per week to track the status of the den and to determine when it is no longer occupied. When it is no longer occupied, project activities within the exclusion zone may occur. 	<p>If habitat suitable for the species is present on a project site, retain a qualified biologist to assist with implementing the specified measures.</p> <p>Conduct surveys as specified.</p> <p>Submit a report documenting the survey methods and results.</p> <p>If occupied dens are found, establish exclusion zones, in which no project activities may occur until denning activities are complete or the den is abandoned, as confirmed by a qualified biologist, as specified. Monitor each den once per week to track the status of the den and to determine when it is no longer occupied.</p>	<p>Prior to and during construction of particular projects.</p> <p>Within 30 days before commencement of project activities.</p> <p>Before construction activities begin.</p> <p>Before construction activities begin, with den monitoring occurring once per week.</p>	<p>PPDO</p> <p>PPDO</p> <p>PPDO</p> <p>PPDO</p>	<p>Document in the project file.</p> <p>Confirm that surveys were conducted. Document in the project file.</p> <p>Submit the report to UC Santa Cruz, and include a copy in the project file.</p> <p>Document the use of exclusion zones in the project file.</p> <p>Document the protected area on the final grading plan.</p>
	<p><u>Mountain Lion</u> Mitigation Measure 3.5-1a: Conduct Project-Level Biological Reconnaissance Sensitive Species and Habitats Survey (See the mitigation above.)</p>	<p>As specified above.</p>	<p>As specified above.</p>	<p>As specified above.</p>	<p>As specified above.</p>

Impact	Mitigation Measure	Mitigation Procedure	Mitigation Timing	Mitigation Responsibility	Monitoring and Reporting Procedure
	<p>Mitigation Measure 3.5-2k: Conduct Focused Noninvasive Surveys for Mountain Lion Dens and Implement Avoidance Measures</p> <p>If it is determined through implementation of Mitigation Measure 3.5-1a that den habitat potentially suitable for mountain lion is present within a particular project site (e.g., caves, other large natural cavities, thickets) or signs of mountain lion activities are observed (e.g., tracks, scat, carcasses or bones of prey species), the following measures shall be implemented to avoid take of mountain lions or destruction of den habitat:</p> <ul style="list-style-type: none"> ▶ Within 30 days before commencement of project activities, a qualified wildlife biologist with familiarity with mountain lion and experience using survey methods for the species will conduct focused surveys of habitat suitable for the species within the project site to identify any potential mountain lion dens. Potential mountain lion dens will include caves, large natural cavities within rocky areas, or thickets deemed appropriate for use by mountain lions based on size and other characteristics (e.g., proximity to human development, surrounding habitat). The qualified wildlife biologist will also survey for signs of mountain lion (e.g., tracks, scat, prey items) in the vicinity of the cave, cavity, or thicket to help determine whether the den may be occupied by mountain lions. If the start of project activities lapses and more than 30 days pass since the survey was completed, an additional survey shall be conducted. ▶ If no potential dens are found, the qualified biologist will submit a report summarizing the results of the survey to UC Santa Cruz, and no further mitigation will be required. ▶ If potential dens are found, further investigation will be required to determine if the den is being used by a mountain lion or another carnivore species (e.g., coyote [<i>Canis latrans</i>], bobcat [<i>Lynx rufus</i>], gray fox [<i>Urocyon cinereoargenteus</i>]). Survey methods will include the use of trail cameras, track plates, hair snares, or other noninvasive methods. Surveys using these noninvasive methods will be conducted for three days and three nights to determine whether the den is occupied by mountain lions. <ul style="list-style-type: none"> ▪ If the den is determined to be unoccupied by any carnivore species, the qualified biologist will submit a report summarizing the results of the survey to UC Santa Cruz, and no further mitigation will be required. 	<p>If den habitat potentially suitable for mountain lion is present on a project site, or signs of mountain lion activities are observed, retain a qualified biologist to assist with implementing the specified measures.</p> <p>Conduct surveys as specified.</p> <p>Submit a report summarizing the survey results.</p> <p>Conduct follow-up surveys as specified.</p> <p>Submit a report summarizing the survey results.</p>	<p>Prior to and during construction of particular projects.</p> <p>Within 30 days before commencement of project activities.</p> <p>Before construction activities begin.</p> <p>Before construction activities begin.</p> <p>Before construction activities begin.</p>	<p>PPDO</p> <p>PPDO</p> <p>PPDO</p> <p>PPDO</p>	<p>Document in the project file.</p> <p>Confirm that surveys were conducted. Document in the project file.</p> <p>Submit the report to UC Santa Cruz, and include a copy in the project file.</p> <p>Confirm that surveys were conducted. Document in the project file.</p> <p>Submit the report to UC Santa Cruz, and</p>

Impact	Mitigation Measure	Mitigation Procedure	Mitigation Timing	Mitigation Responsibility	Monitoring and Reporting Procedure
	<ul style="list-style-type: none"> ▪ If the den is determined to be unoccupied by mountain lion, but is occupied by another carnivore species, the den will not be disturbed while the young of any species are dependent on the den for shelter. ▪ If the den is determined to be occupied by mountain lion, a no-disturbance buffer of at least 2,000 feet will be established around the occupied den within which no project activities will occur, and UC Santa Cruz will notify and consult with CDFW to identify additional adequate seasonal restrictions and/or no disturbance buffers to avoid disturbance, injury, or mortality of mountain lion. 	<p>Establish a no-disturbance buffer and consult with CDFW to identify additional seasonal restrictions and/or no-disturbance buffers to avoid disturbance, injury, or mortality of mountain lion.</p>	<p>Before construction activities begin.</p>	<p>PPDO</p>	<p>include a copy in the project file.</p> <p>Confirm that buffer was established.</p> <p>Document the protected area on the final grading plan.</p> <p>Confirm that CDFW was consulted.</p> <p>Document in the project file.</p>
<p>Impact 3.5-2: Result in Disturbance to or Loss of Special-Status Wildlife Species and Habitat (Continued)</p>	<p>Ringtail Mitigation Measure 3.5-1a: Conduct Project-Level Biological Reconnaissance Sensitive Species and Habitats Survey (See the mitigation above.)</p>	<p>As specified above.</p>	<p>As specified above.</p>	<p>As specified above.</p>	<p>As specified above.</p>
	<p>Mitigation Measure 3.5-2l: Conduct Focused Surveys for Ringtail If it is determined through implementation of Mitigation Measure 3.5-1a that habitat suitable for ringtail is present within a particular project site (e.g., forest or chaparral habitat within 0.6 mile of a permanent water source), the following measures shall be implemented:</p> <ul style="list-style-type: none"> ▶ To minimize the potential for loss of ringtail and active ringtail dens, project activities (e.g., tree removal, other vegetation removal, ground disturbance, staging) within potentially suitable ringtail habitat will be conducted outside of the ringtail breeding season (not well defined, but likely approximately March 1 to July 31), if feasible. ▶ Within seven days before initiation of project activities within potentially suitable ringtail habitat, a qualified biologist with familiarity with ringtail and experience conducting ringtail surveys will conduct a focused survey for potential ringtail dens (e.g., hollow trees, snags, rock crevices) within the project site. The 	<p>If habitat suitable for the species is present on a project site, retain a qualified biologist to assist with implementing the specified measures.</p> <p>Conduct project activities during the nonbreeding season if feasible.</p> <p>Conduct ringtail surveys as specified and identify sightings.</p>	<p>Prior to and during construction of particular projects.</p> <p>During construction.</p> <p>Within seven days before initiation of project activities.</p>	<p>PPDO</p> <p>PPDO</p> <p>PPDO</p>	<p>Document in the project file.</p> <p>Document in the project file.</p> <p>Confirm that surveys were conducted. Document in the project file.</p>

Impact	Mitigation Measure	Mitigation Procedure	Mitigation Timing	Mitigation Responsibility	Monitoring and Reporting Procedure
	<p>qualified biologist will identify sightings of individual ringtails, as well as potential dens.</p> <ul style="list-style-type: none"> ▶ If individuals or potential or occupied dens are not found, the qualified biologist will submit a report summarizing the results of the survey to UC Santa Cruz, and further mitigation will not be required. ▶ If ringtails are identified or if potential dens are located, an appropriate method will be used by the qualified wildlife biologist to confirm whether a ringtail is occupying the den. This may include use of remote field cameras, track plates, or hair snares. Other devices, such as a fiber optic scope, may be utilized to determine occupancy. <ul style="list-style-type: none"> ▪ If no ringtail occupies the potential den, the entrance will be temporarily blocked so that no other animals occupy the project site during project activities, but only after it has been fully inspected. The blockage will be removed once the project activities are completed. ▪ If a den is found to be occupied by a ringtail, a no-disturbance buffer will be established around the occupied den. The no-disturbance buffer will include the den tree (or other structure) plus a suitable buffer as determined by the biologist in coordination with CDFW. Project activities in the no-disturbance buffer will be avoided until the den is unoccupied as determined by the qualified wildlife biologist in coordination with CDFW. 	<p>Submit a report summarizing the survey results.</p> <p>Confirm whether ringtails occupy the potential dens.</p> <p>If a den is found to be occupied by a ringtail, temporarily block the entrance to unoccupied potential dens.</p> <p>If a den is found to be occupied by a ringtail, establish a no-disturbance buffer around the den in coordination with CDFW.</p>	<p>Before construction activities begin.</p> <p>Before construction activities begin.</p> <p>Before and during construction Activities.</p> <p>Before and during construction activities.</p>	<p>PPDO</p> <p>PPDO</p> <p>PPDO</p> <p>PPDO</p>	<p>Submit the report to UC Santa Cruz, and include a copy in the project file.</p> <p>Document in the project file.</p> <p>Confirm that den entrance was blocked. Document in the project file.</p> <p>Confirm that buffers were established. Document in the project file.</p>
<p>Impact 3.5-2: Result in Disturbance to or Loss of Special-Status Wildlife Species and Habitat (Continued)</p>	<p><u>San Francisco Dusky-Footed Woodrat</u> Mitigation Measure 3.5-1a: Conduct Project-Level Biological Reconnaissance Sensitive Species and Habitats Survey (See the mitigation above.)</p> <p>Mitigation Measure 3.5-2m: Conduct Focused Surveys for San Francisco Dusky-Footed Woodrat, Implement Avoidance Measures, or Relocate Nests If it is determined through implementation of Mitigation Measure 3.5-1a that habitat suitable for San Francisco dusky-footed woodrat is present within a particular project site, the following measures shall be implemented:</p> <ul style="list-style-type: none"> ▶ Within seven days before initiation of project activities, a qualified biologist with familiarity with woodrats and experience 	<p>As specified, above.</p> <p>If habitat suitable for this species is present on a project site, retain a qualified biologist to assist with implementing the specified measures.</p> <p>Conduct a survey for San Francisco dusky-footed woodrat nests.</p>	<p>As specified above.</p> <p>Before and during, project construction as specified for the various mitigation measures presented below.</p> <p>Within seven days before initiation of project activities.</p>	<p>As specified above.</p> <p>PPDO</p> <p>PPDO</p>	<p>As specified above.</p> <p>Document in the project file.</p> <p>Confirm that the survey was conducted. Document in the project file.</p>

Impact	Mitigation Measure	Mitigation Procedure	Mitigation Timing	Mitigation Responsibility	Monitoring and Reporting Procedure
	<p>conducting woodrat surveys will conduct a focused survey for San Francisco dusky-footed woodrat nests within the project site.</p> <ul style="list-style-type: none"> ▶ If no woodrat nests are found during the focused survey, the qualified biologist will submit a report summarizing the results of the survey to UC Santa Cruz, and no further mitigation will be required. ▶ If woodrat nests are detected within the project site, the qualified biologist will determine whether the nest is active. The status of a nest is typically determined through the presence of large amounts of scat. If active woodrat nests are present that can be avoided, the perimeter of these nests will be demarcated with high-visibility construction fencing to prevent accidental encroachment by vehicles, equipment, or personnel. ▶ If active woodrat nests within a project site are detected that cannot be avoided, and project activities are planned to occur during the woodrat breeding season (April through June), these active nests must be avoided until the end of the breeding season. ▶ If active woodrat nests within a project site cannot be avoided, and project activities are planned to occur outside of the woodrat breeding season, a qualified biologist in consultation with CDFW will dismantle the woodrat nest by hand, removing the materials layer by layer to allow adult woodrats to escape. If young are discovered during the disassembling process, the qualified biologist will leave the area for at least 24 hours to allow the adult woodrats to relocate their young on their own. ▶ When the disassembly process is completed, the nest materials will be collected and moved to another suitable nearby location to allow for nest reconstruction. 	<p>If no woodrat nests are found, submit a report summarizing the results of the survey.</p> <p>If woodrat nests are detected, determine whether they are active. If active woodrat nests are present that can be avoided, the perimeter of these nests will be demarcated with high-visibility construction fencing.</p> <p>If active woodrat nests cannot be avoided, and project activities are planned to occur during the woodrat breeding season, these active nests must be avoided until the end of the breeding season.</p> <p>If active woodrat nests cannot be avoided, and project activities are planned to occur outside of the woodrat breeding season, a qualified biologist, in consultation with CDFW, will dismantle the woodrat nest by hand, to allow adult woodrats to escape. If young are discovered, the adult woodrats will be given at least 24 hours to relocate their young on their own.</p>	<p>Within seven days before initiation of project activities.</p> <p>Within seven days before initiation of project activities.</p> <p>During project activities.</p> <p>During project activities.</p>	<p>PPDO</p> <p>PPDO</p> <p>PPDO</p> <p>PPDO</p>	<p>Submit the report to UC Santa Cruz, and include it in the project file.</p> <p>Demarcate the perimeter of active nests. Document in the project file.</p> <p>Document in the project file.</p> <p>Document in the project file.</p>

Impact	Mitigation Measure	Mitigation Procedure	Mitigation Timing	Mitigation Responsibility	Monitoring and Reporting Procedure
<p>Impact 3.5-2: Result in Disturbance to or Loss of Special-Status Wildlife Species and Habitat (Continued)</p>	<p>Pallid Bat, Townsend’s Big-Eared Bat, and Western Red Bat Mitigation Measure 3.5-1a: Conduct Project-Level Biological Reconnaissance Sensitive Species and Habitats Survey (See the mitigation above.)</p>	<p>As specified above.</p>	<p>As specified above.</p>	<p>As specified above.</p>	<p>As specified above.</p>
	<p>Mitigation Measure 3.5-2n: Conduct Focused Bat Surveys and Implement Avoidance Measures If it is determined through implementation of Mitigation Measure 3.5-1a that suitable roost habitat for pallid bat, Townsend’s big-eared bat, and western red bat is present within a particular project site, the following measures shall be implemented:</p> <ul style="list-style-type: none"> ▶ In the early planning stages of individual projects under the 2021 LRDP, a qualified biologist with familiarity with bats and bat ecology, and experienced in conducting bat surveys will conduct surveys for bat roosts in suitable habitat (e.g., large trees, crevices, cavities, exfoliating bark, bridges, unoccupied buildings) within and adjacent to the particular project site. ▶ If no evidence of bat roosts is found, the qualified biologist will submit a report summarizing the results of the survey to UC Santa Cruz, and no further study will be required. ▶ If evidence of bat roosts is observed, the species and number of bats using the roost will be determined. Bat detectors shall be used if deemed necessary to supplement survey efforts by the qualified biologist. ▶ A no-disturbance buffer of 250 feet will be established around active pallid bat, Townsend’s big-eared bat, or western red bat roosts, and project activities will not occur within this buffer until after the roosts are unoccupied. ▶ If roosts of pallid bat, Townsend’s big-eared bat, or western red bat are determined to be present and must be removed, the bats will be excluded from the roosting site before the tree, building, or other structure is removed. A program addressing compensation, exclusion methods, and roost removal procedures will be developed in consultation with CDFW before implementation. Exclusion methods may include use of one-way doors at roost entrances (bats may leave but not reenter) or sealing roost entrances when the site can be confirmed to contain 	<p>If roost habitat suitable for these species is present on a project site, retain a qualified biologist to assist with implementing the specified measures.</p> <p>Conduct a survey for bat roosts in suitable habitat in and adjacent to the project site.</p> <p>If no evidence of bat roosts is found, submit a report summarizing the results of the survey.</p> <p>Establish buffers as specified.</p> <p>Develop a program addressing compensation, exclusion methods, and roost removal procedures in consultation with CDFW. If roosts of pallid bat, Townsend’s big-eared bat, or western red bat must be</p>	<p>During the planning stages for each individual project.</p> <p>During the planning stages for each individual project.</p> <p>During the planning stages for each individual project.</p> <p>During the planning stages for each individual project.</p> <p>During the planning stages for each individual project.</p>	<p>PPDO</p> <p>PPDO</p> <p>PPDO</p> <p>PPDO</p> <p>PPDO</p>	<p>Document in the project file.</p> <p>Confirm that the survey was conducted. Document in the project file.</p> <p>Submit the report to UC Santa Cruz, and include a copy in the project file.</p> <p>Confirm that buffers were established. Document in the project file.</p> <p>Confirm that the program was development in consultation with CDFW and is being followed. Document in the project file.</p>

Impact	Mitigation Measure	Mitigation Procedure	Mitigation Timing	Mitigation Responsibility	Monitoring and Reporting Procedure
	<p>no bats. Exclusion efforts may be restricted during periods of sensitive activity (e.g., during hibernation or while females in maternity colonies are nursing young). The loss of each roost (if any) will be replaced in consultation with CDFW and may require construction and installation of bat boxes suitable to the bat species and colony size excluded from the original roosting site. If determined necessary during consultation with CDFW, replacement roosts will be implemented before bats are excluded from the original roost sites. Once the replacement roosts are constructed and it is confirmed that bats are not present in the original roost site by a qualified biologist, the roost tree, building, or other structure may be removed.</p>	<p>removed, the bats will be excluded from the roosting site before the tree, building, or other structure is removed, using methods identified in the program. If necessary, implement replacement roosts before bats are excluded from the original roost sites.</p>			
<p>Impact 3.5-3: Result in Degradation or Loss of Riparian Habitat or Other Sensitive Natural Communities</p>	<p>Mitigation Measure 3.5-1a: Conduct Project-Level Biological Reconnaissance Sensitive Species and Habitats Survey (See the mitigation above.)</p>	<p>As specified above.</p>	<p>As specified above.</p>	<p>As specified above.</p>	<p>As specified above.</p>
	<p>Mitigation Measure 3.5-1c: Implement Measures to Avoid Introduction or Spread of Invasive Plant Species and Plant Pathogens (See the mitigation above under Impact 3.5-1.)</p>	<p>As specified above.</p>	<p>As specified above.</p>	<p>As specified above.</p>	<p>As specified above.</p>
	<p>Mitigation Measure 3.5-3a: Conduct Protocol-Level Surveys for Sensitive Natural Communities and Riparian Habitat and Implement Avoidance Measures If it is determined through implementation of Mitigation Measure BIO-3.5-1a that sensitive natural communities or riparian habitat may be present within a particular project site, the following measures shall be implemented before implementation of project activities:</p> <ul style="list-style-type: none"> ▶ A qualified botanist will perform a protocol-level survey of the project site for sensitive natural communities and sensitive habitats (including riparian habitat and ESHAs) following the CDFW's <i>Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Sensitive Natural Communities</i> (CDFW 2018). Sensitive natural communities will be identified using the best available and current data, including keying them out using the most current edition of <i>A Manual of California Vegetation</i> (including updated natural communities data at http://vegetation.cnps.org/), or referring to relevant reports (e.g., reports found on the VegCAMP website). 	<p>If sensitive natural communities or riparian habitat may be present on a project site, retain a qualified biologist to assist with implementing the specified measures.</p> <p>Conduct the survey as specified.</p>	<p>Before implementation of project activities.</p> <p>Before implementation of project activities.</p>	<p>PPDO</p> <p>PPDO</p>	<p>Document in the project file.</p> <p>Confirm that the survey was conducted. Document in the project file.</p>

Impact	Mitigation Measure	Mitigation Procedure	Mitigation Timing	Mitigation Responsibility	Monitoring and Reporting Procedure
	<ul style="list-style-type: none"> ▶ Before implementation of project activities, development setbacks will be established around all sensitive habitats identified during surveys, and these setbacks will be flagged or fenced with brightly visible construction flagging and/or fencing under the direction of the qualified biologist and no project activities (e.g., vegetation removal (including herbicide application), ground disturbance, staging) will occur within these areas. Setback distances will be dependent on various factors (e.g., presence of special-status wildlife or plant species) and determined by a qualified biologist in consultation with the appropriate agency (e.g., CDFW, CCC), but will generally be at minimum of 50 feet. Foot traffic by personnel will also be limited in these areas to prevent the introduction of invasive or weedy species or inadvertent crushing of plants. Periodic inspections during construction will be conducted by the monitoring biologist to maintain the integrity of exclusion fencing/flagging throughout the period of construction involving ground disturbance. ▶ If sensitive natural communities are identified within a project site that cannot be avoided, Mitigation Measure 3.5-3b shall apply. ▶ If project implementation cannot avoid and thus may adversely affect the bed, bank, channel, or associated riparian habitat subject to CDFW jurisdiction under California Fish and Game Code Section 1602, Mitigation Measure 3.5-3c shall apply. 	<p>Establish setbacks as specified and in consultation with the appropriate agency.</p> <p>Conduct periodic inspections of the exclusion fencing/flagging.</p> <p>Implement Mitigation Measure 3.5-3b if sensitive natural communities on a project site cannot be avoided.</p> <p>Implement Mitigation Measure 3.5-3c if project implementation may adversely affect the bed, bank, channel, or associated riparian habitat subject to CDFW jurisdiction.</p>	<p>Before implementation of project activities.</p> <p>Throughout the period of construction involving ground disturbance.</p> <p>Before implementation of project activities.</p> <p>Before implementation of project activities.</p>	<p>PPDO</p> <p>PPDO</p> <p>PPDO</p> <p>PPDO</p>	<p>Confirm that the setbacks were established following agency consultation. Document in the project file.</p> <p>Document in the project file.</p> <p>Confirm that the mitigation measure was implemented. Document in the project file.</p> <p>Confirm that the mitigation measure was implemented. Document in the project file.</p>
	<p>Mitigation Measure 3.5-3b: Compensate for Unavoidable Loss of Sensitive Natural Communities</p> <p>If after implementation of Mitigation Measure 3.5-3a sensitive natural communities are determined to be present within a particular project site and these habitats cannot be avoided, the following measures shall be implemented:</p> <ul style="list-style-type: none"> ▶ Compensate for unavoidable loss of any sensitive natural community habitat function such that no net loss of habitat function occurs by: 	<p>If after Mitigation Measure 3.5-3a is implemented, sensitive natural communities on a particular project site cannot be avoided, retain a qualified biologist to assist with implementing the specified measures.</p>	<p>Before implementation of project activities.</p>	<p>PPDO</p>	<p>Document in the project file.</p>

Impact	Mitigation Measure	Mitigation Procedure	Mitigation Timing	Mitigation Responsibility	Monitoring and Reporting Procedure
	<ul style="list-style-type: none"> ▪ restoring sensitive natural community habitat function within the project site (e.g., using locally collected seed or cuttings); ▪ restoring degraded sensitive natural communities outside of the project site at a sufficient ratio to offset the loss of habitat function (at least 3:1 for coastal prairie and at least 1:1 for other sensitive natural communities); or ▪ preserving existing sensitive natural communities of equal or better value to the sensitive natural community affected through a conservation easement at a sufficient ratio to offset the loss of habitat function (at least 3:1 for coastal prairie and at least 1:1 for other sensitive natural communities). <p>▶ Prepare and implement a Compensatory Mitigation Plan that includes the following:</p> <ul style="list-style-type: none"> ▪ For preserving existing habitat outside of the project site in perpetuity, the Compensatory Mitigation Plan will include a summary of the proposed compensation lands (e.g., the number and type of credits, location of mitigation bank or easement), parties responsible for the long-term management of the land, and the legal and funding mechanism for long-term conservation (e.g., holder of conservation easement or fee title). UC Santa Cruz will provide evidence in the plan that the necessary mitigation has been implemented or that UC Santa Cruz has entered into a legal agreement to implement it and that compensatory habitat will be preserved in perpetuity. ▪ For restoring or enhancing habitat within the project site or outside of the project site, the Compensatory Mitigation Plan will include a description of the proposed habitat improvements, success criteria that demonstrate the performance standard of maintained habitat function has been met, legal and funding mechanisms, and parties responsible for long-term management and monitoring of the restored or enhanced habitat. ▪ Success criteria required to maintain habitat function for preserved and compensatory populations would include: 	<p>Compensate for unavoidable loss of sensitive natural community habitat function such that no net loss of habitat function occurs.</p> <p>Prepare and implement a Compensatory Mitigation Plan as specified.</p>	<p>Before implementation of project activities.</p> <p>Before implementation of project activities.</p>	<p>PPDO</p> <p>PPDO</p>	<p>Document the compensation method(s) used in the project file.</p> <p>Confirm that the plan was implemented.</p> <p>Include a copy of the plan in the project file.</p>

Impact	Mitigation Measure	Mitigation Procedure	Mitigation Timing	Mitigation Responsibility	Monitoring and Reporting Procedure
	<ul style="list-style-type: none"> • The extent of occupied area and density of plants associated with the sensitive natural community (number of plants per unit area) in compensatory habitats would be equal to or greater than the affected occupied habitat. • Compensatory and preserved sensitive natural communities would be self-producing. Populations would be considered self-producing when: • Plants associated with sensitive natural communities reestablish annually for a minimum of five years with no human intervention such as supplemental seeding; and • Reestablished and preserved habitats contain an occupied area and density comparable to existing occupied habitat areas in similar habitat types in the project vicinity. <p>▶ Impacts on sensitive natural communities considered ESHAs within the coastal zone will require a coastal development permit pursuant to the CCA and compliance with any requirements therein.</p>	<p>If impacts would occur on sensitive natural communities considered ESHAs within the coastal zone, obtain a coastal development permit pursuant to the CCA and comply with its requirements.</p>	<p>Before implementation of project activities.</p>	<p>PPDO</p>	<p>Confirm that a coastal development permit was obtained. Document in the project file.</p>
	<p>Mitigation Measure 3.5-3c: Compensate for Unavoidable Loss of Riparian Habitat</p> <p>If after implementation of Mitigation Measure 3.5-3a riparian habitat is determined to be present within a particular project site and the habitat cannot be avoided, the following measures shall be implemented:</p> <ul style="list-style-type: none"> ▶ A Streambed Alteration Notification will be submitted to CDFW, pursuant to Section 1602 of the California Fish and Game Code. If proposed project activities are determined to be subject to CDFW jurisdiction, UC Santa Cruz will abide by the measures to protect fish and wildlife resources required by any executed agreement prior to any vegetation removal or activity that may affect the resource. Measures to protect fish and wildlife resources shall include, at a minimum, a combination of the following mitigation. ▶ UC Santa Cruz will compensate for the loss of riparian habitat such that no net loss of habitat function and values occurs by: 	<p>If after Mitigation Measure 3.5-3a is implemented, riparian habitat on a particular project site cannot be avoided, implement the following measures.</p> <p>Submit a Streambed Alteration Notification to CDFW. If proposed project activities are subject to CDFW jurisdiction, abide by the measures to protect fish and wildlife resources required by any executed agreement prior to any</p>	<p>Before implementation of project activities.</p> <p>Before implementation of project activities.</p>	<p>PPDO</p> <p>PPDO</p>	<p>Document in the project file.</p> <p>Confirm submittal of the notification to CDFW. Include a copy of the executed agreement, including a record of all required measures, in the project file.</p>

Impact	Mitigation Measure	Mitigation Procedure	Mitigation Timing	Mitigation Responsibility	Monitoring and Reporting Procedure
	<ul style="list-style-type: none"> ▪ restoring riparian habitat function and value within the project site; ▪ restoring degraded riparian habitat outside of the project site; ▪ purchasing riparian habitat credits at a CDFW-approved mitigation bank; or ▪ preserving existing riparian habitat of equal or better value to the affected riparian habitat through a conservation easement at a sufficient ratio to offset the loss of riparian habitat function (at least 1:1). <p>▶ UC Santa Cruz will prepare and implement a Compensatory Mitigation Plan that will include the following:</p> <ul style="list-style-type: none"> ▪ For preserving existing riparian habitat outside of the project site in perpetuity, the Compensatory Mitigation Plan will include a summary of the proposed compensation lands (e.g., the number and type of credits, location of mitigation bank or easement), parties responsible for the long-term management of the land, and the legal and funding mechanism for long-term conservation (e.g., holder of conservation easement or fee title). UC Santa Cruz will provide evidence in the plan that the necessary mitigation has been implemented or that UC Santa Cruz has entered into a legal agreement to implement it and that compensatory habitat will be preserved in perpetuity. ▪ For restoring or enhancing riparian habitat within the project site or outside of the project site, the Compensatory Mitigation Plan will include a description of the proposed habitat improvements, success criteria that demonstrate the performance standard of maintained habitat function has been met, legal and funding mechanisms, and parties responsible for long-term management and monitoring of the restored or enhanced habitat. ▪ Compensatory mitigation may be satisfied through compliance with permit conditions, or other authorizations obtained by UC Santa Cruz (e.g., Lake and Streambed Alteration Agreement), if these requirements are equally or more effective than the mitigation identified above. 	<p>vegetation removal or activity that may affect the resource, as specified.</p> <p>Compensate for loss of riparian habitat such that no net loss of habitat function occurs.</p> <p>Prepare and implement a Compensatory Mitigation Plan as specified.</p> <p>If impacts would occur on riparian habitat considered an ESHA within the coastal zone,</p>	<p>Before implementation of project activities.</p> <p>Before implementation of project activities.</p> <p>Before implementation of project activities.</p>	<p>PPDO</p> <p>PPDO</p> <p>PPDO</p>	<p>Document the compensation method(s) used in the project file.</p> <p>Confirm that the plan was implemented.</p> <p>Include a copy of the plan in the project file.</p> <p>Confirm that a coastal development permit was obtained.</p>

Impact	Mitigation Measure	Mitigation Procedure	Mitigation Timing	Mitigation Responsibility	Monitoring and Reporting Procedure
	<ul style="list-style-type: none"> Impacts on riparian habitat considered an ESHA within the coastal zone will require a coastal development permit pursuant to the CCA and compliance with any requirements therein. 	obtain a coastal development permit pursuant to the CCA and comply with its requirements.			Document in the project file.
Impact 3.5-4: Result in Degradation or Loss of State or Federally Protected Wetlands	Mitigation Measure 3.5-1a: Conduct Project-Level Biological Reconnaissance Sensitive Species and Habitats Survey (See the mitigation above under Impact 3.5-1.)	As specified above.	As specified above.	As specified above.	As specified above.
	Mitigation Measure 3.5-4: Identify State or Federally Protected Wetlands, Implement Avoidance Measures, and Obtain Permits for Unavoidable Impacts on Wetlands If it is determined through implementation of Mitigation Measure BIO-3.5-1a that state or federally protected wetlands may be present within a particular project site, the following measures shall be implemented before implementation of project activities: <ul style="list-style-type: none"> UC Santa Cruz will retain a qualified biologist, hydrologist, or wetland ecologist to prepare a formal delineation of the boundaries of state or federally protected wetlands within the project site (including 1602 jurisdictional waterways) according to methods established in the USACE wetlands delineation manual (Environmental Laboratory 1987) and the Arid West regional supplement (USACE 2008). The qualified biologist will also delineate the boundaries of wetlands that may not meet the definition of waters of the United States, but would qualify as waters of the state, according to the state wetland procedures (SWRCB 2019). This delineation report will be submitted by UC Santa Cruz to USACE and a preliminary jurisdictional determination will be requested. If state or federally protected wetlands are determined to be present within a project site that can be avoided, the qualified biologist will establish a buffer around wetlands and mark the buffer boundary with high-visibility flagging, fencing, stakes, or clear, existing landscape demarcations (e.g., edge of a roadway). The buffer will be a minimum width of 25 feet but may be larger if deemed necessary. The appropriate size and shape of the buffer zone will be determined in coordination with the qualified biologist and will depend on the type of wetland present (e.g., stream, seep, pond), the timing of project activities (e.g., wet or dry time of year), 	If habitat suitable for the species is present on a project site, retain a qualified biologist to prepare a delineation report.	Before implementation of project activities.	PPDO	Provide documentation of results of delineation in project file.
		If state or federally protected wetlands are identified and can be avoided, establish a buffer as specified.	During the planning stages for each individual project.	PPDO	Confirm during plan review, and document in the project file.

Impact	Mitigation Measure	Mitigation Procedure	Mitigation Timing	Mitigation Responsibility	Monitoring and Reporting Procedure
	<p>whether any special-status species may occupy the wetland and the species' vulnerability to the project activities, environmental conditions and terrain, and the project activity being implemented.</p> <p>Project activities (e.g., ground disturbance, vegetation removal, staging) will be prohibited within the established buffer. The qualified biologist will periodically inspect the materials demarcating the buffer to confirm that they are intact and visible, and wetland impacts are being avoided.</p> <ul style="list-style-type: none"> ▶ If it is determined that fill of waters of the United States would result from project implementation, authorization for such fill will be secured from USACE through the Section 404 permitting process. Any waters of the United States that would be affected by the project will be replaced or restored on a no-net-loss basis in accordance with the applicable USACE mitigation guidelines in place at the time of construction. In association with the Section 404 permit (if applicable) and prior to the issuance of any grading permit, Section 401 Water Quality Certification from the Central Coast RWQCB will be obtained. For impacts on waters of the state that may not be covered by the 401 Water Quality Certification, UC Santa Cruz will secure Waste Discharge Requirements, which are described in Section 3.10, "Hydrology and Water Quality." ▶ If it is determined that disturbance or fill of state protected streams or riparian habitat cannot be avoided, UC Santa Cruz will notify CDFW before commencing activity that may divert the natural flow or otherwise alter the bed, bank, or riparian corridor of any 1602 jurisdictional waterway. If project activities trigger the need for a Streambed Alteration Agreement, the proponent will obtain an agreement from CDFW before the activity commences. The applicant will conduct project construction activities in accordance with the agreement, including implementing reasonable measures in the agreement necessary to protect the fish and wildlife resources, when working within the bed or bank of waterways or in riparian habitats associated with those waterways. These measures may include but not be limited to demarcation of the construction area, biological monitoring, environmental awareness training for construction crews, and compensatory measures (e.g., restoration, long-term habitat management). 	<p>Where fill of waters cannot be avoided, UC Santa Cruz will, initiate agency consultation, permitting process, and compensatory action as warranted.</p> <p>Where fill of state protected streams or riparian habitat cannot be avoided, UC Santa Cruz will, initiate agency consultation and the Streambed Alteration Agreement process.</p>	<p>During project design and prior to design approval.</p> <p>During project design and prior to design approval.</p>	<p>PPDO</p> <p>PPDO</p>	<p>Confirm consultation, permitting, and compensatory actions (as warranted) were implemented Document in the project file.</p> <p>Confirm consultation and Streambed Alteration Agreement process documentation in the project file.</p>

Impact	Mitigation Measure	Mitigation Procedure	Mitigation Timing	Mitigation Responsibility	Monitoring and Reporting Procedure
	<ul style="list-style-type: none"> ▶ Impacts on wetlands considered ESHAs within the coastal zone (if any) will require a coastal development permit pursuant to the CCA and compliance with any requirements therein. 				
Impact 3.5-5: Interfere with Wildlife Movement Corridors or Impede the Use of Wildlife Nurseries	Mitigation Measure 3.5-1a: Conduct Project-Level Biological Reconnaissance Sensitive Species and Habitats Survey (See the mitigation above under Impact 3.5-1.)	As specified above.	As specified above.	As specified above.	As specified above.
	Mitigation Measure 3.5-3a: Conduct Protocol-Level Surveys for Sensitive Natural Communities and Riparian Habitat and Implement Avoidance Measures (See the mitigation above.)	As specified above.	As specified above.	As specified above.	As specified above.
	Mitigation Measure 3.5-3b: Compensate for Unavoidable Loss of Sensitive Natural Communities (See the mitigation above.)	As specified above.	As specified above.	As specified above.	As specified above.
	Mitigation Measure 3.5-3c: Compensate for Unavoidable Loss of Riparian Habitat (See the mitigation above.)	As specified above.	As specified above.	As specified above.	As specified above.
	Mitigation Measures 3.5-5a: Utilize Wildlife-Friendly Building and Fencing Designs The following measures shall be implemented during the early planning stages of projects under the 2021 LRDP: <ul style="list-style-type: none"> ▶ Buildings and other permanent structures that would be constructed during implementation of projects under the 2021 LRDP shall be designed to minimize impacts on wildlife, including disruption to wildlife movement, bird strikes, and wildlife entanglement. <ul style="list-style-type: none"> ▪ Building design shall utilize guidelines regarding building height, materials, external lighting, and landscaping provided in the American Bird Conservancy's "Bird Friendly Building Design" (American Bird Conservancy 2015) or other appropriate resources (e.g., International Dark Sky Association). UC Santa Cruz shall require review of the design plans by a qualified biologist, who will determine whether the plans are sufficient to reduce the likelihood of bird strikes or recommend additional measures. 	Implement appropriate building and fencing design measures	During project design and planning.	PPDO	Confirm implementation of design measures.

Impact	Mitigation Measure	Mitigation Procedure	Mitigation Timing	Mitigation Responsibility	Monitoring and Reporting Procedure
	<ul style="list-style-type: none"> ▪ Fencing associated with new development under the 2021 LRDP will utilize wildlife-friendly fencing design to minimize the risk of entanglement or impalement of wildlife. UC Santa Cruz will require the review of fencing design by a qualified biologist prior to installation. The fencing design shall meet, but not be limited to the following standards: <ul style="list-style-type: none"> • Minimize the chance of wildlife entanglement by avoiding barbed wire, loose or broken wires, or any material that could impale, snag, or entrap a leaping animal (e.g., wrought iron fencing with spikes). • Allow wildlife to jump over easily without injury. Typically, fences should be no more than 40 inches high on flat ground to allow adult deer to jump over. The determination of appropriate fence height will consider slope, as steep slopes are more difficult for wildlife to pass. • Allow smaller wildlife to pass under easily without injury or entrapment. 				
	<p>Mitigation Measure 3.5-5b: Retain Wildlife Nursery Habitat and Implement Buffers to Avoid Wildlife Nursery Sites</p> <p>If it is determined through implementation of Mitigation Measure 3.5-1a that wildlife nursery sites are present within a particular project site, the following measures shall be implemented prior to and during construction of a project:</p> <ul style="list-style-type: none"> ▶ A qualified biologist will identify the important habitat features of the wildlife nursery and, prior to commencement of project activities (e.g., ground disturbance, vegetation removal, staging), will mark these features for avoidance and retention during project implementation to maintain the function of the nursery habitat. ▶ A no-disturbance buffer will be established around the nursery site if project activities are required while the nursery site is active/occupied. The appropriate size and shape of the buffer will be determined by a qualified biologist, based on potential effects of project-related habitat disturbance, noise, visual disturbance, and other factors, but will typically be a minimum of 100 feet. No project activity will commence within the buffer area until a qualified biologist confirms that the nursery site is no longer 	<p>If wildlife nursery sites are present, retain a qualified biologist to implement the specified measures.</p>	<p>Prior to implementation of project activities.</p>	<p>PPDO</p>	<p>Document in the project file.</p>

Impact	Mitigation Measure	Mitigation Procedure	Mitigation Timing	Mitigation Responsibility	Monitoring and Reporting Procedure
	<p>active/occupied. Monitoring of the effectiveness of the no-disturbance buffer around the nursery site by a qualified biologist during and after project activities will be required. If project activities cause agitated behavior of the individual(s), the buffer distance will be increased, or project activities modified until the agitated behavior stops. The qualified biologist will have the authority to stop any project activities that could result in potential adverse effects to wildlife nursery sites.</p>				
<p>Impact 3.5-7: Conflict with the Provisions of an Adopted Habitat Conservation Plan or Natural Community Conservation Plan</p>	<p>Mitigation Measure 3.5-7: Establish Alternative Preserves to Replace Inclusion Area D, and Amend the Ranch View Terrace HCP with Approval from USFWS</p> <p>The following measures shall be implemented prior to any development activities within Inclusion Area D (IAD):</p> <ul style="list-style-type: none"> ▶ UC Santa Cruz shall, in consultation with USFWS, seek an amendment to the Ranch View Terrace HCP to accommodate replacement of IAD with replacement habitat that may be suitable, created, or restored for Ohlone tiger beetle. ▶ In consultation with USFWS, UC Santa Cruz will determine whether a new preserve(s) could be established to replace IAD. New proposed preserves will be characterized by equal (12.5 acres) or greater size, and better habitat (e.g., intact coastal prairie, Watsonville loam soils, bare soil available, presence of Ohlone tiger beetle) than IAD. ▶ If USFWS concurs that replacement of IAD is appropriate, the Ranch View Terrace HCP will be amended to exclude IAD. Any new preserve(s) would be managed through yearly monitoring and vegetation management activities with the objective of fostering occupation by Ohlone tiger beetle. ▶ If USFWS does not concur that replacement of IAD is appropriate, the existing incidental take permit and associated measures in the Ranch View Terrace HCP will apply, and no development will occur within IAD. ▶ As noted in Mitigation Measures 3.5-2a and 3.5-2i, UC Santa Cruz may elect to pursue a comprehensive HCP, which shall be accomplished either by amending the Ranch View Terrace HCP or by incorporating and replacing the existing Ranch View Terrace HCP. 	<p>UC Santa Cruz shall initiate consultation with USFWS to implement the specified measures.</p>	<p>Prior to implementation of project activities within the IAD.</p>	<p>PPDO</p>	<p>Confirm implementation of measures and document results.</p>

Impact	Mitigation Measure	Mitigation Procedure	Mitigation Timing	Mitigation Responsibility	Monitoring and Reporting Procedure
Geology and Soils					
<p>Impact 3.7-6: Directly or Indirectly Destroy Unique Paleontological Resources</p>	<p>Mitigation Measure 3.7-6: Treatment of Paleontological Resources For development within the potential fossil-bearing formations in the LRDP area, namely marine formations of Santa Margarita sandstones, Santa Cruz mudstone, and Quaternary marine terrace deposits, and sedimentary formations of Quaternary non-marine terrace deposits and doline deposits, UC Santa Cruz shall require, as part of contract specifications, that the contractor provide a paleontological resources awareness training program to all construction personnel active on the project site during earth moving activities. The first training will be provided prior to the initiation of ground disturbing activities. The training will be developed and conducted in coordination with a qualified paleontologist. The program will include relevant information regarding fossils and fossil-bearing formations that may be encountered. The training will also describe appropriate avoidance and minimization measures for resources that have the potential to be located on the project site.</p> <p>If any paleontological resources are encountered during ground-disturbing activities, the contractor shall ensure that activities in the immediate area of the find are halted and that UC Santa Cruz is informed. UC Santa Cruz shall retain a qualified paleontologist to evaluate the discovery and recommend appropriate treatment options pursuant to guidelines developed by the Society of Vertebrate Paleontology, including development and implementation of a paleontological resource impact mitigation program by a qualified paleontologist for treatment of the particular resource, if applicable. These measures may include, but not be limited to the following:</p> <ul style="list-style-type: none"> ▶ salvage of unearthed fossil remains and/or traces (e.g., tracks, trails, burrows); ▶ screen washing to recover small specimens; ▶ preparation of salvaged fossils to a point of being ready for curation (e.g., removal of enclosing matrix, stabilization and repair of specimens, and construction of reinforced support cradles); and ▶ identification, cataloging, curation, and provision for repository storage of prepared fossil specimens. 	<p>Conduct paleontological resources awareness training.</p> <p>If paleontological resources are encountered, halt activities and retain a qualified paleontologist to evaluate the find, recommend appropriate treatment, and prepare a paleontological resource impact mitigation program</p>	<p>Prior to initiation of earth moving activities.</p> <p>During construction activities.</p>	<p>PPDO</p> <p>PPDO</p>	<p>Verify the contracted conducted training.</p> <p>Document findings and confirm preparation and implementation of a paleontological resource impact mitigation program.</p>

Impact	Mitigation Measure	Mitigation Procedure	Mitigation Timing	Mitigation Responsibility	Monitoring and Reporting Procedure
Greenhouse Gas Emissions and Climate Change					
<p>Impact 3.8-1: Generate Greenhouse Gas Emissions that May Have a Significant Impact on the Environment</p>	<p>Mitigation Measure 3.8-1: Reduce Annual Greenhouse Gas Emissions UC Santa Cruz shall commit to reducing annual GHG emissions by at least 6,907 MTCO₂e by 2040. This reduction shall be achieved through the combination of on-campus GHG reduction projects and, if necessary, purchase of carbon offsets.</p> <p><i>On-Campus or Other Regional Lands Reductions</i></p> <p>UC Santa Cruz shall prioritize GHG reductions through on-campus GHG-reduction projects and actions or at other university-owned properties in the region. UC Santa Cruz could also pursue joint GHG-reduction efforts with other local/regional agencies (e.g., City and County of Santa Cruz.) Reductions in GHG emissions shall be achieved through the combination of any of the following:</p> <ol style="list-style-type: none"> 1. Replanting removed trees or planting equivalent new trees displaced by construction at a 1:1 ratio and ensuring the continued health of the replanted trees. A 100 percent replanting rate would offset 2,160 MTCO₂e per year by 2040. Tree planting at a higher rate would provide further GHG reductions. 2. Reducing new non-fleet mobile source emissions from commuting, vendor trips, and delivery trips by 2040. A 10 percent reduction in anticipated emissions from these sources would reduce emissions by 1,083 MTCO₂e per year in 2040. These reductions can be achieved through an enhanced Transportation Demand Management Program (see Mitigation Measure 3.16-2). This program would include parking management, expanded vanpool program, improved transit service, and increased telecommuting. 3. Requiring renewable diesel or other zero carbon emissions alternatives to be used in place of conventional diesel use in equipment for all construction activity, even those occurring after this 2021 LRDP plan period. A 100-percent renewable diesel construction fleet would reduce emissions in 2040 by 942 MTCO₂e per year. 4. Reducing waste and increasing recycling and composting within the LRDP area as part of UC Santa Cruz's Zero Waste goal under UCOP's Sustainable Practices Policy, including additional on-campus education and opportunities for waste recycling. 	<p>UC Santa Cruz shall implement the specified measures.</p>	<p>During implementation of the 2021 LRDP.</p>	<p>PPDO, TAPS, Sustainability Office, and Grounds</p>	<p>Confirm implementation of measures to reduce annual GHG emissions.</p>

Impact	Mitigation Measure	Mitigation Procedure	Mitigation Timing	Mitigation Responsibility	Monitoring and Reporting Procedure
	<p>5. Pursuing innovative on-site wastewater treatment alternatives, such as waste-to-energy projects, that reduce N₂O and CH₄ process emissions compared to those generated at off-site wastewater treatment.</p> <p>6. Pursuing electrification of existing buildings and requiring that all new buildings be electric only.</p> <p>7. Any other on-campus or regional projects or measures identified during the course of the 2021 LRDP that would effectively and quantifiably reduce emissions.</p> <p><i>Acquire Carbon Offset Credits in Conformance with CARB Guidance that are Demonstrably Real, Permanent, Additional, Quantifiable, Verifiable, and Enforceable</i></p> <p>As part of this mitigation measure, UC Santa Cruz would make the following separate, though overlapping, GHG emission reduction commitments: (1) UC Santa Cruz will maintain compliance with carbon offset accreditation requirements under CARB's Cap-and-Trade program, and (2) per existing UC Policy, UC Santa Cruz's GHG emissions shall, commencing in 2025, be entirely carbon neutral.</p> <p><u>Compliance with CARB's Cap-and-Trade Program:</u> Any carbon offset credits obtained for the purpose of compliance with CARB's Cap-and-Trade program shall be purchased from an accredited carbon credit market. Based on the current program as of January 2021, such offset credits (or California Carbon Offsets) shall be registered with, and retired by an Offset Project Registry, as defined in 17 California Code of Regulations § 95802(a), that is approved by CARB, such as, but not limited to, Climate Action Reserve (CAR), American Carbon Registry, and Verra (formerly Verified Carbon Standard), that is recognized by The Climate Registry, a non-profit organization governed by U.S. states and Canadian provinces and territories.</p> <p><u>Compliance with UC Policy:</u> Compliance with UC's policies for carbon neutrality by 2025 and UC's own policy to reduce Scope 1, 2, and transportation-related Scope 3 emissions below 1990 levels pursuant to AB 32 will be accomplished through reductions in direct emissions, the purchase of renewable electricity, and the purchase of carbon offset credits. UC Santa Cruz will purchase voluntary carbon offset credits as the final action to reach the</p>				

Impact	Mitigation Measure	Mitigation Procedure	Mitigation Timing	Mitigation Responsibility	Monitoring and Reporting Procedure
	<p>GHG emission reduction targets. Internal guidelines will be developed per the UC Carbon Neutrality Initiative to ensure that any use of offsets for this purpose will derive from verified GHG emissions reductions resulting from actions that align, as much as possible, with UC’s research, teaching, and public service mission.</p> <p>To demonstrate that the carbon offset credits provided are real, permanent, additional, quantifiable, verifiable, and enforceable, as those terms are defined in 17 California Code of Regulations § 95802(a), UC Santa Cruz shall prepare an annual report documenting the protocol used to verify those credits and submit that report for approval to a CARB-accredited third-party verification entity. If the verification entity finds that any credits purchased did not meet these criteria, UC shall purchase alternative credits and submit a follow-up report to the verification entity for concurrence. All carbon offsets purchased will be reported publicly and tracked through the Climate Registry as required by UC policy.</p> <p>For any remaining emissions not achieved through on-campus reduction efforts, as outlined above, UC Santa Cruz shall ensure that the remaining emissions reductions are taking place and on the trajectory toward meeting the target of reducing annual GHG emissions by at least 6,907 MTCO_{2e} by 2040 and shall conduct an annual review of emissions reductions. To achieve any remaining GHG emissions reductions, voluntary carbon offsets shall be purchased.</p>				
Hazards and Hazardous Materials					
<p>Impact 3.9-2: Result in the Release of Hazardous Materials from a Site of Known or Potential Contamination</p>	<p>Mitigation Measure 3.9-2a: Conduct Preliminary Site Investigation During project planning, the Environmental Health and Safety (EH&S) Department shall be consulted in order to identify if any past contamination, underground storage tanks (USTs), aboveground storage tanks (ASTs), or other contamination could potentially occur in areas to be disturbed for project construction. EH&S will consider the cases on file at the County of Santa Cruz EHS and information on historical uses in the area to be impacted such as old maps and photos. If EH&S determines that there is no or minimal potential for contamination to occur on site, no additional mitigation is necessary. If it is determined that contamination has the potential to exist on a project site, Mitigation Measure 3.9-2b shall be implemented.</p>	<p>Conduct preliminary site assessment.</p>	<p>During project planning.</p>	<p>PPDO and EH&S</p>	<p>Document findings.</p>

Impact	Mitigation Measure	Mitigation Procedure	Mitigation Timing	Mitigation Responsibility	Monitoring and Reporting Procedure
	<p>Mitigation Measure 3.9-2b: Conduct Site-Specific Investigation and Prepare Work Plan Where initial investigations indicate the potential for contamination, UC Santa Cruz shall conduct soil sampling within the boundaries of the project site 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 (ESA) 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 County of Santa Cruz Environmental Health Services (EHS), Regional Water Quality Control Board (RWQCB), and Department of Toxic Substances Control (DTSC). The agencies involved shall depend on the type and extent of contamination.</p> <p>Based on the results and recommendations of the investigation described above, UC Santa Cruz 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 project site. The work plan shall include measures that ensure the safe transport, use, and disposal of contaminated soil removed from the project site.</p>	<p>Conduct survey and document findings. Conduct remediation activities as necessary.</p>	<p>During project siting or planning phase. Remediation prior to ground-disturbing construction.</p>	<p>PPDO and EH&S</p>	<p>Document finding and confirm remediation activities.</p>
	<p>Mitigation Measure 3.9-2c: Prepare and Implement Hazardous Materials Contingency Plan Prior to initiation of grading or other ground disturbance, UC Santa Cruz shall provide a hazardous materials contingency plan to EH&S and County of Santa Cruz EHS, 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.</p> <p>If at any time during the course of construction, evidence of soil and/or groundwater contamination with hazardous material is encountered, UC Santa Cruz shall immediately halt construction and contact EH&S and County of Santa Cruz EHS. Work shall not be resumed until the discovery has been assessed/treated appropriately (through such mechanisms as soil or groundwater sampling and remediation if potentially hazardous</p>	<p>Prepare hazardous materials contingency plan.</p> <p>Monitor construction site, perform testing, and consult with EH&S and County of Santa Cruz EHS, as necessary.</p>	<p>During project design before project approval.</p> <p>During earth moving activities.</p>	<p>PPDO and EH&S</p> <p>PPDO and EH&S</p>	<p>Confirm preparation and implementation of contingency plan.</p> <p>Confirm monitoring, resting, and consultation, as necessary.</p>

Impact	Mitigation Measure	Mitigation Procedure	Mitigation Timing	Mitigation Responsibility	Monitoring and Reporting Procedure
	<p>materials are detected above threshold levels) to the satisfaction of County of Santa Cruz EHS, RWQCB, and DTSC (as applicable).</p> <p>The hazardous materials contingency plan, and obligations to abide by and implement the plan, shall be incorporated into the construction and contract specifications of the project.</p>				
	<p>Mitigation Measure 3.9-2d: Require Minimization of Hazards during Demolition</p> <p>Prior to demolition of existing structures, in order to minimize potential for accidental release of hazardous materials during demolition, UC Santa Cruz shall complete the following:</p> <ul style="list-style-type: none"> ▶ Locate and dispose of potentially hazardous materials in compliance with all applicable federal, state, and local laws. This shall include: 1) identify locations that could contain hazardous residues; 2) remove plumbing fixtures known to contain, or potentially containing, hazardous materials; 3) determine the waste classification of the debris; 4) package contaminated items and wastes; and 5) identify disposal site(s) permitted to accept such wastes. ▶ Provide written documentation to the appropriate County department and MBARD that asbestos testing and abatement consistent with MBARD Rule 424, as appropriate, has occurred in compliance with applicable federal, state, and local laws. ▶ Provide written documentation to the appropriate County department and MBARD that lead-based paint testing and abatement, as appropriate, has been completed in accordance with applicable state and local laws and regulations. Abatement shall include the removal of lead contaminated soil (considered soil with lead concentrations greater than 400 parts per million in areas where children are likely to be present). If lead-contaminated soil is to be removed, UC Santa Cruz shall submit a soil management plan to County of Santa Cruz EHS. 	<p>Monitor construction site, perform testing, and consult with County of Santa Cruz EHS and MBARD, as necessary.</p>	<p>Inspect construction site during demolition of existing structures.</p>	<p>PPDO and EH&S</p>	<p>Confirm monitoring, resting, and consultation, as necessary.</p>
<p>Impact 3.9-4: Impair Implementation of, or Physically Interfere with, an Adopted Emergency Response Plan or Emergency Evacuation Plan</p>	<p>Mitigation Measure 3.9-4: Prepare and Implement Site-Specific Construction Traffic Management Plans</p> <p>UC Santa Cruz 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</p>	<p>Develop and implement a traffic management plan.</p>	<p>Prior to construction.</p>	<p>PPDO and EH&S</p>	<p>Confirm preparation and implementation of traffic management plan.</p>

Impact	Mitigation Measure	Mitigation Procedure	Mitigation Timing	Mitigation Responsibility	Monitoring and Reporting Procedure
	<p>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. If simultaneous construction activities occur close to one another, UC Santa Cruz shall require that simultaneous road closures not occur within 1,000 feet of each other. 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 Santa Cruz Police Department (UCPD) and Santa Cruz Fire Department (SCFD) of the closures and alternative travel routes. During National Weather Service Red Flag Warnings and Fire Weather Watches, the UCPD and SCFD shall be consulted to determine if any changes to road closures are necessary while these fire hazard conditions are in effect.</p>				
Hydrology and Water Quality					
<p>Impact 3.10-5: Impacts to Karst Aquifer Supply, Recharge and Groundwater Quality</p>	<p>Mitigation Measure 3.10-5a: Procedures for Building on Karst Where Groundwater is Encountered and Where Pressure Grouting is Considered For projects involving construction on karst as determined by the geotechnical investigation, if 1) groundwater is encountered beneath the building site, and 2) the proposed building foundation design includes pressure grouting, UC Santa Cruz shall complete a dye tracing study to confirm potential hydrologic connectivity of the building site with springs around the campus or campus wells. If the study confirms the building site to be hydrologically linked to springs and/or wells in the karst system, then alternative building foundation designs will be implemented.</p>	<p>Conduct dye tracing study to confirm potential hydrologic connectivity. If study confirms the building site to be hydrologically linked to springs and/or wells in the karst system, implement alternative building foundation designs.</p>	<p>Prior to design approval.</p>	<p>PPDO</p>	<p>Confirm implementation of dye tracing study and alternation building foundation design, as necessary.</p>
	<p>Mitigation Measure 3.10-5b: On-Going Groundwater Level and Spring Flow Monitoring If the existing well WSW#1 or a new groundwater well is used for extraction, UC Santa Cruz shall perform monitoring of water levels within that well and any other campus wells completed in the karst aquifer on a continuous basis when groundwater pumping occurs. UC Santa Cruz shall also conduct, at a minimum, monthly flow monitoring of those springs in the</p>	<p>Monitor water levels of existing well WSW#1 or a new groundwater well, and any other campus wells completed in the karst aquifer on an annual basis</p>	<p>Prior to and during groundwater extraction.</p>	<p>PPDO</p>	<p>Confirm water level monitoring and document results.</p>

Impact	Mitigation Measure	Mitigation Procedure	Mitigation Timing	Mitigation Responsibility	Monitoring and Reporting Procedure
	<p>vicinity of the LRDP area shown to be connected to the well via a dye tracing study or other applicable testing method for the duration of groundwater pumping to determine whether there is any long-term decline in water levels or spring discharge. Monitoring of the springs shall also include an assessment of surface water resources (i.e., habitats, plant species, and wildlife species) for a distance of 500 feet downgradient from the daylighting of connected springs at least 30 days prior to and after groundwater pumping to determine if there are any adverse changes (i.e., reduction in ordinary high water mark, changes in plant or wildlife species assemblages such that a species is no longer present, or reduction in plant cover) in the condition of these resources that may be directly attributed to changes in spring discharge as a result of groundwater pumping.</p> <p>If monitoring of water levels and spring flows indicates that UC Santa Cruz extraction of groundwater is contributing to a net deficit in aquifer volume, as indicated by a substantial decrease in average base flow water levels in any monitored wells or a substantial reduction of base flows in monitored springs, the campus will terminate or reduce its use of groundwater from the aquifer. A substantial decrease shall constitute observations of a continual decreasing trend in base groundwater water levels over a 3-5 year period coupled with a decrease in spring base flow conditions, beyond the standard deviation for any given spring, for a corresponding water year type. The average base water levels and base flows in springs will be defined through a statistical analysis of historic data, grouped by water year types. As new monitoring data becomes available, UC Santa Cruz will continually update the statistical analysis.</p>	<p>when groundwater pumping occurs.</p> <p>Terminate or reduce use of groundwater if water levels and spring flows indicate a net deficit.</p>	<p>During groundwater extraction.</p>	<p>PPDO</p>	<p>Review and monitor water level results.</p>
Noise					
<p>Impact 3.12-1: Generate Substantial Temporary Construction Noise</p>	<p>Mitigation Measure 3.12-1: Implement Construction Noise Reduction Measures</p> <p>As part of construction of new/renovated facilities associated with 2021 LRDP implementation, UC Santa Cruz shall implement or incorporate the following noise reduction measures into construction specifications for the contractor(s) to implement during project construction:</p> <ul style="list-style-type: none"> ▶ All construction equipment shall be properly maintained and equipped with noise-reduction intake and exhaust mufflers and engine shrouds, in accordance with manufacturer 	<p>Incorporate measures in contract specifications.</p>	<p>During construction.</p>	<p>PPDO</p>	<p>Inspect construction site to verify that measures are being implemented.</p>

Impact	Mitigation Measure	Mitigation Procedure	Mitigation Timing	Mitigation Responsibility	Monitoring and Reporting Procedure
	<p>recommendations. Equipment engine shrouds shall be closed during equipment operation.</p> <ul style="list-style-type: none"> ▶ Where available and feasible, construction equipment with back-up alarms shall be equipped with either audible self-adjusting backup alarms or alarms that only sound when an object is detected. Self-adjusting backup alarms shall automatically adjust to 5 A-weighted decibels (dBA) over the surrounding background levels. All non-self-adjusting backup alarms shall be set to the lowest setting required to be audible above the surrounding noise levels. ▶ All construction equipment and equipment staging areas shall be located as far as feasible from nearby noise-sensitive land uses and, when feasible, staging areas shall be located such that existing or constructed noise attenuating features (e.g., temporary noise wall or blankets) block line-of-sight between affected noise-sensitive land uses and construction staging areas. ▶ 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 shall be consistent with building codes and other applicable laws and regulations. ▶ Stationary noise sources such as generators or pumps shall be located as far away from noise-sensitive uses as feasible. ▶ No less than 1 week prior to the start of construction activities at a particular location, notification shall be provided to nearby off-campus, noise-sensitive land uses (e.g., residential uses, elementary schools) that are located within 690 feet of the construction site and where projected construction noise levels are anticipated to exceed acceptable daytime L_{max} noise standards. ▶ When construction would occur within 140 feet of on-campus housing or 690 feet of off-campus noise-sensitive uses (e.g., residences, elementary schools, churches) and may result in temporary noise levels in excess of established standards at the exterior of the adjacent noise-sensitive structure, temporary noise barriers (e.g., noise-insulating blankets or temporary plywood structures) shall be erected, if deemed to be feasible and effective, between the noise source and sensitive receptor such that construction-related noise levels are reduced to acceptable noise levels at the receptor. 				

Impact	Mitigation Measure	Mitigation Procedure	Mitigation Timing	Mitigation Responsibility	Monitoring and Reporting Procedure
	<ul style="list-style-type: none"> ▶ Loud construction activity (i.e., construction activity such as jackhammering, concrete sawing, asphalt removal, and large-scale grading operations) shall not be scheduled during the Campus's finals week. ▶ When construction of a project requires material hauling, a haul route plan shall be prepared for the project, for review and approval by UC Santa Cruz, that designates haul routes as far as feasible from sensitive receptors. ▶ The contractor shall designate a disturbance coordinator and post that person's telephone number conspicuously around the construction site, as well as provide it to nearby residences. The disturbance coordinator shall receive all public complaints and be responsible for determining the cause of the complaint and implementing any feasible measures to alleviate the problem. ▶ Construction activities (excluding activities that would result in a safety concern to the public or construction workers) shall be limited to between the hours of 8:00 a.m. and 10:00 p.m., when feasible. For any construction activity that must extend beyond the daytime hours of 8:00 a.m. and 10:00 p.m. and occurs within 440 feet of an on-campus residential building or 1,225 feet of an off-campus sensitive land use, UC Santa Cruz shall require the use of one or more of the following or equivalent measures to reduce interior noise levels to less than 45 dB L_{eq} at the nearest receptor: <ul style="list-style-type: none"> ▪ Use of noise-reducing enclosures around stationary noise-generating equipment (e.g., concrete mixers, generators, compressors). ▪ 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). The curtains shall 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. ▪ Retain a qualified noise specialist to develop a noise monitoring plan and conduct noise monitoring to ensure that noise reduction measures are achieved the necessary 				

Impact	Mitigation Measure	Mitigation Procedure	Mitigation Timing	Mitigation Responsibility	Monitoring and Reporting Procedure
	<p>reductions such that levels at the receiving land uses do not exceed exterior noise levels of 45 dBA L_{eq} for construction activity occurring during noise-sensitive nighttime hours.</p> <ul style="list-style-type: none"> ▪ If restricting construction activities to daytime hours (8 a.m. to 10 p.m.) is infeasible and the application of all feasible mitigation, as listed above, does not successfully reduce interior noise levels to lower than 45 dB L_{eq} at the nearest residential noise-sensitive receptor, UC Santa Cruz will offer hotel accommodations to residents who would temporarily be exposed to nighttime interior noise levels that exceed the interior noise standard of 45 L_{eq}. Alternative overnight accommodations should be in a location that is not adversely affected by nighttime construction noise. 				
<p>Impact 3.12-2: Generate Substantial Temporary (Construction) Vibration Levels</p>	<p>Mitigation Measure 3.12-2a: Implement Measures to Reduce Ground Vibration</p> <p>For any future construction activity that would involve construction activities within 75 feet of an existing sensitive land use or occupied building, the following measures shall be implemented:</p> <ul style="list-style-type: none"> ▶ Earthmoving and ground-impacting operations shall be phased so as not to occur simultaneously in areas close to sensitive receptors (i.e., within 75 feet). The total vibration level produced could be significantly less when each vibration source is operated at separate times. ▶ In the event that simultaneous earthmoving and ground-impacting operations in close proximity to sensitive receptors (i.e., within 75 feet) cannot be avoided, no such construction activities shall be undertaken without prior approval from UC Santa Cruz. Prior to the commencement of such activities, the contractor shall apply for and obtain an exemption from UC Santa Cruz. The application for exemption shall be submitted to UC Santa Cruz and shall include the following information: <ul style="list-style-type: none"> ▪ Explanation as to why operating earthmoving and ground-impacting operations in close proximity to sensitive receptors (i.e., within 75 feet) at separate times is not feasible. ▪ Dates and times that the simultaneous earthmoving and ground-impacting operations construction activities would occur. 	<p>For construction activity with 75 feet of an existing sensitive land use, implement measures as specified.</p>	<p>During construction.</p>	<p>PPDO</p>	<p>Inspect construction site to verify that measures are being implemented.</p>

Impact	Mitigation Measure	Mitigation Procedure	Mitigation Timing	Mitigation Responsibility	Monitoring and Reporting Procedure
	<ul style="list-style-type: none"> ▪ Distance from sensitive receptors at which simultaneous earthmoving and ground-impacting operations construction activities would occur. ▪ Identify the on- and off-site sensitive receptors and structures that could be exposed to levels of ground vibration that could exceed applicable thresholds and apply Mitigation Measure 3.12-2b if applicable. ▶ Rubber-tired equipment shall be used, where feasible, instead of tracked equipment. ▶ Where there is flexibility in the location of use of heavy-duty construction equipment, the equipment shall be operated as far away (up to 250 feet) from vibration-sensitive sites. 				
	<p>Mitigation Measure 3.12-2b: Develop and Implement a Vibration Control Plan</p> <p>To assess and, when needed, reduce vibration and noise impacts from construction activities, the following measures shall be implemented:</p> <ul style="list-style-type: none"> ▶ A vibration control plan shall be developed prior to initiating any construction activities within 50 feet of a sensitive use (75 feet if vibratory equipment is required) and within 125 feet of a structure with laboratory or other similarly sensitive equipment (235 feet if vibratory equipment is required). Applicable elements of the plan shall be implemented before, during, and after construction activities. The plan will include measures sufficient to reduce vibration at sensitive receptors to levels below applicable thresholds (i.e., 0.2 in/sec PPV for building structural damage, 80 VdB for human disturbance and 65 VdB for sensitive equipment). Items that will be addressed in the plan may include, but are not limited to, the following: <ul style="list-style-type: none"> ▪ Pre-construction surveys shall be conducted to identify any pre-existing structural damage to buildings that may be affected by project-generated vibration. ▪ Identification of minimum setback requirements for different types of ground-vibration-producing activities (e.g., use of a vibratory roller) for the purpose of preventing damage to nearby structures and preventing adverse effects on people. Factors to be considered include the nature of the vibration- 	<p>Prepare and implement a vibration control plan.</p>	<p>Before and during construction.</p>	<p>PPDO</p>	<p>Confirm implementation of vibration control plan.</p>

Impact	Mitigation Measure	Mitigation Procedure	Mitigation Timing	Mitigation Responsibility	Monitoring and Reporting Procedure
	<p>producing activity, local soil conditions, and the fragility/resiliency of the nearby structures. Initial setback requirements can be reduced if a project- and site-specific analysis is conducted by a qualified geotechnical engineer or ground vibration specialist that indicates that no structural damage to buildings or structures would occur.</p> <ul style="list-style-type: none"> ▪ Identification of vibration-sensitive equipment and existing vibration control measures for the identified equipment. If, upon evaluation and prior to construction, vibration levels at the nearby equipment would exceed 65 VdB, UC Santa Cruz shall either provide additional vibration dampening (e.g., mounting) for the equipment or relocate the equipment to another suitable location on campus until construction vibration would decrease to below 65 VdB. ▪ Vibration levels shall be monitored and documented at the nearest sensitive land use within the aforementioned distances to document that applicable thresholds are not exceeded. Recorded data shall be submitted on a twice-weekly basis to UC Santa Cruz. If it is found at any time that thresholds are exceeded, construction activities shall cease in that location, and methods shall be implemented to reduce vibration to below applicable thresholds, or an alternative pile installation method shall be used at that location. 				
<p>Impact 3.12-3: Generate Substantial Long-Term Stationary Noise</p>	<p>Mitigation Measure 3.12-3a: Implement Noise Reduction Measures to Reduce Long-Term Noise Impacts from Loading Dock Activity</p> <p>To minimize noise levels generated by loading docks and delivery activity to levels that do not exceed the daytime standard of 70 dB L_{max} or nighttime standard of 65 dB L_{max}, the following measures shall be implemented for construction projects that include loading docks:</p> <ul style="list-style-type: none"> ▶ New loading docks only used during daytime hours (8 a.m. to 10 p.m.) shall be located at least 320 feet from all residential receptors, and new loading docks used during daytime and nighttime hours shall be located at least 560 feet from all residential receptors. If this is not feasible, UC Santa Cruz shall reduce the noise level at all residential receptors to 70 dB L_{max} during daytime hours and 65 dB L_{max} during nighttime hours by incorporating one or more of the following mitigation strategies, 	<p>For construction projects that include loading docks, implement measures as specified.</p>	<p>During construction and project operation.</p>	<p>PPDO</p>	<p>Confirm that measures are being implemented.</p>

Impact	Mitigation Measure	Mitigation Procedure	Mitigation Timing	Mitigation Responsibility	Monitoring and Reporting Procedure
	<p>the effectiveness of which shall be determined on a project-level basis by an acoustical professional:</p> <ul style="list-style-type: none"> ▪ Design and build sound barriers near loading docks and delivery areas that block the line of sight between truck activity areas and residential land uses. Sound barriers may consist of a wall, earthen berm, or combination thereof. ▪ Constructing loading dock pits that are below grade relative to the surrounding parking area or placing loading docks on the side of a building that does not directly face noise-sensitive receptors. ▪ Incorporate a setback distance from loading docks to noise-sensitive receptors, and prohibit truck travel and activity within the setback area by posting signs and/or by installing gates that restrict truck access 				
	<p>Mitigation Measure 3.12-3b: Implement Noise Reduction Measures to Reduce Long-Term Noise Impacts from Corporation Yard Activity To minimize noise levels generated by corporation yard activity to levels that do not exceed the daytime standard of 70 dB L_{max} or nighttime standard of 65 dB L_{max}, the following measures shall be implemented for the construction of new corporation yards:</p> <ul style="list-style-type: none"> ▶ New corporation yards only used during daytime hours (8 a.m. to 10 p.m.) shall be located at least 320 feet from all residential receptors, and new corporation yards used during daytime and nighttime hours shall be located at least 560 feet from all residential receptors. If this is not feasible, UC Santa Cruz shall reduce the noise level at all residential receptors to 70 dB L_{max} during daytime hours and 65 dB L_{max} during nighttime hours by incorporating one or more of the following mitigation strategies, the effectiveness of which shall be determined on a project-level basis by an acoustical professional: <ul style="list-style-type: none"> ▪ Design and build sound barriers around corporation yards that block the line of sight between truck activity areas and residential land uses. Sound barriers may consist of a wall, earthen berm, or combination thereof. ▪ Incorporate a setback distance from corporation yards to noise-sensitive receptors, and prohibit travel and activity of trucks or other heavy equipment within the setback area by posting signs and/or by installing gates that restrict truck access. 	<p>For construction projects that include new corporation yards, implement measures as specified.</p>	<p>During construction and project operation.</p>	<p>PPDO</p>	<p>Confirm that measures are being implemented.</p>

Impact	Mitigation Measure	Mitigation Procedure	Mitigation Timing	Mitigation Responsibility	Monitoring and Reporting Procedure
Public Services					
<p>Impact 3.14-1: Impacts on Fire Facilities</p>	<p>Mitigation Measure 3.14-1: Require Acquisition of New Fire Equipment and Construction/Expansion of On-Campus Fire Station to Meet Fire Access Requirements During the design and planning of individual on-campus structures under the 2021 LRDP, UC Santa Cruz in coordination with SCFD shall determine if proposed development would exceed the height of existing on-campus response vehicles of the existing fire station. If it is determined that proposed development would exceed height capacity of existing on-campus response vehicles, UC Santa Cruz shall initiate the design and planning of a new on-campus fire station that can accommodate the required response vehicle(s) and adequately serve the development. Prior to operation of the on-campus development that would trigger the need for additional fire protection facilities, UC Santa Cruz shall initiate operation of the new on-campus fire station in cooperation with the City and pursuant to existing agreements related to fire protection service provided by SCFD.</p>	<p>UC Santa Cruz to coordinate with SCFD to determine if design and planning of a new on-campus fire station is needed to support on-campus development.</p>	<p>Design and planning of on-campus development.</p>	<p>PPDO and OES</p>	<p>Confirm coordination and implementation of design and planning of a new on-campus fire station, as needed.</p>
Transportation					
<p>Impact 3.16-2: Conflict or Be Inconsistent with CEQA Guidelines Section 15064.3, Subdivision (b) Related to Vehicle Miles Traveled (VMT)</p>	<p>Mitigation Measure 3.16-2: Implement Transportation Demand Management (TDM) Program and Monitoring UC Santa Cruz shall prepare and implement a TDM program as part of the 2021 LRDP that will adaptively manage campus-related VMT. At a minimum, the TDM program shall include the following:</p> <ul style="list-style-type: none"> ▶ performance standards that are deemed sufficient to demonstrate annually that UC Santa Cruz will reduce the total campus VMT per capita to 15 percent below baseline campus average and the total employment VMT per employee to 15 percent below the countywide average; ▶ parking management strategies that reduce the per student/faculty/staff parking rates to reduce travel and associated VMT; ▶ campus features and TDM measures that will be used to achieve the performance standard commitments; and ▶ a monitoring and reporting program. <p>UC Santa Cruz shall initiate preparation of the TDM program within three months of adoption of the 2021 LRDP and shall adopt and initiate program implementation within one academic year of LRDP adoption.</p>	<p>Prepare and implement a TDM program, as specified.</p>	<p>Preparation of the TDM program initiated within three months of adoption of the 2021 LRDP; program adopted and initiated within one academic year of LRDP adoption.</p>	<p>PPDO, TAPS and Sustainability Office</p>	<p>Document measures in annual reporting.</p>

Impact	Mitigation Measure	Mitigation Procedure	Mitigation Timing	Mitigation Responsibility	Monitoring and Reporting Procedure
	<p>This mitigation measure is in alignment with the goals outlined in the UC Santa Cruz 2017-22 Campus Sustainability Plan, including reducing commute VMT by five percent and reducing per capita parking demand by ten percent by 2022.</p> <p><u>Performance Standard</u></p> <p>The TDM Program is intended to reduce the total daily VMT per capita to 15 percent below the baseline campus average and the employment VMT per employee to 15 percent below the countywide average. To accurately monitor performance, the TDM Program will develop specific VMT thresholds (i.e., VMT per capita and VMT per employee) and new baseline conditions to measure VMT thresholds against, based on the same methodology and data sources proposed for the monitoring component of the TDM program by which UC Santa Cruz may adaptively manage campus VMT. For example, if 10 percent of UC Santa Cruz employees were to work remotely, the overall target VMT and VMT per employee would be achieved (i.e., a 2-percent reduction in overall VMT). The VMT metrics presented in this chapter were developed using the SCC Travel Model, while the annual monitoring would occur using data collection. Based on current technologies, the campus' VMT performance could be most effectively monitored by using hose counts to measure the number of trips and anonymous cell phone data, which is "big data" that aggregates trip data using cellphones and navigation divides, to determine trip lengths. Since current technologies, including anonymous cell phone data, do not allow the tracking of employment trip lengths separately from the trip lengths generated by other campus uses (i.e., residential trips), the TDM Program shall develop a performance standard for the employment VMT threshold that is a weighted average of VMT generated by campus commuters and other campus users.</p> <p><u>TDM Program Elements</u></p> <p>A reduction in daily trips and VMT could be achieved through a significantly enhanced and robust TDM program. For the campus, the TDM program includes both campus features proposed as part of the 2021 LRDP and additional programmatic TDM elements that would support employment (faculty, staff, and student) trip reductions, as outlined below, such as employee housing, additional transit, and parking management tools. The campus would have the flexibility to</p>				

Impact	Mitigation Measure	Mitigation Procedure	Mitigation Timing	Mitigation Responsibility	Monitoring and Reporting Procedure
	<p>manage implementation of TDM measures as long as the campus is meeting the VMT performance standards. If the campus is not meeting its performance standard, it would need to evaluate the effectiveness of TDM program and implement additional TDM elements to achieve the performance standards. Potential TDM measures may include, but are not limited to:</p> <p>Implementation Level 1</p> <ul style="list-style-type: none"> ▶ Work with appropriate agencies to implement an intelligent transportation system (ITS) program for the Campus Transit system to provide real-time vehicle location and time-to-arrival information at major on-campus shuttle bus stops. ▶ Encourage SCMTD to implement ITS program for campus routes to provide real-time vehicle location and time-to-arrival information at major SCMTD bus stops on- and off-campus (<i>project is currently in development with delivery planned for 2021</i>). ▶ Continue to expand Commuter Vanpool program. ▶ Expand Bike Shuttle hours of operations, routes and increase frequency of service, as needed. ▶ Improve transit service between Coastal Science Campus, Westside Research Park, and the main residential campus. ▶ Work with local agencies to provide additional secure bike parking and/or "bike stations" at or near off-campus transit stops. ▶ Where feasible, implement a 4-day/10-hour or 9-day/80-hour work schedule option for staff. ▶ Where feasible, promote increased use of telecommuting options for students, staff, and faculty. ▶ Replace monthly/annual parking fee with "pay at exit" use-based, daily or other alternative, dynamic payment mechanisms and parking fee policies that encourage off-peak travel. <p>Implementation Level 2</p> <ul style="list-style-type: none"> ▶ Implement reduced on-campus parking fees for arrivals and departures occurring during off-peak hours, to better manage existing and reduce the need for new parking. 				

Impact	Mitigation Measure	Mitigation Procedure	Mitigation Timing	Mitigation Responsibility	Monitoring and Reporting Procedure
	<ul style="list-style-type: none"> ▶ Work with local agencies to implement a series of off-campus bike circulation improvements (bike boulevards, secure bike parking at major transit stops, etc.). ▶ Work with appropriate agencies to identify and develop a Westside Santa Cruz multi-modal hub, to connect Westside shuttle service with expanded automobile and bike parking and (ultimately) regional access via the adjoining rail right-of-way. ▶ Work with appropriate agencies to identify and develop remote Park & Ride facilities with transit service. ▶ Explore opportunities to construct new student/staff housing along off-campus transit corridors, including the RTC mass transit rail-trail corridor. <p>Potential VMT Reduction by Program Measure</p> <p>Employee Housing – The 2021 LRDP identifies sites with capacity to house as many as 25 percent of new employees, based on demand associated with the 2021 LRDP. Employee housing would be predominantly located near the main entrance to the campus at Bay and High Streets and at Westside Research Park to make trips to services such as grocery stores and schools as convenient as possible for employees and their families. Inclusion of support uses such as child-care, small park spaces, and community-use rooms located on-campus could also help reduce the number of trips taken by employees. The California Air Pollution Control Officers Association (CAPCOA) conducted a study to quantify greenhouse gas (GHG) mitigation measures, which also assess how certain policies/actions can reduce VMT, and subsequently reduce GHG. Per CAPCOA, land use/location measures could reduce VMT by up to 5 percent for a suburban development.</p> <p>Telecommuting - Continue to allow and encourage employees to telecommute when possible. Specifically, shift work schedules such that travel occurs outside of peak congestion periods so that employees do not drive longer routes to avoid traffic or providing opportunities for employees to work from home one or a few days a week can reduce travel to the campus. While schedule shifts would still result in commute trips to campus, they could encourage use of transit by moving trips to times of day when buses are less crowded and/or allow commuters to travel outside of peak commute periods where people may choose</p>				

Impact	Mitigation Measure	Mitigation Procedure	Mitigation Timing	Mitigation Responsibility	Monitoring and Reporting Procedure
	<p>longer routes to avoid traffic. Telecommuting is an easy and low-cost way to reduce VMT and GHG. Per CAPCOA, alternative work schedules and telecommuting could reduce work VMT by up to 5.5 percent.</p> <p>Additional Transit - Add express service from major regional destinations or provide fair share contribution to regional mass transit improvements. Add select long-distance bus service to/from campus. Per CAPCOA, transit system improvements could reduce VMT by up to 10 percent, which is also consistent with the campus' Sustainability Plan.</p> <p>TDM Program Expansion - Expand TDM programs and prioritize investments in transportation programs before constructing on-campus parking facilities, such as implementing multimodal transit hubs and working with partner agencies to increase transit and active transportation connectivity to the campus. Provide additional subsidies for transit use by commuters. Provide additional subsidized commuter vanpool routes to locations with concentrated employee residences, real-time ride matching, and reserved carpool and vanpool parking spaces. Per CAPCOA, a commute trip reduction program could reduce work VMT anywhere from 1 percent to 21 percent, depending on if it is voluntary or required.</p> <p>Parking Management Tools - Improve parking management and enforcement system. Establish "no net new commuter parking" and other parking management or eligibility policies. Per CAPCOA, parking policy/pricing could reduce VMT by up to 20 percent. Each of the TDM strategies can be combined with others to increase the effectiveness of vehicle trip and VMT reduction; however, the interaction between the various strategies is complex. Generally, with each additional measure implemented the incremental benefit of vehicle trip and VMT reduction may be less than the benefit that measure would have if it was considered on its own.¹ Thus, overall, the TDM measures could reduce VMT by up to an additional 15 percent, given the land use context and anticipated effectiveness of the TDM measures.</p> <p>Annual Monitoring Program Starting in the next full academic year after adoption and initiation of a TDM Program implementation, including establishment of baseline</p>				

¹ For example, a theoretical TDM measure A and B may have an effectiveness of 10 percent each when they are considered on their own. However, if the two measures are combined, the reduction may only be 15 percent and not the 20 percent expected by adding the two measures together.

Impact	Mitigation Measure	Mitigation Procedure	Mitigation Timing	Mitigation Responsibility	Monitoring and Reporting Procedure
	<p>data, UC Santa Cruz shall conduct cordon counts at the two campus entrances for at least two weeks, on the fourth week of fall and spring quarters, and other methods to quantify mode choice and trip length, to determine whether the campus is achieving a 15 percent reduction in the per capita VMT over baseline to a maximum of 7.7 VMT per capita. A big data service could be used, to estimate the VMT generated by the campus during the same academic year as the cordon count data collected or other methods such as a mandatory employee travel survey. As noted earlier, the VMT generated by employees cannot be measured separately, so a ratio will be applied to estimate the VMT generated by employees, if big data is only used.</p> <p>An annual monitoring report shall be developed to describe: (a) specific steps taken to implement the TDM program; (b) results of the annual cordon counts and other data collected, including the methodology used to calculate VMT; (c) findings regarding whether the campus has met the VMT performance standard; and (d) an outline of additional TDM measures (i.e., a corrective action plan) to be implemented in subsequent years should the VMT performance standard of at least 15 percent below baseline VMT levels is not reached.</p>				
Utilities and Service Systems					
<p>Impact 3.17-1: Impacts on Water Supply</p>	<p>Mitigation Measure 3.17-1a: Require Implementation of Measures Consistent with City Drought Measures</p> <p>If and when the City of Santa Cruz implements drought emergency management measures, UC Santa Cruz shall implement the following measures for the duration of the drought emergency:</p> <ul style="list-style-type: none"> ▶ Reduce use of potable water for irrigation of campus landscaping, including the Arboretum, in accordance with reductions required by the City for similar users; ▶ Utilize water from the existing supply well in Jordan Gulch. UC Santa Cruz shall implement a program of monitoring flow at downgradient springs during the time when the well is being used; ▶ Require academic/administrative water use on campus be reduced, consistent or in excess of the City's target for business facilities; and ▶ Require residential water use on campus be reduced, consistent or in excess of the City's target for multifamily residential facilities. 	<p>During drought emergency, implement measures as specified.</p>	<p>Duration of drought emergency.</p>	<p>PPDO</p>	<p>Confirm implementation of measures throughout the duration of a drought emergency.</p>

Impact	Mitigation Measure	Mitigation Procedure	Mitigation Timing	Mitigation Responsibility	Monitoring and Reporting Procedure
Wildfire					
Impact 3.18-1: Compatibility with Adopted Emergency Response and Evacuation Plans	Mitigation Measure 3.9-4: Prepare and Implement Site-Specific Construction Traffic Management Plans (See the mitigation above under Impact 3.9-4: Impair Implementation of, or Physically Interfere with, an Adopted Emergency)	As specified above.	As specified above.	As specified above.	As specified above.
Impact 3.18-2: Wildfire Risk Associated with New Development and Land Use Patterns	Mitigation Measure 3.18-2: Prepare Campus-Wide Vegetation Management Plan Upon approval of the 2021 LRDP and certification of the EIR, UC Santa Cruz shall initiate preparation and, within 2 years, begin implementation of a campus-wide vegetation management plan. The campus-wide vegetation management plan shall identify fire hazard areas consistent with California Government Code Sections 51179 and 51182, and implement a policy framework for managing fuel loads and maintaining defensible space consistent with Public Resources Code Section 4291. Policies and implementation actions that shall be considered as part of the plan will include, but are not limited to: <ul style="list-style-type: none"> ▶ vegetation management techniques for fire hazard mitigation, including thinning, pruning, removing or otherwise altering vegetation to reduce the potential for ignitions and to modify potential fire behavior; different vegetation management techniques shall be identified, depending on vegetation type, location, condition, and configuration; ▶ Treatment actions will be limited to eradication or control of invasive plants, removal of uncharacteristic fuel loads (e.g., removing dead or dying vegetation), trimming of woody species as necessary to reduce ladder fuels, and select thinning of vegetation to restore densities that are characteristic of healthy stands of the vegetation types present in the LRDP area; ▶ vegetation management and maintenance standards for dominant vegetation types in the LRDP area, specific recommendations for key wildfire risk areas, and the procedures for identifying and planning annual vegetation treatment operations; ▶ fuel management requirements, including clearing vegetation within 100 feet of structures, removing trees and branches that extend within 100 feet of a chimney/stovetop outlet, clearing 	Prepare and implement a campus-wide vegetation management plan.	Within 2 years of approval of the 2021 LRDP and certification of the EIR.	PPDO and OES	Confirm preparation and implementation of a campus-wide vegetation management plan.

Impact	Mitigation Measure	Mitigation Procedure	Mitigation Timing	Mitigation Responsibility	Monitoring and Reporting Procedure
	<p>roofs of vegetative debris, and maintaining vegetation adjacent to overhanging of a building;</p> <ul style="list-style-type: none"> ▶ best management practices implemented to avoid and/or minimize impacts associated with soil erosion, biological resources, and water quality, including the use of fire resistant/drought tolerant landscaping within 100 feet of new/modified structures within high or very high fire hazard zones; and ▶ building construction requirements for new development located in HFHSZs, including fire- or flame-resistant roofing material, roof vent coverings/screens, exterior siding, skylights, windows, doors, and decks, consistent with California Fire Code Chapter 49. <p>As part of this effort, UC Santa Cruz shall also consider and incorporate actions/strategies included as part of the CAL FIRE California Vegetation Treatment Program.</p>				