MITIGATION MONITORING AND REPORTING PROGRAM FOR THE

University Community Plan Update and VST Specific Plan Project

State Clearinghouse No. 2001021056

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ATTACHMENT G

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List of Abbreviations

AAQA	Ambient Air Quality Analysis
BESD	Banta Elementary School District
BMP	best management practice
CALGreen	State Building Energy Efficiency Standards
CAPCOA	California Air Pollution Control Officers Association
CARB	California Air Resources Board
CDFW	California Department of Fish and Wildlife
CEC	California Energy Commission
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
CFR	Code of Federal Regulations
City	City of Merced
CNEL	community noise equivalent level
County	County of Merced
dBA	A-weighted decibel
ESA	federal Endangered Species Act
ghg	greenhouse gas
lb/day	pounds per day
L_{dn}	day-night average noise level
L_{eq}	energy-equivalent noise level
MMRP	mitigation monitoring and reporting program
MSDS	Material Safety Data Sheets
$MTCO_2e$	metric tons of carbon dioxide equivalent
NAHC	Native American Heritage Center
NMFS	National Marine Fisheries Service
NPDES	National Pollutant Discharge Eliminate System

PCC	Public Contract Code
PRC	Public Resources Code
RWQCB	regional water quality control board
SJVAPCD	San Joaquin Valley Air Pollution Control District
SWPPP	storm water pollution prevention plan
USACE	U.S. Army Corps of Engineers
USFWS	U.S. Fish and Wildlife Service
Valley CAN	Valley Clean Air Now
VELB	valley elderberry longhorn beetle
VERA	Voluntary Emission Reduction Agreement
ZNE	zero net energy

1. Mitigation Monitoring and Reporting Program

In accordance with the California Environmental Quality Act (CEQA) (Public Resources Code [PRC] Section 21000 et seq.), the County of Merced (County) prepared a Focused Subsequent Environmental Impact Report (SEIR) for the UCP Update and VST Specific Plan Project (the Project). The Project is located in unincorporated Merced County, northeast of the City of Merced, south of UC Merced, and within the City's sphere of influence (SOI). The proposed UCP Update area encompasses 1,841 acres and includes two properties; the Hunt and VST properties. The VST Property consists of 654 acres immediately south of the UC Merced Campus and is bounded generally by Lake Road on the west, UC Merced to the north, Cardella Road on the south and the Orchard Drive alignment on the east. The Hunt property is referred to as UCP South in the Adopted UCP, and includes approximately 1,187 acres of land south of UC Merced and is bounded by Lake Road on the west, Cardella Road to the north, Fairfield Canal to the east and Yosemite Road to the south. The Project includes modifications to the University Community Plan as part of the UCP Update and a Specific Plan for the 654-acre VST Property.

The SEIR evaluates the program-level impacts of the proposed changes to the Adopted UCP, and the project specific impacts associated with the VST Specific Plan. The SEIR (State Clearinghouse No. 2001021056) identified significant impacts and mitigation measures that would reduce the identified impacts to less-than-significant levels, where feasible, and concluded that some environmental impacts would be significant and unavoidable. CEQA (PRC Section 21081.6) and the State CEQA Guidelines (Sections 15091[d] and 15097) require public agencies to "adopt a reporting or monitoring program for the changes made to the project or conditions of project approval, adopted in order to mitigate or avoid significant effects on the environment." This mitigation monitoring and reporting program (MMRP) has been prepared for the Project because the SEIR identifies significant adverse impacts related to project implementation, and mitigation measures have been identified to reduce or eliminate most of those impacts. Adoption of this MMRP would occur in conjunction with approval of the Project.

1.1. 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 before and during project construction and operation, as applicable.

The MMRP table provided below has been prepared to assist the responsible parties in implementing the mitigation measures applicable to the Project. The table identifies the impact; the individual mitigation measures; the specific actions required before, during, and after construction; the implementing party; and mitigation timing. The table also includes a column to confirm implementation of the mitigation measures after project approval. The numbering of mitigation measures follows the numbering sequence found in the project SEIR. Mitigation measures that are referenced more than once in the SEIR are not duplicated multiple times in the MMRP table.

1.2. 2001/2004 UCP EIR and relationship to the UCP Update and VST Specific Plan MMRP

In 2004, the County adopted the UCP, which covered a 2,133-acre area that included most of the VST property, just south of the UC Merced campus (Adopted UCP). A program EIR was certified with adoption of the UCP in 2001 and a supplemental EIR, which focused on hydrology and water quality, was certified on December 21, 2004 via Resolution No. 2004-238 (referred to collectively herein as the 2001/2004 UCP EIR; State Clearinghouse No. 2001021056). The 2001/2004 UCP EIR was identified as the appropriate document to base the subsequent CEQA analyses upon because it describes the potential environmental impacts of the planning documents that would be amended by the VST Specific Plan and was certified by the County.

The County adopted an MMRP as part of the 2001/2004 UCP EIR approvals and those mitigation measures are incorporated herein by this reference. This MMRP is focused specifically on the UCP Update and VST Specific Plan

Project. Where mitigation measures applicable to the Project remain the same as those adopted in the 2001/2004 UCP EIR, the title, "Adopted Mitigation Measure," is used as the mitigation measure was "adopted" as part of the 2001/2004 UCP EIR; where mitigation measures would be modified or eliminated from those identified in the 2001/2004 UCP EIR, the title, "Modified Mitigation Measure," is used; and where new mitigation measures were developed for the modified Phase 2 Project, the title, "New Mitigation Measure," is used.

This MMRP only applies to activities associated with implementation of the UCP Update and VST Specific Plan Project applicable to the portions of the Project detailed in each measure. In addition, if the UCP Update and VST Specific Plan Project does not proceed, and the Project as approved through the 2001/2004 UCP EIR is implemented across the UCP area, the 2001/2004 UCP EIR mitigation measures would be applied to those activities.

1.3. Roles and Responsibilities

The County is responsible for overall administration of the MMRP and for verifying that the applicant, builder, construction contractor, or other designated party has completed the necessary actions for each measure. The party responsible for implementing each item will identify the staff members responsible for coordinating with the County on the MMRP.

1.4. Mitigation Monitoring and Reporting Program Table

Table 1, which identifies the mitigation measures applicable to the UCP Update and VST Specific Plan Project, includes the table columns identified and described below:

- Impact: This column presents all the impacts disclosed in the SEIR for which mitigation was identified.
- Mitigation Measure: This column presents all the mitigation measures identified in the UCP Update and VST Specific Plan Project SEIR, each of which has been adopted and incorporated into the project.
- Action(s): For every mitigation measure, one or more actions are described. The actions delineate the means by which the mitigation measures will be implemented and, in some instances, the criteria for determining whether a measure has been successfully implemented. Where mitigation measures are particularly detailed, the action may refer back to the measure.
- Implementing Party: This column identifies the entity responsible for undertaking the required action.
- Timing: Implementation of the action must occur before or during some part of project approval, project design, or project construction or on an ongoing basis. This column identifies the timing for implementation of each mitigation measure.
- Completion of Implementation: The County is responsible for ensuring that mitigation measures are successfully implemented with respect to work implemented within the County's jurisdiction. The "Completion of Implementation" column is to be used by the County to indicate when implementation of a mitigation measure has been completed. The County, at its discretion, may delegate implementation responsibility or portions thereof to qualified consultants or contractors. Upon annexation, the County's responsibility to ensure that the mitigation measures are successfully implemented will be transferred to the City of Merced. The "Completion of Implementation" column is to be used by the City to indicate when implementation of a mitigation measure has been completed.

Table 1 UCP Update and VST Specific Plan Mitigation Monitoring and Reporting Program

Impact	Mitigation Measure	Action(s)	Implementing Party[1]	Timing	Completion of Implementation
Air Quality					
Impact 3.1.1: Generation of Short-Term, Construction-Related Emissions of ROG, NO_X, PM_{10}, and $PM_{2.5}$	**Adopted Mitigation Measure 4.3-1 Compliance with the following SJVAPCD mitigation measure listed in Table 6-3 of the GAAMAQD would further reduce dust created during construction activities:** ▶ Limit traffic speeds on unpaved roads to 15 mph. **Adopted Mitigation Measure 4.3-2 Construction contracts shall include the following specifications:** ▶ Minimize idling time to a maximum of ten minutes when construction equipment is not in use; ▶ Employ construction activity management techniques such as extending the construction period outside the ozone season of May through October, reducing the number of hours of construction and scheduling activities during off peak hours; ▶ Tuning engines to manufacturer's specifications; ▶ When feasible, schedule equipment usage to avoid simultaneous use of equipment. **New Mitigation Measure 3.1-1a: Utilize the cleanest available off-road construction equipment, including the latest Tier diesel or electric equipment (e.g. scrapers, graders, trenchers, tractors, loaders, backhoes, etc.) (UCP South only)** All construction specifications shall require use off-road construction equipment that meet EPA's Tier 4 emission standards as defined in 40 CFR 1039 and comply with the appropriate test procedures and provisions as contained in 40 CFR Parts 1065 and 1068. Tier 3 models can be used if a Tier 4 version of the equipment type is not yet produced by manufacturers. This measure can also be achieved by using battery-electric off-road equipment as it becomes available. Implementation of this measure shall be required in the	Prepare an AAQA for all construction and operational emissions that exceed 100 lb/ day.	Project applicant, construction contractor, SJVAPCD	During preparation of the EIR for UCP South	
		Confirm that construction equipment measures are implemented	County of Merced	Before grading	

[1] The County's obligation to implement or confirm that implementation has been satisfied will transfer to the City of Merced upon annexation.

Impact	Mitigation Measure	Action(s)	Implementing Party[1]	Timing	Completion of Implementation
	contract the project applicant establishes with its construction contractors. The applicant shall demonstrate its plan to fulfill the requirements of this measure in a report or in project improvement plan details submitted to the discretionary land use authority (City of Merced or Merced County) prior to the use of any off-road, diesel-powered construction equipment. **New Mitigation Measure 3.1-1b: Preparation of an Ambient Air Quality Analysis (UCP South only)** SJVACPD recommends that construction and operational emissions that exceed 100 lb/day prepare an AAQA to assess whether a project would violate an AAQS. Prior to the approval of a Final Map, the project applicant shall prepare a project-level analysis of emissions for development in the UCP area that is subject to SJVAPCD oversight to confirm whether the particular land use development would result in emissions that exceed this 100 lb/day screening criterion. In cases where a project's construction activity would generate emissions above this screening criterion (i.e., 100 lb/day) s, the project applicant shall prepare an AAQA. If, following the preparation of an AAQA, emissions are found to contribute to an exceedance of an AAQS, the project applicant shall either implement additional emission reduction measures as part of the project or, once all feasible on-site reduction measures have been exhausted, engage in regional programs that serve to reduce air pollution in the San Joaquin Valley. An example of a potential program includes the Valley Clean Air Now (Valley CAN) organization, which improves public health through investments in vehicle repair and replacement programs. Emissions reduction programs must demonstrate a quantifiable reduction and must be located within the SJVAB so air pollution reductions are realized in the basin. Alternatively, if regional air pollution reduction programs are unavailable, the project applicant may enter into a Voluntary Emission Reduction Agreement (VERA) with SJVAPCD to reduce emissions to below 100 lb/day for any pollutant that exceeds the screening criteria. If conditions warrant participation in a VERA, the VERA shall demonstrate a pound-for-pound reduction in emissions				

Impact	Mitigation Measure	Action(s)	Implementing Party[1]	Timing	Completion of Implementation
	that exceed 100 lb/day through a process that funds and implements emissions reduction projects within the SJVAB. The types of emission reduction projects that could be funded include electrification of stationary internal combustion engines (such as well pumps), replacing old heavy-duty trucks with cleaner, more efficient heavy-duty trucks, and replacement of old farm tractors. If a VERA is found to be required to meet thresholds, and the applicant elects to enter into one, the project applicant shall engage in a discussion with SJVAPCD prior to the adoption of the VERA to ensure that feasible mitigation has been identified to reduce emissions to a less-than-significant level.				
Impact 3.1-2: Long-Term, Operational (Regional) Emissions of Criteria Air Pollutants and Precursors	**Adopted Mitigation Measure 4.3-4** (a) Outdoor electrical outlets shall be installed in the front and backyards of all housing units. (b) Use solar or low emission water heaters. (c) Orient buildings to take advantage of solar heating and natural cooling and use passive solar design. (d) Increase wall and attic insulation.	Implement construction design features to minimize impacts.	Project applicant, construction contractor	Before building permit issuance	
		Preparation of air quality assessment to determine whether any SJVAPCD annual mass emissions thresholds are exceeded.	Project applicant, SJVAPCD	Before building permit issuance	
	New Mitigation Measure 3.1-2a: Implement On-Site Project Design Features to Reduce Emissions of Criteria Air Pollutants (UCP South) Prior to the issuance of any development permits, the project applicant shall Implement the following measures to reduce the project's emissions: ▶ Use low-VOC (50–100 grams per liter) paint for external residential applications on all construction drawings for review and approval by staff of the discretionary land use authority (City of Merced or Merced County). ▶ Incorporate traffic calming measures including marked crosswalks, count-down signal timers, curb extensions, speed tables, raised crosswalks, raised intersections, median islands, tight corner radii, roundabouts, and on-street parking				

Impact	Mitigation Measure	Action(s)	Implementing Party[1]	Timing	Completion of Implementation
	throughout the site plan. Specific calming measures and locations shall be identified by a qualified transportation specialist. ▶ Electric water heaters in all residences (no gas storage tank heaters). ▶ Electric heating, ventilation, and air conditioning (HVAC) units in residences (no gas units). ▶ Meet Tier 2 electric vehicle charging standards of the most recent version of Part 11 of the Title 24 California Building Code (CalGreen Code) for all land use types. ▶ Restrict idling times for heavy heavy duty trucks accessing the project site to 3 minutes or less through the signage indicating that idling must be limited to this duration. ▶ Plant vegetation throughout the project site near areas of high pollution generation (e.g., heavily traveled roadways, sites of truck idling) to reduce the dispersion of air pollutants. ▶ Apply for grant funding through SJVAPCD's Bikeway Incentive Program, which offers funding for Class I, Class II, and Class III bicycle paths for projects within the SJVAB. **Mitigation Measure 3.1-2b: Engage in Regional Programs to Offset Project Emissions of ROG, NO_X, CO, and PM_{10} (UCP South and VST Specific Plan)** **UCP South** Once the on-site reduction measures listed above under Mitigation Measure 3.1-2a have been incorporated, an air quality assessment shall be prepared to determine whether any SJVAPCD annual mass emissions thresholds are exceeded. If no thresholds are exceeded, no further action is necessary. If one or more thresholds are exceeded, prior to the issuance of grading permits for the first phase of development, the project applicant shall enter into a VERA through coordination with SJVAPCD to reduce emissions to meet SJVAPCD's annual mass emissions thresholds for any pollutant that exceeds their respective threshold. The project applicant shall engage in a discussion with SJVAPCD prior to the adoption of the				

Impact	Mitigation Measure	Action(s)	Implementing Party[1]	Timing	Completion of Implementation
	VERA to ensure that feasible mitigation has been identified to reduce emissions to a less-than-significant level consistent with the direction given in SJVAPCD's GAMAQI. As allowed by SJVAPCD, the project applicant shall be provided the opportunity to perform an additional quantification of the project's operational emissions following the implementation of the proposed measures listed above under Mitigation Measure 3.1-2a to estimate the TPY needed to reduce emissions to meet SJVAPCD's annual thresholds of significance. **VST Specific Plan** A project-level evaluation of potential emissions has been performed for the VST Specific Plan. Based on SJVAPCD's guidance, various project design features have been incorporated into the design of the VST Specific Plan to reduce emissions, such as transportation management strategies and the elimination of onsite natural gas infrastructure for residential land uses. Based on this data (see Table 3.1-13), the applicant shall enter into a VERA with SJVAPCD to fully compensate for ROG, NO_X, and CO emissions that exceed SJVAPCD's CEQA annual mass emissions thresholds of significance.				
Biological Resources					
Impact 3.2-1: Result in Disturbance to or Loss of Special-Status Plant Species	**Adopted Mitigation Measure 4.4-2:** The County shall ensure that at least 551 acres of upland annual grassland is preserved in conjunction with and to support at least 61.2 acres of vernal pool fairy shrimp habitat (for a total of 612 acres). **Adopted Mitigation Measure 4.4-6:** Seed collection from the shining navarretia located within the UCP area shall be conducted prior to the loss of the populations in the UCP area. Seed collection shall be conducted by a qualified botanist or restoration biologist. Collected seeds shall be dispersed within suitable habitat (i.e., seasonally moist	Preservation of upland annual grassland.	Project applicant, County of Merced	Before construction	This has been completed for VST.
		Collection of shining navarretia seeds within UCP area.	Project applicant, construction contractor	Before construction	
		Pre-construction surveys of special-status species.	Project applicant, construction contractor	Before construction	

Impact	Mitigation Measure	Action(s)	Implementing Party[1]	Timing	Completion of Implementation
	clay flats in grassland). Seeds shall be dispersed only within suitable habitats where shining navarretia does not currently occur to avoid impacts on the genetic composition of existing populations. Seed from shining navarretia shall be dispersed in suitable habitat within the annual grassland preserved in conjunction with loss of vernal pool habitat (Impact 4.4.1) and/or Swainson's hawk habitat (Impact 4.4.4) if feasible. However, if mitigation lands to serve both purposes cannot be found, the applicant will be responsible for negotiating a conservation easement with a land owner in the vicinity such that a minimum of seven populations of shining navarretia receive long-term protection. **Mitigation Measure 3.2-1: Implement Avoidance Measure and Mitigation for Special-Status Plant Species Not Covered by the Existing CDFW Incidental Take Permit or USFWS Biological Opinion** ▶ During implementation of preconstruction surveys required under the CDFW ITP and USFWS Biological Opinion Conservation Measures, a qualified botanist will target additional special-status plant species not covered by these permits. Surveys will follow survey methods from CDFW's Protocols for Surveying and Evaluating Impacts on Special-Status Native Plant Populations and Natural Communities (CDFW 2018) and will be conducted during the blooming period for these species (Table MM 3.2-1). ▶ If special-status plant species are not found, the botanist will document the findings in a report to the discretionary land use authority (City of Merced or Merced County), and no further mitigation will be required. If special-status plant species are found, the area occupied by special-status plants will be avoided completely, if feasible (i.e., project objectives can still be met). This may include establishing a no-disturbance buffer around the occupied habitat and demarcation of this buffer by a qualified biologist or botanist using flagging or high-visibility construction fencing. The size of the buffer	Establishment of buffer area if any special-status species are found.	Project applicant, construction contractor	Before construction	

Impact	Mitigation Measure	Action(s)	Implementing Party[1]	Timing	Completion of Implementation
	will be determined by the qualified biologist or botanist and will be large enough to avoid direct or indirect impacts on the plant. ▶ If special-status plans are found during special-status plant surveys and cannot be avoided, the project applicant shall, in consultation with CDFW or USFWS as appropriate depending on species status, develop and implement a site-specific mitigation strategy to achieve no net loss of occupied habitat or individuals. It is likely that existing mitigation efforts for state and federally listed plant species required under the ITP and USFWS Biological Opinion would be sufficient to reduce impacts on non-listed special-status plant species to a less-than-significant level. 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. Purchase of credits from an agency-mitigation bank that contains the affected species may also be used to offset loss of occupied habitat. Potential mitigation sites could include suitable locations within or outside of the UCP area or VST Specific Plan area. 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: ▪ 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: • plants reestablish annually for a minimum of five years with no human intervention such as supplemental seeding; and				

Impact	Mitigation Measure	Action(s)	Implementing Party[1]	Timing	Completion of Implementation
	• 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 offsite mitigation includes dedication of conservation easements, purchase of mitigation credits, or other offsite 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.				
Impact 3.2-2: Result in Disturbance to or Loss of Special-Status Wildlife Species and Habitat	**Adopted Mitigation Measure 4.4-2:** The County shall ensure that at least 551 acres of upland annual grassland is preserved in conjunction with and to support at least 61.2 acres of vernal pool fairy shrimp habitat (for a total of 612 acres). **Adopted Mitigation Measure 4.4-4(a):** The County shall ensure that Swainson's hawk foraging habitat is preserved offsite in sufficient quality and quantity, as determined through consultation with the CDFW, to mitigate for the loss resulting from the proposed UCP. The preservation of annual grasslands (through Policy PA 2.3) that are suitable as foraging habitat for Swainson's hawk shall be located within 10 miles of a current or historic Swainson's hawk nest site (consistent with CDFG guidance). **Adopted Mitigation Measure 4.4-4(b):** The County shall require pre-construction surveys to identify active raptor nests prior to the onset of construction activities within 1,000 feet of any ground disturbing activities (i.e., construction site). The pre-construction surveys will be conducted in accordance with USFWS and/or CDFW guidelines. If	Preservation of upland annual grassland.	Project applicant, County of Merced	Before construction	This has been completed for VST.
		Preservation of offsite foraging habitat for Swainson's hawk	Project applicant, construction contractor, CDFW	Before construction	
		Pre-construction surveys to identify active raptor nests. Consultation with CDFW and USFWS if any are located	Project applicant, construction contractor	Before construction	
		Pre-construction surveys to identify San Joaquin kit fox. If any are located, implementation of June 1999 Standardized Recommendations for Protection of the San Joaquin Kit Fox Prior to or During Ground Disturbance	Project applicant, construction contractor	Before construction	

	no active raptor nests are identified within 1,000 feet of the construction site, no further mitigation would be necessary. If active nests are found within 1,000 feet of the construction site, the CDFW shall be consulted to determine appropriate mitigation measures to minimize the effect. At a minimum, construction shall be delayed within an appropriate buffer zone, as determined by consultation with CDFW, until the young have fledged. **Adopted Mitigation Measure 4.4-5:** Project applicants shall conduct surveys for dens/burrows that could be occupied by vagrant San Joaquin kit fox prior to any ground-disturbing activities within the UCP area. The surveys shall be conducted within two weeks or less of any ground-disturbing activities. If dens/burrows meeting the criteria suitable for use by San Joaquin kit fox are found, the dens/burrows shall be cleared using the methodologies that are consistent with those described in the June 1999 Standardized Recommendations for Protection of the San Joaquin Kit Fox Prior to or During Ground Disturbance. **New Mitigation Measure 3.2-2a: Conduct Preconstruction Surveys for Western Spadefoot, Implement Avoidance Measures, and Relocate Individuals** ▶ Within 7 days before commencement of project activities that would result in ground disturbance, vegetation removal, or use of vehicles, a qualified biologist familiar with the life history of western spadefoot and experienced in performing surveys for western spadefoot will conduct a focused preconstruction survey of habitat suitable for the species within the UCP area. The qualified biologist will inspect the project site in the UCP area for adult western spadefoot toads, eggs and tadpoles within aquatic breeding habitat, as well as suitable burrow habitat. ▶ If western spadefoot adults, tadpoles, or eggs are not detected during the focused survey, the qualified biologist will submit a report summarizing the results of the survey to the discretionary land use authority (City of Merced or Merced County), and further mitigation will not be required. ▶ If western spadefoot adults, tadpoles, or eggs are detected, a qualified biologist with an appropriate CDFW Scientific Collecting	Pre-construction surveys to identify presence of Western spadefoot. Implementation of mitigation with CDFW permit if any are located.	Project applicant, construction contractor, CDFW	Before construction	

Impact	Mitigation Measure	Action(s)	Implementing Party[1]	Timing	Completion of Implementation
	Permit that allows handling of amphibians will relocate individual adults, tadpoles, or eggs to nearby suitable habitat with prior approval of CDFW. The qualified biologist will also be present during initial ground disturbance activities and will inspect the project site in the UCP area before initiation of project activities. If additional western spadefoot are detected, the qualified biologist will relocate individuals into suitable habitat for western spadefoot (i.e., vernal pool grasslands) that will be preserved in perpetuity. **New Mitigation Measure 3.2-2b: Conduct Preconstruction Surveys for Western Pond Turtle, Implement Avoidance Measures, and Relocate Individuals** ▶ Within 48 hours before commencement of project activities that would result in ground disturbance, vegetation removal, or use of vehicles, a qualified biologist familiar with the life history of western pond turtle and experienced in performing surveys for western pond turtle will conduct a focused survey of habitat suitable for the species within the UCP area. If aquatic habitat potentially suitable for the species is present within a project site in the UCP area (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 western pond turtles as well as suitable burrow habitat. ▶ If western pond turtles are not detected during the focused survey, the qualified biologist will submit a report summarizing the results of the survey to the discretionary land use authority (City of Merced or Merced County), and further mitigation will not be required. ▶ If western 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	Pre-construction surveys to identify presence of Western pond turtle. Implementation of avoidance measures and relocation.	Project applicant, construction contractor	Before construction	

	handling of reptiles will be present during initial ground disturbance activities and will inspect the project site before initiation of project activities. If western pond turtles are detected, the qualified biologist will move the turtles downstream and out of harm's way. **New Mitigation Measure 3.2-2c: Conduct Focused American Badger Survey and Establish Protective Buffers** ▶ Within 30 days before commencement of project activities that would result in ground disturbance, vegetation removal, or use of vehicles, 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 UCP area 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 the discretionary land use authority (City of Merced or Merced County), 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. **New Mitigation Measure 3.2-2d: Conduct Focused Surveys for Crotch Bumble Bee and Implement Avoidance Measures If Listed under CESA** Prior to implementation of project activities that could result in loss of crotch bumble bees (e.g., ground disturbance, vegetation removal), the following measures will be implemented. ▶ The project applicant will retain a qualified biologist familiar with bumble bees in California, with experience using survey methods	Pre-construction surveys to identify presence of American Badger. Establishment of protective buffers.	Project applicant, construction contractor	Before construction	

Impact	Mitigation Measure	Action(s)	Implementing Party[1]	Timing	Completion of Implementation
	for bumble bees, and with approval from CDFW to conduct focused surveys of suitable habitat within the project site in the UCP area. Because a survey protocol for this species has not been established, survey methods will be developed and approved in consultation with CDFW, and will generally include but not be limited to the following elements (included in survey protocols for other bumble bee species in the United States [USFWS 2018]): ▪ Surveys will be conducted during the active flight season (typically March through September). ▪ Surveys will be conducted by walking transects through suitable habitat, or by surveying a minimum of one person-hour per 3 acres of suitable habitat without transects. ▪ Bumble bees within the project site will be identified through passive, non-lethal methods (e.g., visual surveys using binoculars, photographic documentation), as approved by CDFW. • If crotch bumble bees are detected during focused surveys, the survey results will be submitted to the discretionary land use authority (City of Merced or Merced County) and CDFW. The project applicant will consult with CDFW to determine whether there are additional avoidance measures available that would reduce the likelihood of injury or mortality of crotch bumble bee. The project applicant will consult with CDFW to determine whether authorization for take of crotch bumble bees would be required by obtaining an incidental take permit pursuant to California Fish and Game Code Section 2081. If required, the project applicant will implement measures required under the permit which may include compensatory mitigation to fully mitigate impacts on crotch bumble bee.	Pre-construction surveys to identify presence of Crotch Bumble Bee. Establishment of avoidance measures	Project applicant, construction contractor. CDFW	Before construction	
		Pre-construction surveys to identify presence of bats. Establishment of avoidance measures	Project applicant, construction contractor. County of Merced	Before construction	

Impact	Mitigation Measure	Action(s)	Implementing Party[1]	Timing	Completion of Implementation
	• If no crotch bumble bees are detected during focused surveys, the survey results will be submitted to the discretionary land use authority (City of Merced or Merced County). The project applicant will consult with CDFW to determine whether the negative survey results are sufficient to conclude that crotch bumble bees (including underground overwintering and nesting colonies) are absent from the project site, and that authorization for take of crotch bumble bees would not be required. If CDFW concurs, then further mitigation would not be required. **New Mitigation Measure 3.2-2e: Conduct Focused Bat Surveys and Implement Avoidance Measures** Within 30 days before commencement of project activities, a qualified biologist familiar with bats and bat ecology and experienced in conducting bat surveys will conduct surveys for bat roosts in suitable habitat (e.g., trees, crevices, cavities, exfoliating bark, bridges, unoccupied buildings) within and adjacent to the UCP area. ▶ Surveys will consist of a daytime pedestrian survey looking for evidence of bat use (e.g., guano) and/or an evening emergence survey to note the presence or absence of bats within potential roosts. ▶ If no evidence of bat roosts is found, the qualified biologist will submit a report summarizing the results of the survey to the discretionary land use authority (City of Merced or Merced County), 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. ▶ If an active western red bat maternity roost is detected, a qualified biologist shall determine an appropriate avoidance buffer to be maintained from April 1 until young are capable of	Pre-construction surveys to identify presence of burrowing owl. Establishment of avoidance measures and compensation for affected areas	Project applicant, construction contractor. CDFW	Before construction	
		If pile driving must occur within 55 feet of existing structures, use vibratory pile driving or augered piles.	Project applicant, construction contractor	During construction	

Impact	Mitigation Measure	Action(s)	Implementing Party[1]	Timing	Completion of Implementation
	flight (typically through August). Project activities will not occur within this buffer until after the roosts are unoccupied. ▶ If roosts of 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 roost 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 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 roost other structure may be removed. **New Mitigation Measure 3.2-2f: Conduct Protocol-Level Surveys for Burrowing Owl, Implement Avoidance Measures, and Compensate for Loss of Occupied Burrows** This mitigation measure would remove the requirements of Adopted Mitigation Measure 4.4-4(b) and implement the following protocol-level survey requirements. 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., grassland, agricultural land) on and within 1,640 feet (500 meters) of the UCP area. Surveys will be conducted before the start of project				

Impact	Mitigation Measure	Action(s)	Implementing Party[1]	Timing	Completion of Implementation
	activities and in accordance with Appendix D of the *CDFW Staff Report on Burrowing Owl Mitigation* (CDFW 2012; CDFW Staff Report). ▶ If no occupied burrows are found, the qualified biologist will submit a report documenting the survey methods and results to the discretionary land use authority (City of Merced or Merced County), and no further mitigation will be required. ▶ If an active burrow is found within 1,640 feet of pending construction activities that would occur during the nonbreeding season (September 1 through January 31), a minimum protection buffer of 164 feet (50 meters) shall be established and maintained 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. The exclusion plan will include a compensatory habitat mitigation plan (see below). ▶ 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 164 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,				

Impact	Mitigation Measure	Action(s)	Implementing Party[1]	Timing	Completion of Implementation
	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, the project applicant 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. The project applicant will retain a qualified biologist to develop a burrowing owl mitigation and management plan that incorporates the following goals and standards: ▪ 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. ▪ 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. ▪ If habitat suitable for burrowing owl is not available for conservation adjacent or proximate to the project site, mitigation lands can be secured offsite and will aim to consolidate and enlarge conservation areas outside of planned development areas and within foraging distance of				

Impact	Mitigation Measure	Action(s)	Implementing Party[1]	Timing	Completion of Implementation
	other conservation lands. Mitigation may also be 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. 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. 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.				
Greenhouse Gas Emissions and Climate Change					
Impact 3.4-1: Conflict with an Applicable Plan, Policy or Regulation Adopted for the Purpose of Reducing the Emissions of Greenhouse Gases	**New Mitigation Measure 3.4-1: Implement the Bay Area Air Quality Management District's On-Site Project Design Features to Demonstrate the Project's Fair Share in Meeting the State's Long-Term GHG Reduction Targets (UCP South only)** The following mitigation measure shall be applied to the UCP South portion of the project site. Prior to the issuance of building permits, the project applicant shall include the following elements in all construction drawings. ▶ Eliminate all on-site natural gas infrastructure for all land uses. ▶ Adherence to the most recent Tier 2 requirements of Part 11 of the Title 24 California Buildings Code's (CALGreen Code's) electric vehicle (EV) charging standards.	Adherence to applicable state guidelines and standards with respect to GHG reduction strategies.	Project applicant	Before building permits are issued and/or before approval of improvement plans	

Impact	Mitigation Measure	Action(s)	Implementing Party[1]	Timing	Completion of Implementation
	▶ Demonstrate consistency with OPR's SB 743 regional VMT standards (i.e., residential projects meeting a 15 percent below the existing VMT per capita, office projects meeting a 15 percent below the existing VMT per employee, and retail projects attaining a no net increase in existing VMT) ▶ If the aforementioned project design features cannot be incorporated into the project's design, the applicant shall include other relevant project design characteristics such that any additional emissions generated from natural gas, insufficient EV charging, or excessive VMT can be fully offset. Examples of measures that could be applied to individual projects in UCP South include, but are not limited to, the following: ▪ Implementation of a solid waste diversion program. ▪ Exceedance of the most recent version of Part 6 of the Title 24 California Building Code (California Energy Code). ▪ Use of low-flow appliances. ▪ Use of energy star appliances. Implementation of ZNE buildings.				
Impact 3.4-3: Conflict with or Obstruct a State or Local Plan for Renewable Energy or Energy Efficiency	**New Mitigation Measure 3.4-3: Implement On-Site Project Design Features that that Address Building Carbonization and Energy Efficiency (UCP South)** Implement the project design features in Mitigation Measure 3.4-1 that address building carbonization and energy efficiency.	Implementation of design features during building construction	Project applicant	Before building permit is issued	
Hydrology and Water Quality					

Impact	Mitigation Measure	Action(s)	Implementing Party[1]	Timing	Completion of Implementation
Impact 3.5-3: Substantially Alter the Existing Drainage Pattern of Project Area	**Mitigation Measure 3.5-3: Implement Altered Channel Cross Section Subject to MID Approval (VST Specific Plan Only)** Prior to initiation of infrastructure improvements for Phase 2 of the VST Specific Plan, the project applicant or subsequent developer shall submit evidence to the discretionary land use authority (City of Merced or Merced County) that: ▶ the proposed modification of the Fairfield Canal is designed such that no change would occur in the hydraulic flow rates and velocities of the canal, and ▶ necessary permits have been obtained from MID. ▶ Specific features that can be incorporated into the design to effectively control flowrate and velocity include (but are not limited to) adjusting the channel cross section, use of construction material that has higher roughness coefficient (i.e., river rock, rip rap, gabions), incorporating roughness baffles, and energy dissipaters at the downstream end of the canal.	Implementation of altered channel cross section of Fairfield Canal	Project applicant with oversight from MID, subject to approval from City of Merced or Merced County	Before infrastructure improvements	
Impact 3.5-5: Cumulative Impacts to Water Quality	No new mitigation is required for this impact. In light of changes to the cumulative condition and current regulations, Adopted Mitigation Measure 4.8-12 is no longer applicable or required to address the cumulative impacts of the UCP Update. The mitigation requirement would be removed as follows: ~~**Adopted Mitigation Measure** 4.8-12 The County shall develop Best Management Practices and prepare a Stormwater Pollution Prevention Plan and a stormwater monitoring program consistent with National Pollution Discharge System Phase 2 Permit Criteria.~~	None	N/A	N/A	
Impact 3.5-6: Cumulative Impacts to	No new mitigation is required for this impact. In light of changes to the cumulative condition and current regulations, Adopted Mitigation Measures 4.8-15 and 4.8-16 are no	None	N/A	N/A	

Impact	Mitigation Measure	Action(s)	Implementing Party[1]	Timing	Completion of Implementation
Hydrology and Flooding	longer applicable or required to address the cumulative impacts of the UCP Update. The mitigation requirement would be removed as follows: ~~**Adopted Mitigation Measure 4.8-15:** The County shall work with the Merced County Flood Control District, MID, and the City of Merced to update the Merced County Critical Area Flooding and Drainage Plan to identify a stategy for managing storm drainage runoff associated with future development within the Merced area. The plan update shall include at a minimum: existing hydrologic and hydraulic conditions, identification of base flood elevations that meet FEMA 44 CFR part 60 requirements, if such data have not been developed, and a process to evaluate the one-foot cumulative increase criteria; estimates of future peak flows and volumes based on anticipated land uses; performance standards for new development that address both peak flows and volumes while downstream conditions are not worsened; strategies to coordinate the development of local storm drainage and flood protection improvements with Merced County Streams Group projects; and mechanisms to update or revise the plan as needed as new information becomes available.~~ ~~**Adopted Mitigation Measure 4.8-16:** MID and the County shall coordinate to ensure that additional stormwater drainage systems do not add flows into the Fairfield Canal that would exceed the canal's capacity restrictions, potentially creating levee failure or overtopping conditions downstream of the UCP area.~~				
Noise and Vibration					
Impact 3.6-1: Short-Term Construction-	**Adopted Mitigation Measure 4.10-4:** Construction contractors shall comply with the following or an equivalent noise control program:	Construction equipment must comply with noise control program	Project applicant, construction contractor	Before ground disturbance	

Impact	Mitigation Measure	Action(s)	Implementing Party[1]	Timing	Completion of Implementation
Generated Noise Levels	▶ All noise-producing project equipment and vehicles using internal combustion engines shall be equipped with exhaust mufflers and air-inlet silencers where appropriate, in good operating condition that meet or exceed original factory specification. ▶ Mobile or fixed "package" equipment (e.g., arc-welders, air compressors) shall be equipped with shrouds and noise control features that are readily available for that type of equipment. ▶ All mobile or fixed noise producing equipment used on the project, that is regulated for noise output by local, state or federal agency, shall comply with such regulation while engaged in project-related activities. ▶ Electrically powered equipment shall be used instead of pneumatic or internal combustion powered equipment, where practicable. ▶ Material stockpiles and mobile equipment staging, parking and maintenance areas shall be located as far as practicable from noise-sensitive receptors. ▶ The use of noise-producing signals, including horns, whistles, alarms, and bells shall be for safety warning purposes only. No project-related public address loudspeaker, two-way radio, or music system shall be audible at any adjacent noise-sensitive receptor except for emergency use. The erection of temporary noise barriers will be considered where project activity is unavoidably close to noise-sensitive receptors. **New Mitigation Measure 3.6-1: Revise Policy N 2.6 for Managing Noise from Construction Activities of the Adopted UCP** Revise Policy N 2.6 of the Adopted UCP as follows: **Policy N 2.6** Manage noise from construction activities by: ▶ Limiting the hours of construction activities that generate noise, when adjacent to housing and other "sensitive" uses. ~~Typically,~~ Construction is limited to the hours of 7:00 a.m. to 6:00 p.m.	Implementation of noise control features on certain equipment	Project applicant, construction contractor	Before ground disturbance	

Impact	Mitigation Measure	Action(s)	Implementing Party[1]	Timing	Completion of Implementation
	~~10:00 p.m.~~, weekdays ~~and Saturday~~, and prohibited on Saturdays, Sundays, and legal holidays, except for emergency work. ▶ ~~Requiring that all construction vehicles or equipment, fixed or stationary, be equipped with properly operating and maintained mufflers.~~ ▶ All construction equipment shall be properly maintained and equipped with noise-reduction intake and exhaust mufflers and engine shrouds, in accordance with manufacturers' recommendations. Equipment engine shrouds shall be closed during equipment operation. ▶ Requiring that construction vehicle staging areas be located as far as practical from existing residential uses ▶ Requiring that construction vehicle trips be routed as far as practical from existing residential uses ▶ 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 dB 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. ▶ Locate any trailers and materials used during construction capable of breaking the line of sight between the noise-sensitive receptors and construction-noise generating equipment such that they would serve as noise barriers in order to protect noise-sensitive receptors from noise generated by off-site construction activity. ▶ For construction occurring within 600 feet of an existing noise sensitive receptor, install temporary noise curtains as close as possible to the noise-generating activity such that the curtains obstruct the direct line of sight between the noise-generating construction activity and the nearby sensitive receptors. Temporary noise curtains shall consist of durable, flexible composite material featuring a noise barrier layer bounded to				

Impact	Mitigation Measure	Action(s)	Implementing Party[1]	Timing	Completion of Implementation
	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. ▶ Noise-reducing enclosures and techniques shall be used around stationary noise-generating equipment (e.g., concrete mixers, generators, compressors). ▶ Operate heavy-duty construction equipment at the lowest operating power possible. Electrically powered equipment shall be used instead of pneumatic or internal combustion powered equipment, where practicable.				
Impact 3.6-2: Long-Term, Operational Noise (Stationary and Area Sources)	**Mitigation Measure 3.6-2: Amend the UCP to Include Provisions for Operational Stationary Source Noise Generating Activities** The County of Merced shall revise the following policies in the UCP Update as follows: ▶ **Policy N 1.1** Design and construct new noise-generating land uses in a manner that does not cause excessive exterior or interior noise for noise-sensitive land uses ~~on any location of nearby residential properties~~. The exterior noise standard for noise-sensitive land uses is ~~of 65~~ 60 dBA L_{dn} and the interior noise standard for residential structures and other noise-sensitive land uses is 45 dB L_{dn}; provided, however, that residential uses within and immediate adjacent to the Town Center shall be considered commercial mixed uses for the purposes of determining noise compatibility. Additionally, exterior stationary source noise standards for noise-sensitive land uses are 55 dB L_{eq} between the hours of 7:00 a.m. and 10:00p.m. and 45 dB L_{eq} and 50 L_{max} between the hours of 10:00 p.m. and 7:00 a.m. ~~shall not be exceeded by stationary noise generating land uses at any existing or planned residential land use~~. Noise reduction features shall be included in the design of any land use that has noise sources affecting residential land uses. These noise reduction features shall include structure design and layout, site planning, and other measures; block walls and barriers	Design of new land uses to prevent excessive noise near noise-sensitive receptors	Project applicant, County of Merced	Prior to Project approval	

Impact	Mitigation Measure	Action(s)	Implementing Party[1]	Timing	Completion of Implementation
	(including berms) shall only be used where such measures are deemed infeasible or ineffective. **Policy N X.X** Loading docks shall be located and designed such that noise generated by activity at the loading dock would not exceed the City's stationary noise source criteria (i.e., exterior noise levels of 55 dB L_{eq} between the hours of 7:00 a.m. and 10:00p.m. and 45 dB L_{eq} and 50 L_{max} between the hours of 10:00 p.m. and 7:00 a.m) at any existing noise sensitive receptor As part of the design-build process for uses that include loading docks, a specialized noise study will be completed to evaluate the specific design and ensure compliance with City of Merced noise standards. Reduction of loading dock noise can be achieved by locating loading docks as far away as possible from noise sensitive land uses, constructing noise barriers between loading docks and noise-sensitive land uses, or using buildings and topographic features to provide acoustic shielding for noise-sensitive land uses. Final design, location, and orientation shall be dictated by findings in the noise study.				
Impact 3.6-3: Long-Term, Operational Noise (Traffic)	**Adopted Mitigation Measure 4.10-3(a):** The County shall construct barriers and/or retrofit affected homes with noise attenuation measures (e.g., sound-rated windows) necessary to achieve a 45 Ldn interior noise level. **Adopted Mitigation Measure 4.10-3(b):** For development within the UCP area, noise considerations should be taken into account during initial site planning, in order to maximize shielding by the planned structures or other on-site features.	During planning, applicant shall design development with noise considerations in mind.	Project applicant	Prior to Project approval	
Impact 3.6-4: Generate Excessive Groundborne Vibration or Groundborne Noise Levels	**Adopted Mitigation Measure 4.10-5:** Limit groundborne vibration due to construction activities to 0.2 in/sec velocity (limit of potential for damage to structures) in the vertical direction at sensitive receptors. For construction adjacent to highly sensitive uses, apply additional measures as feasible, including advance notice to occupants of sensitive facilities to ensure precautions are taken in those facilities to protect ongoing activities from the effects of vibration.	Implementation of vibration reduction measures,	Project applicant, construction contractor.	During construction.	

Impact	Mitigation Measure	Action(s)	Implementing Party[1]	Timing	Completion of Implementation
	New Mitigation Measure 3.6-4: Amend the UCP to Include Provisions for Potential Vibration-Inducing Activities The County of Merced shall include the following policy in the UCP Update: ▶ **Policy N.X: Construction Vibration.** All potential vibration-inducing activities shall comply with the following measures, setback distances, precautions, monitoring programs, and alternative methods to traditional construction activities: ▪ Ground vibration-producing activities, such as pile driving and blasting, shall be limited to the daytime hours between 7:00 a.m. to 6:00 p.m. on weekdays and shall not occur on weekends and holidays consistent with County of Merced Municipal Code Section 10.60.040. ▪ If pile driving is used and would occur within 630 feet of existing residential receptors, pile holes shall be predrilled to the maximum feasible depth to reduce the number of blows required to seat a pile. ▪ All construction equipment on construction sites shall be operated as far away from vibration-sensitive sites as reasonably possible. ▪ Earthmoving and ground-impacting operations shall be phased so as not to occur simultaneously in areas close to sensitive receptors, to the extent feasible. The total vibration level produced could be significantly less when each vibration source is operated at separate times. ▪ Minimum setback requirements for different types of ground vibration producing activities (e.g., pile driving and blasting) for the purpose of preventing negative human response shall be established based on the specific nature of the vibration producing activity (e.g., type and duration of pile driving), local soil conditions, and the type of sensitive receptor. Established setback requirements (i.e., 630 feet) can be breached only if a project-specific, site-specific, technically adequate ground vibration study indicates that the buildings				

Impact	Mitigation Measure	Action(s)	Implementing Party[1]	Timing	Completion of Implementation
	would not be exposed to ground vibration levels in excess of 70 VdB, and ground vibration measurements performed during the construction activity confirm that the buildings are not being exposed to levels in excess of 70 VdB. ▪ All vibration-inducing activity within the distance parameters described above shall be monitored and documented for ground vibration noise and vibration noise levels at the nearest sensitive land use and associated recorded data submitted to the County of Merced so as not to exceed 70 Vdb. Alternatives to traditional pile driving (e.g., sonic pile driving, jetting, cast-in-place or auger cast piles, nondisplacement piles, pile cushioning, torque or hydraulic piles) shall be considered and implemented where feasible to reduce vibration levels.				

Impact	Mitigation Measure	Action(s)	Implementing Party[1]	Timing	Completion of Implementation
Impact 3.6-5: Cumulative Noise Impacts	**Adopted Mitigation Measure 4.10-3(a):** The County shall construct barriers and/or retrofit affected homes with noise attenuation measures (e.g., sound-rated windows) necessary to achieve a 45 L_{dn} interior noise level. **Adopted Mitigation Measure 4.10-3(b):** For development within the UCP area, noise considerations should be taken into account during initial site planning, in order to maximize shielding by the planned structures or other on-site features. **Adopted Mitigation Measure 4.10-4:** Construction contractors shall comply with the following or an equivalent noise control program: ▶ All noise-producing project equipment and vehicles using internal combustion engines shall be equipped with exhaust mufflers and air-inlet silencers, where appropriate, in good operating condition that meet or exceed original factory specification. ▶ Mobile or fixed "package" equipment (e.g., arc-welders, air compressors) shall be equipped with shrouds and noise control features that are readily available for that type of equipment. ▶ All mobile or fixed noise-producing equipment used on the project, that is regulated for output by local, state or federal	County to retrofit affected homes.	County of Merced	Before construction.	

Impact	Mitigation Measure	Action(s)	Implementing Party[1]	Timing	Completion of Implementation
	agency, shall comply with such regulation while engaged with project-related activities. ▶ Electrically powered equipment shall be used instead of pneumatic or internal combustion powered equipment, where practicable. ▶ Material stockpiles and mobile equipment staging, parking and maintenance areas shall be located as far as practicable from noise-sensitive receptors. ▶ The use of noise-producing signals, including horns, whistles, alarms, and bells, shall be for safety warning purposes only. No project-related public address loudspeaker, two-way radio, or music system shall be audible at any adjacent noise-sensitive receptor except for emergency use. ▶ The erection of temporary noise barriers will be considered where project activity is unavoidably close to noise-sensitive receptors. **Adopted Mitigation Measure 4.10-5:** Limit groundborne vibration due to construction activities to 0.2 in/sec velocity (limit of potential for damage to structures) in the vertical direction at sensitive receptors. For construction adjacent to highly sensitive uses, apply additional measures as feasible, including advance notice to occupants of sensitive facilities to ensure precautions are taken in those facilities to protect ongoing activities from the effects of vibration.	Implementation of noise attenuation measures.	Project applicant, construction contractor	During construction	
Transportation					

Impact	Mitigation Measure	Action(s)	Implementing Party[1]	Timing	Completion of Implementation
Impact 3.7-1: Conflict with a Program, Plan, Ordinance, or Policy Addressing the Circulation System, Including Transit, Roadway, Bicycle and Pedestrian Facilities	**Adopted Mitigation Measure 4.14-4:** Merced County will, and the City of Merced should, ensure adequate maintenance of the existing path along Lake Road and other regional bicycle and pedestrian facilities that provide access to the proposed UCP.	Maintain of existing path and other bike and pedestrian facilities providing access to UCP.	Merced County and City of Merced	During Project operation	
Impact 3.7-3: Substantially Increase Hazards Due to a Geometric Design Feature (e.g., Sharp Curves or Dangerous Intersections) or Incompatible Uses (e.g., Farm Equipment)	**Adopted Mitigation Measure 4.14-4:** Merced County will, and the City of Merced should, ensure adequate maintenance of the existing path along Lake Road and other regional bicycle and pedestrian facilities that provide access to the proposed UCP.	Maintain of existing path and other bike and pedestrian facilities providing access to UCP.	Merced County and City of Merced	During Project operation	

Impact	Mitigation Measure	Action(s)	Implementing Party[1]	Timing	Completion of Implementation
Impact 3.7-5: Cumulative Transportation Impacts	**Adopted Mitigation Measure 4.14-7(a):** UCP development shall contribute its fair share toward the following Tier road improvements which are shown in Figure 4.14-3 [in the 2001/2004 UCP EIR]: ▶ Highway 59, widen to 4 lanes, Yosemite Avenue to Bellevue Road ▶ Highway 59, new segment between Highway 99 and 140 ▶ Yosemite Avenue, extend from R Street to Highway 59 ▶ Yosemite Avenue, widen to 4 lanes, Campus Parkway to G Street ▶ Bellevue Road, widen to 6 lanes, Highway 59 to Campus Parkway ▶ R Street, extend from Yosemite Avenue to Bellevue Road ▶ Parsons Avenue/Gardner Avenue, extend and widen to 4 lanes, Childs Avenue to Bellevue Road ▶ Highway 59, new alignment along Mission Avenue ▶ Mission Avenue, widen to 4 lanes, Highway 99 to Highway 59 ▶ Childs Avenue, widen to 4 lanes, Campus Parkway to Highway 59 **Adopted Mitigation Measure 4.14-7(b):** For development through year 2025, UCP development shall only contribute its fair share toward the following Tier road improvements, which are shown on Figure 4.14-4: ▶ Yosemite Avenue, extend from R Street to Highway 59 ▶ Yosemite Avenue, widen to 4 lanes, Campus Parkway to G Street ▶ R Street, extend from Yosemite Avenue to Belleview Avenue ▶ Parsons Avenue/Gardner Avenue, extend and widen to 4 lanes, Childs Avenue to Bellevue Road	Contribution of fair share road improvements	Project applicant	Before construction	

Impact	Mitigation Measure	Action(s)	Implementing Party[1]	Timing	Completion of Implementation
	▶ Bellevue Road, widen to 4 lanes, Highway 59 to Campus Parkway **Adopted Mitigation Measure 4.14-7(c):** For development through Year 2015, the County shall analyze the expected future operations of the Lake/Yosemite intersection at the following milestone points: (1) determination of conceptual alignment for Campus Parkway, (2) preparation of the Geometric Approval Drawings for Campus Parkway, and (3) each October, beginning in the opening year of the UC Merced Campus. If any of these analyses determine that the Lake/Yosemite intersection will operate at unacceptable LOS, the proposed UCP shall contribute its fair share toward the cost of any improvements deemed necessary at the intersection. Monitoring of the Lake/Yosemite intersection shall end upon completion of the Campus Park extension from Yosemite Avenue to Belleview Road. **Adopted Mitigation Measure 4.14-7(d):** The County shall work with the City of Merced, Caltrans and MCAG to establish rights-of-way and access management requirements along the routes identified above. **Adopted Mitigation Measure 4.14-8(a):** Implement Mitigation Measure 4.14-7(a). In addition, UCP development shall contribute its fair share toward intersection improvement alson G Street between Highway 99 and Childs Avenue. **Adopted Mitigation Measure 4.14-8(b):** Implement Mitigation Measure 4.14-7(d).	Establishing proper rights of way and access for identified routes.	County of Merced, City of Merced	Before construction	