Draft Environmental Impact Report

California State University, Chico Master Plan

Prepared for California State University, Chico

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SCH # 2019049168

AUGUST 2020

DRAFT

California State University, Chico
Master Plan Environmental Impact Report

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SCH # 2019049168

AUGUST 2020

Printed on 30% post-consumer recycled material.

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Executive Summary

The California State University (CSU) has prepared this Draft Environmental Impact Report (EIR) to inform the community, responsible agencies, trustee agencies, and other interested agencies and organizations, of the potential significant environmental effects resulting from implementation of the proposed CSU, Chico Master Plan 2030.[1] This Executive Summary lists the potentially significant environmental impacts and feasible mitigation measures or project alternatives that would avoid or substantially reduce those impacts. This Draft EIR was prepared in compliance with the California Environmental Quality Act (CEQA) (Cal. Pub. Resources Code § 21000-21189.3) and the CEQA Guidelines (Cal. Code Regs. tit. 14, § 15000 *et seq.*).

ES.1 Summary of Impacts

Table ES-1 presents a summary of the potentially significant environmental impacts that could result from the project, proposed mitigation measures, and the level of significance of the impact after the implementation of the mitigation measures.

1 The Board of Trustees of the California State University is the State of California acting in its educational capacity, and is responsible for the oversight of the California State University system, including the CSU Chico campus, one of 23 campuses in the system. They have authority over curricular development, use of property, development of facilities, and fiscal and human resources management. As such, the Board of Trustees is the lead agency under CEQA and is responsible for review and certification of the EIR and for consideration of Project approval. CSU Chico will act as point of contact for the CEQA process.

Table ES-1. Summary of Project Impacts

Environmental Topic	Impact	Mitigation Measure(s)	Level of Significance After Mitigation
Aesthetics – No Significant Impacts			
AES-1. The project would not have a substantial adverse effect on a scenic vista.	LTS	N/A	LTS
AES-2. The project would not substantially damage scenic resources, including, but not limited to trees, rock outcroppings, and historic buildings within a state scenic highway.	NI	N/A	NI
AES-3. In non-urbanized areas, the project would not substantially degrade the existing visual character or quality of public views of the site and its surroundings and in urbanized areas, would not conflict with the applicable zoning and other regulations governing scenic quality.	LTS	N/A	LTS
AES-4. The project would not create a new source of substantial light or glare which would adversely affect day or nighttime views in the area.	LTS	N/A	LTS
Air Quality			
AQ-1. The project would not conflict with or obstruct implementation of the applicable air quality plan.	LTS	N/A	LTS
AQ-2. The project would not result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard.	LTS	N/A	LTS
AQ-3. The project would not expose sensitive receptors to substantial pollutant concentrations.	LTS	N/A	LTS
AQ-4. The project would not result in other emissions (such as those leading to odors) adversely affecting a substantial number of people.	LTS	N/A	LTS

Table ES-1. Summary of Project Impacts

Environmental Topic	Impact	Mitigation Measure(s)	Level of Significance After Mitigation
Biological Resources			
BIO-1. The project would have a substantial adverse effect, either directly or through habitat modifications, on a species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service. ***Special-Status Plants (Big-Scale Balsamroot).*** *Big-scale balsamroot is a perennial herb with potential to occur on the main campus and University Farm. Impacts could include the destruction of individual plants or populations of plants that may become established in the construction footprint prior to ground disturbance.* ***Special-Status Plants (Silky Cryptantha).*** *Silky cryptantha is an annual herb with potential to occur on the main campus along Big Chico Creek. Impacts could include the destruction of individual plants or populations of plants that may become established in the construction footprint prior to ground disturbance.* ***Special-Status Plants (Wooly Rose-Mallow).*** *Wooly rose-mallow is an emergent rhizomatous herb found in riprap on sides of levees or in freshwater marshes and swamps. This species has potential to occur on the main campus along Big Chico Creek, where riprap is located. Impacts could include the destruction of individual plants or populations of plants that may become established in the construction footprint prior to ground disturbance.*	PS	**MM-BIO-1. Rare Plant Survey.** Prior to ground-disturbance in the riparian woodland on the main campus, a qualified botanist shall conduct surveys during the appropriate blooming period for potentially occurring special-status plant species. The purpose of the survey shall be to delineate and flag populations of special-status plant species for avoidance. Special-status plant populations identified during the pre-construction survey shall be mapped using a hand-held GPS unit and avoided where possible. Plant individuals or populations plus a 10-foot buffer shall be temporarily fenced during construction activities with high-visibility fencing or prominently flagged. If complete avoidance of populations is infeasible, further measures, as described below, shall be necessary. If avoidance of special-status plant species is not feasible, a Rare Plant Salvage and Translocation Plan shall be prepared by a qualified botanist and approved by CSU prior to implementation. The Rare Plant Salvage and Translocation Plan shall include, at a minimum: identification of occupied habitat to be preserved and removed; identification of on-site or off-site preservation, restoration, or enhancement locations; methods for preservation, restoration, enhancement, and/or translocation; goals and objectives; replacement ratio and success standard of 1:1 for impacted to established acreage; a monitoring program to ensure mitigation success; adaptive management and remedial measures in the event that the performance standards are not achieved; and financial assurances and a mechanism for conservation of any mitigation lands required in perpetuity.	LTS

Table ES-1. Summary of Project Impacts

Environmental Topic	Impact	Mitigation Measure(s)	Level of Significance After Mitigation
Special-Status Plants (California Satintail). *California satintail is a perennial rhizomatous herb with potential to occur on the main campus along Big Chico Creek. Impacts could include the destruction of individual plants or populations of plants that may become established in the construction footprint prior to ground disturbance.* ***Special-Status Plants (Veiny Monardella).*** *Veiny monadella is an annual herb found in heavy clay soils with potential to occur on the main campus in undeveloped areas. Impacts could include the destruction of individual plants or populations of plants that may become established in the construction footprint prior to ground disturbance.*			
BIO-1 cont'd. ***Valley Elderberry Longhorn Beetle (VELB).*** *Elderberry shrubs located in the riparian corridor along Big Chico Creek on the main campus provide potential habitat for the valley elderberry longhorn beetle. Impacts could include direct destruction of habitat as a result of vegetation removal or trimming in the riparian woodland along Big Chico Creek.*		**MM-BIO-2. VELB Protection and Habitat Avoidance.** Per the U.S. Fish and Wildlife Service Framework for *Assessing Impacts to the Valley Elderberry Longhorn Beetle (Desmocerus californicus dimorphus)* (Framework; USFWS 2017), the below measures shall be implemented to avoid and minimize potential impacts to VELB. These measures apply to all construction and maintenance work with the potential to affect elderberry shrubs located along Big Chico Creek on the main campus. 1. All areas to be avoided during construction activities shall be fenced and/or flagged as close to construction limits as feasible. 2. Activities that may damage or kill an elderberry shrub (e.g., trenching, paving, etc.) may need an avoidance area of at least 6 meters (20 feet) from the drip-line of elderberry shrubs, depending on the type of activity. 3. A qualified biologist shall provide training for all contractors, work crews, and any onsite personnel	

Table ES-1. Summary of Project Impacts

Environmental Topic	Impact	Mitigation Measure(s)	Level of Significance After Mitigation
		on the status of the VELB, its host plant and habitat, the need to avoid damaging the elderberry shrubs, and the possible penalties for noncompliance. 4. A qualified biologist shall monitor the work area at project appropriate intervals to assure that all avoidance and minimization measures are implemented. The amount and duration of monitoring shall depend on the project specifics and should be discussed with the U.S. Fish and Wildlife Service biologist. 5. As much as feasible, all activities that could occur within 50 meters (165 feet) of an elderberry shrub, shall be conducted outside of the flight season of the VELB (March - July). 6. Trimming may remove or destroy VELB eggs and/or larvae and may reduce the health and vigor of the elderberry shrub. In order to avoid and minimize adverse effects to VELB, trimming shall only occur between November and February and shall avoid the removal of any branches or stems that are ≥ 1 inch in diameter. Measures to address regular and/or large scale maintenance (trimming) should be established in consultation with the U.S. Fish and Wildlife Service biologist. 7. Herbicides shall not be used within the drip-line of the shrub. Insecticides shall not be used within 30 meters (98 feet) of an elderberry shrub. All chemicals shall be applied using a backpack sprayer or similar direct application method. 8. Mechanical weed removal within the drip-line of the shrub shall be limited to the season when adults are not active (August - February) and shall avoid damaging the elderberry.	

Table ES-1. Summary of Project Impacts

Environmental Topic	Impact	Mitigation Measure(s)	Level of Significance After Mitigation
		9. Erosion control shall be implemented and the affected area shall be re-vegetated with appropriate native plants. 10. For all unavoidable adverse impacts to VELB or its habitat, consultation with the U.S. Fish and Wildlife Service shall be necessary to determine the appropriate type and amount of compensatory mitigation. Per Tables 1 and 2 of the Framework, suitable riparian habitat may be replaced, at a minimum of 3:1 for all acres that will be permanently impacted by the project. Suitable non-riparian habitat may be replaced, at a minimum of 1:1 for all acres that will be permanently impacted by the project.	
BIO-1 cont'd. **Western Pond Turtle.** *Within the main campus, western pond turtle could use Big Chico Creek and the adjacent riparian woodland as a migratory corridor, as limited basking and upland nesting habitat exist along this segment of the creek. Direct impacts could include mortality or injury to turtles if present in the riparian corridor prior to vegetation removal or other ground-disturbing activities. Indirect impacts to western pond turtle could result from a temporary reduction of cover following vegetation removal activities in the riparian woodland.*		**MM-BIO-3.** Preconstruction Surveys for Western Pond Turtle. A qualified biologist shall conduct a survey for western pond turtle within 48 hours prior to the start of construction activities within areas near the riparian woodland on the main campus. Concurrently with the preconstruction survey, searches for nest sites shall be conducted and any identified sites shall be delineated with high-visibility flagging or fencing and avoided during construction activities. If avoidance is not possible, the nest and/or turtle shall be removed by a qualified biologist and relocated to an appropriate location in coordination with California Department of Fish and Wildlife biologists. If turtles and/or nests are encountered during the preconstruction survey, a qualified biologist shall be present during grubbing and clearing activities in suitable habitat to monitor for western pond turtle. If a turtle is observed in the active construction zone, construction shall cease and a qualified biologist will be	

Table ES-1. Summary of Project Impacts

Environmental Topic	Impact	Mitigation Measure(s)	Level of Significance After Mitigation
		notified. Construction may resume when the biologist has either relocated the turtle to nearby suitable habitat outside the construction zone, or, after thorough inspection, determined that the turtle has moved away from the construction zone.	
BIO-1 cont'd. **Burrowing Owl.** *Within the Master Plan area, the University Farm provides potential nesting habitat for burrowing owl. Direct impacts could include mortality or injury to owls or destruction of burrows/nests if nesting in or adjacent to a construction site prior to ground-disturbing activities. In addition, loud construction activities could cause an adult owl to abandon an active nest that is in close proximity to construction, which could lead to nest failure.*		**MM-BIO-4.** Preconstruction Surveys for Burrowing Owl. A qualified biologist shall conduct surveys for burrowing owl within 30 days prior to ground-disturbing activities in undeveloped areas of the University Farm. The survey shall cover the limits of ground disturbance and potentially suitable nesting habitat within 300 feet. If ground-disturbing activities are delayed, then additional surveys shall be conducted such that no more than 7 days elapse between the survey and ground-disturbing activities. If non-nesting burrowing owls are observed in or adjacent to the construction footprint during the survey, construction shall be postponed until the qualified biologist can fully implement a California Department of Fish and Wildlife-approved burrow exclusion plan (to be prepared by the qualified biologist). The exclusion plan shall be conducted in accordance with the Staff Report on Burrowing Owl Mitigation (CDFW 2012). Once owls have been successfully excluded and unoccupied burrows evacuated, construction in the area may proceed. If nesting burrowing owls are observed during the survey, construction activities within 300 feet of occupied burrows shall be delayed until young owls have fledged and are independent of the burrow, as determined by a qualified biologist. The qualified biologist may reduce the 300-foot buffer based on the type, timing, extent, and	

Table ES-1. Summary of Project Impacts

Environmental Topic	Impact	Mitigation Measure(s)	Level of Significance After Mitigation
		intensity of the construction activity and other factors such as site topography and vegetation cover between the construction activity and the burrow. Once all young have fledged and are no longer dependent upon the nest burrow, the same burrow exclusion procedure described above shall be implemented prior to resuming construction activities in the area.	
BIO-1 cont'd. **Swainson's Hawk.** *The University Farm provides potential nesting habitat for Swainson's hawk. Direct and indirect impacts to Swainson's hawk would be similar to those described above for burrowing owl.*		**MM-BIO-5.** Preconstruction Surveys for Swainson's Hawk. A qualified biologist shall conduct surveys for Swainson's hawk prior to tree removal or building demolition activities on the University Farm, if undertaken during the Swainson's hawk nesting season (March 1 – August 31). The surveys shall be conducted in accordance with the Swainson's Hawk Technical Advisory Committee (TAC) Recommended Timing and Methodology for Swainson's Hawk Nesting Surveys in California's Central Valley (TAC 2000). The survey shall cover the limits of construction and suitable nesting habitat within 500 feet. If an active nest is observed in the survey area, construction within 500 feet of the nest shall be delayed until young hawks have fledged and are independent of the nest, as determined by a qualified biologist. In consultation with California Department of Fish and Wildlife biologists, the qualified biologist may reduce the 500-foot buffer based on the type, timing, extent, and intensity of the construction activity and other factors such as site topography and vegetation cover between the construction activity and the nest. Construction within 500 feet of the nest may reinitiate once all young have fledged and are no longer dependent upon the nest.	
BIO-1 cont'd.		MM-BIO-6. Preconstruction Surveys for Nesting Birds (including Yellow Warbler and Loggerhead Shrike). A qualified biologist shall conduct a survey for nesting	

Table ES-1. Summary of Project Impacts

Environmental Topic	Impact	Mitigation Measure(s)	Level of Significance After Mitigation
Nesting Birds. *The main campus, University Farm, and University Village provide nesting habitat for a variety of native birds and raptors protected by California Fish and Game Code and the Migratory Bird Treaty Act. Direct and indirect impacts to nesting birds and raptors would be similar to those described above for burrowing owl.*		birds approximately two days prior to vegetation removal activities on the main campus, University Village and University Farm conducted during the nesting season (March through August). The survey shall cover the limits of vegetation removal and suitable nesting habitat within 500 feet for raptors and 100 feet for other nesting birds. If any active nests are observed during surveys, a qualified biologist shall establish a suitable avoidance buffer from the active nest. The buffer distance, to be determined by the qualified biologist, will typically range from 50 to 300 feet, and shall be determined based on factors such as the species of bird, topographic features, intensity and extent of the disturbance, timing relative to the nesting cycle, and anticipated ground disturbance schedule. Limits of construction to avoid active nests shall be established in the field with flagging, fencing, or other appropriate barriers and shall be maintained until the chicks have fledged and the nests are no longer active, as determined by the qualified biologist. If vegetation removal activities are delayed, additional nest surveys shall be conducted such that no more than 7 days elapse between the survey and vegetation removal activities.	
BIO-1 cont'd. ***Native Bats (Pallid Bat and Western Red Bat)****. Native bats roosting on the Main Campus or University Farm could be impacted by future development under the proposed Master Plan, either indirectly from noise-related disturbance or destruction of roost sites or directly through mortality or injury to bats roosting in*		**MM-BIO-7. Preconstruction Surveys for Roosting Bats.** If feasible, building demolition and tree removal activities shall be conducted outside of the bat maternity season (March 1 – August 31) to avoid potential impacts to maternity colonies. If building demolition and tree removal activities must occur during the bat maternity season, a qualified biologist (i.e., biologist with knowledge of California bat	LTS

Table ES-1. Summary of Project Impacts

Environmental Topic	Impact	Mitigation Measure(s)	Level of Significance After Mitigation
trees that are removed or structures that are demolished.		species, as well as experience conducting bat surveys and preparing and implementing bat exclusion plans) shall conduct a survey for maternity roosts within 14 days prior to construction. The survey shall include a visual inspection of potential roosting features (bats need not be present) and presence of guano in the construction footprint and within 50 feet. Potential roosting features found during the survey shall be flagged or marked. If a bat roosting or maternity colony cannot be completely avoided, the individuals shall be safely evicted under the direction of the qualified bat biologist. If individuals cannot be safely evicted due to factors such as lack of alternative roosting sites or the young still being reliant on adults, as determined by the qualified bat biologist, ground-disturbing activities within a specified distance of the roost (specified distance to be determined by the bat biologist, based on surroundings and vulnerability of roost site, etc.) shall be postponed or halted until conditions are suitable for safe eviction or the roost has vacated naturally. Implement **MM BIO-11**	
BIO-1 cont'd. ***American Badger.*** *American badgers burrowing on the University Farm could be impacted by future development under the proposed Master Plan, either indirectly through noise-related disturbance or destruction of burrow sites, or directly through mortality or injury to badgers occupying burrows in an area subject to disturbance.*		**MM-BIO-8. Preconstruction Surveys for American Badger.** A qualified biologist shall conduct focused surveys for American badger dens within 2 weeks prior to ground-disturbing activities in undeveloped areas of the University Farm. The survey shall cover the limits of ground disturbance and a 100-foot buffer. Any winter or natal American badger dens located during the survey shall be evaluated (typically with remote cameras) to determine activity status. Prior to construction, the qualified biologist shall establish a 100-foot no-disturbance buffer (e.g., mesh	LTS

Table ES-1. Summary of Project Impacts

Environmental Topic	Impact	Mitigation Measure(s)	Level of Significance After Mitigation
		exclusion fencing, flagging, or similar) around any active American badger natal dens identified during the survey. The buffer shall be maintained until the qualified biologist determines that the den is no longer active and the young are no longer dependent upon the den for survival. If construction occurs during the non-breeding period (typically from June through February) and an active non-natal den is found in or adjacent to the construction footprint, a qualified biologist (with the appropriate permits and credentials) shall attempt to trap or flush the individual and relocate it to suitable habitat away from construction. If no dens are observed, and/or after a trapping or flushing effort is completed, and/or after it is confirmed that a natal den is no longer active, the vacated or unoccupied den can be excavated and construction can proceed. Implement **MM BIO-11**	
		Implement MM-BIO-9, -10, and -11	
BIO-2. The project would have a substantial adverse effect on riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service.	PS	**MM-BIO-9. Riparian Woodland and Creek Protection.** Prior to the initiation of ground-disturbing activities in the riparian woodland on the main campus, the limits of disturbance and avoided habitat shall be fenced (e.g., mesh exclusion fencing, flagging, or similar). No construction, staging, or other ground-disturbing activities shall be permitted beyond the construction fence. Construction contractors shall be responsible for establishing and maintaining appropriate Best Management Practices (BMPs) prior to, during, and following ground disturbance in the riparian woodland. Implementation of MM-BIO-11 would also ensure	LTS

Table ES-1. Summary of Project Impacts

Environmental Topic	Impact	Mitigation Measure(s)	Level of Significance After Mitigation
		riparian woodland and creek protection during construction. Temporarily disturbed areas in the riparian woodland shall be revegetated following construction and prior to the first rain event (more than one half inch of precipitation in a 24-hour period). Reseeded areas shall be covered with a biodegradable erosion control fabric to prevent erosion and downstream sedimentation. The project engineer shall determine the specifications needed for erosion control fabric (e.g., sheer strength) based on anticipated maximum flow velocities and soil types. No seed of nonnative species shall be used unless certified to be sterile..	
BIO-2 cont'd.		**MM-BIO-10. Contingency Plan for In-Water Work.** If CSU, Chico facilities staff determines that a project has the potential to impact Big Chico Creek or other aquatic habitat by the placement of fill material, an individual or nationwide permit from the Army Corps of Engineers (ACOE) shall be obtained prior to such activity. As part of the ACOE permit, compensatory mitigation may be required, at a ratio to be determined by the ACOE, to offset the loss of wetland/waters habitat. If so, and as part of the permit application process, a qualified biologist shall draft a mitigation and monitoring plan to address implementation and monitoring requirements under the permit to ensure that the project would result in no net loss of habitat functions and values. The plan shall contain, at a minimum, mitigation goals and objectives, mitigation location, a discussion of actions to be implemented to mitigate the impact, monitoring methods and performance criteria, extent of monitoring to be conducted, actions to be taken in the event that the mitigation is not successful, and reporting	

Table ES-1. Summary of Project Impacts

Environmental Topic	Impact	Mitigation Measure(s)	Level of Significance After Mitigation
		requirements. The plan shall be approved by ACOE and compensatory mitigation shall take place either on site or at an appropriate off-site location as approved by the ACOE. Concurrent with the ACOE permit, CSU shall also obtain a Water Quality Certification from the RWQCB, subject to the same mitigation plan requirements stated above. Any work within the bed or bank of Big Chico Creek, or within the abutting riparian woodland, or within the seasonal pond at the University Farm, would require authorization from CDFW under a California Fish and Game Code Section 1600 Streambed Alteration Agreement. Trimming or removal of riparian vegetation may also require compensatory mitigation.	
BIO-3. The project would have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means.	PS	Implement **MM-BIO-9** and **-10**	LTS
BIO-4. The project would interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites.	PS	**MM-BIO-11. Worker Environmental Awareness Training.** For activities that require preconstruction surveys for special-status species, CSU shall retain a qualified biologist to provide worker environmental awareness training (WEAT) for all construction workers and field inspectors. The WEAT may also be conducted through a video or electronic presentation created by a qualified biologist specifically for the project. The WEAT shall instruct workers on how to recognize all special-status plant and wildlife species and their preferred habitat potentially present in the project site, applicable laws and regulations regarding each species, actions to take if a special-status species is observed during construction activities including the name/contact information of the monitoring biologist, and the nature	LTS

Table ES-1. Summary of Project Impacts

Environmental Topic	Impact	Mitigation Measure(s)	Level of Significance After Mitigation
		and purpose of protective measures including best management practices and other required mitigation measures. They shall also be instructed as to sensitive resource areas, including wetlands or other water, to avoid impacts within the project site other than where impacts have been authorized, and regarding relevant laws and regulations for each resource.	
		Implement **MM-BIO-4**, -5, -6, -7, -8, -9, -10	
BIO-5. The project would not conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.	NI	N/A	NI
BIO-6. The project would not conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan.	NI	N/A	NI
Cultural Resources			
CUL-1. The project may cause a substantial adverse change in the significance of a historical resource pursuant to §15064.5.	PS	**MM-CUL-1.** Subsequent technical work must be conducted prior to the start of new construction, additions, renovations (including Americans with Disabilities Act (ADA) compliance work), or site improvements, involving work that could possibly constitute a substantial adverse change in the significance of a historical resource by means of physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings, such that the significance of a historical resource would be materially impaired (State CEQA Guidelines Section 15064.5) within or adjacent to CEQA historical resources. The subsequent technical work must include preparation of a report where the proposed project design plans and/or schematics are analyzed in conformance with the Secretary of the Interior's Standards (SOIS) for the Treatment of Historic Properties, specifically, the	LTS

Table ES-1. Summary of Project Impacts

Environmental Topic	Impact	Mitigation Measure(s)	Level of Significance After Mitigation
		Standards for Rehabilitation and Guidelines for Rehabilitating Historic Buildings. As CSU Chico is subject to PRC 5024 and 5024.5 regulations which results in requiring consultation with SHPO on state owned historical resources, this SOIS analysis of the proposed project plans will also need to be reviewed and approved by SHPO. Further, all proposed ADA compliance work shall reference both the "Accessibility Considerations" section of the Rehabilitation Guidelines and National Park Service Preservation Brief 32, Making Historic Properties Accessible to ensure that ADA compliance work minimizes changes to historic materials and features. The project plan/schematic design review (technical report) shall be completed by a qualified architectural historian or historic preservation specialist who meets the SOIS Professional Qualifications for Architectural History. Upon review, the qualified specialist and SHPO may recommend changes/revisions to project plans in order to obtain conformance with the Standards for Rehabilitation. Alternatively, CSU, Chico may choose to work with a preservation architect who meets the SOIS Professional Qualifications. As part of this subsequent technical reporting, if the subject building is located within an existing historic district or directly adjacent to a historical resources possible indirect impacts to those buildings will need to be addressed. If deemed necessary, an appropriate level of protection shall be provided for those buildings adjacent to historical resources during proposed new construction and renovation activities. A preservation plan shall be developed to provide these details. At a minimum, protective fencing shall be used during construction activities so historic buildings are not	

Table ES-1. Summary of Project Impacts

Environmental Topic	Impact	Mitigation Measure(s)	Level of Significance After Mitigation
		inadvertently impacted. The preservation plan shall also examine the potential effects of vibration resulting from nearby demolition and construction activities. The final preservation plan shall be appended to the final set of construction plans. All SHPO consultation, subsequent reporting on the project meeting the SOIS guidelines, and any necessary preservation plans must be completed prior to the start of construction. MM-CUL-2. Implementation of the Master Plan will result in future project-level activities that involve construction and ground disturbing activities within the Master Plan areas. As such, future projects involving these types of activities could constitute a substantial adverse change in the significance of a historical resource by means of physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings, such that the significance of a historical resource would be materially impaired (State CEQA Guidelines Section 15064.5). To mitigate the potential impacts of future projects developed under the Master Plan, CSU, Chico shall be required to ensure that potential impacts to historical resources be assessed as part of planning and environmental clearance for their individual project(s). Prior to the initiation of any construction and/or ground disturbing activities, subsequent identification and impact analysis, including consideration of previously identified historical resources and evaluation of buildings and structures over the age 45 years old that have not been previously identified for historical significance in accordance with the guidance of the State of California Office of Historic Preservation, shall be conducted. As such, a Historic Resource Evaluation (HRE) report must be prepared. If the HRE identifies the	

Table ES-1. Summary of Project Impacts

Environmental Topic	Impact	Mitigation Measure(s)	Level of Significance After Mitigation
		presence of CEQA historical resources and impacts cannot be avoided through project redesign (MM-CUL-1) than more documentation may be required and mitigation will be necessary. A qualified architectural historian, meeting the SIOS Professional Qualifications, shall conduct all work related to the preparation of a HRE, impact analyses, mitigation recommendations (if deemed necessary), and/or subsequent technical reports, should the proposed construction and implementation of the Facilities Master Plan result in potential impacts to CEQA historical resources. MM-CUL-1 would apply to resources found to be historical under CEQA.	
CUL-2. The project may cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5.	PS	**MM-CUL-3.** Prior to initiation of WREC Expansion work, and subsequent to development of the plans for this activity, previous findings associated with CA-BUT-003000H should be reviewed by a qualified archaeologist. If appropriate, a monitoring and treatment plan may be required prior to project construction. **MM-CUL-4.** In the event that archaeological resources (sites, features, or artifacts) are exposed during construction activities for the proposed project, all earth-disturbing work occurring in the vicinity (generally within 100 feet of the find) shall immediately stop. The archaeologist shall evaluate the significance of the find and determine whether or not additional study is warranted. If the discovery proves significant under California Environmental Quality Act (14 CCR 15064.5(f); PRC Section 21082) or Section 106 of the National Historic Preservation Act (36 CFR 60.4), additional work such as preparation of an archaeological treatment plan, testing, or data recovery may be warranted.	LTS

Table ES-1. Summary of Project Impacts

Environmental Topic	Impact	Mitigation Measure(s)	Level of Significance After Mitigation
CUL-3. The project may disturb any human remains, including those interred outside of dedicated cemeteries.	PS	**MM-CUL-5.** In compliance with California Health and Safety Code, Section 7050.5, if human remains are discovered in any place other than a dedicated cemetery, no further disturbance or excavation of the site or nearby area reasonably suspected to contain human remains can occur until the County coroner has examined the remains (California Health and Safety Code, Section 7050.5b). Public Resources Code, Section 5097.98, also outlines the process to be followed in the event that remains are discovered. If the County coroner determines or has reason to believe the remains are those of a Native American, the coroner must contact the California NAHC within 24 hours (California Health and Safety Code, Section 7050.5c). The NAHC will notify the Most Likely Descendant. With the permission of the landowner, the Most Likely Descendant may inspect the site of discovery. The inspection must be completed within 48 hours of notification of the Most Likely Descendant by the NAHC. The Most Likely Descendant may recommend means of treating or disposing of, with appropriate dignity, the human remains and items associated with Native Americans.	LTS
CUL-4. The project would not cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074.	LTS	N/A	LTS
Energy			
ENG-1. The project would not result in a potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation.	LTS	N/A	LTS
ENG-2. The project would not conflict with or obstruct a state or local plan for renewable energy or energy efficiency.	LTS	N/A	LTS

Table ES-1. Summary of Project Impacts

Environmental Topic	Impact	Mitigation Measure(s)	Level of Significance After Mitigation
Geology and Soils			
GEO-1. The project would not directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:			
a. Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42?	NI	N/A	NI
b. Strong seismic ground shaking?	LTS	N/A	LTS
c. Seismic related ground failure including liquefaction?	LTS	N/A	LTS
d. Landslides?	LTS	N/A	LTS
GEO-2. The project would not result in substantial soil erosion or the loss of topsoil.	LTS	N/A	LTS
GEO-3. The project would not be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse.	LTS	N/A	LTS
GEO-4. The project may be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), but would not result in substantial direct or indirect risks to life or property.	LTS	N/A	LTS
GEO-5. The project would not have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater.	LTS	N/A	LTS
GEO-6. The project could directly or indirectly destroy a unique paleontological resource or site or unique geologic feature.	PS	**MM-GEO-1A.** In the event that paleontological resources (e.g., fossils) are encountered during grading/excavations, the paleontological monitor shall temporarily halt and/or divert grading activity to allow recovery of paleontological resources. The area of discovery shall be roped off with a 50-foot-radius buffer.	LTS

Table ES-1. Summary of Project Impacts

Environmental Topic	Impact	Mitigation Measure(s)	Level of Significance After Mitigation
		Once documentation and collection of the find is completed, the monitor shall allow grading/excavations to recommence in the area of the find. **MM-GEO-1B.** Prior to commencement of any construction project within the scope of the proposed Master Plan that may affect previously undisturbed Modesto Formation sediments, CSU shall retain a qualified paleontologist per the Society of Vertebrate Paleontology (SVP) (2010) guidelines. Previously undisturbed Modesto Formation sediments would constitute those sediments anywhere within Master Plan area boundaries, beneath native topsoil (i.e., generally the upper 1 to 3 feet) and artificial fill, as determined by a qualified geologist/paleontologist. The geologist/paleontologist shall be consulted prior to project grading and excavations to determine whether Modesto Formation sediments may be encountered during construction. In the event that it is determined that Modesto Formation sediments may be encountered during grading/excavations, a paleontologist shall prepare a Paleontological Resources Impact Mitigation Program (PRIMP) for the project. The PRIMP shall be consistent with the SVP (2010) guidelines and shall outline requirements for • preconstruction meeting attendance and worker environmental awareness training, • where monitoring is required within the project area based on construction plans and/or geotechnical reports,	

Table ES-1. Summary of Project Impacts

Environmental Topic	Impact	Mitigation Measure(s)	Level of Significance After Mitigation
		• procedures for adequate paleontological monitoring and discoveries treatment, and paleontological methods (including sediment sampling for microvertebrate fossils), • reporting, and collections management. Pursuant to the PRIMP, the qualified paleontologist may attend the preconstruction meeting and a paleontological monitor shall be required to be on-site during rough grading and other ground-disturbing activities in previously undisturbed Modesto Formation sediments. Activities such as repair and replacement of utility lines and activities affecting non-native fill are generally exempt from this requirement.	
Greenhouse Gas Emissions			
GHG-1. The project would not generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment.	LTS	N/A	LTS
GHG-2. The project would not conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases.	LTS	N/A	LTS
Hazards and Hazardous Materials			
HAZ-1. The project would not create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials.	LTS	N/A	LTS
HAZ-2. The project could create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment.	PS	**MM-HAZ-1. Hazardous Materials Contingency Plan.** Prior to commencement of any building renovation, demolition or other construction activities, a Hazardous Materials Contingency Plan (HMCP) shall be developed that addresses potential impacts to soil, soil vapor, and groundwater from releases on or near the project site, as well as the potential for existing hazardous materials onsite (e.g. drums and tanks). The HMCP shall include	LTS

Table ES-1. Summary of Project Impacts

Environmental Topic	Impact	Mitigation Measure(s)	Level of Significance After Mitigation
		training procedures for identification of contamination. The HMCP shall describe procedures for assessment, characterization, management, and disposal of hazardous constituents, materials and wastes, and notification and decommissioning procedures for tanks, in accordance with all applicable federal, state, and local regulations. Contaminated soils and/or groundwater shall be managed and disposed of in accordance with federal, state, and local regulations. The HMCP shall include health and safety measures, which may include, but are not limited to, periodic work breathing zone monitoring and monitoring for volatile organic compounds using a handheld organic vapor analyzer in the event impacted soils are encountered during excavation activities. The University and its contractors shall implement the HMCP during project construction activities.	
		MM-HAZ-2. Soil Sampling. Prior to construction and development activities on the University Farm Development Area, a soil sampling plan shall be prepared by the University or its contractors and soil samples shall be collected and analyzed for pesticides, herbicides, and metals, which are commonly associated with historical pesticide and herbicide use on agricultural properties. Should contaminants of concern be identified in surface soils above regulatory screening levels which would indicate a potential impact to human health and/or the environment, a remediation plan shall be developed prior to commencement of construction and development activities. Coordination with the overseeing regulatory agency(ies), including DTSC and the RWQCB, may be required if contamination is discovered above regulatory levels.	

Table ES-1. Summary of Project Impacts

Environmental Topic	Impact	Mitigation Measure(s)	Level of Significance After Mitigation
		MM-HAZ-3. Monitoring Well Decommissioning/Protection. The monitoring wells on the project site associated with the three Cortese List sites may require removal, protection or replacement. Prior to construction activities that may affect a monitoring well, a monitoring well management plan shall be prepared by the University or its contractors. A separate plan shall be prepared for monitoring wells associated with each individual site, as each site is managed separately by the State Department of Toxic Substances Control (DTSC). The plan(s), which may include decommissioning, destruction, protection, and/or replacement procedures, shall be written in accordance with applicable state and local laws, and submitted to DTSC and other agencies, as applicable, for approval. The approved plan(s) shall be followed and onsite wells shall be removed and/or protection measures emplaced prior to construction in accordance with applicable laws and regulations.	
HAZ-3. The project would emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school.	PS	Implement **MM-HAZ-1**	LTS
HAZ-4. The project would be located on a site that is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would create a significant hazard to the public or the environment.	PS	**MM-HAZ-4. Vapor Mitigation.** Prior to construction of residential, educational, or commercial buildings, a soil vapor investigation shall be conducted within the proposed building footprint. If concentrations of contaminants in soil vapor are above regulatory screening levels within the footprint of a proposed building or enclosed structure, vapor mitigation measures shall be implemented in accordance with the State Department of Toxic Substances Control Vapor Intrusion Mitigation Advisory (DTSC, 2011). The construction contractor shall develop vapor mitigation	LTS

Table ES-1. Summary of Project Impacts

Environmental Topic	Impact	Mitigation Measure(s)	Level of Significance After Mitigation
		measures that adequately mitigate potential vapor intrusion in buildings and enclosed structures. Typical vapor mitigation measures shall include installation of a sub-slab geomembrane or vapor barrier installed throughout the entire footprint of the building. Optional blowers can be connected to the vent piping at the roofline for conversion of a passive venting system into an active system, if necessary. Functionality of these features shall be maintained and monitored once the building is operational, to continue protection from vapor intrusion.	
		Implement **MM-HAZ-1** and **-2.**	
HAZ-5. The project is not located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, and would not result in a safety hazard or excessive noise for people residing or working in the project area.	NI	N/A	NI
HAZ-6. The project would not impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan.	NI	N/A	NI
HAZ-7. The project would not expose people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires.	NI	N/A	NI
Hydrology and Water Quality			
HYD-1. The project would not water quality standards or waste discharge requirements or otherwise degrade surface or ground water quality.	LTS	N/A	LTS

Table ES-1. Summary of Project Impacts

Environmental Topic	Impact	Mitigation Measure(s)	Level of Significance After Mitigation
HYD-2. The project would/would not substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin. (Potentially Significant/Less than Significant) [TBC when water usage is determined]	LTS	N/A	LTS
HYD-3. The project would not substantially alter the existing drainage pattern of the Master Plan area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:	LTS	N/A	LTS
a. result in substantial erosion or siltation on or off site;	LTS	N/A	LTS
b. substantially increase the rate or amount of surface runoff in a manner which would result in flooding on or off site;	LTS	N/A	LTS
c. create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or	LTS	N/A	LTS
d. impede or redirect flood flows?	LTS	N/A	LTS
HYD-4. The project would not risk release of pollutants due to project inundation in a flood hazard, tsunami, or seiche zone.	LTS	N/A	LTS
HYD-5. The project would not conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan.	LTS	N/A	LTS
Land Use and Planning			
LU-1. The project would not physically divide an established community.	NI	N/A	NI
LU-2. The project would not cause a significant environmental impact due to a conflict with any land use	NI	N/A	NI

Table ES-1. Summary of Project Impacts

Environmental Topic	Impact	Mitigation Measure(s)	Level of Significance After Mitigation
plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect.			
Noise			
NOI-1. The project would result in generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of applicable standards.	PS	**MM-NOI-1.** The following measures shall be implemented as part of construction activities within the Community Plan area, in order to reduce the effects of noise levels generated from construction operations. • Construction operations and related activities within the plan area shall be limited to the weekday hours of 7:00 AM to 9:00 PM and the Sunday or holiday hours of 10:00 AM to 6:00 PM. For construction activity taking place between June 15th and September 15th, construction hours shall be limited to the weekday hours of 6:00 AM to 9:00 PM and the Sunday or holiday hours of 10:00 AM to 6:00 PM. • Construction equipment and vehicles shall be fitted with efficient, well-maintained mufflers that reduce equipment noise emission levels at the project site. Internal combustion powered equipment shall be equipped with properly operating noise suppression devices (e.g., mufflers, silencers, wraps) that meet or exceed manufacture specifications. Mufflers and noise suppressors shall be properly maintained and tuned to ensure proper fit, function and minimization of noise. • Pumps that are not submerged and above-ground conveyor systems shall be located within acoustically treated enclosures. • Portable and stationary site support equipment (such as generators, compressors, rock crushers,	LTS

Table ES-1. Summary of Project Impacts

Environmental Topic	Impact	Mitigation Measure(s)	Level of Significance After Mitigation
		and cement mixers) shall be located as far as possible from nearby noise-sensitive receptors. • Impact tools shall have the working area/impact area shrouded or shielded, with intake and exhaust ports on power equipment muffled or suppressed. This may necessitate the use of temporary or portable, application specific noise shields or barriers. • Construction equipment shall not be idled for extended periods (e.g., 15 minutes or longer) of time in the immediate vicinity of noise-sensitive receptors. • A disturbance coordinator shall be designated by the general contractor, which will post contact information in a conspicuous location near the entrance of the subject construction sites so that it is clearly visible to nearby receivers most likely to be disturbed. The coordinator shall manage complaints resulting from the construction noise. Reoccurring disturbances shall be evaluated by a qualified acoustical consultant retained by the project proponent to ensure compliance with applicable standards.	
		MM-NOI-2. Operational noise levels shall be minimized through project-site design, equipment selection, construction of a localized barriers or parapets, as presented below. For on-site academic and residential buildings the standard is 45 dBA interior noise level. For off-site residential land uses, the standard for daytime and nighttime stationary noise source is 55 dBA Leq and 50 dB Leq, respectively. • All localized heating, ventilation, and air conditioning equipment shall be located within	

Table ES-1. Summary of Project Impacts

Environmental Topic	Impact	Mitigation Measure(s)	Level of Significance After Mitigation
		mechanical equipment rooms wherever possible. • Selection of mechanical equipment shall consider radiated outdoor sound pressure levels and select equipment with lower sound generation levels whenever possible. • Localized noise barriers or rooftop parapets shall be constructed around the HVAC equipment so that line-of-site to the noise source from the property line of the noise-sensitive receptors is blocked. • As project specific site plans and specifications become available, projects incorporating mechanical equipment that have the potential to generate substantial noise levels shall demonstrate compliance with applicable noise thresholds at the nearest sensitive receptor. Demonstration of compliance may be shown through manufacturer noise levels or an assessment of the project by a qualified acoustical consultant.	
		MM-NOI-3. Minimize Athletic Event Spectator Noise Levels through Project-site design and construction of a localized barriers or solid-backed seating areas. Softball Stadium spectator seating shall be designed to direct the majority of the sound levels generated by spectators to the south, towards the softball play field. This may be accomplished through the construction of localized noise barriers partially surrounding the spectator seating. Barriers would need to be constructed of materials having an STC rating of 29 or greater and block line-of-site from the seating area to the noise-sensitive receptors north of the Plan Area. To minimize event noise levels in the surrounding community, further	

Table ES-1. Summary of Project Impacts

Environmental Topic	Impact	Mitigation Measure(s)	Level of Significance After Mitigation
		environmental noise analysis shall be performed by a qualified acoustical consultant when design-level site plans are available.	
NOI-2. The project would not result in generation of excessive groundborne vibration or groundborne noise levels.	LTS	N/A	LTS
Population and Housing			
POP-1. The project would not induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure).	LTS	N/A	LTS
POP-2. The project would not displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere.	LTS	N/A	LTS
Public Services and Recreation			
PUB-1. The project would result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, or the need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for any of the public services:			
Fire protection?	LTS	N/A	LTS
Police protection?	LTS	N/A	LTS
Schools?	LTS	N/A	LTS
Parks?	LTS	N/A	LTS
Other public facilities?	LTS	N/A	LTS
PUB-2. Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated.	LTS	N/A	LTS
PUB-3. The project would include the construction or expansion of recreational facilities which might have an adverse physical effect on the environment.	LTS	N/A	LTS

Table ES-1. Summary of Project Impacts

Environmental Topic	Impact	Mitigation Measure(s)	Level of Significance After Mitigation
Transportation			
TRA-1. The proposed Master Plan would not conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities.	LTS	N/A	LTS
TRA-2. Implementation of the 2019 Master Plan would not reduce VMT per student by 15 percent compared to the forecasted baseline conditions and cumulative year VMT for the Master Plan area.	PS	**MM-TRA-1.** Implement TDM strategies to reduce the number of project vehicle trips or reduce trip lengths to achieve VMT per student reduction of 15 percent below baseline conditions. Table 3.14-10 indicates that implementation of the 2019 Master Plan would reduce VMT per student by 1.7 percent under 2019 Baseline Plus 2019 Master Plan conditions and 5.9 percent under 2030 Cumulative Plus 2019 Master Plan conditions. Mitigation should be developed and implemented to achieve a 15 percent reduction under both conditions. Using the CSU TDM Manual (CSU 2012) as a guide, CSU, Chico shall develop and implement a TDM plan to reduce daily trips and VMT generated by campus faculty, employees, and students to achieve a 15 percent VMT per student reduction under both conditions (note that this calculation represents total VMT generated by all trip generation sources on campus and is expressed as an efficiency metric that is divided by the number of students). TDM measures best suited for college towns generally include measures intended to reduce driving on campus such as subsidized transit passes, improved transit and shuttles, parking management, encouraging bicycle and pedestrian travel, and locating student housing on-campus. TDM policies that could reduce vehicle trip generation and VMT include, but are not limited to, the following:	SU

Table ES-1. Summary of Project Impacts

Environmental Topic	Impact	Mitigation Measure(s)	Level of Significance After Mitigation
		• Eliminate on-campus parking for students residing in new campus housing (long term) • Phase out existing on-campus parking for students residing in campus housing or residing within walking distance of campus (short term) • Provide remote long-term parking for students in campus housing or residing within walking distance, as an alternative to on-campus parking to allow students to have vehicles without incentivizing commute driving (long term) • Price parking to provide incentives for increasing travel in modes other than single-occupancy vehicles (short term) • Work with the City of Chico to implement parking restrictions to limit commuter parking in nearby neighborhoods (short term) • Work with B-Line to develop and fund improvements to better align transit routes serving CSU, Chico with class schedules and increase route frequency (short term) • Provide additional bicycle connections through the campus core, in addition to the planned bike path, especially in the north-south direction (short term) • Work with the City to implement planned bicycle facilities on streets adjacent to the campus, consistent with the Chico Bicycle Plan (long term) • Provide more options for remote learning to reduce the need for students to travel to campus (long term)	

Table ES-1. Summary of Project Impacts

Environmental Topic	Impact	Mitigation Measure(s)	Level of Significance After Mitigation
		• Increase benefits and incentives for carpooling, including preferred parking and reduce permit prices (short term) • Replace front-wheel bike racks with racks that provide more secure locking and increased ease of use (short term) • Market programs to educate students and employees about alternatives to driving (short term) • Develop policies and incentives for use of electric bicycles and scooters as an alternative to driving (short term) Short-term actions are feasible for implementation in five years or less. Long-term actions may be implemented after five years. The TDM plan shall be updated to include a schedule for adoption of policies and a plan for funding improvements. The plans shall also include an ongoing monitoring program to track effectiveness. Monitoring shall occur once every two years to determine the effectiveness of the implemented actions.	
TRA-3. The project would not increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment).	LTS	N/A	LTS
TRA-4. The project would not result in inadequate emergency access.	LTS	N/A	LTS

Table ES-1. Summary of Project Impacts

Environmental Topic	Impact	Mitigation Measure(s)	Level of Significance After Mitigation
Utilities and Service Systems			
UTL-1. The project would not require or result in the relocation or construction of new or expanded water, wastewater treatment, or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects.	LTS	N/A	LTS
UTL-2. The project would have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry, and multiple dry years.	LTS	N/A	LTS
UTL-3. The project would result in a determination by the wastewater treatment provider, which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments.	LTS	N/A	LTS
UTL-4. The project would not generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of federal, state, and local management and reduction statutes or solid waste reduction goals.	LTS	N/A	LTS

Notes: LTS = Less than Significant, NI = No Impact, PS = Potentially Significant, SU = Significant and Unavoidable

ES.2 Analysis of Alternatives

Alternatives Considered

Alternatives to the proposed project are discussed in Chapter 4. This discussion includes alternatives that were identified but dismissed from further consideration. Three alternatives to the proposed project are considered in the analysis:

1. No Project Alternative
2. Expanded Housing Alternative
3. Modified Footprint Alternative

No Project Alternative

The “No Project” analysis discusses the existing conditions as well as what would reasonably be expected to occur in the foreseeable future if the Project was not approved (Cal. Code Regs. tit. 14, § 15126.6 (e)(2) and (3)(A)). Under the No Project Alternative, the proposed Master Plan and an enrollment ceiling increase to 18,600 FTE students would not be adopted and the campus would continue to operate under the previously adopted master plan.

The No Project Alternative would not reduce any of the impacts associated with the proposed project, and would increase impacts to historical resources.

Expanded Housing Growth Alternative

The proposed Master Plan provides for construction of 1,800 new student beds. Accounting for the demolition of 339 beds, on-campus housing would increase from 2,260 to 3,721. Increasing on-campus housing (or off-campus housing within a walkable distance) generally has a favorable effect on transportation, energy, air quality, and greenhouse gas emissions by reducing the vehicle miles travelled (VMT) per student. This alternative is designed to reduce the significant VMT impact associated with the proposed project. While VMT is reduced under the proposed Master Plan, the reduction falls well short of the 15% goal identified in the CSU’s revised transportation guidelines. Due to limitations in the regional transportation model, it is not possible to calculate the direct effect that each additional student housed on campus would have on VMT. However, it is well understood to be a positive relationship, and that increased housing growth would reduce VMT associated with the University.

The proposed Master Plan would potentially allow for the housing of most first-year students on campus. This alternative would approximately double the proposed increase in student beds, to a build-out of 4,450 student beds. This would allow the University to house all first-year and over one-third of second year students. In order to accomplish this a major increase in residential density would be required, resulting in taller, denser residence halls. Residential space in the north campus would be greatly increased. In addition to the proposed residence hall at the Butte Hall site, some expansion of Shasta and/or Lassen Hall would also be necessary. The proposed Creekside Housing project and Rio Chico (public-private partnership) project would also be increased in density. Creekside would be taller, and or add an additional building, which would reduce the outdoor athletic space. The proposed Rio Chico development would be denser, which would result in either an increase in height, or a footprint expansion that could adversely affect the potential historical houses on the north side of the block.

The Expanded Housing Growth Alternative would reduce impacts associated with VMT, although it cannot be determined if these impacts would be reduced to a less than significant level. This alternative would increase impacts related to changes in visual character, as the intensity of residential development on campus would be increased.

Modified Footprint Alternative

This alternative would provide for approximately the same amount of growth in both student housing and other academic and support uses but would revise the arrangement of land uses. The prior master plan, Master Plan 2005, identified the College Park area east of Konkow, Mechoopda, and Esken Hall as student residential development, with an associated parking structure. This alternative would place residential uses in this area and not demolish the existing residence halls (Konkow, Mechoopda, and Esken). This alternative would therefore not construct additional housing at the Creekside site or Rio Chico. Expansion of housing to the current Butte Hall site would be included, similar to the proposed project, to meet student housing goals.

The proposed Arena would be moved to Rio Chico. This would move the use further away from the residential neighborhoods north of West Sacramento Avenue. Rio Chico is selected as the only area large enough, with surface street access (via Walnut Street/Nord Avenue and Ivy/Warner Street) and a nearby University parking structure.

Academic and support uses would be developed as proposed for the Master Plan project.

This alternative would not entirely avoid any of the significant environmental impacts of the proposed Master Plan. Off-site noise impacts associated with athletic fields (Impact NOI-1) would be reduced, but not avoided, by buffering the fields with on-campus residential buildings and a new parking structure. However, construction of the arena at the Rio Chico site would likely result in the demolition of buildings that are potentially historic resources.

Environmentally Superior Alternative

The Expanded Housing Alternative would reduce transportation impacts related to VMT, although it is unknown if the reductions would result in the impact being reduced to less than significant. However, increase of housing on campus would require densification of residential buildings, resulting in increased height and bulk. The visual impact of these structures would be increased, resulting in a potentially significant impact. It is possible this impact could be mitigated by additional design controls and landscaping. By reducing a significant and unavoidable impact, this alternative would be the environmentally superior alternative.

ES.3 Areas of Controversy

The CEQA Guidelines, Cal. Code Regs. tit. 14, § 15123 (b)(2), require the executive summary of an EIR to disclose areas of controversy known to the lead agency that have been raised by the agencies and the public. The County circulated a Notice of Preparation (NOP) to solicit agency and public comments on the scope and environmental analysis to be included in the EIR. A total of six comment letters were received during the NOP public review period. Copies of the NOP and the NOP comment letters received are included in Appendix A to this EIR. Three letters were received from state agencies (Caltrans, the Regional Water Quality Control Board, and the Native American Heritage Commission), one from Chico Unified School District, and two from residents of Chico. Four of the letters raised the issue of traffic. Increased traffic related to future campus development, while not necessarily controversial, was the most common issue raised during the scoping process.

ES.4 Issues to be Resolved by the Lead Agency

The CEQA Guidelines, Cal. Code Regs. tit. 14, § 15123(b)(3), require that an EIR contain a discussion of issues to be resolved. With respect to the proposed project, the key issues to be resolved include decisions by the CSU Board of Trustees, as lead agency, as to:

- Whether or not to proceed with the proposed project.
- Selection of proposed project or feasible project alternatives.
- Feasibility of the recommended mitigation measures.

1 Introduction

The California Environmental Quality Act (CEQA) serves as the main framework of environmental law and policy in California. CEQA emphasizes the need for public disclosure and preventing or significantly reducing environmental damage associated with proposed projects. Unless the project qualifies for a statutory or categorical exemption, CEQA is applicable to any project that is subject to discretionary approval by a public agency.

This draft environmental impact report (Draft EIR) evaluates the environmental impacts of the proposed California State University Chico (CSU, Chico) Master Plan (proposed Master Plan or project). The Draft EIR has been prepared under the direction of California State University (CSU) Board of Trustees in accordance with the requirements of the California Environmental Quality Act (CEQA) (Pub. Res. Code § 21000 et seq.) and the State CEQA Guidelines.

This chapter of the Draft EIR presents the following:

- Proposed project overview and background;
- Purpose and intended uses of the Draft EIR;
- Scope of the Draft EIR;
- Overview of the environmental review and approval process; and
- Draft EIR organization

1.1 Project Overview and Background

The Board of Trustees require each CSU campus to develop and periodically update a Master Plan that depicts existing and proposed facilities "necessary to accommodate a specified enrollment at an estimated planning horizon, in accordance with approved educational policies and objectives" (CSU 2012a). Future enrollment for each CSU campus is defined by full-time-equivalent student (FTES)[1] enrollment targets developed by the campus in consultation with the CSU Office of the Chancellor Office (CSU 2012b). The campus's current Master Plan, prepared in 2005, anticipated an enrollment of 15,800 FTES; CSU, Chico's enrollment as of Fall 2018 was 16,437 FTES.

In keeping with the Trustees' requirement, CSU, Chico's Master Plan serves as a long-range planning document that guides physical development of the campus to accommodate an enrollment target of 18,600 FTES through a 2030 planning horizon. The Master Plan is also intended to align the university's future physical development vision with its academic mission, which encompasses inquiry, innovation, and experiential learning as articulated in its new Strategic Plan (2019-2024). Accordingly, the Master Plan identifies new and expanded or improved academic facilities, student housing, athletic and recreational facilities, and support facilities totaling approximately 3.7 million square feet (sf) at buildout, or approximately 1.2 net new sf of development, to accommodate student enrollment growth, associated faculty and staff growth, and evolution of the university's academic programs.

For further information about the Master Plan, see Chapter 2, Project Description.

1 The FTES calculation reflects the expectation that full-time undergraduate and graduate students will enroll in 15 units and 12 units per quarter, respectively. As a metric for communicating the size of enrollment, FTES is always lower than straight student headcount, because not all students take full-time course loads each quarter.

1.2 Purpose and Intended Uses of this Draft EIR

CEQA defines the lead agency for a project as the public agency with primary responsibility for carrying out or approving a project, and as part of that process, ensuring compliance with CEQA. This Draft EIR was prepared under the direction of the Board of Trustees in accordance with the applicable requirements of CEQA (Cal. Pub. Resources Code, § 21000 *et seq*.) and the State CEQA Guidelines (Cal. Code Regs. tit. 14, § 15000 *et seq*.).

A Draft EIR is an informational document that is required to identify (1) the potentially significant environmental effects of a project on the environment, (2) the manner in which those significant effects can be avoided or significantly lessened via the implementation of potentially feasible mitigation measures, (3) a reasonable range of potentially feasible alternatives to a project that would eliminate or substantially lessen any significant environmental effects, and (4) any significant and unavoidable adverse impacts that cannot be mitigated or otherwise reduced. According to the State CEQA Guidelines, “feasible” means capable of being accomplished in a successful manner within a reasonable period of time, considering economic, environmental, legal, social, and technological factors (Cal. Pub. Resources Code, § 21061.1). This Draft EIR provides information about the potential effects of the proposed Master Plan on the environment for the lead agency, responsible and trustee agencies, and the public.

The Board of Trustees is required to consider the information in this EIR, together with any other relevant information, in making its decisions about the proposed Master Plan. Although an EIR does not determine the ultimate decision that will be made regarding implementation of a project, CEQA requires lead agencies to consider the information in the EIR and make findings regarding each significant effect identified in the EIR. The Board of Trustees has sole authority to consider and certify the Final EIR, approve the proposed Master Plan, and adopt the Mitigation Monitoring and Reporting Program, Findings of Fact, and Statement of Overriding Considerations. Other agencies may also use this EIR in their review and approval processes, as indicated in Chapter 2, Project Description.

1.3 California State University Autonomy

The Board of Trustees is responsible for oversight of the CSU system, including the CSU, Chico campus, one of 23 campuses in the system. CSU, Chico is an entity of the CSU, which is a constitutionally created state agency and is therefore not subject to local government planning and land use plans, policies, or regulations. Although there is no formal mechanism for joint planning, CSU, Chico may consider, for coordination purposes, aspects of local plans and policies for the communities surrounding the campus when it is appropriate. The proposed Master Plan would be subject to state and federal agency planning documents described herein, but would not be bound by local or regional planning regulations or documents such as a city’s General Plan or municipal code.

1.4 Scope of this Draft EIR

Project growth and development anticipated in the proposed Master Plan and PDFs are evaluated in this EIR at a program level. This EIR considers certain projects, identified as Near-Term” projects, at a higher level of detail. The Near-Term projects are those which may occur within the first five years of the Master Plan approval. The Near-Term projects consist of master planned projects identified as Phase 1, a select number of Phase 2 projects, and three un-phased projects that have been identified as University priorities. Chapter 2, Project Description, provides a list of the Near-Term projects. The EIR provides the description of these projects and evaluates them at a project level. Therefore, this EIR is both a program and project EIR. The distinctions between program and project EIRs and associated analyses are provided below:

- Program EIR: Per state and CSU CEQA Guidelines, and as further discussed in Chapter 2, Project Description, this Draft EIR evaluates the entire Master Plan program proposed for buildout by 2030. A program EIR may be prepared for a series of actions that are related geographically, or as part of a series of actions for adopting rules, regulations, plans, or general criteria for a continuing program or for individual activities carried out under the same authorizing law or regulation (Cal. Code Regs. tit. 14, § 15168). A program EIR has several advantages; it serves as a basic reference document that avoids unnecessary repetition of facts or analysis in subsequent project-specific assessments, and it allows the lead agency to consider the broad, regional impacts of a program of actions before its adoption and eliminates redundant or contradictory approaches to the consideration of regional and cumulative impacts. Individual Master Plan projects pursued in the future will be evaluated in light of the program analysis contained in this EIR to determine whether additional environmental documentation is required, as follows:
  - If an individual project is within the scope of the program EIR and would not have new or more severe significant effects, no new environmental document would be required (Cal. Code Regs. tit. 14, § 15168[c][2]). In this instance, the CSU prepares a finding of consistency with EIR document (CSU 2019).
  - If some changes or additions are necessary, but no new or more severe significant effects would result, an addendum to the program EIR would be prepared (Cal. Code Regs. tit. 14, § 15164[a]).
  - If an individual project would have potentially significant effects that were not examined in the program analysis of this EIR, a new initial study would need to be prepared leading to either an EIR or negative declaration, which may be tiered from the program analysis in this EIR (Cal. Code Regs. tit. 14, § 15168[c][1]). "Tiering" refers to using the analysis of general matters contained in a broader EIR (such as one prepared for a general plan or policy statement) with later EIRs and negative declarations on narrower projects; incorporating by reference the general discussions from the broader EIR; and concentrating the later EIR or negative declaration solely on the issues specific to the later project (Cal. Code Regs. tit. 14, § 15152).
- Project EIR: Per state and CSU CEQA Guidelines, this EIR is being prepared, in part, as a "project" EIR. A project EIR examines the environmental impacts of a specific development project. This portion of the EIR will focus primarily on the changes in the environment that would result from the near-term projects, which are those projects which are anticipated to be developed in the first five years of Master Plan implementation. The EIR examines all phases of these projects at a project level of detail, including planning, construction, and operation (Cal. Code Regs. Title 14, § 15161).

1.5 Environmental Review and Approval Process

1.5.1 Scoping

The State CEQA Guidelines authorize and encourage an early consultation or scoping process to help identify the range of actions, alternatives, mitigation measures, and significant effects to be analyzed and considered in an EIR, and resolve the concerns of affected regulatory agencies, organizations, and the public (Cal. Code Regs. Title 14, § 15083). Scoping is intended to explore issues for environmental evaluation, ensuring that important considerations are not overlooked and uncovering concerns that might otherwise go unrecognized.

On April 29, 2019, a Notice of Preparation (NOP) was published to provide notification that an EIR for the proposed Master Plan was being prepared and to solicit guidance on the scope and content of the environmental issues to be addressed in this EIR (CEQA Guidelines Section 15082). The NOP was circulated for a 30-day comment period from April 29, 2019 to May 28, 2019. An EIR scoping meeting was held on May 6, 2019, in Colusa Hall on the CSU, Chico campus to solicit input from interested agencies, individuals, and organizations. To the extent that issues identified in public comments involve potentially significant effects on the environment according to the CEQA, and/or were raised by responsible and trustee agencies, they are identified and addressed in this EIR.

1.3.2 Public Review of Draft EIR

The Draft EIR will be distributed for a 45-day public review period from August 12, 2020 to September 25, 2020. During this public review period, written comments on the adequacy of the Draft EIR can–be submitted by all interested public agencies, organizations, community groups, and individuals to the following contact by no later than 5:00 p.m. on September 25, 2020 to:

Jenna L. Wright
Sr. Capital Planner/Financial Manager
California State University, Chico
400 West 1st Street
Chico, California 95926-0925
jlwright@csuchico.edu

Comments may be submitted by mail or e-mail. Due to local and state restrictions related to COVID-19, the Draft EIR will be available for online public review at the following location:

- Online at https://www.csuchico.edu/fms/announcements/mp-eir.shtml

If you have difficulty accessing the DEIR, please contact Jenna Wright at jlwright@csuchico.edu. An online townhall meeting will be held to answer questions and receive public comments on the environmental information presented in the Draft EIR. Please refer to the Notice of Availability for this EIR for the meeting date and log-in information. CSU, Chico encourages public agencies, organizations, community groups, and all other interested persons to provide written comments on the Draft EIR prior to the end of the 45-day public review period. If any agency, organization, group, or person wishes to make a legal challenge to the Board of Trustees' final decision on the proposed Master Plan, that agency or person may be limited to addressing only those environmental issues that they or another party raised during the 45-day public review period for the Draft EIR.

1.5.3 Final EIR/Project Approval

Following the close of the public and agency comment period on the Draft EIR, responses will be prepared for all written comments received during the public review period that raise CEQA-related environmental issues regarding the proposed Master Plan. The responses will be published in the Final EIR.

As required by CEQA, written responses to comments submitted by public agencies will be provided to those agencies for review at least 10 days prior to the Board of Trustees' consideration of certification of the EIR and approval of the proposed Master Plan project. The EIR will be considered by the Board of Trustees in a public meeting, and will be certified if it is determined to comply with CEQA. Upon certification of the EIR, the Board of Trustees will consider the proposed Master Plan for approval during the same public meeting.

1.5.4 Adoption of Mitigation Monitoring & Reporting Program

CEQA requires that a program to monitor and report on mitigation measures be adopted by lead agencies as part of the project approval process. The Mitigation Monitoring & Reporting Program (MMRP) is prepared in accordance with Section 21081.6 of the Public Resource Code. CEQA requires that such a program be adopted at the time the lead agency determines to carry out a project for which an EIR has been prepared, to ensure that mitigation measures identified in the EIR are implemented. The MMRP for the proposed Master Plan project will be prepared during preparation of the Final EIR so that it can reflect any changes or revisions to mitigation measures made in response to public comments on the Draft EIR.

1.6 Draft EIR Organization

In accordance with CEQA and the CEQA Guidelines (Cal. Code Regs.Title 14, §§ 15122–15132). This Draft EIR is organized into the following chapters and sections:

- **Executive Summary** presents an overview of the proposed Master Plan; provides a summary of the environmental impacts and mitigation measures evaluated in the Draft EIR; provides a summary of the alternatives evaluated in the Draft EIR; and summarizes known areas of controversy.
- **Chapter 1, Introduction**, explains the CEQA process; describes the purpose and scope and the Draft EIR; provides information on the review and approval process; and outlines the organization of this Draft EIR.
- **Chapter 2, Project Description**, provides an overview of the proposed Master Plan; provides information about the background, location, and setting of the campus; identifies the proposed Master Plan project objectives; provides a detailed description of the proposed Master Plan's physical and operational characteristics; and lists the anticipated required approvals.
- **Chapter 3, Environmental Setting, Impacts, and Mitigation Measures**, explains the approach to the environmental analysis for this EIR, and provides environmental setting, impacts, and mitigation measures for the topics under study in this EIR. Each section is divided into four subsections: Introduction, Environmental Setting, Relevant Plans, Policies and Ordinances, and Impacts and Mitigation Measures.
- **Chapter 4, Alternatives**, describes the alternatives to the proposed Master Plan that were considered but eliminated from further consideration; analyzes the environmental impacts of project alternatives and compares them to the proposed Master Plan; and identifies the environmentally superior alternative.
- **Chapter 5, Other CEQA Considerations**, identifies potentially growth-inducing impacts; significant and unavoidable impacts; and the significant and irreversible commitment of resources associated with the proposed Master Plan.
- **Chapter 6, Report Preparers**, lists the organizations and individuals involved in preparing this Draft EIR and the individuals who provided information.
- **Appendices** contain additional information used in preparing this Draft EIR. The Appendices include information on the Draft EIR scoping process, and technical reports and data that support the analysis in the Draft EIR.

1.7 References

California Environmental Quality Act Statute and Guidelines (Cal. Pub. Resources Code, § 21000 *et seq*.; 14 Cal. Code Regs., § 15000 *et seq*.)

CSU (California State University). 2012a. State University Administrative Manual, Section VII, Five-Year Capital Improvement Program Procedures and Formats for Capital Outlay Submission: Section 9100.1, Basis for Major Capital Outlay and Five-Year Capital Improvement Program Submissions: 3. Full Time Equivalent Student Enrollment Allocations. https://calstate.policystat.com/policy/6657509/latest/

CSU. 2012b. State University Administrative Manual, Section II, Physical Master Plan and Off-Campus Centers: Section 9007, Development of Physical Master Plan. http://www.calstate.edu/cpdc/suam/SUAM9007-9014.pdf

2 Project Description

The project consists of the CSU, Chico Master Plan (proposed Master Plan or project), including the proposed Master Plan map and the project design features (PDF). The proposed Master Plan provides the basis for the physical development of the CSU, Chico campus over the next 10 years. The proposed master plan describes the land uses and building space requirements to support 18,600 full-time equivalent students (FTES). The project location, project setting and surrounding land uses, project objectives, and specific project elements are described in detail in this chapter.

2.1 Project Location and Setting

The existing CSU, Chico campus is located in the City of Chico, California in Butte County (Figure 2-1). Butte County (County) is located centrally in northern California, north of the state capitol of Sacramento. The County encompasses the northeastern part of the Sacramento Valley, extending into the northern Sierra Nevada mountain range. According to the U.S. Census Bureau, the County has a total land area of 1,636 square miles (U.S. Census Bureau 2010). The City of Chico is located primarily in the valley region at the westernmost part of the County, which includes many agricultural uses such as croplands, nut and fruit orchards, and meadows for livestock grazing. Some areas of the City extend into the foothill region, where the valley meets the forest.

The 132-acre main campus is generally bounded by the Union Pacific Railroad (UPRR) on the west; West Sacramento, Legion, and Mansion Avenues on the north; Esplanade, Children's Park, Salem, and Normal Streets on the east; and West Second and West Third Streets on the south (Figure 2-2a). The main campus sits between the city's commercial downtown area to the south and predominantly residential neighborhoods of the north, northwestern and western areas, including Mansion Park and The Avenues. These neighborhoods include low-density residential to the north and medium-high density residential along the northwestern and western borders. Typical low-density residential areas consist of moderately-sized, one- and two-story homes built along uniformly sized streets lined with trees. Medium-high density residential areas consist of low-rise apartment buildings, typically two-stories in height, along with townhouses and larger rentable homes.

Regional access to the main campus is provided by State Routes (SR) 99 and 32. Public transit service to the campus is provided by Butte Regional Transit, also known as B-Line, operated by the Butte County Association of Governments. The Chico Transit Center is adjacent to the campus on West Second Street between Normal Avenue and Salem Street and provides connections to many routes. Key routes include Routes 8 and 9, which operate as student shuttles when spring and fall semester classes are in session. Additionally, Greyhound provides regional and national bus service from its bus station at West Fifth Street and Orange Street, and Amtrak has limited daily rail service in Butte County from Seattle to Los Angeles, as well as daily connections on the Amtrak Thruway Bus to the Stockton Amtrak station and the Sacramento Valley Amtrak station.

In addition to the main campus, CSU, Chico owns a 650-bed apartment complex (part of University Housing) approximately one mile to the northwest (University Village) (Figure 2-2b), between West Sacramento Avenue and Nord Avenue (SR 32)., and the Paul L. Byrne Memorial University Farm, also known as the University Farm, an 800-acre farm approximately five miles south of the main campus (Figure 2-2c). CSU, Chico also owns two buildings east of Esplanade at 25/35 Main Street. These two buildings, adjacent to the main campus, are used for administrative functions, including Chico State Enterprises (formerly the University Foundation).

The term “Master Plan Area”, as referred to throughout this document, encompasses the entire main campus (including 25/35 Main Street and the College Park area) along with University Village, the University Farm, and the residential neighborhood known as Rio Chico which is surrounded by the main campus.

2.2 Background

The current master plan, Master Plan 2005, planned for the physical development of the main campus and the University Farm to accommodate 15,800 FTES, which was an increase of approximately 1,800 FTS over the 2000 enrollment levels. Important master planned projects implemented since 2005 include the Student Services Center, Wildcat Recreation Center, Sutter Hall, Gateway Science Museum, Arts and Humanities Building, Science Building (Siskiyou II Science Replacement Building), and Parking Structure 2 and Office Building. Figure 2-3 shows the current Master Plan map.

The campus had 16,437 FTES as of Fall 2018.[1] As of that semester, the student population was supported by 989 instructional faculty and 1,106 staff. The campus currently has 2,187,026 gross square feet (GSF) in non-residential buildings. Student housing consists of 2,260 beds in multiple buildings, totaling 536,356 GSF. See Table 2-1, below.

2.3 Existing Campus

2.3.1 Campus Organization

The main campus is divided by Big Chico Creek and the Ivy/Warner Street Corridor, forming three informal areas: south campus, north campus, and west campus. The south campus includes the historic core of the campus and the student union, as well as Meriam Library and other academic buildings. The south campus transitions into Chico’s downtown street grid. The University Police Station (part of Parking Structure #2) is located south of West Second Street, as are three other University-owned buildings: Sapp Hall, Sierra Hall, and the Deen House.

The north campus includes most of the on-campus student residence halls, in addition to numerous academic buildings, and the historic Albert E. Warrens Reception Center (also known as the Moulton House). The Gateway Science Museum is located at the northeastern edge of campus; the museum parking lot is adjacent to the parking lot of the historic Bidwell Mansion (maintained and operated by the California Department of Parks of Recreation).

The west campus, across Ivy/Warner Street, is home to the athletic fields and facilities, three residence halls, the student health center, three academic buildings (including the engineering buildings), and the Wildcat Recreation Center. The Facilities Management and Services Yard and the central plant (boiler/chiller) are also located here.

The west campus also includes the College Park neighborhood and surrounds the Rio Chico neighborhood. College Park is a former residential area located west of Ivy/Warner Street between the residence halls and Chico High School. This area was identified as an acquisition area in the Master Plan 2005. Most of the parcels have been acquired and the land is currently used for temporary campus parking. Three single family properties remain in private ownership and are proposed for acquisition under the Master Plan.

1 The 2018-2019 academic year represents the baseline conditions for this EIR. The NOP was issued on April 29, 2019.

Rio Chico is a residential neighborhood occupying a single block bisected by an alley between Rio Chico Way and Big Chico Creek on the north, West First Street on the south, Cherry Street on the east, and Orange Street on the west. Although none of the residential properties is owned by the University the block is surrounded by the University's west campus, with athletic and recreational facilities to the north, the Wildcat Recreational Center (WREC) to the south, O'Connell Center to the east, and Facilities Management to the west. The north half of the block consists primarily of older single-family homes rented by students. The south half of the block consists mainly of small multifamily rental units, also mostly rented by students.

2.3.2 Academic Facilities

Academic buildings are distributed throughout the three areas of the main campus. The south campus includes academic buildings encompassing a broad range of academic disciplines. This area is bookended by the Physical Science Building to the east and the new Science Building to the west. Ayres Hall, Laxson Auditorium, The Arts and Humanities Building, and Performing Arts Center house a range of arts and performing arts departments. The Roth Planetarium and Meriam Library are also located near the Science Building. Glenn Hall, which houses a range of business programs, is located between the Science Building and the historic campus core.

Currently, the northeastern portion of campus contains Aymer J. Hamilton Building, a one-story, former elementary school building, and Modoc Hall, a two story 1960s-era building, both deteriorating and in need of replacement. Child development, psychology, and speech pathology are centered in these buildings. Holt Hall, located across Big Chico Creek from the historic campus core, houses the College of Natural Sciences and various departments. Further west, Butte Hall and Tehama Hall encompass a range of liberal arts programs. Plumas Hall, next to Tehama Hall, has an internal courtyard that houses engineering and anthropology labs around it. The main part of the building also houses the Department of Agriculture and parts of other academic departments.

The west campus is dominated by athletic facilities, which supports the study of physical education, including kinesiology and recreational program management (housed in Yolo Hall). Science and technology majors are also concentrated in the west campus, including the O'Connell Technology Center and the Langdon Engineering Center.

2.3.3 University and Student Support Facilities

Student support services are concentrated in the south campus, with the Bell Memorial Union and the Student Services Center located near a main entrance way at West Second Street and Chestnut Street. The Student Health Center is located in the west campus, north of Acker Gym.

The south campus also contains several university support facilities. At the center of campus, Kendall Hall serves primarily as an administrative building. The nearby Colusa Hall is a multi-use conference center. Just north of these two buildings is the Continuing Education building. Extending from the campus into the City of Chico South Campus Neighborhood, is the University Police Station, and Sapp Hall and Sierra Hall, which house public and alumni engagement services.

The Facilities Management Services Yard, in the most westerly portion of the campus, includes administrative offices and the corporation yard.

At the north end of campus is the Gateway Science Museum, which is open to the public. Also located in the north campus is the Albert E. Warrens Reception Center, a house designed by renowned California architect Julia Morgan. Formerly the University President's residence, it is now used for special events.

2.3.4 Athletic and Recreational Facilities

Athletic and recreational Facilities are located in the west campus. University Stadium, Nettleton Stadium (baseball), tennis courts, as well as softball, soccer and multi-use fields are located here. Two gymnasiums, Shurmer Gym and Acker Gym, are located adjacent to each other, on Ivy/Warner Street. The Wildcat Recreational Center is also located in the west campus, south of West First Street.

2.3.5 Residential Facilities

The current housing program includes on-campus traditional student housing as well as the off-campus University Village. On-campus housing is concentrated in the north campus, where several residence halls and dining commons are located: Shasta and Lassen Halls, the midrise tower Whitney Hall, and Sutter Hall, the newest residence hall and the location of the student dining commons. Three residence halls are located in the west campus: Konkow, Mechoopda, and Esken Halls. There are approximately 1,610 on-campus student beds.

University Village is a former apartment complex, now owned by the University for student housing, located one mile from the campus core (see Figure 2-2b). University Village has an total of 650 student beds.

2.3.6 Open Space and Landscaping

The entire CSU, Chico campus was designated an arboretum in 1982 and contains over 200 tree species, including some planted under the auspices of John Bidwell, Chico's founder, in the second half of the 1800s. Big Chico Creek and its riparian corridor form the defining feature of the campus, running east-west and bisecting the campus. A series of pedestrian bridges cross the creek and pedestrian paths run north and south of the creek from Ivy/Warner Street to Selvester's Café. The south campus contains several formal open landscaped open spaces, including quadrangles and lawn areas located throughout the historic campus core and surrounding Trinity Hall, Kendall Hall, Ayres Hall, and Laxson Auditorium. Other prominent landscape features include the George Peterson Rose Garden, north of Trinity Hall, and Trinity Commons, a broad quadrangle north of the Student Union and Chestnut Street campus entrance. Campus athletic fields are concentrated in the northwestern part of the campus; the former College Park residential neighborhood, also in the northwestern part of the campus, retains much of its original tree canopy and residential landscaping,

2.3.7 Access, Circulation, Parking, and Transit

Primary vehicular access to the campus is on West Second Street and Ivy/Warner Street. The north edge of campus is defined by Arcadian Avenue, Mansion Avenue, Citrus Avenue, and Legion Avenue. The Esplanade provides access to the Gateway Science Museum and the Aymer J. Hamilton building. West of Ivy/Warner Street, West First Street (west of Warner Street) allows vehicular traffic, providing access through the southerly end of the west campus.

Two parking structures, at West Second Street/Cherry Street and West Second Street/Chestnut Street provide easy access to the campus. Additional surface parking is available, primarily at the edge of campus, at West

Second/Chestnut Street, Orange Street, Aymer J. Hamilton, Student Health Center, and the Stadium and north residence halls (Konkow, Mechoopda, and Esken Halls). The total estimated campus parking is 2,519 spaces (see Table 2-1, below).

Transit service to the CSU, Chico campus is provided by Butte Regional Transit, also known as B-Line, operated by the Butte County Association of Governments. The Chico Transit Center is adjacent to the campus on West Second Street between Normal Avenue and Salem Street and provides connections to many routes. B-Line Routes 8 and 9 operate as student shuttles, and only operate when spring and fall semester classes are in session. When classes are not in session, Route 9c, with limited service and stops, serves these routes.

Campus Connection is a free shuttle service provided by the University Police Department to the campus community as an alternative to walking on campus at night. It operates between 6:00 pm to 12:00 pm, and stops at several designated locations on campus as well as University Village. University Housing also operates a dedicated shuttle between the main campus and University Village.

Pedestrian and Bicycle Circulation

The main campus is accessible through a variety of pedestrian pathways, including pathways on either side of Big Chico Creek, and West First Street, which is a pedestrian plaza from Salem Street to Ivy/Warner Street. The south campus pedestrian paths and entryways integrate with the street grid of downtown Chico. The south and north campus are connected by several pedestrian bridges over Big Chico Creek and Ivy/Warner Street.

The campus can be accessed by several bicycle routes, including the bike path adjacent to the Union Pacific Railroad connecting to Rio Chico Way; a bike path connecting Nord Avenue to the railroad bike path and Warner Street; a bike path from Sol-Wil-Le-No-Avenue to West First Street; the bike lanes on Ivy/Warner, Nord Avenue, West Sacramento Avenue, West First Street, West Second Street, and Salem Street; and bike routes on Chestnut Street, Arcadian Avenue, and Memorial Way. Within the main campus bicycle travel is currently prohibited in most of the south campus, north campus, and the pedestrian paths in the west campus.

2.3.8 Utilities and Infrastructure

Most of the cooling and heating needs of the campus are met by a central heating and cooling plant located between the athletic fields and the Facilities Management Services yard in the west campus. Electricity is supplied to the campus by Pacific Gas and Electric (PG&E) and supplemented by photovoltaic solar panel installations on campus buildings and at the University Farm.

Domestic water service is provided to the campus by California Water Service Company (Cal Water), This is supplemented by a groundwater well located north of Big Chico Creek on the main campus, near Butte Hall, that is owned and operated by the University and provides untreated (raw) water for irrigation.

Sewer service is provided by the City of Chico (with the exception of the University Farm, which utilizes an on-site septic system).

Stormwater runoff from the campus is split between two systems: direct drainage to Big Chico Creek via the campus storm drain system, and a connection to the City's stormwater system. University Village is connected to the City storm drain system, while University Farm drains, via surface drains, to Dubock Slough.

2.3.9 University Farm

The University Farm is located approximately 5 miles south of the main campus, on Hegan Lane. The 800-acre University Farm was established in 1960. The University Farm includes facilities for aquaponics, beef, swine, sheep, organic dairy units, greenhouses, and irrigation training, Classroom space, an office building, mechanics shop, pavilion, and the meats lab are also located there. Around the developed central area of the University Farm there are orchards and fields for row crops, organic vegetables, and regenerative agriculture.

The farm manager and 15 full-time staff oversee the farm's activities, supported by approximately 35 to 40 part-time students.

2.3.10 25/35 Main Street

Chico State Enterprises (formerly the University Foundation) owns two office buildings adjacent to the main campus, east of Esplanade. 25/35 Main Street houses Chico State Enterprises, the Butte Creek Ecological Reserve, North State Public Radio, and several other campus and academic organizations. There are no classroom facilities at this location.

2.4 Project Objectives

CEQA requires the statement of a project's objectives to be clearly written so as to define the underlying purpose of a project in order to permit development of a reasonable range of alternatives and aid the lead agency in making findings when considering a project for approval. The underlying purpose of the proposed Master Plan project is to guide campus development in a manner that supports the university's Strategic Vision 2019-2024 and a 2030 enrollment target of 18,600 FTES and accompanying faculty and staff growth, while preserving and enhancing the campus environment and quality of life.

The following project objectives are based on the goals and organizing principles of the proposed Master Plan, and support the underlying purpose of the project:

1. Transform the campus core into a strong, activated "HUB" focused on instructional space, student housing, and student support programs.
2. Consolidate student housing and residential life within three distinct neighborhoods in close proximity to the "HUB" or campus core.
3. Increase opportunities for first-year freshmen to live on campus.
4. Enhance the visibility and accessibility of the campus's current decentralized arts and culture district through the enhancement of existing performing arts spaces and consolidation of museum programs at a new campus gateway on Esplanade.
5. Provide new and renovated facilities and open space to reflect today's students' need for additional informal space for collaborative learning.
6. Improve and expand services and facilities for counseling, health and wellness, to include physical and mental health.
7. Improve and expand facilities and support in the west campus for experiential (hands-on) learning and recreational opportunities and campus athletics.

8. Maximize existing academic space to improve the academic and research environment by updating and improving facilities for today's learners and educators. This includes flexible learning environments that can adapt to different styles of learning and pedagogy.
9. Preserve important farmland on the University Farm while enhancing its ability to support the university's academic mission as well as the region's existing and future agricultural industries, through the modernization of aging buildings and facilities, development of new classroom, laboratory, and support space for agricultural programs, infrastructure upgrades, creation of a new Farm Store, provision of on-site student housing, and improved road and parking facilities.
10. Improve pedestrian and bicycle access on campus through extending the bicycle path to have a more contiguous east-west corridor that also enhances pedestrian safety.
11. Relocate and consolidate existing parking facilities on the campus perimeter to free up limited campus space for academic, student support, and residential uses.
12. Improve the safety and character of the Ivy/Warner corridor through development of an enlivened on-campus Rio Chico residential neighborhood, comprising new student residence halls, expanded Wildcat Recreation Center (WREC), improved south campus gateway, and improved pedestrian connections between off-campus Ivy/Warner Street and the campus core.
13. Implement carbon reduction strategies with the goal of achieving carbon neutrality by 2030 through tactics such as onsite renewable energy, electrification of utilities, and improved alternative transportation infrastructure.
14. Increase the resiliency of campus utility systems by creating utility redundancy and decentralization of the central plant combined with onsite renewable energy.
15. Improve landscape and stormwater function and aesthetic.

2.5 Master Plan Components

The proposed Master Plan is a long-range planning document intended to guide future development of the campus to accommodate increased enrollment of up to 18,600 FTES at buildout. To accommodate this enrollment growth, the proposed Master Plan provides for an anticipated increase in demand for academic facilities, student residential housing, recreation and athletics facilities, and other support facilities and services on campus through 2030. Table 2-1 summarizes existing and proposed building gross square footages, number of student beds, and number of parking spaces at the main campus. As shown therein, implementation of the proposed Master Plan would include approximately 531,536 GSF of new academic facilities and approximately 156,000 GSF of student support space. Master Plan implementation would demolish approximately 447,538 GSF of existing facilities and construct approximately 921,932 net new GSF, for a campuswide square footage total of approximately 3,645,314 GSF at buildout.[2] Net student beds would increase by 1,461 and net parking would increase by 310 spaces. Master Plan buildout is anticipated to take approximately 10 years following approval.

The proposed Master Plan proposes to transform the CSU, Chico campus core, or "hub", into a more socially vibrant, student-centered space; provide more opportunities for student dining and activities after hours and on weekends; integrate student housing and residential life into the central academic and social fabric of the campus rather than on the campus perimeter; distribute student support space in a more balanced fashion throughout the campus; develop a distinct arts and culture district that consolidates the currently scattered visual and performing arts

2 These development numbers do not include the University Farm, which is discussed separately, below.

facilities; expand and enhance outdoor gathering spaces, particularly within the north campus and the plaza in front of the Wildcat Recreation Center; and better integrate the campus perimeter with downtown Chico.

To accomplish this, the proposed Master Plan would redevelop portions of the campus core as well as increase density in underdeveloped areas of campus through the replacement of outdated and inefficient facilities and redevelopment of existing surface parking lots. Figure 2-4 shows the proposed Master Plan building program in illustrative form. Figure 2-5 shows existing buildings that would be demolished to implement the proposed Master Plan. Figure 2-6 shows the proposed CSU Master Plan Map which includes the existing and future building program.

This Draft EIR evaluates phased buildout of the proposed Master Plan building program at a "program level" per the State CEQA Guidelines (Cal. Code Regs. tit. 14, § 15168). When CSU, Chico is ready to proceed with planning and construction of these projects, they will be subject to additional project-specific review to determine the need for and appropriate type of subsequent CEQA compliance. A subset of projects anticipated to be implemented within the first five years following Master Plan approval (Near-Term Projects) is described in Section 2.6 of this chapter and is evaluated at a "project level" of detail in this Draft EIR.

Table 2-1. Proposed Master Plan Building Program

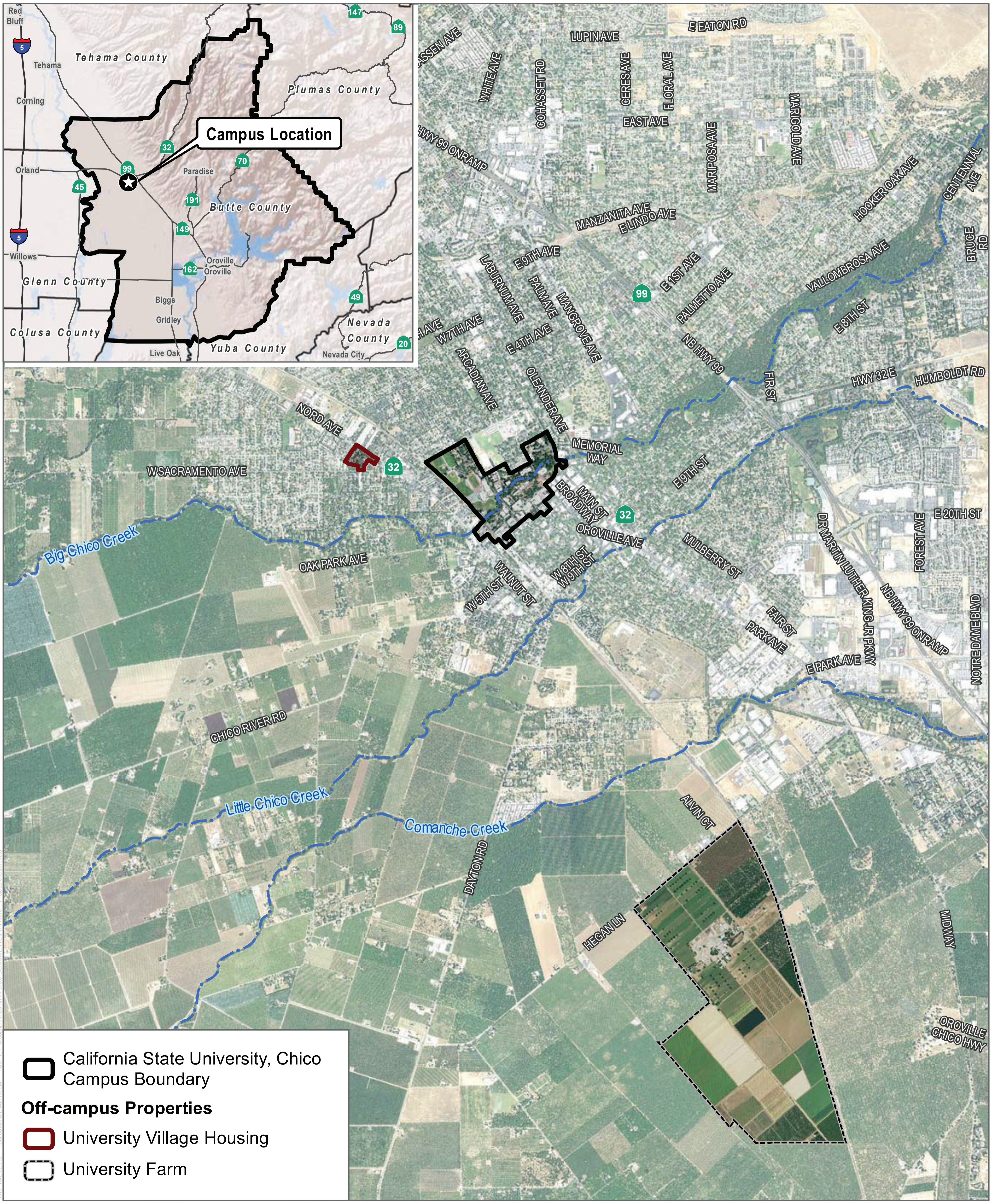
Campus Space	Amount	GSF
Existing Space		
Non-Residential Campus Buildings		2,187,026
Student Housing – On Campus	1,610 Beds	395,616
Student Housing – University Village	650 Beds	140,740
Parking – Structures	983 Spaces	314,210
Parking – Surface	1,536 Spaces	
Total Existing Space Excluding Parking	**2,260 Beds, 2,519 Spaces**	**2,723,382**
Planned Space (New)		
Future Academic Space (New Construction)		
Academic Building (Part of Plumas Site)		36,000
Butte Hall Replacement		92,300
Glenn Hall Replacement		85,636
Holt Hall Addition		12,000
Academic Building (Modoc II)		75,000
Academic Building (AJH Site)		38,400
Academic Building (AJH Site)		46,400
Forensic/Admin/Office Building		33,000
Academic Building (Shurmer Site)		112,800
Total Academic Space		**531,536**
Future Residential Space (New Construction)		
Creekside (2 buildings)	800 Beds	184,800
Rio Chico (2 buildings)	400 Beds	122,000
Butte Hall Site (1 building)	600 Beds	187,000
Total Residential Space	**1,800 Beds**	**493,800**
Future Student Support Space		
WREC Expansion + Wellness Center		75,000
BMU Expansion (Mixed Use Building)	300 Spaces	70,000

Table 2-1. Proposed Master Plan Building Program

Campus Space	Amount	GSF
Cultural/Museum Building		11,000
Total Support Space	**300 Spaces**	**156,000**
Future Athletic Space		
Arena/Events Center	4,000 Seats	160,234
Softball Facility (including restrooms, storage)	500 Seats (net new)	1,500
Track Seating Replacement (West Bleachers)		2,000
Total Planned Indoor Athletic Space		**163,734**
Future University Support Space		
University Services Building (FMS yard)		36,000
Data Center		1,200
Surface Parking	200 Spaces	
Parking Structure, Arena	900 Spaces	360,000
Total University support Space Excluding Parking	**1,100 Spaces**	**26,400**
Demolition (Removal)		
Academic Space Removal		
Glenn Hall		41,250
Butte Hall		89,421
Physical Science Building		82,882
Modoc Hall		35,260
Aymer J. Hamilton Building		36,860
Plumas Hall Labs		17,500
Total Academic Space Removal		**303,173**
Residential Space Removal		
Konkow Hall	107 Beds	23,930
Esken Hall	112 Beds	30,290
Mechoopda Hall	120 Beds	30,290
Total Residential Space Removal	**339 Beds**	**84,510**
Student Support Space Removal		
Student Health Center		22,300
Total Support Space Removal		**22,300**
Athletic Space Removal		
Softball Facility		
Shurmer Gymnasium		24,310
Acker Gymnasium (partial)		3,260
PE Storage		2,370
Stadium West Restroom (at Field 6 & 7)		1,775
Stadium East Restroom		500
Total Athletic Space Removal		**32,215**
University Support Space Removal		
FMS Admin Office		5,340
Surface Parking	1,090 Spaces	

Table 2-1. Proposed Master Plan Building Program

Campus Space	Amount	GSF
Total Support Space Removal	1,090 Spaces	5,340
Total Proposed Campus Space New Construction	1,800 Beds, 1,400 Spaces	1,371,470
Total Proposed Campus Space Removal	339 Beds, 1,090 Spaces	447,538
Total Net New Campus Space	1,461 Beds, 310 Spaces	923,932
Total Campus Space (Master Plan Buildout)	3,721 Beds, 2,829 Spaces	3,647,314



SOURCE: USDA 2016, USGS 2018, County of Butte 2018, CSU, Chico 2019

DUDEK

FIGURE 2-1

Project Location

California State University, Chico Master Plan EIR

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SOURCE: USDA 2016, USGS 2018, County of Butte 2018, CSU, Chico 2019

DUDEK

0 350 700 Feet

FIGURE 2-2A

CSU, Chico Campus

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SOURCE: USDA 2016, USGS 2018, County of Butte 2018, CSU, Chico 2019

DUDEK

0 300 600 Feet

FIGURE 2-2B

University Village

California State University, Chico Master Plan EIR

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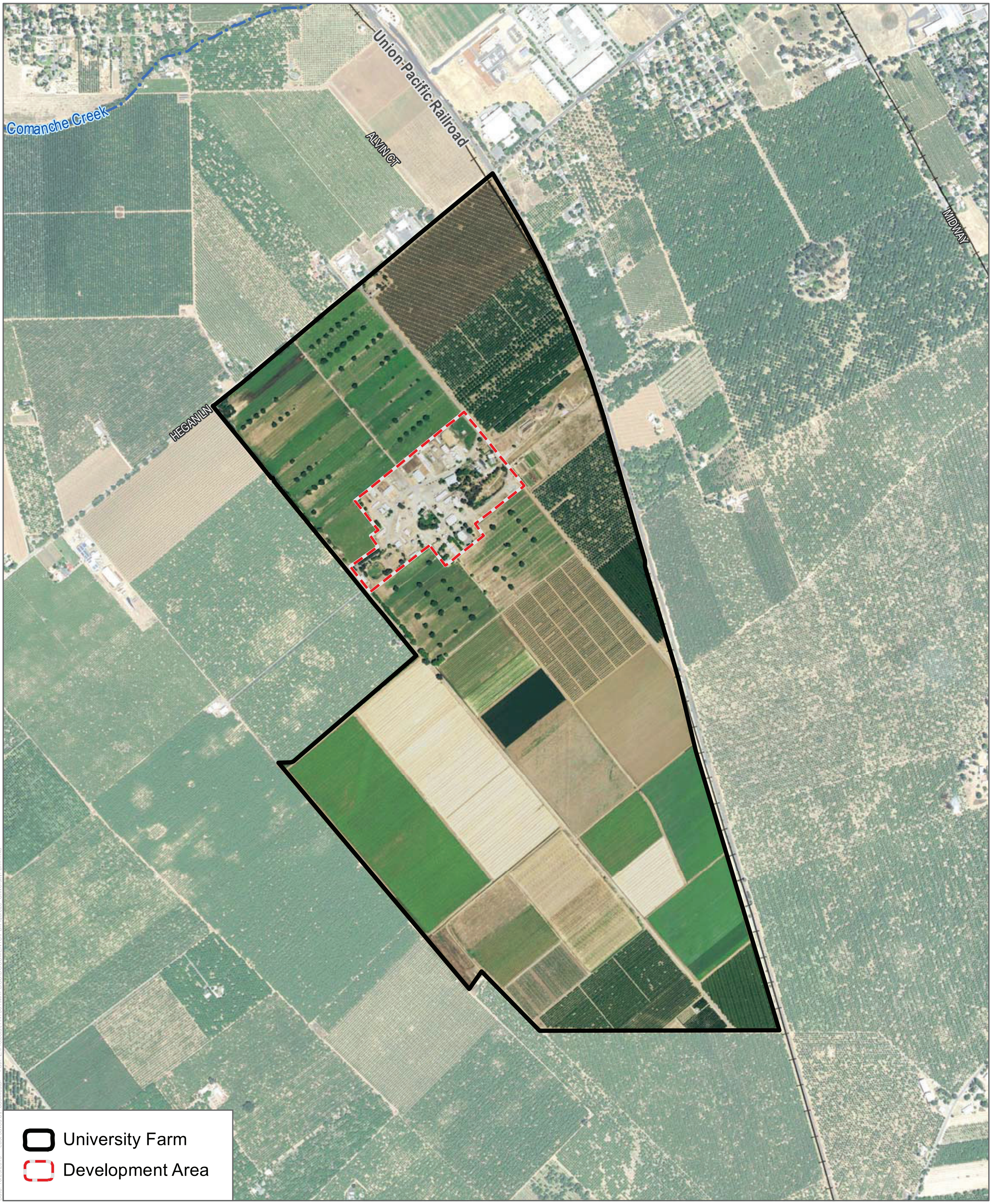

SOURCE: USDA 2016, USGS 2018, County of Butte 2018, CSU, Chico 2019

DUDEK

0 750 1,500 Feet

FIGURE 2-2C

University Farm

California State University, Chico Master Plan EIR

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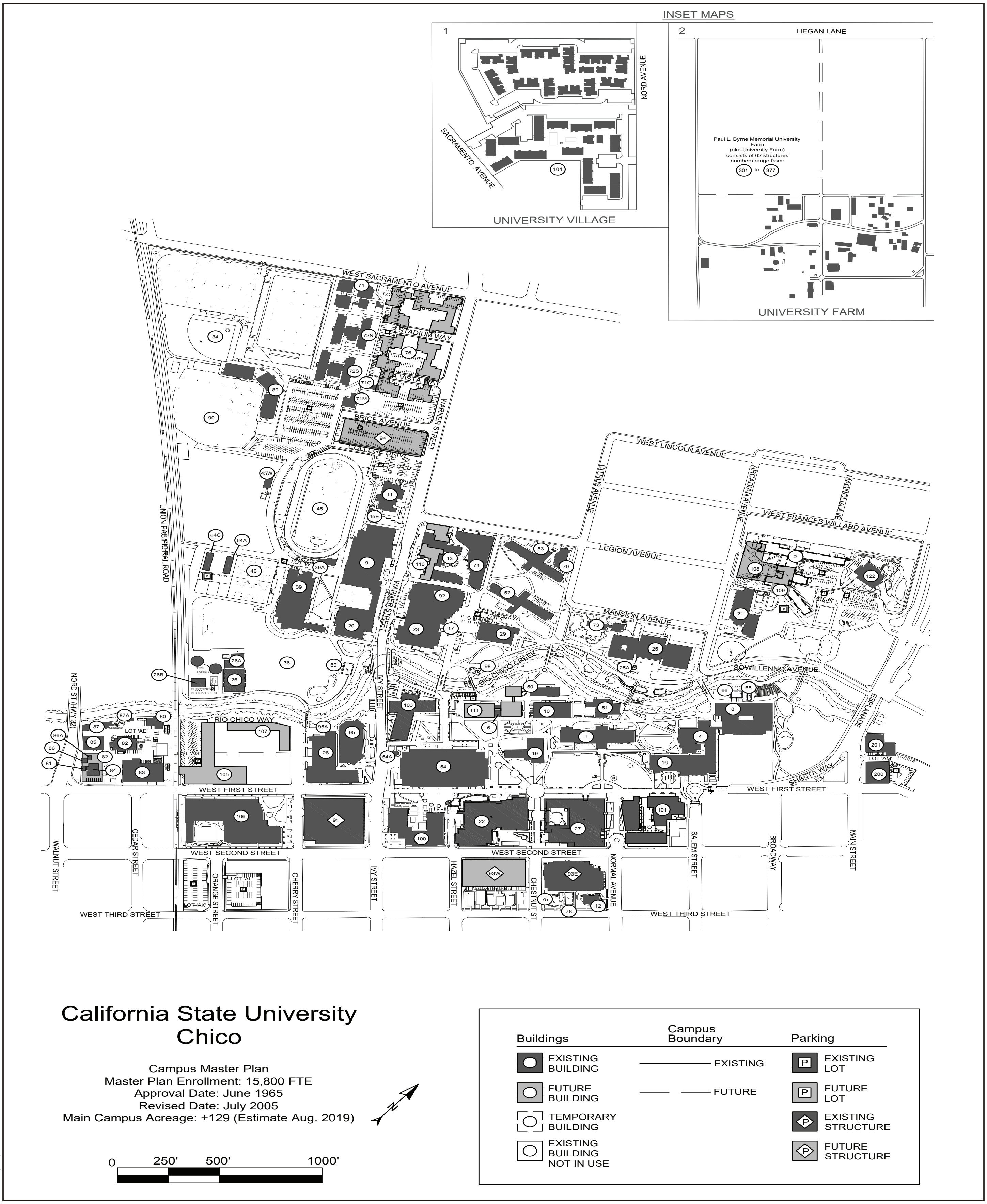

SOURCE: CSU Chico 2018

FIGURE 2-3A

Existing Master Plan

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California State University, **Chico**

Master Plan Enrollment: 15,800 FTE

Master Plan approved by the Board of Trustees: June 1965

Master Plan Revision approved by the Board of Trustees: March 1967, December 1968, January 1969, February 1971, November 1971, November 1973, September 1976, September 1980, March 1981, March 1984, May 1985, November 1990, July 2005

1. Kendall Hall
2. Aymer Jay Hamilton Building
4. Ayres Hall
6. Glenn Hall
8. Physical Science Building
9. Acker Gymnasium
10. Colusa Hall
11. Student Health Center
12. Sapp Hall
13. Whitney Hall
16. Laxson Auditorium
17. Butte Station
19. Trinity Hall
20. Shurmer Gymnasium
21. Modoc Hall
22. Bell Memorial Union
23. Plumas Hall
25. Holt Hall
25a. Holt Station
26. Boiler/Chiller Plant
26a. Boiler/Chiller Plant North
26b. Wildcat Switchgear Building
27. Performing Arts Center
28. Langdon Engineering Center
29. Butte Hall
34. Softball Field
36. Physical Education Field
39. Yolo Hall
39a. PE Mechanical Enclosure
45. Stadium
45e. Stadium Restrooms (East)
45w. Stadium Restrooms (West)
46. Tennis Courts
50. Continuing Education Building
51. Selvester's Café
52. Lassen Hall
53. Shasta Hall
54. Meriam Library
54a. Roth Planetarium
64a. Greenhouse A
64c. Greenhouse C
65. Physical Science Greenhouse
66. Physical Science Headhouse
69. Physical Education Storage
70. Housing Office
71. Konkow Hall
71g. Housing Grounds Shop
71m. Housing Maintenance Shop
72n. Mechoopda Hall
72s. Esken Hall
73. Albert E. Warrens Reception Center
74. Sutter Hall
75. Sierra Hall and Annex
76. *Student Housing – Phase II*
78. Deen House
80. FMS Paint Shop
81. FMS Hazardous Chemical Storage
82. FMS Administration Building
83. FMS Warehouse
84. FMS Trades Workshop
85. FMS Garage
86. FMS Hazardous Materials Storage
86a. FMS Hazardous Waste Storage
87. FMS Equipment Shed
87a. FMS Storage Shed
89. Nettleton Stadium
90. Bohler Field
91. Parking Structure
92. Tehama Hall
93e. Parking Structure 2 (and Office Building)
93w. *Parking Structure - Southwest*
94. *Parking Structure - North*
95. John F. O'Connell Technology Center
95a. O'Connell Mechanical Enclosure
98. Grounds Pump House
100. Student Services Center
101. Arts & Humanities Building
103. Science Building
104. University Village
105. *Rio Chico Academic Facility*
106. Wildcat Recreation Center
107. *Aquatic Center*
108. *Modoc II*
109. *Childcare Facility*
110. *Housing Phase III - Whitney*
111 *Glenn Hall Replacement*
122. Gateway Science Museum
200. 35 Main Street
201. 25 Main Street
301.- 377. University Farm (consists of 62 structures, numbers range from 301 to 377)

LEGEND:
Existing Facility / *Proposed Facility*

NOTE: Existing building numbers correspond with building numbers in the Space and Facilities Data Base (SFDB)

SOURCE: CSU Chico 2018

FIGURE 2-3B

Existing Master Plan

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SOURCE: CSU Chico 2020

DUDEK

FIGURE 2-4

Proposed Master Plan

CSU Chico Master Plan EIR

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DEMOLITION

1. Konkow Hall
2. Mechoopda Hall
3. Esken Hall
4. Softball Stadium
5. Student Health Center
6. University Stadium East Bleachers & Restroom
7. West Stadium Restroom
8. Shurmer Gymnasium
9. Plumas Hall Labs
10. Butte Hall
11. PHED Shed
12. FMS Office
13. FMS Key Shop
14. Glenn Hall
15. Physical Science Building
16. Green House & Head House
17. Modoc Hall
18. Aymer J. Hamilton Building

SOURCE: CSU Chico 2020

DUDEK

FIGURE 2-5

Preliminary Master Plan Demolition

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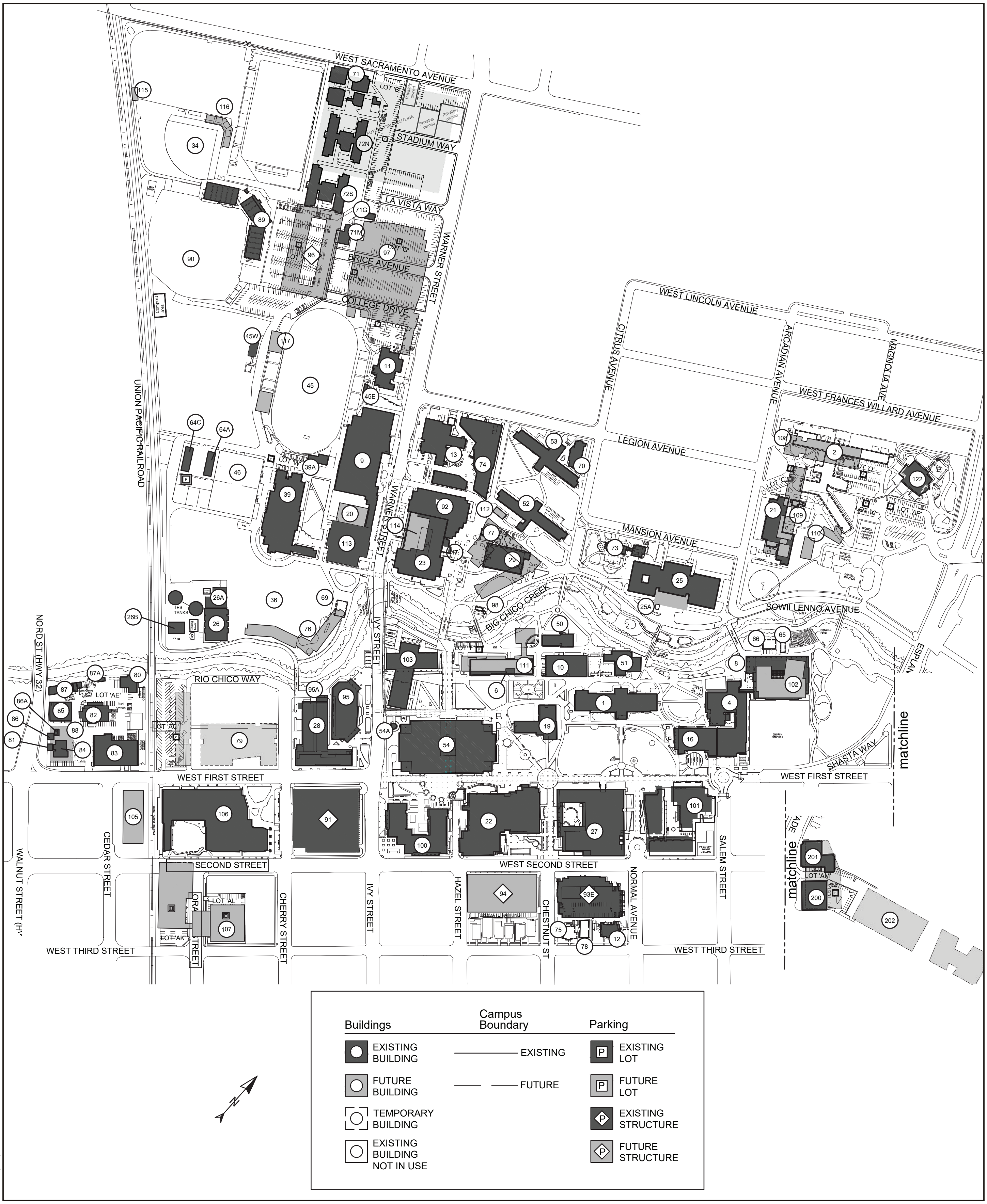

SOURCE: CSU Chico 2020

FIGURE 2-6A

Proposed Master Plan

California State University, Chico Master Plan EIR

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California State University, **Chico**

Master Plan Enrollment: 18,600 FTE

Master Plan approved by the Board of Trustees: June 1965

Master Plan Revision approved by the Board of Trustees: March 1967, December 1968, January 1969, February 1971, November 1971, November 1973, September 1976, September 1980, March 1981, March 1984, May 1985, November 1990, July 2005, *November 2020*

1. Kendall Hall
2. Aymer Jay Hamilton Building
4. Ayres Hall
6. Glenn Hall
8. Physical Science Building
9. Acker Gymnasium
10. Colusa Hall
11. Student Health Center
12. Sapp Hall
13. Whitney Hall
16. Laxson Auditorium
17. Butte Station
19. Trinity Hall
20. Shurmer Gymnasium
21. Modoc Hall
22. Bell Memorial Union
23. Plumas Hall
25. Holt Hall
25a. Holt Station
26. Boiler/Chiller Plant
26a. Boiler/Chiller Plant North
26b. Wildcat Switchgear Building
27. Performing Arts Center
28. Langdon Engineering Center
29. Butte Hall
34. Softball Field
36. Physical Education Field
39. Yolo Hall
39a. PE Mechanical Enclosure
45. Stadium
45e. Stadium Restrooms (East)
45w. Stadium Restrooms (West)
46. Tennis Courts
50. Continuing Education Building
51. Selvester's Café
52. Lassen Hall
53. Shasta Hall
54. Meriam Library
54a. Roth Planetarium
64a. Greenhouse A
64c. Greenhouse C
65. Physical Science Greenhouse
66. Physical Science Headhouse
69. Physical Education Storage
70. Housing Office
71. Konkow Hall
71g. Housing Grounds Shop
71m. Housing Maintenance Shop
72n. Mechoopda Hall
72s. Esken Hall
73. Albert E. Warrens Reception Center
74. Sutter Hall
75. Sierra Hall and Annex
76. *Creekside Residence Hall*
77. *Residence Hall (Butte Site)*
78. Deen House
79. *Rio Chico Development*
80. FMS Paint Shop
81. FMS Hazardous Chemical Storage
82. FMS Administration Building
83. FMS Warehouse
84. FMS Trades Workshop
85. FMS Garage
86. FMS Hazardous Materials Storage
86a. FMS Hazardous Waste Storage
87. FMS Equipment Shed
87a. FMS Storage Shed
88. *University Services Building*
89. Nettleton Stadium
90. Bohler Field
91. Parking Structure
92. Tehama Hall
93e. Parking Structure 2 (and Office Building)
94. *Parking Structure 3 (and Mixed Use Building)*
95. John F. O'Connell Technology Center
95a. O'Connell Mechanical Enclosure
96. *Arena Parking Structure*
97. *Arena (and pool)*
98. Grounds Pump House
100. Student Services Center
101. Arts & Humanities Building
102. *Butte Hall Replacement Building*
103. Science Building
104. University Village
105. *Forensic Anthropology/Admin/Office Bldg*
106. Wildcat Recreation Center
107. *WREC Expansion + Health Center*
108. *Modoc II Academic Building*
109. *Academic/Admin/Office Buildings*
110. *Museum*
111. *Glenn Hall Replacement*
112. *Data Center Building*
113. *Warner Street West Academic Building*
114. *Warner Street Laboratory Research Building*
115. *Golf Practice Area and Storage*
116. *Softball Facility*
117. *University Stadium Seating and Restrooms*
122. Gateway Science Museum
200. 35 Main Street
201. 25 Main Street
202. *25/35 Main Development (land lease)*
301.-390. University Farm (consists of 62 existing and *13 future* structures, numbers range from 301 to 390)

LEGEND:
Existing Facility / *Proposed Facility*

NOTE: Existing building numbers correspond with building numbers in the Space and Facilities Data Base (SFDB)

SOURCE: CSU Chico 2020

FIGURE 2-6B

Proposed Master Plan

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Housing

With phased housing development, the proposed Master Plan would allow more freshmen to live on the main campus. This would be accomplished by demolishing the current north campus residence halls (Esken/Mechoopda/Konkow) and adding a new six-story residence hall south of Lassen Hall (site of the existing Butte Hall) and two five-story buildings in the west campus (Creekside Housing). Lassen, Shasta, and Whitney Halls would be renovated. Student support functions (e.g., dining halls, cafes) and gathering spaces would be located on the first floor of student housing buildings.

The proposed Master Plan envisions a public-private partnership project in the Rio Chico neighborhood that would provide additional student housing. The University does not propose to acquire the properties within Rio Chico; instead, the University anticipates leasing purpose-built student housing to be constructed and owned by a private developer. The single-family homes along Rio Chico Way would be preserved and restored, and may serve as faculty housing. This location would engage with the WREC, which is proposed for expanded student life and wellness services as part of the Master Plan.

No changes are proposed at University Village, although it may transition from undergraduate housing to graduate student and/or student family housing. Overall, the proposed Master Plan would result in a net increase of approximately 1,400 net new student beds on the campus.

Academic Facilities

The proposed Master Plan would update and better utilize academic spaces throughout the campus. The Plan would replace both the Aymer J. Hamilton Building and Modoc Hall with multiple new buildings housing a combination of academics, administration, cultural/museum space, as well as surface parking to service the area. Other proposed projects include replacement of the Plumas lab space, Butte Hall, and Glenn Hall, expansion of Holt Hall, and new academic buildings at the Shurmer Gym site and west of the WREC, just south of the FMS yard. Planned renovations include Ayres Hall, Laxson Auditorium, and Langdon Engineering Center. The Physical Science Building would be demolished to accommodate the future Butte Hall replacement.

Athletic and Recreational Facilities

The change in housing locations allows for replacement and expanded athletic fields in the northern most part of campus for academic and recreation sport uses in addition to athletics. This area is also proposed as the site of a new 4,000-seat arena/event center for basketball and other events (e.g., convocations, academic conferences, public lectures, and concerts). The event center would incorporate some of the athletics and academic functions currently housed in the existing gymnasiums along Warner Street. The athletics program also includes a new outdoor pool, softball stadium, and a parking structure (discussed in more detail below under Access, Circulation, and Parking). These proposed Master Plan changes would provide approximately 4.5 acres of new field space. Acker Gym would be renovated, and the WREC would be expanded (see Support Space, below).

Open Space and Landscaping

The proposed Master Plan emphasizes Big Chico Creek, and would improve and extend the creek landscape corridor. Drought tolerant and native plantings would be emphasized to reduce water usage. Landscaping would be integrated into the stormwater system to improve water quality and reduce runoff.

Access, Circulation, Parking, and Transit

On-campus surface parking would be replaced in some cases to allow for new buildings. Two new parking structures would be constructed on the northwest and south edges of the campus, and two small surface lots would be constructed on the northwest and northeast sides. Overall, the parking additions and losses would result in a net increase of approximately 310 parking spaces campuswide. The proposed Master Plan does not include any changes to the existing on-campus transit service or facilities. Ivy/Warner Street would be improved according to "complete street" principles in partnership with the City of Chico.

Pedestrian and Bicycle Circulation

The proposed Master Plan includes the addition of an east-west bike path through campus on the north side of Big Chico Creek. This will align with the City of Chico bike path and will allow bicyclists to ride and park their bikes closer to their destination. The plan would also address the aesthetics of the pedestrian path on the north side of Big Chico Creek in addition to improving safety and visibility for all. The Ivy/Warner Street corridor would be redesigned as a "complete street" to better provide for pedestrian and bicycle circulation in addition to maintaining automobile access.

Utilities Improvements

The Master Plan includes a number of water-saving project components, including athletic field improvements that would convert natural fields to a synthetic turf surface reducing water required for irrigation, and infrastructure upgrades to improve building efficiency, including water usage efficiency. Water metering would be installed for buildings and irrigation zones for better monitoring of campus water usage. Additionally, more photovoltaic arrays are planned for installation on the University Farm, Bell Memorial Union, Science Building, and the Wildcat Recreation Center. These new photovoltaic arrays would add approximately 1,450 kW to the campus power supply. Energy metering would also be added to monitor facilities energy usage. An analysis of the existing campus natural gas distribution system revealed that improvements to PG&E's infrastructure would be needed to support buildout of the proposed Master Plan. However, the University ultimately plans to phase out natural gas in support of adopted climate neutrality goals. Other planned utilities and infrastructure improvements include the following:

- Installation of low-flow plumbing fixtures
- New utility connections for new and renovated buildings
- Stormwater retention for irrigation water
- Establishing a new water well for irrigation of athletic fields
- Implement Low Impact Development (LID) strategies to reduce stormwater runoff and improve water quality
- Replace steam and waste and chilled water systems throughout campus, including in ground lines
- Replace sewer lines
- Improve the chilled water and steam system by installing heat recovery chiller systems tied to the campus loop where feasible
- Install photovoltaic and solar thermal systems to offset overall energy usage in buildings
- Upgrade existing 12kV Switchgear with a dual sectional gear (currently in progress)
- Replace existing medium voltage cable and conduit
- Implement VOIP telecommunications in all buildings
- Add energy metering to monitor facilities usage

University Farm

Several phased improvements are planned at the University Farm. These include replacement of out-of-date buildings, construction of a new food science building, a University Farm Store, on-site residential space (20 beds), remodeling several buildings, development of a solar array on the Farm, and the construction of new roadways, parking, and perimeter fencing. The University Farm has 152,636 GSF of existing space. The proposed Master Plan would demolish approximately 31,250 GSF and construct 63,480 GSF of new construction (including expansion of existing buildings), for a net increase of 32,230 GSF.

Support Space

Support space would provide for various supportive uses. Support space projects include a mixed-use building that would expand the functions of Bell Memorial Union (BMU) to the south side of West Second Street. Renovations would be made to the BMU and Student Services Center. A proposed WREC expansion would incorporate student health. Selvester's Café would be renovated. Renovations are planned for several administrative buildings: Kendall Hall, Trinity Hall, and the Center for Continuing Education. A new museum would be constructed in the northeast campus, in the vicinity of the Gateway Science Museum and Bidwell Mansion.

25/35 Main Street

These two Chico State Enterprises-owned (formerly University Foundation) buildings, adjacent to the main campus, and the private property to the east are considered an opportunity area. Although the future redevelopment of this site is outside the scope of this EIR, the City of Chico and CSU, Chico are exploring future development opportunities there, which could serve the community and the University. These could include conference/hotel facilities and other public amenities.

2.6 Near-Term Projects

As previously stated, this EIR evaluates the phased buildout of the proposed Master Plan building program described in Section 2.5 of this chapter at a "program level" per the CEQA Guidelines (Cal. Code Regs. tit. 14, § 15168). When CSU, Chico is ready to proceed with planning and construction of these projects, they will undergo project-specific review to determine the need for and appropriate type of additional CEQA compliance.

In contrast, those projects anticipated to be constructed within the first five years following Master Plan approval (Near-Term Projects) are described and evaluated at a "project level" of detail so as to provide comprehensive environmental clearance in this document. The Near-Term Projects include those projects identified in Phase 1, selected Phase 2 projects, and certain un-phased projects that are University priorities. The complete list of Near-Term Projects and a description of each are presented below.

Butte Hall Replacement

The existing Butte Hall, an 89,421-GSF building, which houses the College of Behavioral and Social Sciences, would be replaced. The Butte Hall replacement would be constructed at the site of the current Physical Science Building. The new building would be approximately 92,300 GSF, with four floors, and 60 feet in height. Rooftop solar PV panels are planned for the new building. The existing Butte Hall will undergo a minor renovation in order to function as temporary space during the replacement of Glenn Hall and other future projects. A 1,200-GSF data center building would be constructed adjacent to existing Butte Hall. Ultimately, Butte Hall would be demolished and student housing would be constructed at this site.

Physical Science Building Demolition

The existing 82,882-GSF Physical Sciences Building would be demolished. The existing greenhouse and headhouse (support facilities for the greenhouse), located between the Physical Science Building and Big Chico Creek, would be demolished. The Butte Hall replacement building would be constructed at this site.

Facilities Management & Services Yard

The Facilities Management & Services (FMS) yard, located at West First Street and Nord Avenue, would undergo several improvements. A new administration building (University Services Building), totaling approximately 36,000 GSF would be constructed at the south corner of the yard. Following construction of the new administration building, the existing 5,887-GSF administration building would be demolished. The existing warehouse, located in the east corner of the FMS yard, would be renovated. The renovation of the 18,274-GSF structure would be largely confined to the building's interior with only minor exterior improvements.

Forensic Anthropology/Admin/Office Building

This proposed 33,000-GSF academic building would be located south of West First Street between Cedar Street and the UPRR tracks. The three-story building would include laboratory space, classrooms, collaborative space, and office space (including the Department of Anthropology). The Forensic Anthropology Lab is currently located in Plumas Hall labs (which would be replaced as part of the proposed Master Plan).

Athletic Field Improvements

Athletic Fields 6 and 7, located west of the existing University Stadium, are utilized for recreation and club sports which creates substantial wear and tear on the natural turf. The improvements would include converting these fields to a synthetic turf surface, sized large enough to accommodate a rugby field in the north/south direction, three recreation fields in the east-west direction, and two softball fields in the north and south corners. Lighting and fencing/netting may be added to extend hours of use. The existing restrooms at this location may be relocated to the University Stadium Seating addition.

West of Athletic Fields 6 and 7, a new hammer throw venue would be constructed.

Field 10B, a natural turf field west of the Soccer Stadium, would be renovated, including new turf and underdrainage. Lights may also be added. The golf practice *area* would be moved from its current location south of Shurmer Gym to the existing hammer throw location at the west end of this field.

A new water well may be considered in the northwest campus exclusively to irrigate the natural turf athletic fields.

New Creekside Housing

Two proposed residential buildings would be located north of Big Chico Creek, west of Warner Street, and south of Shurmer Gym and Yolo Hall. The two five-story buildings would provide 800 student beds in double-occupancy rooms. The proposed five-story buildings would be approximately 88 feet tall. Demolition of an existing PE storage unit (2,370 GSF) would be required prior to construction.

Glenn Hall Replacement

The existing 41,250 GSF building, built in 1958, would be replaced by a new 85,000 GSF building. The building would step up from two stories on east side to four stories on the west, with an approximate maximum height of 60 feet. The new building would include classrooms, office space, and large lecture spaces. The proposed building would house the College of Business, which is dispersed between Glenn Hall and two other buildings.

WREC Expansion

The WREC was built in 2009 and serves as the main student recreation facility on campus, featuring three basketball courts, an indoor running track, four group exercise rooms, a pool and hot tub, and a 3-story climbing wall and bouldering area. Additional facilities are included for ballroom dance, hip hop, paintball, rugby, water polo, fencing, and many more activities.

The proposed expansion would be south of the current facility, attached at the second level by a skybridge over West Second Street. The expansion would provide additional space for 1-on-1 training and video training sessions, additional multi-use courts, and an on-site location for Adventure Outings.

A second overarching goal of the WREC Expansion is to bring physical and mental health and wellness together under one roof. The addition extending across Orange Street would house facilities for mental and physical health. Services provided at the existing Student Health Center would be relocated here, and the existing Student Health Center would be demolished. The connection across Orange Street to accommodate the expansion could be accomplished either by a skybridge or by closing Orange Street between West Second and West Third Street. The potential abandonment of Orange Street would require consultation and agreement with the City of Chico.

Meriam Library Renovation

Meriam Library was built in two phases in 1959 and 1975. Numerous system upgrades are necessary, including IT, the addition of a fire sprinkler system, lighting upgrades for energy efficiency, HVAC replacement, hazardous material removal, upgraded restrooms for required access, and interior finishes improvements. The internal programming of the building may also be revised, particularly at such time as the Museum of Anthropology is located to a new dedicated facility in the northeast area of the campus.

Deen House Renovation

Located within the historic South Campus Neighborhood on West Third Street, the Deen House requires substantial interior and exterior renovation to restore the building to its original character. Once renovated, the building could house University Advancement, thereby bringing that office in closer proximity to Sapp Hall, which serves a similar function.

Sapp Hall Renovation

Also located within the historic South Campus Neighborhood on West Third Street, Ella Caroline Sapp Hall houses part of University Advancement, Alumni and Parent Engagement, and the Chico State Calling Center. Substantial interior and exterior upgrades are necessary for maintenance and to restore this building to its original character.

Bike Path

Along the north side of Big Chico Creek, a new pedestrian path and dedicated two-way bike path would provide an uninterrupted east-west connection through campus. This path would align with the City of Chico bike path and would allow bicyclists to ride and park their bikes into the campus core and closer to their destinations. The proposed cross section would provide a 12-foot pedestrian path, and two 4-foot bike lanes.

Ivy/Warner Street Improvements

In partnership with the City of Chico, the Ivy/Warner corridor is planned to be improved according to “complete street” principles. A raised, planted median would act as a traffic calming measure and bioswales would collect street stormwater runoff. Utilities would be consolidated in a corridor under the street, allowing future utility work to be less disruptive. Raised, highly visible crosswalks (“tables”) would improve pedestrian safety. Dedicated bike lanes and separated pedestrian sidewalks would be provided.

University Farm

Several near-term improvements are planned for the University Farm. These include:

- Construction of a 10,380-GSF single-story Farm Store to include a full store component for produce, meat, deli/ice cream, dairy products, nuts, wine and other grocery items. The back of house will include a cooler, freezer, kitchen, dry storage and an office. In addition to the store, the building is to include conference rooms, storage, and a 260-person conference area with an additional 3,000 GSF. outdoor conference patio and covered outdoor barbecue area. The Campus Master Plan includes 53 parking spaces as well as bus parking, and a loading dock capable of receiving large semi-trucks.
- Expansion of the Meats Laboratory from approximately 8,000 to 14,000 GSF. The Meats Laboratory is a meat processing facility, operating under federal inspection, which serves multiple purposes within the College of Agriculture and University Farm. The facility is currently undersized for its operations and an addition is needed for more educational opportunities, additional equipment, and increased production.
- Installation of the Farm PV Solar Array. While the University Farm has multiple locations that are optimal for solar arrays, preliminary planning places the proposed array just west of the existing University Farm building area. A more detailed assessment of location and the size of the installation would need to be conducted, with the goal of making the University Farm energy-positive. Land selection is intended to ensure that no Class 1 farmland be taken out of production for solar installation.
- Demolition of certain University Farm buildings, including the Sheep Management Center, the Surface Silo, multiple Greenhouses, the Livestock Laboratory, the Lumber Shed, and the Crops Building

Utilities Infrastructure

The Utilities Infrastructure project will renovate and replace several existing utility infrastructure systems over a five-year period. The purpose of this project is to repair age-related deficiencies, expand capacity, bring systems up to code, extend distribution, and improve efficiency of utility infrastructure elements to accommodate campus growth/expansion, as well as a move towards renewable self-generated energy on campus. On-campus utilities systems, including electrical, natural gas, sewer, waste water, chilled water, steam, and domestic water, are past their expected life and renovation is needed to improve reliability and efficiency.

Listed below are the highest priority Utility Infrastructure improvements. These infrastructure systems were found to be at risk for failure and beyond their usable life cycle by an engineering analysis and as part of the Facilities Condition Assessments.

- Repair high risk utilities with life safety concerns
- Per the master plan develop cluster type approaches for improvements
- Combine utilities upgrades that are within the same proximity to minimize trenching and hardscape reconstruction
- Start with vaults, manholes, valves and utility boxes then develop phasing plans for utility line upgrades.
- Line upgrades will start at the campus boundaries and then work towards the Boiler Chiller Plant
- Energy management systems (EMS) control upgrades will be phased by priority

2.7 Project Design Features

This section describes the Project Design Features (PDFs) proposed as part of the Master Plan project and included in analytical assumptions for purposes of impact analysis in this Draft EIR. These which were developed based on the proposed Master Plan Report and Design Guidelines and would be implemented as the campus proceeds with Master Plan implementation.

2.7.1 Access, Circulation, Parking, and Transit

The following proposed Master Plan strategies address various modes of transportation, including pedestrian, bicycle, vehicular, and transit.

Pedestrian

The proposed Master Plan proposes a series of pedestrian improvements to provide a coherent, logical sequence of connections, gathering spaces, and an appropriate sidewalk hierarchy that appropriately defines major and minor campus paths (see Figure 2-7). The proposed Master Plan recommends the following improvements:

- Enhance the primary north-south walk connecting the First Street walk to north campus to extend the same quality of materials and finish as First Street
- Reconstruct the north campus circulation systems, specifically the path running along Big Chico Creek as pedestrian paths with dedicated cycling lanes
- Construct (in phases) a new primary path from the WREC to the Arena through west campus as new development comes online, tying campus together west of Ivy/Warner
- Enhance the primary connection from west campus across the railroad tracks to better serve as a pedestrian gateway to campus
- Extend the south campus experience along First Street to the railroad tracks, creating a pedestrian only zone that stitches the east and west sides of Ivy/Warner together
- Establish new and reconstructed walks to follow the recommended guidelines for hierarchy throughout campus
- Create plaza spaces at north campus, west campus, and the First Street extension to provide flexibility for multiple functions, shade, and appropriate seating and gathering space for students
- Improve pedestrian safety at crosswalks along the Ivy/Warner corridor
- Realign Creekside path on west campus north of the Boiler /Chiller Plant for increased visibility and safety

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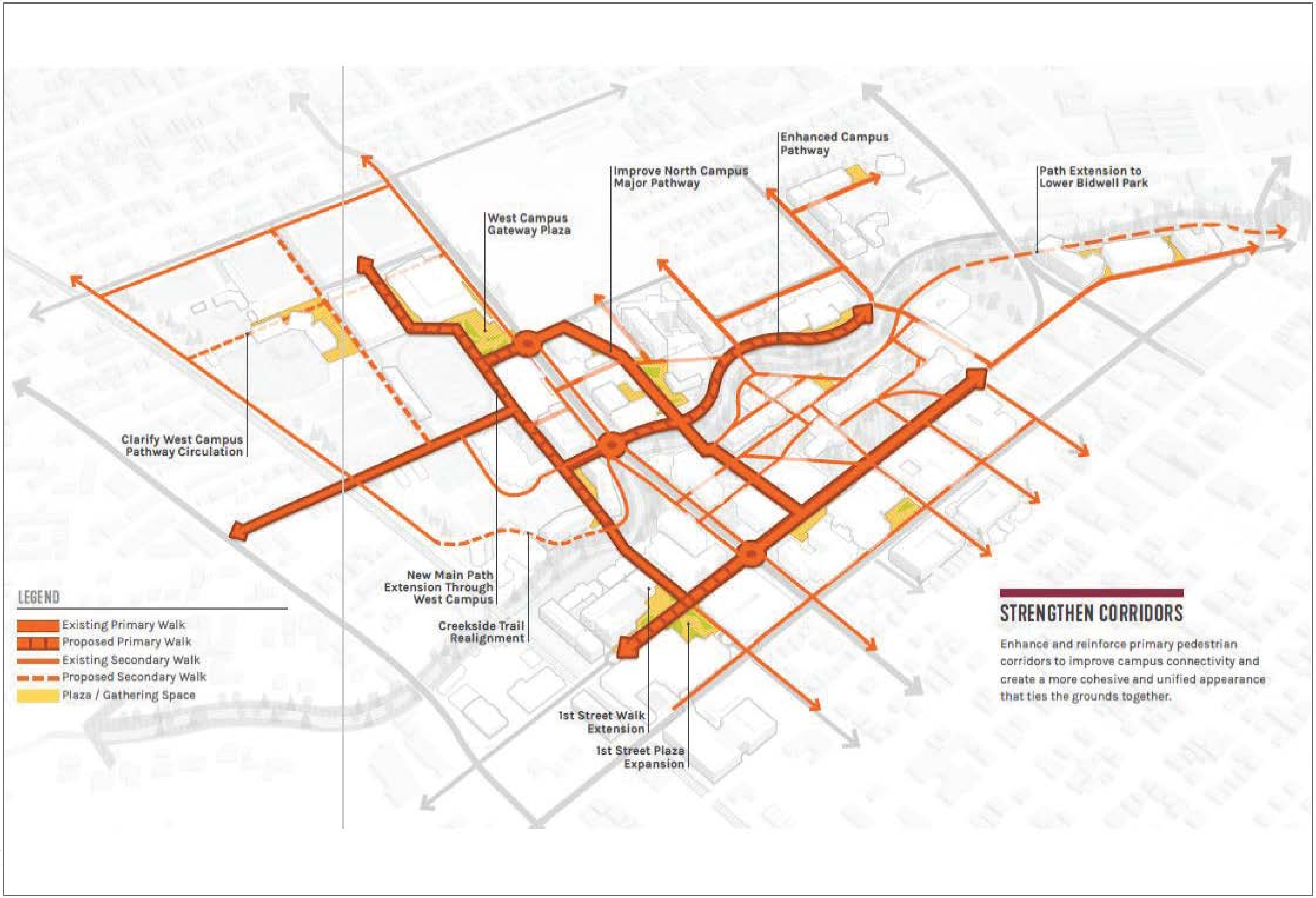

SOURCE: CSU Chico 2018

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FIGURE 2-7

Pedestrian Network

CSU Chico Master Plan EIR

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Non-Motorized Vehicles

The campus core is currently a pedestrian-only area. While this zone is intended to eliminate potential conflicts with pedestrians, it has resulted in a barrier to bicycle commuting (as well as scooters, skateboards, etc.). The proposed Master Plan would include the following improvements for non-motorized vehicles (see Figure 2-8):

- Create a non-motorized vehicle path that parallels the north side of Big Chico Creek to provide a continuous connection through campus to the neighborhoods east and west
- Relocate existing bike parking and create new bike parking adjacent to the new cycling path on the interior of the campus
- Create additional secondary cycling paths through campus, specifically on the west campus, for greater connection and access
- Consider opportunities to establish a north/ south cycling connection west of the Physical Science Building, connecting the Big Chico Creek corridor path to First Street
- Partner with the City of Chico to establish safer city connections to campus to increase cycling use

Motorized Vehicles

The campus has a limited interior vehicular circulation system, with the exception of the Ivy/Warner corridor that bisects west campus from the campus core. West Sacramento Avenue makes up the northern edge of campus. West Second Street generally marks the southern boundary, though University facilities are located on the south side of the street.

Two major north/south streets, Esplanade and Nord Avenue, handle most of the vehicular traffic on the east and west sides of campus, respectively. Interior roads are limited to emergency and service use only (see Figure 2-9). The proposed Master Plan makes the following recommendations for vehicular circulation improvements:

- Utilize upcoming construction to underground power cables along the Ivy/ Warner corridor to reconfigure Ivy and Warner streets as a notable campus asset, with the ultimate goal of creating a “complete street.” A raised, planted median would act as a traffic calming measure and bioswales would collect street stormwater runoff. Raised, highly visible crosswalks (“tables”) would improve pedestrian safety. Dedicated bike lanes and separated pedestrian sidewalks would be provided.
- Enhance campus entries at existing and proposed drop-off and turnaround locations
- Continue to serve existing parking structures by providing appropriate ingress and egress, specifically for the proposed arena parking structure with access from West Sacramento Avenue and Warner Street
- Continue to provide access to interior accessible parking locations currently serving campus
- Create dedicated cycling lanes on any road improvement projects
- Improve the parking lot entrance to the Gateway Science Museum surface parking lot from Esplanade

The proposed Master Plan would also improve vehicle parking. While the overall increase in parking spaces is moderate, approximately 300 spaces, the proposed Master Plan would consolidate these spaces to better utilize the University’s existing land assets. The parking strategy would also support the proposed Master Plan objective of increasing the use of alternative transportation modes and reducing the carbon footprint of automotive commuting. The following improvements would be implemented (see Figure 2-10):

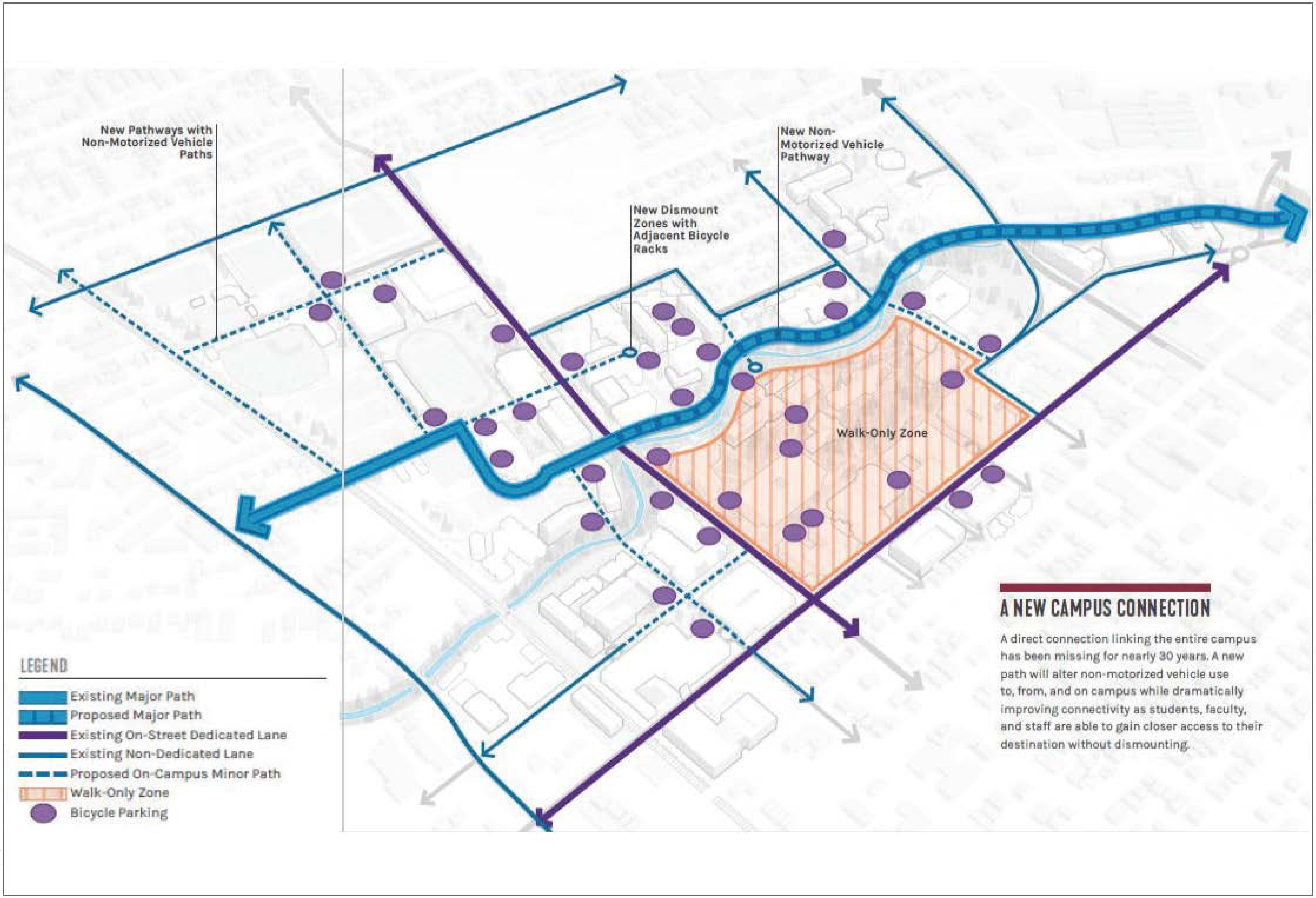
- Consolidate surface parking on west campus and replace it with a 900-vehicle parking structure
- Redevelop the existing surface parking lot between Chestnut and Hazel Streets south of Second Street as a mixed-use facility that includes 300 parking spaces
- Provide accessible parking to the campus interior as needed
- Create a 300-vehicle public parking structure on the Lost Park property (near 25/35 Main) that serves the hotel and convention center
- Expand and reconfigure the surface parking lot in the northeast section of the campus to accommodate the increased student, faculty, and staff presence proposed for this area

Transit

The campus is served by the Butte Regional Transit (B-Line) public bus system, which students can ride free during the school year. Multiple routes from throughout the City converge at the Transit Center located at the corner of Second Street and Salem Street, just south of Chico's campus core. The University also operates the Campus Connection Shuttle, a free shuttle service provided by the University Police Department to the campus community as an alternative to walking on campus at night. Riders must wait at a designated stop along the Campus Connection route in order to be picked up and may only be dropped off at designated stops.

University Village students can utilize the University Village (UV) Bus, leaving UV every 30 minutes to transport students to classes on the main campus as well as the CSU, Chico University Farm.

As campus facilities are built or removed and circulation patterns reconfigured, the University will need to update designated drop-off and pickup locations to continue to best support the campus community.



SOURCE:CSU Chico 2018

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FIGURE 2-8

Non-Motorized Vehicle Network

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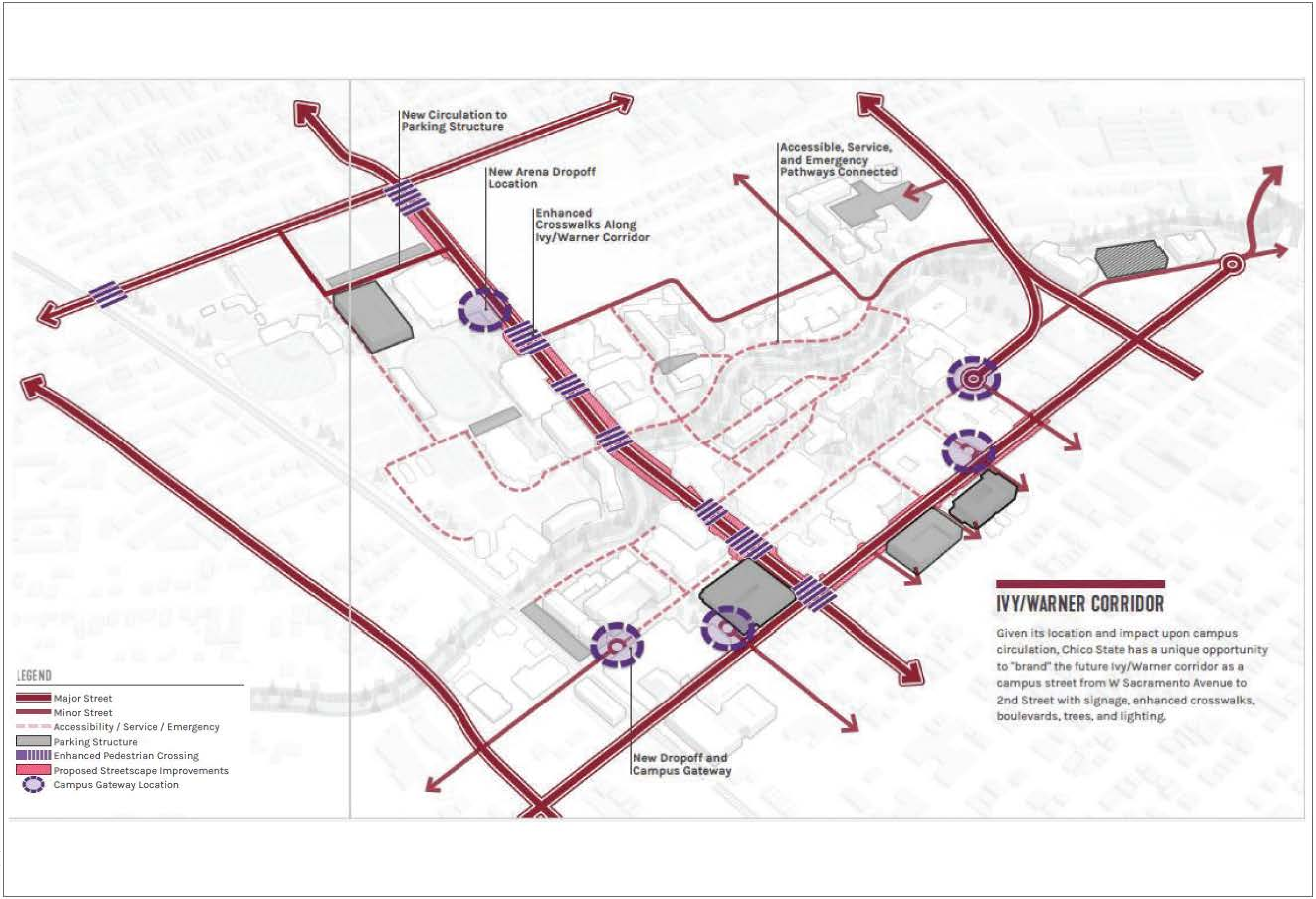

SOURCE: CSU Chico 2018

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FIGURE 2-9

Vehicular Network

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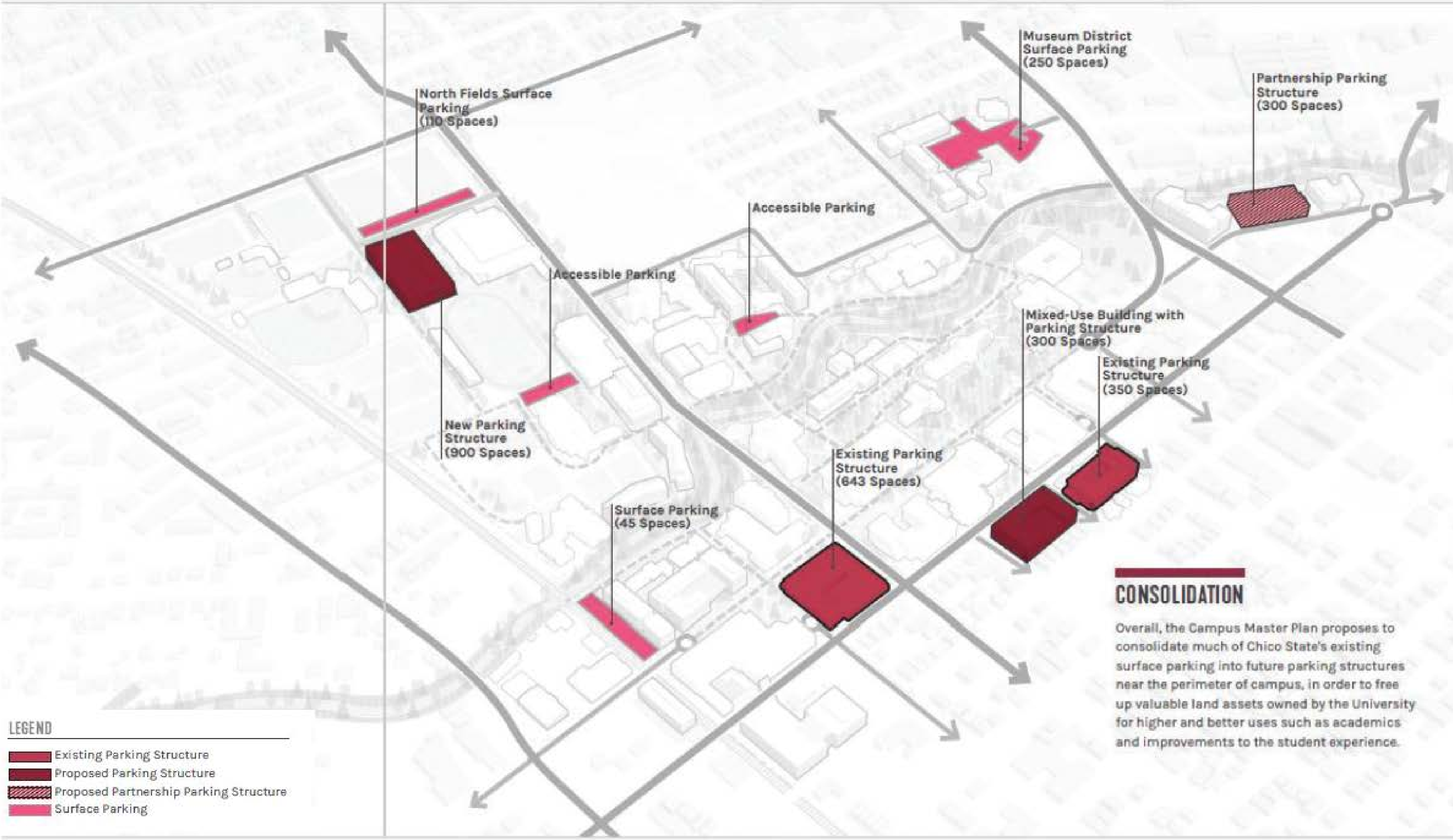

SOURCE:CSU Chico 2018

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FIGURE 2-10

Parking

CSU Chico Master Plan EIR

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2.7.2 Sustainability

The proposed Master Plan incorporates and implements the University's sustainability goals. Proposed Master Plan strategies include the following:

- Capitalize on building location and directional placement (passive strategies) to enhance shading for cooling needs.
- Maintain and improve tree shading.
- Utilize best management practices to assist evapotranspiration and ground infiltration.
- Infiltrate aquifer for storage, utilize native landscaping practices to avoid irrigation demand where possible.
- Create increased reliability in electrical systems in case of outages and decentralize from central plant to create resilience through district systems. Utilize renewable energy production and battery storage onsite to allow temporary or selective campus operations during utility power disruptions.
- Utilize low-impact development techniques to manage and capture stormwater for aquifer storage.
- Maintain 2030 neutrality target through tactics such as net zero building development, existing building renovations, facilitating non-vehicular transit, and other methods identified in the updated Climate Action Plan.
- Preserve existing trees to the maximum extent feasible and plant new trees in coordination with development.
- Support Big Chico Creek by managing edges to prevent erosions. Runoff can also be treated before entering the creek system through natural landscaping and infiltration.
- Minimize surface parking areas and utilize permeable pavers.
- Decrease stormwater runoff into Big Chico Creek and treat runoff on campus as much as possible.
- Increased redundancy, decentralization of public services.
- Design considerations for building scale ventilation and filtration systems. Increasing biodiversity through campus with various ecological and environmental strategies including establishing the campus as a wildlife sanctuary through vegetation choices and creek management.

In addition, the CSU Board of Trustees adopted a Sustainability Policy in 2014. This policy includes numerous goals related to the sustainability of the CSU system and individual campuses. The following goals are identified as applicable to future development considered under the proposed Master Plan:

- The CSU will strive to reduce facility GHG emissions to 80 percent below 1990 levels by 2040. Campus tracking and reporting of their GHG inventory will be grounded in the American College and University President's Climate Commitment guidelines or equivalent, with consideration to campus requested improvements. Metrics will include GHG emissions per FTE.
- All CSU campuses will pursue water resource conservation to reduce water consumption by 10 percent by 2016, and 20 percent by 2020 including such steps to develop sustainable landscaping, install controls to optimize irrigation water use, reduce water usage in restrooms and showers, and promote the use of reclaimed/recycled water. In the event of a declaration of drought, the CSU will cooperate with the state, city, and county governments to the greatest extent possible to reduce water use.
- Campuses shall seek to reduce the solid waste disposal rate by 50 percent (PRC § 42921) by 2016, by 80 percent by 2020, and move to zero waste.
- All future CSU new construction, remodeling, renovation, and repair projects will be designed with consideration of optimum energy utilization, low life cycle operating costs, compliance with all applicable

energy codes (enhanced Title 24 energy codes) and regulations. In the areas of specialized construction that are not regulated through the current energy codes, such as historical buildings, museums, and auditoriums, the CSU will ensure that these facilities are designed to consider energy efficiency. Energy efficient and sustainable design features in the project plans and specifications will be considered in balance with the academic program needs of the project within the available project budget.

- The CSU shall design and build all new buildings and major renovations to meet or exceed the minimum requirements equivalent to LEED Silver.
- Each campus shall operate and maintain a comprehensive energy management system that will provide centralized reporting and control of the campus energy related activities.

2.8 Project Approvals and Intended Uses of the EIR

This EIR is an informational document for both agency decision-makers and the public and will be used to provide the required analysis under CEQA in support of the CSU Board of Trustees' consideration of the proposed Master Plan. The CSU Board of Trustees is the lead agency responsible for certification of this EIR as adequate under CEQA and the related approval of the proposed Master Plan.

The CSU, Chico campus is governed by the CSU Board of Trustees, which is the State of California acting in its higher education capacity. Under applicable law, the CSU alone is responsible for governance of its property (see Ed. Code § 84030 – 84031). As such, while CSU strives to work with local governments and develop its campuses in a manner compatible with local planning objectives where feasible, CSU, as an entity of the State of California, is not subject to local planning requirements.

Table 2-2 identifies the various agency approvals required for approval of the proposed Master Plan and implementation of subsequent master planned projects.

Table 2-2. Anticipated Permits and Approvals for Master Plan Implementation

Applicable Jurisdiction or Agency	Compliance, Approval or Permit	Responsible Agency
Master Plan		
Board of Trustees of the California State University	Approval and adoption of the proposed Master Plan	
	EIR Certification Approval of schematic plans for future facilities and improvements	
Individual Developments Under The Master Plan		
Board of Trustees of the California State University	Amendment to the Capital Outlay Program, as necessary	
	Schematic Plans and other related actions and approvals, as necessary	
Division of the State Architect	Accessibility Compliance	
State Fire Marshal	Facility Fire and Life Safety Compliance	
U.S. Fish and Wildlife Service	Endangered Species Act Incidental Take Permit - Required if federally listed species would be taken in advance of the base-wide Habitat Conservation Plan, Implementation Agreement and Incidental Take Permits	

Table 2-2. Anticipated Permits and Approvals for Master Plan Implementation

Applicable Jurisdiction or Agency	Compliance, Approval or Permit	Responsible Agency
California Department of Fish and Wildlife	California Endangered Species Act Incidental Take Permit – Required if state listed species would be taken in advance of the base-wide Habitat Conservation Plan, Implementation Agreement and Incidental Take Permits	✓
	Fish and Game Code Section 1600 Streambed Alteration Agreement - Required if streambeds, waterways or riparian habitat would be affected	
U.S. Army Corps of Engineers	Clean Water Act Section 404 Fill permit – Required if jurisdictional wetlands would be filled	
Regional Water Quality Control Board	National Pollutant Discharge Elimination System Permit (NPDES) - Storm Water Pollution Prevention Plan (SWPPP) and Notice of Intent to Comply with NPDES Construction Permit	
	Clean Water Act Section 401 Water Quality Certification - Required if jurisdictional wetlands would be filled	✓
Butte County Air Quality Resources District	Authority to Construct and/or Permits to Operate for stationary sources (e.g., generators)	✓
	Hazardous Materials Removal and Asbestos Demolition	
City of Chico	Encroachment permits for projects involving construction in City right-of-way.	
	Approval of new connections to City utilities, such as sewer or storm drain.	
	City approvals may be required for off-campus public-private partnership (P3) projects.	✓

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3 Environmental Setting and Impacts

This section of the Draft Environmental Impact Report (EIR) describes the environmental setting and the scope of the environmental analysis and attributes of the analytical approach. This information is provided to assist readers in understanding the manner in which the impact analyses have been conducted in this EIR.

3.0 Scope of the Environmental Analysis

The proposed Master Plan Project (or project) would guide the physical development of the California State University Chico (CSU, Chico) campus. Approval of the project would not constitute a commitment to any specific component of the Master Plan, construction schedule, or funding priority. Each development embarked on by CSU, Chico during the lifespan of the Master Plan would be individually reviewed and approved by the California State University Board of Trustees (Board of Trustees) or its designee. This EIR provides a program-level environmental assessment, which evaluates the environmental effects of the project and focuses on full development of the main campus, University Village, and University Farm as contemplated by the Master Plan. These areas are referred to in this EIR as the main campus, University Village and University Farm and are collectively considered the “project site.” Additionally, the near-term developments that are expected to be developed within the next five years are evaluated at a project-specific level.

Based on the Notice of Preparation (NOP) scoping process, as described in Chapter 1, Introduction, this EIR addresses the regulatory setting, impacts, and mitigation measures of the following technical issue area or topics in detail:

- Aesthetics
- Air Quality
- Biological Resources
- Cultural Resources and Tribal Cultural Resources
- Energy
- Geology, Soils and Paleontology
- Greenhouse Gases
- Hazards, Hazardous Materials and Wildfire
- Hydrology and Water Quality
- Land Use
- Noise
- Population and Housing
- Public Services and Recreation
- Transportation
- Utilities

Potential impacts related to Agricultural and Forestry Resources and Mineral Resources are not likely to be significant under the California Environmental Quality Act (CEQA) and CEQA Guidelines (Cal. Pub. Resources Code, § 21000 *et seq.*; Cal. Code Regs. tit. 14, § 15000 *et seq.*), thus, these topics are not addressed in this EIR. See Chapter 5 for additional information on effects found to be less than significant.

3.0.1 Environmental Baseline/Existing Conditions

An EIR must include a description of the existing physical environmental conditions in the vicinity of the project to provide the "baseline physical conditions" against which project-related changes can be compared. Normally, the baseline condition is the physical condition that exists when the NOP is published (Cal. Code Regs. tit. 14, § 15125). The NOP for the Project was published on April 29, 2019. Therefore, 2019 will be the baseline year for analysis in this EIR. Where 2019 data is not available, the most recent information is used to describe the existing physical conditions. Campus demographic information is primarily drawn from the 2018-2019 academic year. The California Environmental Quality Act (CEQA) Guidelines recognize that the data for establishing an environmental baseline cannot be rigid. Because physical environmental conditions may vary over a range of time, the use of environmental baselines that differ from the date of the NOP is reasonable and appropriate in certain circumstances when doing so results in a more accurate or conservative environmental analysis.

3.0.2 Definition of the Study (Project) Area

The project area (project site, Master Plan area) consists of the main campus, the University Village, and the University Farm (see Figures 2a, 2b, and 2c). The extent of the project area varies among the environmental resource areas analyzed in this EIR, depending on the extent of the area in which impacts could occur. For example, the evaluation of population and housing impacts considers the Butte County Association of Governments (BCAG) region, which includes the cities of Biggs, Chico, Gridley, Oroville, and the Town of Paradise. This region is the basis for growth forecasts and various regional plans that relate to population and housing impacts. Whereas, geology, soils and paleontological impacts, for example, are assessed only for the project area, which is where such impacts could result with the Project. (See Chapter 2, Project Description, for further description of the project area.) The study area for each environmental resource area is defined in the pertinent resource sections included in chapter 3.

3.0.3 California State University Autonomy

CSU, Chico is an entity of the CSU system, which represents the state operating in its higher education capacity and therefore is not subject to local government planning and land use plans, policies, or regulations. The proposed Master Plan would be subject to state and federal agency planning documents described herein, but would not be bound by local or regional planning regulations or documents, including but not limited to the City of Chico General Plan or municipal code. This EIR may consider, for coordination or informational purposes only, certain aspects of local plans and policies where appropriate.

3.0.4 Impact Analysis

The analyses of impacts in this EIR are based on varying factors, depending on the primary cause of the impact. Impacts related to biological resources; cultural resources; geology, soils and paleontology; hazards (including hazardous materials and wildfire); and hydrology and water quality are analyzed primarily on the basis of the location and amount of ground disturbance (the footprint of development) that would result from the Project. Impacts related to air quality; energy; greenhouse gas emissions; noise; population and housing; public services and recreation; transportation; and utilities are analyzed on the basis of the net population increase as well as the location, type and/or size of development contemplated by the Project.

Impacts are evaluated in terms of changes due to the project as compared to existing conditions. For each environmental topic or resource area, the conditions anticipated as the result of Master Plan implementation are compared to baseline (current existing) conditions, to characterize the anticipated change. It should be noted that existing conditions do not constitute a significant impact for the purposes of CEQA. “[T]he purpose of an EIR is to identify the significant effects of a project on the environment, not the significant effects of the environment on the project” (*Ballona Wetlands Land Trust v. City of Los Angeles* (2011) 201 Cal.App.4th 455, 473 and California Building Industry Association v. Bay area Air Quality Management District (2015) Cal.App 4th.).

This chapter addresses the environmental setting, environmental impacts, and mitigation measures associated with the project with respect to the following environmental topics:

- Section 3.1, Aesthetics
- Section 3.2, Air Quality
- Section 3.3, Biological Resources
- Section 3.4, Cultural Resources
- Section 3.5, Energy
- Section 3.6, Geology, Soils, and Paleontology
- Section 3.7, Greenhouse Gas Emissions
- Section 3.8, Hazards and Hazardous Materials
- Section 3.9, Hydrology and Water Quality
- Section 3.10, Land Use and Planning
- Section 3.11, Noise
- Section 3.12, Population and Housing
- Section 3.13, Public Services and Recreation
- Section 3.14, Transportation
- Section 3.15, Utilities and Service Systems

Sections 3.1 through 3.15 of this Draft EIR, which present technical analysis for each of the 15 environmental topics evaluated in detail, include the following components.

Regulatory Setting: This subsection presents information on the laws, regulations, plans, and policies that govern or pertain to the environmental topic being discussed. As noted above in Section 3.0.3, California State University Autonomy, the CSU is the state operating in its higher education capacity and is not subject to local land use plans, policies, or regulation, although this EIR consider, for coordination or informational purposes only, certain local plans and policies where appropriate.

Environmental Setting: This subsection describes existing environmental conditions on the CSU, Chico campus, off-campus properties, and in the surrounding areas as appropriate, in accordance with State CEQA Guidelines Section 15125. The discussions of the environmental setting focus on information relevant to the issue under evaluation. The extent of the geographic area considered may differ between environmental topics, depending on the locations of potentially affected resources.

Environmental Impacts and Mitigation Measures: For each environmental topic, this subsection presents thresholds of significance, an overview of the analytical methodology including technical studies upon which the analyses rely, and a detailed discussion of the potentially significant effects of the proposed Master Plan on the existing environment, in accordance with State CEQA Guidelines Section 15126.2. The thresholds of significance are defined and thresholds for which the project would have no impact are disclosed and dismissed from further evaluation. Project impacts and mitigation measures are numbered sequentially in each subsection (Impact 3.2-1, Impact 3.2-2, Impact 3.2-3, etc.). A summary impact statement precedes detailed impact analysis for each significance thresholds. The impact analysis includes the substantial evidence upon which significance determinations are based.

For each impact determination, a less than significant impact indicates that the proposed Master Plan project would not result in a substantial adverse change in the physical environment. A potentially significant or significant impact indicates a substantial adverse change in the physical environment and requires the identification of feasible mitigation that would avoid, minimize, or reduce those impacts, in accordance with State CEQA Guidelines Section 15126.4.

Where an existing law, regulation, or permit requires mandatory and prescriptive actions that provide environmental protections, with little or no discretion required for their implementation and with the effect of avoiding an impact or maintaining an impact at a less than significant level, the environmental protections afforded by the regulations are considered before determining impact significance. In contrast, where existing laws or regulations specify a mandatory permit process for future projects, performance standards without prescriptive actions to accomplish them, or other requirements that afford substantial discretion in their implementation, impact significance is determined prior to consideration of the environmental protections afforded by the regulatory requirements. In such circumstances, impacts may be potentially significant or significant, and those regulatory requirements may then be included as mitigation measures.

This subsection also describes whether mitigation measures would reduce project impacts to less than significant levels. Significant and unavoidable impacts are identified where applicable, in accordance with State CEQA Guidelines Section 15126.2(b).

References: References for information sources cited in the impact chapters.

3.0.5 Cumulative Impacts

CEQA requires that in addition to project impacts, an EIR must discuss cumulative impacts. Cumulative impacts refer to two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts. The cumulative impact from several projects is the change in the environment, which results from the incremental impact of the project when added to other closely related past, present, and reasonably foreseeable probable future projects. Cumulative impacts can result from individually minor but collectively significant projects taking place over a period of time (Cal. Code Regs. tit. 14, § 15355).

The CEQA Guidelines clarify a number of issues with respect to cumulative impacts, as follows.

- An EIR should not discuss cumulative impacts to which the project would not contribute.
- If the combined cumulative impact (impacts from other projects combined with the impact from the proposed project) is not significant, then the EIR should briefly indicate why the impact is not significant, and no further evaluation is necessary.
- If the combined cumulative impact is significant, the EIR discussion must reflect the severity of the impact and the likelihood of its occurrence.

- If the combined cumulative impact is significant, the EIR also must indicate whether the project's contribution to that significant cumulative impact will or will not be cumulatively considerable.
- An EIR may determine that the project's contribution is rendered less than cumulatively considerable if the project is required to implement or fund its fair share of a mitigation measure or measures designed to alleviate the cumulative impact (Cal. Code Regs. tit. 14, § 15130[a]).

The CEQA Guidelines provide additional guidance with respect to how an adequate cumulative impact analysis might be completed and note that this may be based on:

- A list of past, present, and probable future projects producing related or cumulative impacts, or
- A summary of projections contained in an adopted general plan or related planning document, or in a prior environmental document which has been adopted or certified, which described or evaluated regional or area-wide conditions contributing to the cumulative impact (Cal. Code Regs. tit. 14, § 15130[b]).

To evaluate the cumulative impacts of the project, the analysis in this EIR uses the projection method. As the project will build out over a period of 10 years, and is located in an established developed area (i.e., the CSU. Chico campus within the City of Chico), the projection method is appropriate. The City of Chico 2030 General Plan (adopted 2011) and General Plan EIR (SCH# 2008122038) are two important sources for evaluating area-wide conditions. Certain resource analyses may incorporate additional projections. For example, this EIR uses BCAG regional growth forecasts for 2030 in Section 3.12, Population and Housing. The cumulative analysis for each topic indicates the geographic area and analytical approach used in the analysis.

In addition, to ensure there are no proposed projects in the City of Chico near the Master Plan area that would be inconsistent with the General plan, or otherwise exceed the development assumptions of the General Plan, the City of Chico's current Development Activity report (August 2019) was reviewed. All proposed projects in the vicinity of CSU, Chico are consistent with the General Plan and consistent with existing development patterns.

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3.1 Aesthetics

This section of the Draft EIR evaluates potential Master Plan impacts on existing visual conditions, including scenic views, scenic resources, and lighting associated with implementation of the proposed Master Plan Project (or project). This section describes the existing visual conditions on the main campus, University Farm, and University Village, and evaluates the potential for project-related visual impacts, considering proposed project design features that could reduce or eliminate associated impacts. No scoping comments were received regarding aesthetics in response to the Notice of Preparation (NOP).

3.1.1 Existing Conditions

Study Area

The study area for the aesthetics analysis includes the main campus, University Farm, University Village, and the surrounding parts from which these areas are visible. These University-owned areas are located within the City of Chico and Butte County, and in some areas within or surrounded by unincorporated County lands. The main campus and University Village are in the incorporated City, while University Farm is on County land and entirely surrounded by unincorporated agricultural lands (Butte County 2019).

Visual Character of Project Site

Main Campus

Since its founding in 1887, the University has been characterized by a mix of natural resources and the built environment. The main campus was strategically located along Big Chico Creek, a major ecological feature in the area (CSU, Chico 2019a). Native trees such as valley oak, alder, and western sycamore, and shrubs including western redbud and Himalayan blackberry line the north and south banks of Big Chico Creek. The main campus is mostly developed, with the exception of Big Chico Creek and its riparian corridor, which flows southwest through and bisects the m campus. The entire main campus is designated as an arboretum, with over 200 species of plants (CSU, Chico 2020). Topography is generally level, sloping slightly toward Big Chico Creek, with elevations ranging from approximately 185 to 210 feet above mean sea level (amsl).

As shown in Figure 2-2a in the Project Description, the main campus is generally bounded by the Union Pacific Railroad (UPRR) on the west; West Sacramento, Legion, and Mansion Avenues on the north; Esplanade, Children's Park, Salem, and Normal Streets on the east; and West Second and West Third Streets on the south. The main campus sits between the city's commercial downtown area to the south and predominantly residential neighborhoods of the north, northwestern and western areas. The main campus includes a collection of historic and architecturally significant buildings arranged around a system of open spaces and pedestrian pathways. The tallest buildings on campus including Butte Hall, 108 feet, and Whitney Hall, 110 feet. Much of the architectural character is defined through the use of concrete and brick building materials that visually unify the campus. Along West First Street and within the historical campus core south of Big Chico Creek, buildings and structures use distinct red and brown brick masonry, Spanish tile roofs, and decorative columns and arches. Traditional fluted posts, acorn lighting fixtures, and more contemporary orb fixtures mounted on raised concrete foundation are utilized (CSU, Chico 2019a). Romanesque-style brick buildings including Kendall Hall, Trinity Hall, and Laxson Auditorium are located in the historic campus core, built after the Normal School fire in 1927. Plantings around the campus core buildings include flowers such as azaleas, hydrangeas, camellias, and roses, as well as Japanese maple trees and New Zealand Flax (CSU, Chico 2018).

With rapid expansion of the campus in the 1960s, newer buildings moved towards Neo-Formalist and International influences. Campus building construction peaked in the 1960s and 1970s and included such buildings as Holt Hall, Langdon Hall, Modoc Hall, and Plumas Hall, which combine newer architectural elements such as smooth faced-concrete and paneling, with the university's traditional characteristic elements such as red-brown masonry (CSU, Chico 2016). The Arts and Humanities building, completed more recently in 2016, perpetuates that visual theme and unity, through the use of a first-level brick base, complementing the campus's architectural heritage, while the second and third floors utilize glass walls representative of current architectural trends (CSU, Chico 2016). Figure 3.1-1 contains photos showing the distinct visual character of the main campus. The main campus is connected to pedestrian-oriented downtown Chico, which has its own distinct character. With material changes and delineations such as distinguishing paver type and patterns, various plantings, sculptural walls and buildings, and signage for wayfinding, the main campus has a defined edge that visually separates it from the downtown area (CSU, Chico 2019a).

In the Rio Chico area, large, mature trees line the pedestrian sidewalk and shade the properties. Homes in the Rio Chico area include those of Colonial Revival, vernacular, and Queen Anne Revival style architecture. The College Park properties include Minimal Traditional and Ranch style homes. The Minimal Traditional style of architecture includes gabled or hipped roofs and mass-produced, cost-effective materials, and are rectangular or L-shaped in plan, with emphasis on practicality in design. Ranch style homes also include gabled or hipped roofs, with entry points situated under a moderate roof overhang, and a variety of exterior building materials such as brick and stone.

University Village

University Village is located approximately 1 mile west of campus and is developed with student housing and related amenities. There is a total of 25 buildings consisting of six-person, three bedroom clusters and double studios (CSU Chico, 2019b). Buildings and structures use off-white paneling with red accents for doors and balcony fencing. The buildings are two-story, low-rise buildings with outdoor staircases and entryways. The entire property is landscaped, with a row of mature trees lining West Sacramento Avenue, and various trees and shrubs spread throughout the property. There are two pools, bicycle and vehicular surface parking, with gated entries and exits. Light poles are present throughout the paved parking areas. The site is generally level, with elevations ranging from approximately 175 to 185 feet amsl.

University Farm

The University Farm is an 800-acre farm facility located two miles south of the main campus and surrounded by agricultural land. Established in 1960, the University Farm is devoted to field, tree crops and pasture and a core working "farm" area with an array of plant and animal facilities, including storage buildings and barns, a dairy and meat laboratory, cattle enclosures, and research facilities (CSU Chico 2005). The topography of farm is generally level, with elevations ranging from approximately 170 to 190 feet AMSL.

Visual Character of the Surrounding Area

Butte County is located centrally in northern California and in the northeastern part of the Sacramento Valley, extending into the northern Sierra Nevada mountain range. The County has three general topographical areas: the valley region, the foothills east of the valley, and the mountain region east of the foothills (Butte County 2018).

Big Chico Creek

Meriam Library

Kendall Hall Entrance

Kendall Hall

FIGURE 3.1-1

Existing Conditions

California State University, Chico Master Plan EIR

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The City of Chico is located primarily in the valley region at the westernmost part of the County. The valley is a wide, expansive plain including numerous croplands, nut and fruit orchards, and meadows for livestock grazing. The main campus, University Farm, and University Village are located on this plain, where intervening vegetation on flat land obscures views of the Sierra Nevada. Some areas of the City extend into the foothill region, where the valley meets the foothill woodland and forest. This includes Bidwell Park, which spans 3,670 acres from west to east, ranging in elevation from approximately 200 feet AMSL at Lower Bidwell Park to 1600 feet AMSL at the northeastern-most point of Upper Bidwell Park (City of Chico 2013a). Bidwell Park follows Big Chico Creek east of the campus and is noted for its dense tree cover in the Lower Park and its steep geography and rock formations in the Upper Park. Numerous trails, picnic areas, and swimming holes are located throughout the Park. Open space lands are predominant in northern and northeastern parts of the City, with some open space integrated into the center of the City along creeks and channels.

The visual character of the areas adjacent to University-owned properties is summarized below. The discussion provides a general description of the visual attributes of the areas that are characterized by development, particular land uses, and/or landscape features.

City of Chico

Development within the City surrounds all sides of the main campus, and includes low-density residential to the north, medium-high density residential along the northwestern and western borders, and residential mixed-use to the south. Commercial mixed use comprises most of the downtown area, which borders the southeastern campus boundary. University Village is surrounded by other medium-high density residential neighborhoods to the north, east, and west, and single-family homes to the south.

Typical low-density residential areas in the City consist of moderately-sized, one- and two-story homes built along uniformly sized streets lined with trees. Medium-high density residential areas consist of low-rise apartment buildings, typically two-stories in height, along with townhouses and larger rentable homes. The most common street tree species in the City include Chinese pistache, crepe myrtle, and black walnut (City of Chico 2013b). Buildings of the downtown area include multi-story, mixed use structures including shops, commercial services, and recreational amenities. According to Chapter 19.44 of the Chico Code of Ordinances, buildings in the downtown area are permitted to reach 85 feet in height. Development patterns and architectural identity of older and newer areas of the City are distinct. The downtown core and surrounding neighborhood streets are constructed in a grid pattern with similar building exteriors, while newer areas include arterial streets, curvilinear street patterns, and a wider range of architectural styles (City of Chico 2017).

Unincorporated Butte County

The University Farm is surrounded by agricultural lands within unincorporated Butte County. These agricultural lands include dense croplands and orchards that block distant views. Surrounding the University Farm are large, mature trees planted in rows that further hide views in and out of the area. Topography of the adjacent areas range from 180 AMSL to 190 AMSL.

Scenic Resources, Views and Vistas

As a component of the CSU, the CSU, Chico campus is not subject to municipal regulation of uses on property owned or controlled by CSU, Chico in furtherance of the University's education purposes. CSU, Chico may consider, for information purposes only, aspects of local plans and policies for the communities surrounding the Master Plan area, but it is not bound by those plans and policies in its planning efforts. Refer to 3.10, Land Use and Planning, for further discussion on the concept of sovereign immunity. Nonetheless, while CSU is not subject to local government planning or ordinances, the General Plans for the City of Chico and Butte County provide some description of scenic views and/or scenic resources in the surrounding areas. The Butte County General Plan identifies Butte Creek Canyon as a scenic resource, with portions of Skyway Road southeast of the City providing scenic views of its topographic and geologic features. Butte County has established a Scenic Highway (-SH) overlay zone to preserve the aesthetic qualities of areas visible from roadways designated as scenic highways by the State or the Butte County Board of Supervisors. The –SH overlay zone extends 350 lineal feet outward from the scenic highway right-of-way (Butte County 2015). This includes areas of State Route 32 just west of the City boundary, as well as Skyway Road beginning southeast of the City boundary and extending up to the Town of Paradise (Butte County 2018). The Chico General Plan has designated Vallombrosa Avenue, E. 8th Street, the Esplanade, Chico Canyon Road, Centennial Avenue, Manzanita Avenue, Humboldt Road, and Bidwell Avenue as scenic roads in need of specialized treatment when performing roadway improvements (City of Chico 2017). According to the Chico General Plan Update Draft Environmental Impact Report (Draft EIR), scenic vistas for the city include views of the transition between landscapes (Sierra Nevada foothills to the east and the Central Valley to the west), the agricultural landscape, and the foothills and rising elevations to the east of Chico, the major creeks, Bidwell Park, and views of city neighborhoods.

Views from the Project Site

In its setting in the Sacramento Valley region, the main campus, University Farm, and University Village are built on flat topography lacking expansive views. Mature landscaping is present throughout the properties, and also lines surrounding streets and adjacent properties such that large portions of the Sierra Nevada Mountains are not visible. Due to the flat valley topography, panoramic views of agricultural fields of the plain and scenic resources such as Butte Creek Canyon are not available.

Near-Term Development Current Site Conditions

This section describes the aesthetics setting for the near-term development sites. The aesthetics setting information above also applies to these near-term development sites. Additional information is provided below related to specific development conditions on each site. Not all near-term development sites are further described below, such as the Meriam Library Renovation, as improvements would not change exterior site conditions.

Butte Hall

Butte Hall is located near the center of the campus, north of Big Chico Creek and south of Lassen Hall. As Butte Hall is seven stories tall, the building is intermittently visible from residential properties to the northwest behind tall, mature trees, as well as from properties lining West Sacramento Avenue. A cement plaza creates a visual connection with Plumas/Tehama Halls to the west.

Physical Science Building

The Physical Science Building is located south of Big Chico Creek near the southeast main campus boundary. The building is visible from a small portion of West First Street where there is an entrance to a paved surface parking lot. The Bidwell Presbyterian Church and large trees block views from south of the site, while the large trees lining Big Chico Creek block views from north, east, and west of the site. Ayres Hall is adjacently located southwest of the building.

Facilities Management & Services Yard

The Facilities Management & Services (FMS) yard is located at West First Street and Nord Avenue. The site consists of various single-story buildings with paved surface parking lots. The FMS yard is surrounded by commercial uses, with the exception of residences to the northeast across the railroad tracks. The site is visible from those properties lining Orange Street, along with motorists and pedestrians traveling near the site at West First Street and Nord Avenue.

Forensic Anthropology/Administrative Office Building

This proposed 33,000-gross-square-foot (GSF) academic building would be located south of West First Street between Cedar Street and the railroad tracks. As of May 2019, the site was undeveloped and used as a construction staging area with portable storage units and construction vehicles. The closest residences are located along Cedar Street, directly across from the site and to the south. The site is adjacent to the Wildcat Recreation Center (WREC) and across the street from the FMS Yard.

Athletic Field Improvements

Athletic Fields 6 and 7 are located west of the existing University Stadium and are currently covered in worn natural turf. The athletic fields are visible behind residential properties lining Nord Avenue and across the train tracks. Athletic Field 10B is another natural turf field west of the existing Soccer Stadium, visible from properties along Nord Avenue and West Sacramento Avenue.

New Creekside Housing

Two proposed residential buildings would be located north of Big Chico Creek, west of Warner Street, and south of Shurmer Gym and Yolo Hall. The site is currently an athletic field, with views from the south and east shielded by large trees lining Big Chico Creek.

Glenn Hall Replacement

The existing Glenn Hall is a 41,250 GSF building south of Big Chico Creek. The site is adjacent to the George Petersen Rose Garden and is within, and visible from, the northwest portion of the historical campus core.

WREC Expansion

The proposed expansion would be located south of the current WREC facility, attached at the second level by a skybridge over West Second Street. The current site is divided in two by Orange Street. Both sites are used as surface parking lots, while the east site also includes utilities infrastructure and a water tower. Adjacent uses include a church and other University-owned buildings.

Deen House Renovation

Located within the Historic South Campus Neighborhood on West Third Street, the Deen House requires both interior and exterior renovation to restore the building to its original character. The Deen House is visible from surrounding residential properties along West Third Street, as well as Sapp Hall next door.

Sapp Hall Renovation

Also located within the Historic South Campus Neighborhood on West Third Street, Ella Caroline Sapp Hall requires interior and exterior upgrades necessary for maintenance and restoration. Sapp Hall is visible from residential properties and commercial properties along West Third Street and Normal Avenue. The Deen House is visible next door. Views from the north are blocked by a large, multi-story parking structure.

Utilities Improvements

Near-term utilities improvements include the replacement and upgrade of various underground utility lines (water, steam, chilled water, etc.) and building energy controls.

Key Viewpoints

From off-site locations, intervening buildings and landscaping screen much of the main campus, University Farm, and University Village from view. The flat landscaping limits views of these properties to immediately adjacent streets and roadways. Viewers would be limited to motorists, and bicyclists on perimeter roadways and residents of surrounding areas. Most of the views from these residents and from other residential homes are obscured by large mature trees and established landscape. While these properties may be visible from higher-elevation points in the foothills or mountain region, views of the sites are not particularly distinct amid other surrounding developments.

Key viewpoints of the project are shown in Figure 3.1-2. These viewpoints have been selected based on visibility from public areas, the sensitivity of viewer groups, "important" or recognizable views of the campus, and views which would be potentially affected by implementation of the proposed project. The viewpoints are briefly described below:

Viewpoint 1: Big Chico Creek and North Bank Pathway

Viewpoint 1, looking northeast from the end of a bridge crossing, shows views of the existing pedestrian pathway that follows along Big Chico Creek. A storage building is visible to the side of the pathway and along the north bank of the creek. Large, mature trees of the Big Chico Creek riparian corridor follow along the pathway. A cement plaza connects the bridge and the existing pathway to campus buildings. Butte Hall is visible behind large trees and across a grass field.

Viewpoint 2: Campus Historic Core

Viewpoint 2, looking southwest from the campus historic core near Colusa Hall, contains views of the back of the *Three Sisters* concrete sculpture[1] and the George Petersen Rose Garden. From this view, Glenn Hall is visible to the right and Meriam Library is visible to the left.

Viewpoint 3: Trinity Hall from West Second Street and Chestnut Avenue

Viewpoint 3, looking northwest from West Second Street and Chestnut Avenue, consists of a centered view of the Trinity Hall bell tower, Bell Memorial Union to the left, the Performing Arts Center to the right, and the concrete pathways connecting these buildings. Bike racks, benches, and tall trees are located alongside these pathways.

1 https://www.csuchico.edu/fms/resources/campus-art/three-sisters.shtml

SOURCE: USDA 2016, USGS 2018, County of Butte 2018, CSU, Chico 2019

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FIGURE 3.1-2

CSU, Chico Campus Key Views

California State University, Chico Master Plan EIR

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FIGURE 3.1-3

Key Viewpoint 1

California State University, Chico Master Plan EIR

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FIGURE 3.1-3

Key Viewpoint 2

California State University, Chico Master Plan EIR

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FIGURE 3.1-3

Key Viewpoint 3

California State University, Chico Master Plan EIR

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FIGURE 3.1-3

Key Viewpoint 4

California State University, Chico Master Plan EIR

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FIGURE 3.1-3

Key Viewpoint 5

California State University, Chico Master Plan EIR

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FIGURE 3.1-3

Key Viewpoint 6

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FIGURE 3.1-3

Key Viewpoint 7

California State University, Chico Master Plan EIR

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FIGURE 3.1-3

Key Viewpoint 8

California State University, Chico Master Plan EIR

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FIGURE 3.1-3

Key Viewpoint 9

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FIGURE 3.1-3

Key Viewpoint 10

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FIGURE 3.1-3

Key Viewpoint 11

California State University, Chico Master Plan EIR

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FIGURE 3.1-3

Key Viewpoint 12

California State University, Chico Master Plan EIR

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FIGURE 3.1-3

Key Viewpoint 13

California State University, Chico Master Plan EIR

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FIGURE 3.1-3

Key Viewpoint 14

California State University, Chico Master Plan EIR

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Viewpoint 4: Future Creekside Housing from Ivy/Warner Street

Viewpoint 4, looking southwest from Ivy/Warner Street, contains views of the existing grass athletic field adjacent to Yolo Hall, Shurmer Gym, and the tennis courts. The field would eventually house two new five-story student housing buildings. View 4 contains a view of a storage building, that will also be demolished to make room for the student housing buildings, to the left, as well as a clear view of the Boiler Chiller Plant and its two large, white cylindrical structures.

Viewpoint 5: Aymer J. Hamilton Building from Arcadian Avenue

Viewpoint 5, looking east from Arcadian Avenue, shows views of the Aymer J. Hamilton building and its half-circle driveway. Large trees line the pedestrian walkway in front of the grass field of the half-circle driveway, and more trees are visible in the distance behind the building.

Viewpoint 6: Lassen Hall from Mansion Avenue and Citrus Avenue

Viewpoint 6, looking southwest from Mansion Avenue and Citrus Avenue, contains a view of Lassen Hall. Tall trees, shrubs, a grass field, and a pedestrian walkway are visible in front of the building. The top few stories of Butte Hall are also visible in the distance.

Viewpoint 7: Student Health Center and Future Arena from Warner Street and Legion Avenue

Viewpoint 7, looking northwest from Warner Street and Legion Avenue, contains views of the existing Student Health Center and a surface parking lot. Mature trees along College Drive block views of any distant structures

Viewpoint 8: Future Arena from West Sacramento Avenue and Warner Street

Viewpoint 8, looking south from West Sacramento Avenue and Warner Street, shows a view of an existing surface parking lot, a single-family residence along Warner Street, and the intersection of Warner Street and Stadium Way.

Viewpoint 9: Rio Chico from Rio Chico Way

Viewpoint 9, looking northeast from Rio Chico Way, contains views of existing housing structures of the property known as Rio Chico. Large, mature trees line the pedestrian sidewalk and shade the Rio Chico properties.

Viewpoint 10: WREC Expansion from West Second Street

Viewpoint 10, looking southeast from West Second Street, shows parking lots on both sides of Orange Street and structures of a PG&E-owned substation to the right, directly across from the existing WREC.

Viewpoint 11: Future Mixed-Use Building from West Second Street

Viewpoint 11, looking southeast from West Second Street in front of the Bell Memorial Union, shows an existing surface parking lot between Chestnut Street and Hazel Street that would eventually become a mixed-use facility. Large trees are scattered along the pedestrian sidewalk and within the existing parking lot.

Viewpoint 12: 25 and 35 Main Street from Shasta Way

Viewpoint 12, looking east from Shasta Way, includes the University Foundation-owned buildings of 25 and 35 Main Street across the Esplanade from the main campus. Street parking and an entrance between the two buildings that leads to more surface parking lots is visible along Main Street.

Viewpoint 13: University Farm

Viewpoint 13, looking north from Hengst Drive, shows a view alongside the University Farm. The University Farm is surrounded by agricultural lands, which include dense croplands and orchards that block distant views. There are large, mature trees planted in rows that further hide views into the area.

Viewpoint 14: University Village from West Sacramento Avenue

Viewpoint 14, looking north from West Sacramento Avenue, shows the University Village student housing buildings and a gated entryway leading to surface parking. The buildings are two stories tall, with outdoor staircases and entryways. The entire area is landscaped, with mature trees lining West Sacramento Avenue, and various trees and shrubs spread throughout the property.

Light and Glare

Nighttime lighting is necessary to provide and maintain a safe and secure environment. Light that falls beyond the intended area of illumination is referred to as “light trespass.” Types of light trespass include spillover light and glare. Spillover light, which is light that illuminates surfaces beyond the intended area, is typically caused by artificial lighting sources, such as from building security lighting, signs, parking lot lights, roadway lights, and stadium lights on playing fields. Spillover light can adversely affect light-sensitive uses (i.e., adjacent residences), by creating unwanted illumination. Because light dissipates as it moves farther from its source, the intensity of the lighting source is often increased to compensate for dissipating light, which can increase the amount of light that illuminates adjacent uses. The type of light fixture determines the extent to which light will spill over onto adjacent properties and/or be visible from far away. Modern, energy-efficient fixtures that face downward, such as cutoff-type fixtures and shielded light fixtures, are less obtrusive than older light fixtures.

Glare can result from sunlight or from artificial light reflecting off building exteriors, such as glass windows, metal roofs or other highly reflective surface materials. Squinting or turning away from a light source is an indication of glare. Cutoff-type light fixtures minimize glare because they emit relatively low-intensity light at these angles. Glare resulting from sunlight reflecting off building exteriors can be reduced with design features that use low-reflective glass and exterior materials and colors that absorb, rather than reflect, light.

Sources of nighttime illumination and potential glare on and adjacent to the main campus are generally limited to the interior and exterior lights of buildings; lighting visible through windows; parking lot and path lighting; and lighting along campus streets. When in use, night lighting is also present in the sports fields located in the northwestern portion of the main campus. These sources of illumination are typical of those in a developed area. In addition, cars and trucks traveling to, from, and within the area, as well as parked cars, represent another source of glare. Natural and artificial light reflect off various surfaces and can create localized occurrences of daytime and nighttime glare. Buildings and structures made with glass, metal, and polished exterior roofing materials exist throughout the main campus. Due to the high density of buildings, roadways, and pathways, the downtown area contains the most sources of light and glare and is the most brightly illuminated area near the campus.

The University Farm consists of agricultural and open space areas requiring minimal or no nighttime lighting and with minimal sources of glare. Existing site lighting for the University Farm is very limited. Most of the lighting at the University Farm is used for security reasons. Most of the existing facilities at the University Farm are enclosed, minimizing light pollution (CSU Chico 2005).

The University Village is lighted throughout the surface parking lots and paths, as well as building exteriors. This lighting is typical of those found in other multi-family housing units surrounding the site. West Sacramento Street contains street lighting and has cars and trucks traveling within the area as a source of glare.

3.1.2 Regulatory Setting

Federal

State Scenic Highway Program

The California Department of Transportation (Caltrans) manages the State Scenic Highway Program detailed in Streets and Highways Code Section 260. A highway may be designated as scenic depending upon how much of the natural landscape can be seen by travelers, the scenic quality of the landscape, and the extent to which development intrudes upon the traveler's enjoyment of the view. To become an officially designated scenic highway, a local jurisdiction must adopt a scenic corridor protection program for the eligible state scenic highway, apply to Caltrans for scenic highway approval, and receive notification from Caltrans that the highway has been designated as a Scenic Highway. The scenic corridor protection program is made up of adopted ordinances to preserve the scenic quality of the corridor or document such regulations that already exists in various portions of local codes. State and county roads can be designated as scenic highways. There are no highways or roads within the City eligible for inclusion in the State Scenic Highway Program (Caltrans 2017).

State

CSU Campus Design Review Process

The California State University (CSU) System uses a design review process at all of its campuses, as part of the schematic design preparation process (CSU 2004). This process involves the appointment of an outside master plan architect by the President of each campus. The architect reviews design for new construction projects for appropriateness of design and quality based on the design vocabulary of the particular campus, which is currently established in the design guidelines included in the 2005 Master Plan for CSU, Chico. The outside architectural review is then reviewed and interpreted by the building official on campus, who has the ultimate responsibility for determining how the review will affect the ultimate design of a new building project. The proposed master Plan would update the existing design guidelines.

Local

Because CSU, Chico is a component of the CSU System, which is a state agency, the project is not subject to local government planning or ordinances. Accordingly, because neither local general plans or any other local land use plans or ordinances are applicable to CSU, Chico, such local plans and ordinances are not used for impact determination but are described for informational purposes.

The main campus and University Village are within an urbanized area, while University Farm is within a non-urbanized area. The main campus is zoned as Public/Quasi Public Facilities, while University Village is zoned as Medium-High Density Residential. The Public/Quasi Public zone development standards are determined by specific plan or planned development permit (Ord. 2427 §34, Ord. 2519 §19). The Medium-High Density Residential zone includes height limits of 45 feet for primary housing units, minimum lot sizes of 4,000 square feet for interior lots, and setbacks ranging from 5 to 15 feet (Ord. 2427 §14, Ord. 2494 §21, Ord. 2511, §10). Additionally, there are sections south of the university zoned as High Density Residential with an 85-foot height limit, The University Farm is zoned as Agriculture – 40 in the Butte County Zoning Ordinance, with setback standards of 20-25 feet and maximum permitted height of non-residential structures at 50 feet, with the exception of agricultural support structures such as water tanks and silos. (Butte County 2015). The main campus, University Village, and University Farm do not conflict with any development standards of the City or County.

3.1.3 Thresholds of Significance

The significance criteria used to evaluate the project impacts to aesthetics are based on Appendix G of the CEQA Guidelines. According to Appendix G of the CEQA Guidelines, a significant impact related to aesthetics would occur if the project would:

1. Have a substantial adverse effect on a scenic vista.
2. Substantially damage scenic resources including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway.
3. In non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings. (Public views are those that are experienced from publicly accessible vantage point). If the project is in an urbanized area, conflict with applicable zoning and other regulations governing scenic quality.
4. Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area.

3.1.4 Impact Analysis

Methodology

Field Visit

Dudek environmental planners conducted a field visit of the site and surrounding area on November 8, 2019, to assess the existing visual character of the landscape. Photographs were taken of the site from the viewpoints used in the evaluation (discussed in Section 3.1.1, Existing Conditions, above). Key viewpoints were chosen with consideration of the amount of visual change that would result from the individual project components, as well as availability of public views. The analysis considers the quality and character of existing view, the number and sensitivity of potential viewers, the degree of visual change, and the consistency of proposed development with established standards.

Impact Analysis

Impact AES-1. The project would not have a substantial adverse effect on a scenic vista. (Less than Significant)

While CSU is not subject to local government planning or ordinances, the General Plans for the City of Chico and Butte County provide some description of scenic views in the surrounding areas. The Butte County General Plan identifies Butte Creek Canyon as a scenic resource, with portions of Skyway Road southeast of the City providing scenic views. According to the Chico General Plan Update Draft Environmental Impact Report (Draft EIR), scenic vistas for the city include views of the transition between landscapes including the foothills and rising elevations to the east of Chico, the major creeks, Bidwell Park, and views of city neighborhoods. There are no significant viewpoints of these vistas from the Master Plan area that would be impacted. Similarly, there are viewpoints adjacent to the Master Plan area that would be impaired by build-out of the Master Plan. While areas of the project site would potentially be visible from higher-elevation points in the foothills, such as Butte Creek Canyon, views of the project site areas would not be particularly distinct amid other surrounding developments. Therefore, impacts related to scenic views would be **less than significant**.

Impact AES-2. The project would not substantially damage scenic resources, including, but not limited to trees, rock outcroppings, and historic buildings within a state scenic highway. (No Impact)

While there are no state-designated scenic highways or roads within the City, the Butte County Scenic Highway overlay zone includes areas of State Route 32 just west of the City boundary, as well as Skyway Road beginning southeast of the City boundary and extending towards the Town of Paradise (Butte County 2018). Additionally, the Chico General Plan has designated Vallombrosa Avenue, E. 8th Street, the Esplanade, Chico Canyon Road, Centennial Avenue, Manzanita Avenue, Humboldt Road, and Bidwell Avenue as scenic roads in need of specialized treatment when performing roadway improvements.

The Master Plan proposes a series of transportation improvements, including creation of pedestrian and bicycle paths, adding raised medians, and enhancing campus entryways at drop-off and turnaround locations. Visible from the Esplanade, the Lost Park property would undergo a series of renovations. This would involve demolition of 25/35 Main Street buildings and replacement with a hotel and convention center building, and a retail and parking structure. This project component would also include the creation of a bicycle path and underpass under the Esplanade to connect to the Lost Park properties. Additionally, there are plans to improve the parking lot entrance to the Gateway Science Museum surface parking lot from the Esplanade. CSU is not subject to local government planning or ordinances and is thus not subject to County or City designated scenic roads. Nevertheless, the proposed improvements would be consistent with existing campus design and would be designed to visually enhance the area, per the proposed Master Plan Design Guidelines. Thus, there would be **no impact** related to damage of scenic resources within a state scenic highway or locally designated scenic corridor.

Impact AES-3. In non-urbanized areas, the project would not substantially degrade the existing visual character or quality of public views of the site and its surroundings, and in urbanized areas, would not conflict with applicable zoning and other regulations governing scenic quality. (Less than Significant)

The main campus and University Village are within an urbanized area, while University Farm is within a non-urbanized area. The main campus is zoned as Public/Quasi Public Facilities, while University Village is zoned as Medium-High Density Residential. Both the main campus and University Village are consistent with current zoning code development standards, and would continue to be consistent upon buildout of the proposed Master Plan components. While the University is not subject to local zoning regulations, this information provides useful context for the consideration of the compatibility of the proposed Master Plan with respect to the existing visual character of the campus, University Village, and University Farm surroundings.

As further discussed below, the visual character and quality of public views of the main campus would primarily be altered through the demolition of existing buildings and addition of new structures near the campus edge, such as the new Arena and parking structure and the new Mixed-Use Building between Chestnut and Hazel Streets, and including near-term projects such as the WREC Extension and new Creekside Residence Halls.

Views within the historic campus core would remain relatively unchanged. The path on the north side of Big Chico Creek (Viewpoint 1) would be improved to accommodate both pedestrians and bicycles. While internal renovations and minor repairs are anticipated for Trinity Hall (Viewpoint 3) and Kendall Hall, the exteriors would remain unchanged. Glenn Hall (visible in Viewpoint 2) would be replaced. The new building would be consistent with the architecture of the campus core.

Housing projects at Creekside (Viewpoint 4) and Rio Chico (Viewpoint 5) would densify the western campus. The Creekside housing project would largely be screened from street-level public views (including Warner Street) by mature trees. The buildings would be similar in scale to the academic buildings to the south and east. The height of the five- story project (arranged in one or two buildings) would be approximately 88 feet. This is slightly higher than the nearby Science Building (Siskiyou II), which is 78 feet, but less than other buildings on campus including Butte Hall, 108 feet, and Whitney Hall, 110 feet. Additionally, the new buildings would be similar in mass to the two large, white cylindrical structures of the Boiler Chiller Plant. The proposed Rio Chico project would preserve the existing houses on the creek side (Viewpoint 5) and replace the existing low-density housing to the south with two five-story residence halls. These halls would be surrounded by campus development and would be visually consistent with surrounding campus development.

As seen in Viewpoints 7 and 8, the new Arena and parking structure would replace the existing Student Health Center and nearby single-family residences, changing the visual massing and character of the site along Warner Street. The new structures would primarily be visible to on-campus students, faculty, and visitors, or from the adjacent athletic fields of Chico High School. The residential uses north of West Sacramento Avenue would be buffered by landscaping trees and new multi-purpose athletic fields.

The Aymer J. Hamilton Building and Modoc Hall (Viewpoint 5) would be replaced by two academic buildings and a museum, with an expanded parking lot to the east (which would connect to the existing Gateway Science Museum and Bidwell Mansion parking). The new buildings may be up to three stories, which would be one story taller than the existing Modoc Hall and two stories taller than Aymer J. Hamilton. The west setback (Arcadian Avenue) would be increased relative to the existing Modoc Hall setback. The northern setback (which is adjacent to the rear property lines of single-family homes on West Frances Willard Avenue would be maintained and may also utilize a stepped building design (with the upper stories set back further than the lower stories). Public views (as seen from adjoining public streets) would not substantially change in character (academic buildings). Building height would increase but, per the proposed Design Guidelines, the design and materials would improve relative to existing conditions.

The new Mixed-Use Building between Chestnut and Hazel Streets would involve demolition of the existing parking lot shown in Viewpoint 11. The new structure would stand five stories tall, with storefront retail space and parking on the first three floors. The Mixed-Use site is surrounded by campus development to the north and west, and medium-density residential uses to the south and west. Although the proposed building would be taller than the existing adjacent buildings, it would be generally be consistent with the adjacent campus buildings. Although the University is not subject to local zoning standards, the proposed building would also be consistent with the 85’ height limit of the City's R-4 (High Density Residential zoning) in the vicinity.[2] The ground floor retail would provide engagement of the public street rather than a blank façade.

The proposed WREC expansion would be south of the current WREC facility, attached at the second level by a skybridge over Second Street. This would involve demolition of the current parking lots at each side of Orange Street, as shown in Viewpoint 10. The WREC expansion would be visually similar to the existing facility, with steel/concrete construction and a brick/panel façade.

The redevelopment of 25/35 Main Street (Viewpoint 12) is outside of the scope of this project, but visual changes to this site is a foreseeable outcome of the Master Plan implementation. The current office buildings at 25/35 Main Street lack variety and do not engage the public street. The potential redevelopment of this site would improve the character and quality of this site, as well as visually opening up "Lost Park" (the underutilized open space to the east) to public viewpoints such as those from the Esplanade and surrounding side streets .

Due to intervening landscaping and vegetation, public views of the University Farm generally do not reveal the existing farm buildings or structures, which are centrally located on the property. As seen in Viewpoint 13, looking north from Hengst Drive, the University Farm is surrounded by rows of mature trees around the border, blocking views into the main Farm site. Accordingly, build-out of the proposed master plan farm buildings would not substantially affect public views of the University Farm. While project site areas would potentially be visible from higher-elevation points in the foothills, such as Butte Creek Canyon, views of University Farm would not be particularly distinct amidst surrounding developments, and the proposed buildings are similar in scale to the existing structures, single story structures ranging from 3,000 to 10,000 square feet.

There are no changes to University Village as part of the proposed project and thus, the visual character and quality of public views would be the same as the current conditions shown in Viewpoint 14.

For the above reasons, implementation of the proposed Master Plan would not substantially degrade the existing visual character or quality of public views of the Master Plan area and its surroundings. Impacts would be **less than significant impact**

Impact AES-4. The project would not create a new source of substantial light or glare which would adversely affect day or nighttime views in the area. (Less than Significant)

The campus is located in a developed area that already contains numerous sources of lighting. As described in Section 3.1.1, Existing Conditions, current sources of light and glare on and adjacent to the main campus include interior and exterior lights of buildings; lighting visible through windows; parking lot and path lighting; and lighting along campus streets. Lighting is also present in the sports fields located in the northwestern portion of the main campus. Parked and traveling vehicles represent a common source of glare. These sources of light and glare are typical of those in a developed area. The University Farm is located in a non-urbanized area and contains limited site lighting, largely for security reasons. Most of the existing facilities at the University Farm are enclosed, minimizing light pollution (CSU, Chico 2005). The University Village is lighted throughout the surface parking lots and paths, as well as building exteriors.

The proposed Master Plan update would include additional interior and exterior building, parking lot, and path lighting. Additional lighting would only be installed for illumination to the extent necessary, such as for nighttime

2 There is a small area zoned R-3, Medium Density Residential, directly south of the project site. The blocks to the south and west are zoned R-4.

pedestrian use, and all lights would be shielded and/or downward-facing in order to minimize light pollution (per the proposed Design Guidelines). Overall, it is not expected that the proposed Master Plan would create substantial light or glare such that day or nighttime views would be substantially affected. Thus, the incremental increase in light and glare levels posed by new development occurring over the planning horizon for the Master Plan would result in a **less than significant** impact related to light or glare.

3.1.5 Cumulative Impacts

The proposed Master Plan would not have a substantial adverse effect on a scenic vista, substantially damage scenic resources, substantially degrade the existing visual character or quality of the site and its surroundings, or create a new source of substantial light or glare. The Master Plan would result in additional infill development that would generally be of similar scale, mass, and height as other developments in the area. Development in the City of Chico, adjacent to the University, is assumed to comply with the City's zoning standards and other aesthetic regulations. In many cases, future cumulative development would replace deteriorating and/or underutilized structures and thus improve visual quality of the area. Incremental increases in light and glare generated by new development in the area would be gradually realized over the implementation timeline of the Master Plan and cumulative projects. . Thus, the Master Plan would not result in a cumulatively considerable contribution to any significant cumulative aesthetic impact. Future near- and long-term projects reviewed by this EIR would additionally be subject to design review prior. As such, the proposed project would result in a **less than significant** cumulative impact related to aesthetics.

3.1.6 Mitigation Measures

No mitigation measures are required as impacts would be less than significant.

3.1.7 Level of Significance After Mitigation

No mitigation measures are required. All impacts would be less than significant without mitigation.

3.1.8 References

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3.2 Air Quality

This section describes the existing air quality conditions of the proposed Master Plan area (or project site) and vicinity, identifies associated regulatory requirements, and evaluates potential impacts of the project with respect to consistency with air quality plans, emission of criteria air pollutants, and exposure to pollutant concentrations. No scoping comments were received regarding air quality in response to the Notice of Preparation (NOP).

3.2.1 Existing Conditions

Ambient air quality is generally affected by climatological conditions; the topography of the air basin; the type and amounts of pollutants emitted; and, for some pollutants, sunlight. The project site is located within the Sacramento Valley Air Basin (SVAB). Topographical and climatic factors in the SVAB create the potential for high concentrations of regional and local air pollutants. This section describes relevant characteristics of the air basin, types of air pollutants, health effects, and existing air quality levels.

The SVAB includes Sacramento, Shasta, Tehama, Butte, Glenn, Colusa, Sutter, Yuba, Yolo, and portions of Solano and Placer Counties. The SVAB extends from south of Sacramento to north of Redding and is bounded on the west by the Coast Ranges and on the north and east by the Cascade Range and Sierra Nevada. The San Joaquin Valley Air Basin is located to the south.

Climate and Topography

Hot dry summers and mild rainy winters characterize the Mediterranean climate of the valley. Temperature may range from 20°F to 115°F, with summer highs usually in the 90s and winter lows occasionally below freezing. The high average summer temperatures, combined with very low relative humidity, produces hot, dry summers that contribute to ozone buildup. Average annual rainfall is approximately 20 inches, with snowfall being very rare. The prevailing winds are moderate in strength and vary from moist, clean breezes from the south to dry land flows from the north (SMAQMD 2016).

Weather patterns throughout the SVAB are affected by geography. Mountain ranges tend to buffer the basin from the marine weather systems that originate over the Pacific Ocean. However, the Carquinez Strait creates a breach in the Coast Range on the west of this basin, which exposes the midsection of the SVAB to marine weather. This marine influence moderates climatic extremes, such as the cooling that sea breezes provide in summer evenings. These breezes also help to move pollutants out of the valley. During approximately half of the days from July through September, however, a phenomenon called the "Schultz Eddy" prevents this from occurring. Instead of allowing the prevailing wind patterns to move north carrying the pollutants out of the valley, the Schultz Eddy causes the wind pattern to circle back south (SMAQMD 2016). Essentially, this phenomenon causes the air pollutants to be blown south toward the Sacramento area. This effect exacerbates the pollution levels in the area and increases the likelihood of violating federal and state standards. The effect normally dissipates around noon when the delta sea breeze arrives.

The mountains surrounding the valley can also contribute to elevated pollutant concentrations during periods of elevated surface inversions. These inversions are most common in late summer and in the fall. Surface inversions are formed when the air close to the surface cools more rapidly than the warm layer of air above it. Elevated inversions occur when a layer of cool air is suspended between warm air layers above and below it. Both situations result in air stagnation. Air pollutants accumulate under and within inversions, subjecting people to elevated pollution levels and associated health concerns. The surface concentrations of pollutants are highest when these conditions are combined with smoke from agricultural burning or when temperature inversions trap cool air, fog, and pollutants near the ground (SMAQMD 2016).

Pollutants and Effects

Criteria Air Pollutants

Criteria air pollutants are defined as pollutants for which the federal and state governments have established ambient air quality standards, or criteria, for outdoor concentrations to protect public health. The national and California standards have been set, with an adequate margin of safety, at levels above which concentrations could be harmful to human health and welfare. These standards are designed to protect the most sensitive persons from illness or discomfort. Pollutants of concern include ozone (O_3), nitrogen dioxide (NO_2), carbon monoxide (CO), sulfur dioxide (SO_2), coarse particulate matter (PM_{10}), fine particulate matter ($PM_{2.5}$), and lead. In California, sulfates, vinyl chloride, hydrogen sulfide, and visibility-reducing particles are also regulated as criteria air pollutants. These pollutants, as well as toxic air contaminants (TACs), are discussed in the following paragraphs. [1]

Ozone

O_3 is a strong-smelling, pale blue, reactive, toxic chemical gas consisting of three oxygen atoms. It is a secondary pollutant formed in the atmosphere by a photochemical process involving the sun's energy and O_3 precursors. These precursors are mainly oxides of nitrogen (NO_x) and reactive organic gases (ROGs, also termed volatile organic compounds or VOCs). The maximum effects of precursor emissions on O_3 concentrations usually occur several hours after they are emitted and many miles from the source. Meteorology and terrain play major roles in O_3 formation, and ideal conditions occur during summer and early autumn on days with low wind speeds or stagnant air, warm temperatures, and cloudless skies. O_3 exists in the upper atmosphere O_3 layer (stratospheric O_3) and at the Earth's surface in the troposphere (ground-level O_3). [2] The O_3 that the U.S. Environmental Protection Agency (EPA) and the California Air Resources Board (CARB) regulate as a criteria air pollutant is produced close to the ground level, where people live, exercise, and breathe. Ground-level O_3 is a harmful air pollutant that causes numerous adverse health effects and is thus considered "bad" O_3. Stratospheric, or "good," O_3 occurs naturally in the upper atmosphere, where it reduces the amount of ultraviolet light (i.e., solar radiation) entering the Earth's atmosphere. Without the protection of the beneficial stratospheric O_3 layer, plant and animal life would be seriously harmed.

O_3 in the troposphere causes numerous adverse health effects; short-term exposures (lasting for a few hours) to O_3 can result in breathing pattern changes, reduction of breathing capacity, increased susceptibility to infections, inflammation of the lung tissue, and some immunological changes (EPA 2013). These health problems are particularly acute in sensitive receptors such as the sick, the elderly, and young children.

Inhalation of O_3 causes inflammation and irritation of the tissues lining human airways, causing and worsening a variety of symptoms. Exposure to O_3 can reduce the volume of air that the lungs breathe in and cause shortness of breath. O_3 in sufficient doses increases the permeability of lung cells, rendering them more susceptible to toxins and microorganisms. The occurrence and severity of health effects from O_3 exposure vary widely among individuals, even when the dose and the duration of exposure are the same. Research shows adults and children who spend more time outdoors participating in vigorous physical activities are at greater risk from the harmful health effects of O_3 exposure. While there are relatively few studies of O_3's effects on children, the available studies show that children are no more or less likely to suffer harmful effects than adults. However, there are a number of reasons why children may be more susceptible to O_3 and other pollutants. Children and teens spend nearly twice as much time outdoors and engaged in vigorous activities as adults. Children breathe more rapidly than adults and inhale

1 The descriptions of the criteria air pollutants and associated health effects are based on the U.S. Environmental Protection Agency's (EPA's) Criteria Air Pollutants (EPA 2018a) and the California Air Resources Board's (CARB's) Glossary of Air Pollutant Terms (CARB 2019a).

2 The troposphere is the layer of the Earth's atmosphere nearest to the surface of the Earth. The troposphere extends outward about 5 miles at the poles and about 10 miles at the equator.

more pollution per pound of their body weight than adults. Also, children are less likely than adults to notice their own symptoms and avoid harmful exposures. Further research may be able to better distinguish between health effects in children and adults. Children, adolescents and adults who exercise or work outdoors, where O_3 concentrations are the highest, are at the greatest risk of harm from this pollutant (CARB 2019b).

Nitrogen Dioxide and Oxides of Nitrogen

NO_2 is a brownish, highly reactive gas that is present in all urban atmospheres. The major mechanism for the formation of NO_2 in the atmosphere is the oxidation of the primary air pollutant nitric oxide, which is a colorless, odorless gas. NO_x, which includes NO_2 and nitric oxide, plays a major role, together with ROG, in the atmospheric reactions that produce O_3. NO_x is formed from fuel combustion under high temperature or pressure. In addition, NO_x is an important precursor to acid rain and may affect both terrestrial and aquatic ecosystems. The two major emissions sources of NO_x are transportation and stationary fuel combustion sources (such as electric utility and industrial boilers).

A large body of health science literature indicates that exposure to NO_2 can induce adverse health effects. The strongest health evidence, and the health basis for the ambient air quality standards (AAQS) for NO_2, results from controlled human exposure studies that show that NO_2 exposure can intensify responses to allergens in allergic asthmatics. In addition, a number of epidemiological studies have demonstrated associations between NO_2 exposure and premature death, cardiopulmonary effects, decreased lung function growth in children, respiratory symptoms, emergency room visits for asthma, and intensified allergic responses. Infants and children are particularly at risk because they have disproportionately higher exposure to NO_2 than adults due to their greater breathing rate for their body weight and their typically greater outdoor exposure duration. Several studies have shown that long-term NO_2 exposure during childhood, the period of rapid lung growth, can lead to smaller lungs at maturity in children with higher levels of exposure compared to children with lower exposure levels. In addition, children with asthma have a greater degree of airway responsiveness compared with adult asthmatics. In adults, the greatest risk is to people who have chronic respiratory diseases, such as asthma and chronic obstructive pulmonary disease (CARB 2019c).

Carbon Monoxide

CO is a colorless, odorless gas formed by the incomplete combustion of hydrocarbon, or fossil fuels. CO is emitted almost exclusively from motor vehicles, power plants, refineries, industrial boilers, ships, aircraft, and trains. In urban areas, automobile exhaust accounts for the majority of CO emissions. CO is a nonreactive air pollutant that dissipates relatively quickly; therefore, ambient CO concentrations generally follow the spatial and temporal distributions of vehicular traffic. CO concentrations are influenced by local meteorological conditions—primarily wind speed, topography, and atmospheric stability. CO from motor vehicle exhaust can become locally concentrated when surface-based temperature inversions are combined with calm atmospheric conditions, which is a typical situation at dusk in urban areas from November to February. The highest levels of CO typically occur during the colder months of the year, when inversion conditions are more frequent.

CO is harmful because it binds to hemoglobin in the blood, reducing the ability of blood to carry oxygen. This interferes with oxygen delivery to the body's organs. The most common effects of CO exposure are fatigue, headaches, confusion and reduced mental alertness, light-headedness, and dizziness due to inadequate oxygen delivery to the brain. For people with cardiovascular disease, short-term CO exposure can further reduce their body's already compromised ability to respond to the increased oxygen demands of exercise, exertion, or stress. Inadequate oxygen delivery to the heart muscle leads to chest pain and decreased exercise tolerance. Unborn babies whose mothers experience high levels of

CO exposure during pregnancy are at risk of adverse developmental effects. Unborn babies, infants, elderly people, and people with anemia or with a history of heart or respiratory disease are most likely to experience health effects with exposure to elevated levels of CO (CARB 2019d).

Sulfur Dioxide

SO_2 is a colorless, pungent gas formed primarily from incomplete combustion of sulfur-containing fossil fuels. The main sources of SO_2 are coal and oil used in power plants and industries; as such, the highest levels of SO_2 are generally found near large industrial complexes. In recent years, SO_2 concentrations have been reduced by the increasingly stringent controls placed on stationary source emissions of SO_2 and limits on the sulfur content of fuels.

Controlled human exposure and epidemiological studies show that children and adults with asthma are more likely to experience adverse responses with SO_2 exposure, compared with the non-asthmatic population. Effects at levels near the 1-hour standard are those of asthma exacerbation, including bronchoconstriction accompanied by symptoms of respiratory irritation such as wheezing, shortness of breath, and chest tightness, especially during exercise or physical activity. Also, exposure at elevated levels of SO_2 (above 1 parts per million [ppm]) results in increased incidence of pulmonary symptoms and disease, decreased pulmonary function, and increased risk of mortality. The elderly and people with cardiovascular disease or chronic lung disease (such as bronchitis or emphysema) are most likely to experience these adverse effects (CARB 2019e).

SO_2 is of concern both because it is a direct respiratory irritant and because it contributes to the formation of sulfate and sulfuric acid in particulate matter (NRC 2005). People with asthma are of particular concern, both because they have increased baseline airflow resistance and because their SO_2-induced increase in airflow resistance is greater than in healthy people, and it increases with the severity of their asthma (NRC 2005). SO_2 is thought to induce airway constriction via neural reflexes involving irritant receptors in the airways (NRC 2005).

Particulate Matter

Particulate matter pollution consists of very small liquid and solid particles floating in the air, which can include smoke, soot, dust, salts, acids, and metals. Particulate matter can form when gases emitted from industries and motor vehicles undergo chemical reactions in the atmosphere. $PM_{2.5}$ and PM_{10} represent fractions of particulate matter. Coarse particulate matter (PM_{10}) is about 1/7 the thickness of a human hair. Major sources of PM_{10} include crushing or grinding operations; dust stirred up by vehicles traveling on roads; wood-burning stoves and fireplaces; dust from construction, landfills, and agriculture; wildfires and brush/waste burning; industrial sources; windblown dust from open lands; and atmospheric chemical and photochemical reactions. Fine particulate matter ($PM_{2.5}$) is roughly 1/28 the diameter of a human hair. $PM_{2.5}$ results from fuel combustion (e.g., from motor vehicles and power generation and industrial facilities), residential fireplaces, and woodstoves. In addition, $PM_{2.5}$ can be formed in the atmosphere from gases such as sulfur oxides, NO_x, and ROG.

$PM_{2.5}$ and PM_{10} pose a greater health risk than larger-size particles. When inhaled, these tiny particles can penetrate the human respiratory system's natural defenses and damage the respiratory tract. $PM_{2.5}$ and PM_{10} can increase the number and severity of asthma attacks, cause or aggravate bronchitis and other lung diseases, and reduce the body's ability to fight infections. Very small particles of substances such as lead, sulfates, and nitrates can cause lung damage directly or be absorbed into the blood stream, causing damage elsewhere in the body. Additionally, these substances can transport adsorbed gases such as chlorides or ammonium into the lungs, also causing injury. PM_{10} tends to collect in the upper portion of the respiratory system, whereas $PM_{2.5}$ is small enough to penetrate deeper into the lungs and damage lung tissue. Suspended particulates also produce haze and reduce regional visibility and damage and discolor surfaces on which they settle.

A number of adverse health effects have been associated with exposure to both $PM_{2.5}$ and PM_{10}. For $PM_{2.5}$, short-term exposures (up to 24-hour duration) have been associated with premature mortality, increased hospital admissions for heart or lung causes, acute and chronic bronchitis, asthma attacks, emergency room visits, respiratory symptoms, and restricted activity days. These adverse health effects have been reported primarily in infants, children, and older adults with preexisting heart or lung diseases. In addition, of all of the common air pollutants, $PM_{2.5}$ is associated with the greatest proportion of adverse health effects related to air pollution, both in the United States and worldwide based on the World Health Organization's Global Burden of Disease Project. Short-term exposures to PM_{10} have been associated primarily with worsening of respiratory diseases, including asthma and chronic obstructive pulmonary disease, leading to hospitalization and emergency department visits (CARB 2017a).

Long-term exposure (months to years) to $PM_{2.5}$ has been linked to premature death, particularly in people who have chronic heart or lung diseases, and reduced lung function growth in children. The effects of long-term exposure to PM_{10} are less clear, although several studies suggest a link between long-term PM_{10} exposure and respiratory mortality. The International Agency for Research on Cancer published a review in 2015 that concluded that particulate matter in outdoor air pollution causes lung cancer (CARB 2017a).

Lead

Lead in the atmosphere occurs as particulate matter. Sources of lead include leaded gasoline; the manufacturing of batteries, paints, ink, ceramics, and ammunition; and secondary lead smelters. Prior to 1978, mobile emissions were the primary source of atmospheric lead. Between 1978 and 1987, the phase out of leaded gasoline reduced the overall inventory of airborne lead by nearly 95%. With the phase out of leaded gasoline, secondary lead smelters, battery recycling, and manufacturing facilities are becoming lead-emissions sources of greater concern.

Prolonged exposure to atmospheric lead poses a serious threat to human health. Health effects associated with exposure to lead include gastrointestinal disturbances, anemia, kidney disease, and, in severe cases, neuromuscular and neurological dysfunction. Of particular concern are low-level lead exposures during infancy and childhood, because children are highly susceptible to the effects of lead. Such exposures are associated with decrements in neurobehavioral performance, including intelligence quotient performance, psychomotor performance, reaction time, and growth.

Sulfates

Sulfates are the fully oxidized form of sulfur, which typically occur in combination with metals or hydrogen ions. Sulfates are produced from reactions of SO_2 in the atmosphere and can result in respiratory impairment, as well as reduced visibility.

Vinyl Chloride

Vinyl chloride is a colorless gas with a mild, sweet odor, which has been detected near landfills, sewage plants, and hazardous waste sites, due to the microbial breakdown of chlorinated solvents. Short-term exposure to high levels of vinyl chloride in air can cause nervous system effects, such as dizziness, drowsiness, and headaches. Long-term exposure through inhalation can cause liver damage, including liver cancer.

Hydrogen Sulfide

Hydrogen sulfide is a colorless and flammable gas that has a characteristic odor of rotten eggs. Sources of hydrogen sulfide include geothermal power plants, petroleum refineries, sewers, and sewage treatment plants. Exposure to hydrogen sulfide can result in nuisance odors, as well as headaches and breathing difficulties at higher concentrations.

Visibility-Reducing Particles

Visibility-reducing particles are any particles in the air that obstruct the range of visibility. Effects of reduced visibility can include obscuring the viewshed of natural scenery, reducing airport safety, and discouraging tourism. Sources of visibility-reducing particles are the same as for $PM_{2.5}$ described above.

Reactive Organic Gases

Hydrocarbons are organic gases that are formed from hydrogen and carbon and sometimes other elements. Hydrocarbons that contribute to formation of O_3 are referred to and regulated as ROGs (also referred to as VOCs). Combustion engine exhaust, oil refineries, and fossil-fueled power plants are the sources of hydrocarbons. Other sources of hydrocarbons include evaporation from petroleum fuels, solvents, dry cleaning solutions, and paint.

The primary health effects of ROGs result from the formation of O_3 and its related health effects. High levels of ROGs in the atmosphere can interfere with oxygen intake by reducing the amount of available oxygen through displacement. Carcinogenic forms of hydrocarbons, such as benzene, are considered TACs. There are no separate health standards for ROGs as a group.

Non-Criteria Air Pollutants

Toxic Air Contaminants

A substance is considered toxic if it has the potential to cause adverse health effects in humans, including increasing the risk of cancer upon exposure, or acute and/or chronic non-cancer health effects. A toxic substance released into the air is considered a TAC. TACs are identified by federal and state agencies based on a review of available scientific evidence. In the State of California, TACs are identified through a two-step process that was established in 1983 under the Toxic Air Contaminant Identification and Control Act. This two-step process of risk identification and risk management and reduction was designed to protect residents from the health effects of toxic substances in the air. In addition, the California Air Toxics "Hot Spots" Information and Assessment Act, Assembly Bill (AB) 2588, was enacted by the legislature in 1987 to address public concern over the release of TACs into the atmosphere. The law requires facilities emitting toxic substances to provide local air pollution control districts with information that will allow an assessment of the air toxics problem, identification of air toxics emissions sources, location of resulting hotspots, notification of the public exposed to significant risk, and development of effective strategies to reduce potential risks to the public over 5 years.

Examples of TACs include certain aromatic and chlorinated hydrocarbons, certain metals, and asbestos. TACs are generated by a number of sources, including stationary sources, such as dry cleaners, gas stations, combustion sources, and laboratories; mobile sources, such as automobiles; and area sources, such as landfills. Adverse health effects associated with exposure to TACs may include carcinogenic (i.e., cancer-causing) and noncarcinogenic effects. Noncarcinogenic effects typically affect one or more target organ systems and may be experienced on either short-term (acute) or long-term (chronic) exposure to a given TAC.

Diesel Particulate Matter

Diesel particulate matter (DPM) is part of a complex mixture that makes up diesel exhaust. Diesel exhaust is composed of two phases, gas and particle, both of which contribute to health risks. More than 90 percent of DPM is less than 1 micrometer in diameter (about 1/70th the diameter of a human hair), and thus is a subset of $PM_{2.5}$ (CARB 2019f). DPM is typically composed of carbon particles ("soot," also called black carbon) and numerous organic compounds, including over 40 known carcinogenic organic substances. Examples of these chemicals include polycyclic aromatic hydrocarbons, benzene, formaldehyde, acetaldehyde, acrolein, and 1,3-butadiene (CARB 2019f). CARB classified "particulate emissions from diesel-fueled engines" (i.e., DPM) (Cal. Code Regs., tit.17, § 93000) as a TAC in August 1998. DPM is emitted from a broad range of diesel engines: on-road diesel engines of trucks, buses, and cars; and off-road diesel engines including locomotives, marine vessels, and heavy-duty construction equipment, among others. Approximately 70 percent of all airborne cancer risk in California is associated with DPM (CARB 2000). To reduce the cancer risk associated with DPM, CARB adopted a diesel risk reduction plan in 2000 (CARB 2000). Because it is part of $PM_{2.5}$, DPM also contributes to the same non-cancer health effects as $PM_{2.5}$ exposure. These effects include premature death; hospitalizations and emergency department visits for exacerbated chronic heart and lung disease, including asthma; increased respiratory symptoms; and decreased lung function in children. Several studies suggest that exposure to DPM may also facilitate development of new allergies (CARB 2019f). Those most vulnerable to non-cancer health effects are children, whose lungs are still developing, and the elderly, who often have chronic health problems.

Odors

Odors are generally regarded as an annoyance rather than a health hazard. Manifestations of a person's reaction to odors can range from psychological (e.g., irritation, anger, or anxiety) to physiological (e.g., circulatory and respiratory effects, nausea, vomiting, and headache). The ability to detect odors varies considerably among the population and overall is quite subjective. People may have different reactions to the same odor. An odor that is offensive to one person may be perfectly acceptable to another (e.g., coffee roaster). An unfamiliar odor is more easily detected and is more likely to cause complaints than a familiar one. In a phenomenon known as odor fatigue, a person can become desensitized to almost any odor, and recognition may only occur with an alteration in the intensity. The occurrence and severity of odor impacts depend on the nature, frequency, and intensity of the source; wind speed and direction; and the sensitivity of receptors.

Sensitive Receptors

Some land uses are considered more sensitive to changes in air quality than others, depending on the population groups and the t involved. People most likely to be affected by air pollution include children, the elderly, athletes, and people with cardiovascular and chronic respiratory diseases. The term sensitive receptors refer to facilities where people who are sensitive to air pollution live or spend considerable amounts of time. Land uses where air pollution-sensitive individuals are most likely to spend time include schools and schoolyards, parks and playgrounds, daycare centers, nursing homes, hospitals, and residential communities (sensitive sites or sensitive land uses) (CARB 2005).

The closest off-site sensitive receptors include residential uses located to the north, south, east, and west of the Main Campuses boundary, Chico High School, which is located to the north on Legion Avenue, adjacent to the project site's boundary, Chico Junior High, located approximately 0.25 miles to the east, and Citrus Avenue Elementary School, located approximately 0.23 miles to the north. In addition, residential uses are located adjacent to the University Village's boundary, located to the north, south, south, and west and immediately to the northwest of the University Farm's boundary.

Air Quality Conditions

Butte County Attainment Designations

Pursuant to the 1990 federal Clean Air Act amendments, the EPA classifies air basins (or portions thereof) as "attainment" or "nonattainment" for each criteria air pollutant, based on whether the National Ambient Air Quality Standards (NAAQS) have been achieved. Generally, if the recorded concentrations of a pollutant are lower than the standard, the area is classified as attainment for that pollutant. If an area exceeds the standard, the area is classified as nonattainment for that pollutant. If there is not enough data available to determine whether the standard is exceeded in an area, the area is designated as "unclassified" or "unclassifiable." The designation of "unclassifiable/attainment" means that the area meets the standard or is expected to meet the standard despite a lack of monitoring data. Areas that achieve the standards after a nonattainment designation are redesignated as maintenance areas and must have approved maintenance plans to ensure continued attainment of the standards. The California Clean Air Act, like its federal counterpart, called for the designation of areas as attainment or nonattainment, but based on California Ambient Air Quality Standards (CAAQS) rather than the NAAQS. Table 3.2-1 identifies the current attainment status of the project site with respect to the NAAQS and CAAQS, and the attainment classifications for the criteria pollutants.

Table 3.2-1. Butte County Attainment Classification

Pollutant	Averaging Time	Designation/Classification
National Standards		
O_3	8 hours	**Marginal Nonattainment**
NO_2	1 hour, annual arithmetic mean	Unclassifiable/Attainment
CO	1 hour; 8 hours	Unclassifiable/Attainment
SO_2	24 hours; annual arithmetic mean	Unclassifiable/Attainment
PM_{10}	24 hours	Unclassifiable/Attainment
$PM_{2.5}$	24 hours; annual arithmetic mean	Unclassifiable/Attainment
Lead	Quarter; 3-month average	Unclassifiable/Attainment
California Standards		
O_3	1 hour; 8 hours	**Nonattainment**
NO_2	1 hour; annual arithmetic mean	Attainment
CO	1 hour; 8 hours	Attainment
SO_2	1 hour; 24 hours	Attainment
PM_{10}	24 hours; annual arithmetic mean	**Nonattainment**
$PM_{2.5}$	Annual arithmetic mean	**Nonattainment**
Lead	30-day average	Attainment
SO_4	24 hours	Attainment
H_2S	1 hour	Unclassified
Vinyl chloride	24 hours	No designation
Visibility-reducing particles	8 hours (10:00 a.m.–6:00 p.m.)	Unclassified

Sources: EPA 2018b (national); CARB 2017b (California).
Notes: O_3 = ozone; NO_2 = nitrogen dioxide; CO = carbon monoxide; SO_2 = sulfur dioxide; PM_{10} = coarse particulate matter; $PM_{2.5}$ = fine particulate matter; SO_4 = sulfates; H_2S = hydrogen sulfide.

In summary, Butte County is designated as a nonattainment area for the national O_3 standard and is nonattainment for the state O_3, PM_{10} and $PM_{2.5}$ standards. Butte County is designated as unclassified or attainment for all other state and federal standards (EPA 2018b; CARB 2017b).

Local Ambient Air Quality

CARB, air districts, and other agencies monitor ambient air quality at approximately 250 air quality monitoring stations across California. Air quality monitoring stations usually measure pollutant concentrations 10 feet above ground level; therefore, air quality is often referred to in terms of ground-level concentrations. Table 3.2-2 presents the most recent background ambient air quality data from 2016 to 2018. The East Avenue monitoring station, located at 984 East Ave, Chico, California, is the nearest air quality monitoring station to the project site, located approximately 1.8 miles north of the project site. This station monitors O_3, NO_2, CO, PM_{10}, and $PM_{2.5}$. However, no monitoring data was available for SO_2 within Butte County. The data collected at this station is considered representative of the air quality experienced in the project vicinity and is provided in Table 3.2-2. The number of days exceeding the ambient air quality standards are also shown in Table 3.2-2.

Table 3.2-2. Local Ambient Air Quality Data

Monitoring Station	Unit	Averaging Time	Agency/ Method	Ambient Air Quality Standard	Measured Concentration by Year			Exceedances by Year		
					2016	*2017*	*2018*[a]	*2016*	*2017*	*2018*[a]
Ozone (O_3)										
East Avenue Monitoring Station	ppm	Maximum 1-hour concentration	California	0.09	0.080	0.076	0.076	0	0	0
	ppm	Maximum 8-hour concentration	California	0.070	0.074	0.070	0.070	*1*	*0*	*0*
			National	0.070	0.073	0.069	0.069	*1*	*0*	*0*
Nitrogen Dioxide (NO_2)										
East Avenue Monitoring Station	ppm	Maximum 1-hour concentration	California	0.18	0.032	0.037	0.051	0	0	0
			National	0.100	0.032	0.038	0.052	0	0	0
	ppm	Annual concentration	California	0.030	0.006	0.006	0.006	0	0	0
			National	0.053	—	—	—	—	—	—
Carbon Monoxide (CO)										
East Avenue Monitoring Station	ppm	Maximum 1-hour concentration	California	20	—	—	—	—	—	—
			National	35	1.7	1.9	20.7	0	0	0
	ppm	Maximum 8-hour concentration	California	9.0	—	—	—	—	—	—
			National	9	1.4	1.4	12.8	0	0	8
Coarse Particulate Matter (PM_{10})[b]										
East Avenue Monitoring Station	g/m^3	Maximum 24-hour concentration	California	50	58.1	101.3	454.0	8 (8.1)	14 (ND)	40 (41.5)
			National	150	57.0	101.4	478.7	ND (14)	0.0 (0)	3.0 (9)

Table 3.2-2. Local Ambient Air Quality Data

Monitoring Station	Unit	Averaging Time	Agency/ Method	Ambient Air Quality Standard	Measured Concentration by Year			Exceedances by Year		
					2016	*2017*	*2018*[a]	*2016*	*2017*	*2018*[a]
	g/m³	Annual concentration	California	20	20.6	ND	32.3	—	—	—
Fine Particulate Matter ($PM_{2.5}$)[b]										
East Avenue Monitoring Station	g/m³	Maximum 24-hour concentration	National	35	37.2	45.2	411.7	1.2 (1)	2.3 (2)	18.8 (18)
	g/m³	Annual concentration	California	12	45.9	47.0	417.0	—	—	—
			National	12.0	7.6	9.0	13.7	—	—	—

Sources: CARB 2019g; EPA 2019.

Notes: ppm = parts per million by volume; ND = insufficient data available to determine the value; — = not available; μg/m³ = micrograms per cubic meter.

Data taken from CARB iADAM (http://www.arb.ca.gov/adam) and EPA AirData (http://www.epa.gov/airdata/) represent the highest concentrations experienced over a given year.

Exceedances of national and California standards are only shown for O_3 and particulate matter. Daily exceedances for particulate matter are estimated days because PM_{10} and $PM_{2.5}$ are not monitored daily. All other criteria pollutants did not exceed national or California standards during the years shown. There is no national standard for 1-hour ozone, annual PM_{10}, or 24-hour SO_2, nor is there a state 24-hour standard for $PM_{2.5}$.

East Avenue Monitoring Station is located at 984 East Avenue, Upland, California 95926.

a Air monitoring data from 2018 is substantially higher compared with previous years concentrations due to the Camp Fire event experienced in November 2018.

b Measurements of PM_{10} and $PM_{2.5}$ are usually collected every 6 days and every 1 to 3 days, respectively. Number of days exceeding the standards is a mathematical estimate of the number of days concentrations would have been greater than the level of the standard.

3.2.2 Regulatory Setting

Federal

Criteria Air Pollutants

The federal Clean Air Act, passed in 1970 and last amended in 1990, forms the basis for the national air pollution control effort. The EPA is responsible for implementing most aspects of the Clean Air Act, including setting NAAQS for major air pollutants; setting hazardous air pollutant (HAP) standards; approving state attainment plans; setting motor vehicle emission standards; issuing stationary source emission standards and permits; and establishing acid rain control measures, stratospheric O_3 protection measures, and enforcement provisions. Under the Clean Air Act, NAAQS are established for the following criteria pollutants: O_3, CO, NO_2, SO_2, PM_{10}, $PM_{2.5}$, and lead.

The NAAQS describe acceptable air quality conditions designed to protect the health and welfare of the citizens of the nation. The NAAQS (other than for O_3, NO_2, SO_2, PM_{10}, $PM_{2.5}$, and those based on annual averages or arithmetic mean) are not to be exceeded more than once per year. NAAQS for O_3, NO_2, SO_2, PM_{10}, and $PM_{2.5}$ are based on statistical calculations over 1- to 3-year periods, depending on the pollutant. The Clean Air Act requires the EPA to reassess the NAAQS at least every 5 years to determine whether adopted standards are adequate to protect public health based on current scientific evidence. States with areas that exceed the NAAQS must prepare a state implementation plan that demonstrates how those areas will attain the standards within mandated time frames. Table 3.2-3 presents the NAAQS and CAAQS.

Table 3.2-3. National and State Ambient Air Quality Standards

Pollutant	Averaging Time	California Standards[a]	National Standards[b]	
		Concentration[c]	*Primary*[c,d]	*Secondary*[c,e]
O_3	1 hour	0.09 ppm (180 μg/m³)	—	Same as Primary Standard[f]
	8 hours	0.070 ppm (137 μg/m³)	0.070 ppm (137 μg/m³)[f]	
NO_2[g]	1 hour	0.18 ppm (339 μg/m³)	0.100 ppm (188 μg/m³)	Same as Primary Standard
	Annual Arithmetic Mean	0.030 ppm (57 μg/m³)	0.053 ppm (100 μg/m³)	
CO	1 hour	20 ppm (23 mg/m³)	35 ppm (40 mg/m³)	None
	8 hours	9.0 ppm (10 mg/m³)	9 ppm (10 mg/m³)	
SO_2[h]	1 hour	0.25 ppm (655 μg/m³)	0.075 ppm (196 μg/m³)	—
	3 hours	—	—	0.5 ppm (1,300 μg/m³)
	24 hours	0.04 ppm (105 μg/m³)	0.14 ppm (for certain areas)[g]	—
	Annual	—	0.030 ppm (for certain areas)[g]	—
PM_{10}[i]	24 hours	50 μg/m³	150 μg/m³	Same as Primary Standard
	Annual Arithmetic Mean	20 μg/m³	—	
$PM_{2.5}$[i]	24 hours	—	35 μg/m³	Same as Primary Standard
	Annual Arithmetic Mean	12 μg/m³	12.0 μg/m³	15.0 μg/m³
Lead[j,k]	30-day Average	1.5 μg/m³	—	—
	Calendar Quarter	—	1.5 μg/m³ (for certain areas)[k]	Same as Primary Standard
	Rolling 3-Month Average	—	0.15 μg/m³	
Hydrogen sulfide	1 hour	0.03 ppm (42 μg/m³)	—	—
Vinyl chloride[j]	24 hours	0.01 ppm (26 μg/m³)	—	—
Sulfates	24 hours	25 μg/m³	—	—
Visibility reducing particles	8 hour (10:00 a.m. to 6:00 p.m. PST)	Insufficient amount to produce an extinction coefficient of 0.23 per kilometer due to particles when the relative humidity is less than 70 percent	—	—

Source: CARB 2016.

Notes: ppm = parts per million by volume; μg/m³ = micrograms per cubic meter; mg/m³= milligrams per cubic meter.

a California standards for O_3, CO, SO_2 (1-hour and 24-hour), NO_2, suspended particulate matter—PM_{10}, $PM_{2.5}$, and visibility-reducing particles, are values that are not to be exceeded. All others are not to be equaled or exceeded. CAAQS are listed in the Table of Standards in Section 70200 of Title 17 of the California Code of Regulations.

b National standards (other than O_3, NO_2, SO_2, particulate matter, and those based on annual averages or annual arithmetic mean) are not to be exceeded more than once a year. The O_3 standard is attained when the fourth highest 8-hour concentration measured at each site in a year, averaged over 3 years, is equal to or less than the standard. For PM_{10}, the 24-hour standard is attained when the expected number of days per calendar year with a 24-hour average concentration above 150 micrograms per cubic meter ($\mu g/m^3$) is equal to or less than one. For $PM_{2.5}$, the 24-hour standard is attained when 98 percent of the daily concentrations, averaged over 3 years, are equal to or less than the standard.

[c] Concentration expressed first in units in which it was promulgated. Equivalent units given in parentheses are based upon a reference temperature of 25° Celsius (°C) and a reference pressure of 760 torr (1 atmosphere). Most measurements of air quality are to be corrected to a reference temperature of 25°C and a reference pressure of 760 torr; ppm in this table refers to ppm by volume, or micromoles of pollutant per mole of gas.

[d] National Primary Standards: The levels of air quality necessary, with an adequate margin of safety to protect the public health.

[e] National Secondary Standards: The levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.

[f] On October 1, 2015, the primary and secondary NAAQS for O_3 were lowered from 0.075 ppm to 0.070 ppm

[g] To attain the 1-hour national standard, the 3-year average of the annual 98th percentile of the 1-hour daily maximum concentrations at each site must not exceed 100 parts per billion (ppb). Note that the national 1-hour standard is in units of ppb. California standards are in units of parts per million (ppm). To directly compare the national 1-hour standard to the California standards the units can be converted from ppb to ppm. In this case, the national standard of 100 ppb is identical to 0.100 ppm.

[h] On June 2, 2010, a new 1-hour SO_2 standard was established and the existing 24-hour and annual primary standards were revoked. To attain the 1-hour national standard, the 3-year average of the annual 99th percentile of the 1-hour daily maximum concentrations at each site must not exceed 75 ppb. The 1971 SO_2 national standards (24-hour and annual) remain in effect until 1 year after an area is designated for the 2010 standard, except that in areas designated nonattainment of the 1971 standards, the 1971 standards remain in effect until implementation plans to attain or maintain the 2010 standards are approved.

[i] On December 14, 2012, the national annual $PM_{2.5}$ primary standard was lowered from 15 $\mu g/m^3$ to 12.0 $\mu g/m^3$. The existing national 24-hour $PM_{2.5}$ standards (primary and secondary) were retained at 35 $\mu g/m^3$, as was the annual secondary standard of 15 $\mu g/m^3$. The existing 24-hour PM_{10} standards (primary and secondary) of 150 $\mu g/m^3$ also were retained. The form of the annual primary and secondary standards is the annual mean, averaged over 3 years.

[j] CARB has identified lead and vinyl chloride as TACs with no threshold level of exposure for adverse health effects determined. These actions allow for the implementation of control measures at levels below the ambient concentrations specified for these pollutants.

[k] The national standard for lead was revised on October 15, 2008, to a rolling 3-month average. The 1978 lead standard (1.5 $\mu g/m^3$ as a quarterly average) remains in effect until one year after an area is designated for the 2008 standard, except that in areas designated nonattainment for the 1978 standard, the 1978 standard remains in effect until implementation plans to attain or maintain the 2008 standard are approved.

Hazardous Air Pollutants and Toxic Air Contaminants

The 1977 federal Clean Air Act amendments required the EPA to identify National Emission Standards for Hazardous Air Pollutants (HAPs), known as Toxic Air Contaminants (TACs) in California, to protect public health and welfare. HAPs include certain VOCs, pesticides, herbicides, and radionuclides that present a tangible hazard, based on scientific studies of exposure to humans and other mammals. TACs are usually present in minute quantities in the ambient air; however, their high toxicity or health risk may pose a threat to public health even at low concentrations. Under the 1990 federal Clean Air Act Amendments, which expanded the control program for HAPs, 189 substances and chemical families were identified as HAPs.

A wide range of sources, from industrial plants to motor vehicles, emit HAPs or TACs. The associated health effects are diverse and can be long-term, such as cancer, birth defects, neurological damage, asthma, bronchitis, or genetic damage, or short-term and acute, such as eye watering, respiratory irritation (a cough), running nose, throat pain, and headaches.

TACs are separated into carcinogens and noncarcinogens based on the physiological effects associated with exposure. Carcinogens are assumed to have no safe lower threshold for health impacts, in contrast with criteria air pollutants, for which acceptable levels of exposure can be determined and for which the ambient standards have been established. The cancer risk from TACs is expressed as excess cancer cases per 1 million exposed individuals, typically over a lifetime of exposure.

The EPA regulates HAPs through its National Emission Standards for Hazardous Air Pollutants. The standards for a particular source category require the maximum degree of emission reduction that EPA determines to be achievable, which is known as the Maximum Achievable Control Technology standards. These standards are authorized by Section 112 of the 1970 CAA, and the regulations are published in 40 CFR Parts 61 and 63.

State

Criteria Air Pollutants

The federal Clean Air Act delegates the regulation of air pollution control and the enforcement of the NAAQS to the states. In California, the task of air quality management and regulation has been legislatively granted to CARB, with subsidiary responsibilities assigned to air quality management districts and air pollution control districts at the regional and county levels. CARB, which became part of the California Environmental Protection Agency in 1991, is responsible for ensuring implementation of the California Clean Air Act of 1988, responding to the federal Clean Air Act, and regulating emissions from motor vehicles and consumer products.

CARB has established CAAQS, which are generally more restrictive than the NAAQS. As stated previously, an ambient air quality standard defines the maximum amount of a pollutant averaged over a specified period of time that can be present in outdoor air without harm to the public's health. For each pollutant, concentrations must be below the relevant CAAQS before an air basin can attain the corresponding CAAQS. Air quality is considered in attainment if pollutant levels are continuously below the CAAQS and violate the standards no more than once each year. The CAAQS for O_3, CO, SO_2 (1-hour and 24-hour), NO_2, PM_{10}, and $PM_{2.5}$ and visibility-reducing particles are values that are not to be exceeded. All others are not to be equaled or exceeded.

California air districts have based their thresholds of significance for CEQA purposes on the levels that scientific and factual data demonstrate that the air basin can accommodate without affecting the attainment date for the NAAQS or CAAQS. Since an ambient air quality standard is based on maximum pollutant levels in outdoor air that would not harm the public's health, and air district thresholds pertain to attainment of the ambient air quality standard, this means that the thresholds established by air districts are also protective of human health. Table 3.2-3 above presents the NAAQS and CAAQS.

Toxic Air Contaminants

The state Air Toxics Program was established in 1983 under AB 1807 (Tanner). The California TAC list identifies more than 700 pollutants, of which carcinogenic and noncarcinogenic toxicity criteria have been established for a subset of these pollutants pursuant to the California Health and Safety Code. In accordance with AB 2728, the state list includes the (federal) HAPs. In 1987, the Legislature enacted the Air Toxics "Hot Spots" Information and Assessment Act of 1987 (AB 2588) to address public concern over the release of TACs into the atmosphere. AB 2588 law requires facilities emitting toxic substances to provide local air pollution control districts with information that will allow an assessment of the air toxics problem, identification of air toxics emissions sources, location of resulting hotspots, notification of the public exposed to significant risk, and development of effective strategies to reduce potential risks to the public over 5 years. TAC emissions from individual facilities are quantified and prioritized. "High-priority" facilities are required to perform a health risk assessment, and if specific thresholds are exceeded, the facility operator is required to communicate the results to the public in the form of notices and public meetings.

In 2000, CARB approved a comprehensive Diesel Risk Reduction Plan to reduce diesel emissions from both new and existing diesel-fueled vehicles and engines (CARB 2000). The regulation is anticipated to result in an 80 percent decrease in statewide diesel health risk in 2020 compared with the diesel risk in 2000. Additional regulations apply to new trucks and diesel fuel, including the On-Road Heavy Duty Diesel Vehicle (In-Use) Regulation, the On-Road Heavy Duty (New) Vehicle Program, the In Use Off-Road Diesel Vehicle Regulation, and the New Off-Road Compression-Ignition (Diesel) Engines and Equipment Program. These regulations and programs have timetables by which manufacturers must comply and existing operators must upgrade their diesel-powered equipment. There are several airborne toxic control measures that reduce diesel emissions, including In-Use Off-Road Diesel-Fueled Fleets (13 Cal. Code Regs. §§ 2449 et seq.) and In-Use On-Road Diesel-Fueled Vehicles (13 Cal. Code Regs. § 2025).

California Health and Safety Code Section 41700

Section 41700 of the Health and Safety Code states that a person shall not discharge from any source whatsoever quantities of air contaminants or other material that cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public; or that endanger the comfort, repose, health, or safety of any of those persons or the public; or that cause, or have a natural tendency to cause, injury or damage to business or property. This section also applies to sources of objectionable odors.

Local

Butte County Air Quality Management District

The Butte County Air Quality Management District (BCAQMD) is the primary agency responsible for planning to meet federal and state ambient air quality standards in Butte County. The BCAQMD develops rules and regulations for stationary sources and equipment, prepares emissions inventory and air quality management planning documents, and conducts source testing and inspections. The BCAQMD's air quality management plans include control measures and strategies to be implemented to attain state and federal ambient air quality standards in Butte County. The BCAQMD then implements these control measures as regulations to control or reduce criteria pollutant emissions from stationary sources or equipment. Applicable BCAQMD attainment plans include the following:

- **Northern Sacramento Valley Planning Area 2018 Triennial Air Quality Attainment Plan:** This plan is intended to comply with the requirements of the California Clean Air Act related to bringing the region into compliance with the CAAQS for O_3. BCAQMD has prepared several triennial progress reports that build on the 1991 Air Quality Attainment Plan. The 2018 Triennial Air Quality Attainment Plan (BCAQMD 2018) is the most recent report. The triennial progress report describes historical trends in air quality, includes updated emissions inventories, and identifies feasible control measures that the BCAQMD will study or adopt over the triennial period.
- **Chico, CA/Butte County $PM_{2.5}$ Nonattainment Area Redesignation Request and Maintenance Plan:** On November 16, 2017, CARB approved and submitted a request that EPA find the Chico/Butte County region in attainment for the 2006 24-hour $PM_{2.5}$ NAAQS (BCAQMD 2017). On July 11, 2018, the EPA officially determined that the Chico/Butte County region Federal Nonattainment Area had attained the 24-hour $PM_{2.5}$ NAAQS by the attainment deadline. In August 2018, the BCAQMD approved the $PM_{2.5}$ maintenance plan and request for re-designation for the 2006 $PM_{2.5}$ NAAQS to meet the EPA re-designation requirements.

Rules and Regulations. The BCAQMD establishes and administers a program of rules and regulations to attain and maintain state and national air quality standards and regulations related to TACs. Rules and regulations that may apply to the proposed project during construction and/or operations include the following:

- **Rule 200 – Nuisance**: To protect the public health, Rule 200 prohibits any person from discharging such quantities of air contaminants that cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public.
- **Rule 201 – Visible Emissions**: Prohibits individuals from discharging into the atmosphere from any single source of emissions whatsoever any air contaminant whose opacity exceeds certain specified limits.
- **Rule 202 – Particulate Matter Concentration**: Requires a person to take every reasonable precaution not to cause or allow the discharge of particulate matter from being airborne in excess of 0.3 grains per cubic foot of gas.

- **Rule 205 – Fugitive Dust**: Requires a person to take every reasonable precaution not to cause or allow the emissions of fugitive dust from being airborne beyond the property line from which the emission originates; from construction, handling, or storage activity; or any wrecking, excavation, grading, clearing of land, or solid waste disposal operation.
- **Rule 230 – Architectural Coatings**: Sets volatile organic compound limits for coatings that are applied to stationary structures or their appurtenances. The rule also specifies storage and cleanup requirements for these coatings.
- **Rule 231 – Cutback and Emulsified Asphalt:** Asphalt paving operations that may be associated with implementation of the project would be subject to Rule 231. This rule applies to the manufacture and use of cutback asphalt and emulsified asphalt for paving and maintenance operations.
- **Rule 500 – Stationary Source Permit Fees:** The BCAQMD regulates criteria air pollutant emissions from new and modified stationary sources through this rule.

3.2.3 Thresholds of Significance

The significance criteria used to evaluate the project impacts to air quality are based on Appendix G of the State CEQA Guidelines and the BCAQMD's thresholds of significance. According to Appendix G, a significant impact related to air quality would occur if the project would:

1. Conflict with or obstruct implementation of the applicable air quality plan.
2. Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard.
3. Expose sensitive receptors to substantial pollutant concentrations.
4. Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people.

The BCAQMD has adopted the CEQA Air Quality Handbook, which contains thresholds of significance used to access air quality related impacts from construction and operations of a project. The quantitative air quality analysis provided herein applies the BCAQMD thresholds identified below to determine the potential for the proposed project to result in a significant air quality impact under CEQA (BCAQMD 2014):

- The proposed project would result in short-term (construction) emissions of ROG or NO_x above 137 lbs/day or above 4.5 tons/year, or emissions of PM_{10} or $PM_{2.5}$ above 80 pounds/day;
- The proposed project would result in long-term (operational) emissions of ROG or NO_x above 25 lbs/day or emissions of PM_{10} or $PM_{2.5}$ above 80 lbs/day;
- The proposed project would result in TAC exposures during construction or operations that create a lifetime cancer risk exceeding 10 in 1 million for individual projects, or increased non-cancer risk exceeding a hazard index of 1, or ambient diesel $PM_{2.5}$ exceeding an annual average of 0.3 ug/m^3;
- The proposed project would result in cumulative TAC exposures during construction or operations that create a lifetime cancer risk exceeding 10 in 1 million for individual projects, or increased non-cancer risk exceeding a hazard index of 1, or ambient diesel $PM_{2.5}$ exceeding an annual average of 0.8 ug/m^3 for new sources of TACs or 0.3 ug/m^3 for a new sensitive receptor.

3.2.4 Impact Analysis

Methodology

The proposed Master Plan identifies anticipated development by land use type and square footage. However, specific details about construction and operation of the proposed project are currently not available. Nonetheless, project-generated emissions were estimated based on a reasonable worst-case assessment to disclose the magnitude of potential criteria air pollutant emissions generated during construction and operation of the proposed project.

Construction Emissions

Emissions from the construction phase of the proposed project were estimated using California Emissions Estimator Model (CalEEMod) Version 2016.3.2. Construction assumptions, including phasing, equipment mix, and vehicle trips, were based on CalEEMod default values, which were based on specific information provided by CSU, Chico.

For purposes of estimating proposed project construction emissions, it was assumed that no more than two development projects would be under construction concurrently. Reviewing the most recent CSU, Chico project-sequencing plan for the CSU, Chico campus, it was determined that concurrent construction of the Creekside Housing and Glenn Hall Replacement, two of the near-term developments, would be a reasonable maximal impact scenario. For the purposes of providing the most conservative potential construction analysis, it was assumed that construction of the Creekside Housing would start early 2021 and have a duration of approximately one year, reaching completion in winter 2022. Construction of the Glenn Hall Replacement would start mid-2021 and have a duration of approximately one year, reaching completion in summer 2022. Because California's construction related emission sources are regulated and will foreseeably continue to be more strictly regulated in the future, project emissions are reasonably expected to continue to decline. Thus, by utilizing an earlier start date, the proposed project's estimated emissions likely overstate actual emission levels. Therefore, the analysis and modeling included herein continue to provide an accurate and conservative assessment of the proposed project's construction-related air pollutant emissions. While construction specifics for buildout of the proposed project are not currently available, the emissions generated from the Creekside Housing and Glenn Hall Replacement, were assumed to represent a worst case for development under the proposed Master Plan over the 10-year buildout (2030). The analysis contained herein is based on the following assumptions for the representative construction scenario (duration of phases is approximate):

Creekside Housing

- Demolition: 20 days
- Site Preparation: 3 days
- Grading: 6 days
- Building Construction: 220 days
- Paving: 15 days
- Application of Architectural Coatings: 15 days

Glenn Hall Replacement

- Demolition: 20 days
- Site Preparation: 2 days

- Grading: 4 days
- Building Construction: 200 days
- Paving: 15 days
- Application of Architectural Coatings: 15 days

The construction scenario would involve the demolition of approximately 41,250 square feet of buildings and pavement removal. Grading quantities are currently not identified and grading is anticipated to be minimal because the site is already developed; therefore, this analysis assumes that construction sites would be balanced and would not require substantial import or export of soil. To capture emissions associated with asphalt paving and other impervious surfaces, it was assumed that 3.4 acres would be developed in each construction scenario which was estimated by using Google Earth.

Construction-worker estimates and vendor truck trips by construction phase were based on CalEEMod default values. CalEEMod default trip length values were used for the distances for all construction-related trips.

The construction equipment mix and vehicle trips used for estimating the proposed project-generated construction emissions are shown in Table 3.2-4. For the analysis, it was generally assumed that heavy construction equipment would be operating at the site 5 days per week (22 days per month) during proposed project construction. Specific CalEEMod assumptions for each model scenario, including quantity of equipment, are provided in Appendix B.

Table 3.2-4 Construction Scenario Assumptions

Construction Phase	One-Way Vehicle Trips			Equipment		
	Average Daily Worker Trips	*Average Daily Vendor Truck Trips*	*Total Haul Truck Trips*	*Equipment Type*	*Quantity*	*Usage Hours*
Creekside Housing						
Demolition	16	0	40	Concrete/industrial saws	1	8
				Excavators	3	8
				Rubber tired dozers	2	8
Site preparation	10	0	0	Rubber tired dozers	3	8
				Tractors/loaders/backhoes	4	8
Grading	18	0	0	Excavators	1	8
				Graders	1	8
				Rubber tired dozers	1	8
				Tractors/loaders/backhoes	3	8
				Trenchers	1	8
Building construction	50	20	0	Cranes	1	7
				Forklifts	3	8
				Generator sets	1	8
				Tractors/loaders/backhoes	3	7
				Welders	3	8

Table 3.2-4 Construction Scenario Assumptions

Construction Phase	One-Way Vehicle Trips			Equipment		
	Average Daily Worker Trips	*Average Daily Vendor Truck Trips*	*Total Haul Truck Trips*	*Equipment Type*	*Quantity*	*Usage Hours*
Paving	16	0	0	Cement and mortar mixers	2	6
				Pavers	1	8
				Paving equipment	2	6
				Rollers	2	6
				Tractors/loaders/backhoes	1	8
Architectural coating	10	0	0	Air compressors	1	6
Glenn Hall Replacement						
Demolition	14	0	188	Concrete/industrial saws	1	8
				Rubber tired dozers	1	8
				Tractors/loaders/backhoes	3	8
Site preparation	8	0	0	Graders	1	8
				Rubber tired dozers	1	7
				Tractors/loaders/backhoes	1	8
Grading	10	0	0	Graders	1	6
				Rubber tired dozers	1	6
				Tractors/loaders/backhoes	1	7
				Trenchers	1	8
Building construction	44	18	0	Cranes	1	6
				Forklifts	1	6
				Generator sets	1	8
				Tractors/loaders/backhoes	1	6
				Welders	3	8
Paving	14	0	0	Cement and mortar mixers	1	6
				Pavers	1	6
				Paving equipment	1	8
				Rollers	1	7
				Tractors/loaders/backhoes	1	8
Architectural coating	10	0	0	Air compressors	1	6

Notes: See Appendix B for details.

Operational Emissions

Emissions from the operational phase of the proposed project were estimated using CalEEMod Version 2016.3.2, based on an operational year 2030, the estimated planning horizon for the propose project.

Emissions from the existing land uses on the campus were also estimated using CalEEMod to present the net change in criteria air pollutant emissions. Operational year 2018 was assumed for existing conditions. The total existing land uses within the CSU, Chico campus that are currently occupied and, therefore, evaluated comprise approximately 2,723,382 square feet (see Chapter 2, Project Description, Table 2-1).

Existing and potential proposed project-generated operational air quality emissions were estimated for area sources (hearths, consumer product use, architectural coatings, and landscape maintenance equipment), energy sources (natural gas), and mobile sources. Emissions from each category are discussed in the following text with respect to the proposed project.

Existing and proposed project land use assumptions in CalEEMod were based on the project description, Chapter 2, and the transportation analysis, Section 3.14, and are presented in Table 3.2-5.

Table 3.2-5 Existing and Project Land Use Summary

Land Use	Existing	Project
	Square Feet	
Non-Residential Campus Buildings	2,187,026	2,751,850
Student Housing	536,356 (2,260 beds)	897,246 (3,721 beds)
Parking – Structures	314,210 (990 Spaces)	674,210 (2,190 Spaces)
Parking – Surface	(1,320 Spaces)	(430 Spaces)
Total	**2,723,382**	**3,649,096**

Source: See Chapter 2, Project Description.
Notes: N/A = Not available.

Area

CalEEMod was used to estimate operational emissions from area sources, including emissions from consumer product use, architectural coatings, and landscape maintenance equipment. Emissions associated with natural gas usage in space heating, water heating, and stoves are calculated in the building energy use module of CalEEMod. The existing and proposed project conditions are assumed to not include woodstoves or fireplaces (wood or natural gas). As such, area source emissions associated with hearths were not included.

Consumer products are chemically formulated products used by household and institutional consumers, including detergents; cleaning compounds; polishes; floor finishes; cosmetics; personal care products; home, lawn, and garden products; disinfectants; sanitizers; aerosol paints; and automotive specialty products. Other paint products, furniture coatings, or architectural coatings are not considered consumer products (CAPCOA 2017). Consumer product VOC (i.e., ROG) emissions are estimated in CalEEMod based on the floor area of nonresidential (non-residential campus facilities) and residential (student housing) buildings and on the default factor of pounds of VOC per building square foot per day. For the asphalt surface land use assumed in the Project scenario, CalEEMod estimates VOC emissions associated with use of parking surface degreasers based on a square footage of parking surface area and pounds of VOC per square foot per day.

VOC off-gassing emissions result from evaporation of solvents contained in surface coatings such as in paints and primers used during building maintenance. CalEEMod calculates the VOC evaporative emissions from application of nonresidential surface coatings based on the VOC emission factor, the building square footage, the assumed fraction of surface area, and the reapplication rate. The VOC emission factor is based on the VOC content of the surface coatings, and BCAQMD Rule 230, which restricts the VOC content for interior and exterior coatings. The model default reapplication rate of 10% of area per year is assumed. Consistent with CalEEMod defaults, it is assumed that the nonresidential surface area for painting equals 2.0 times the floor square footage, with 75% assumed for interior coating and 25% assumed for exterior surface coating. For the other asphalt surfaces assumed in the proposed project scenario, the architectural coating area is assumed to be 6% of the total square footage, consistent with the supporting CalEEMod studies provided as an appendix to the CalEEMod User's Guide (CAPCOA 2017).

Landscape maintenance includes fuel combustion emissions from equipment such as lawn mowers, rototillers, shredders/grinders, blowers, trimmers, chain saws, and hedge trimmers. The emissions associated from landscape equipment use are estimated based on CalEEMod default values for emission factors (grams per residential dwelling unit per day and grams per square foot of nonresidential building space per day) and number of summer days (when landscape maintenance would generally be performed) and winter days.

Energy

As represented in CalEEMod, energy sources include emissions associated with building electricity and natural gas usage. Electricity use would contribute indirectly to criteria air pollutant emissions; however, the emissions from electricity use are only quantified for greenhouse gases in CalEEMod, since criteria pollutant emissions occur at the site of the power plant, which is typically off site.

Default values in CalEEMod were updated to reflect the energy use from existing and proposed project conditions (electricity usage and natural gas per year), which are based on the estimates presented in the CSU, Chico Master Plan Report. In 2018, the campus consumed approximately 28,582,609 kilowatt-hours (kWh) of electricity and 1,152,957 therms of natural gas. Buildout of the Master Plan projected energy consumption was estimated to be approximately 37,136,769 kWh of electricity and 1,516,225 therms of natural gas (CSU, Chico 2019).

Mobile Sources

Mobile sources for the proposed project would primarily be motor vehicles (automobiles and light-duty trucks) traveling to and from the project area. Motor vehicles may be fueled with gasoline, diesel, or alternative fuels. The default vehicle mix provided in CalEEMod 2016.3.2, which is based on CARB's Mobile Source Emissions Inventory model, EMFAC, version 2014, was applied for both existing and proposed project conditions.

Trip generation rates for existing and proposed project conditions were based on Section 3.14, Transportation of this Draft EIR. Default vehicle trip generation rates included in CalEEMod for each of the analyzed land uses were adjusted to match the existing campus and the proposed project's trip generation estimates from the Transportation Analysis. In addition, Saturday and Sunday trip rates for both the existing campus and the proposed project were adjusted in proportion to the CalEEMod weekday trip rates because weekend trip-generation rates were not provided in the Transportation Analysis. Overall, the proposed project would result in approximately 31,200 vehicle trips per day while the existing conditions consists of approximately 27,700 vehicle trips per day, a net increase of approximately 3,500 vehicle trips. CalEEMod default trip distances were adjusted to match the daily vehicle miles traveled (VMT) for the existing campus (569,700 miles) and the proposed project (633,700 miles). Other CalEEMod default data, including temperature, trip characteristics, variable start information, and emissions factors were conservatively used for the model inputs. Project-related traffic was assumed to include a mixture of vehicles in accordance with the model defaults. Emission factors representing the vehicle mix and emissions for 2030 (the first full year of operation) were used to estimate emissions associated with the proposed project. Trip rate assumptions for existing and proposed project conditions are shown in Table 3.2-6.

Table 3.2-6 Existing and Project Trip Rate Assumptions

Land Use	CalEEMod Land Use Surrogate	Revised Trip Rate[c]		
		Weekday[a]	*Saturday*[b]	*Sunday*[b]
Existing				
Main Camps Facilities	University/College (4Yr)	1.69	1.28	0.00
Project				
Main Campus Facilities	University/College (4Yr)	1.68	1.28	0.00

Source: Fehr and Peers 2019.
Notes:
a Weekday trip rates are calculated from the existing campus and the proposed project's trip generation from the Transportation Analysis.
b Saturday and Sunday trip rates were adjusted in proportion to the Transportation Analysis weekday trip rates.
c Main campus facilities trip rate is per student.

Impact Analysis

Impact AQ-1. The project would not conflict with or obstruct implementation of the applicable air quality plan. (Less than Significant)

As previously discussed, the project site is under the jurisdiction of the BCAQMD within the SVAB. The SVAB is designated nonattainment for both the national and California ozone standards. Accordingly, the BCAQMD, along with other local air districts in the SVAB, is required to comply with and implement the SIP to demonstrate when and how the region can attain the national O_3 standards. As such, the BCAQMD, along with the other air districts in the region, prepared the *Northern Sacramento Valley Planning Area 2018 Triennial Air Quality Plan*. The 2018 Plan addresses attainment of the CAAQS for O_3 (BCAQMD 2018). The latest plan was adopted by the BCAQMD in coordination with the air quality management districts and air pollution control districts for the counties located in the northern portion of the Sacramento Valley including Colusa, Glenn, Shasta, Sutter, Tehama, and Yuba counties, and incorporates land use assumptions and travel demand modeling provided by the Butte County Association of Governments (BCAG). The purpose of a consistency finding is to determine if a project is inconsistent with the assumptions and objectives of the regional air quality plans, and thus if it would interfere with the region's ability to comply with federal and state air quality standards. In general, projects are considered consistent with, and would not conflict with or obstruct implementation of the air quality plan if the growth in socioeconomic factors is consistent with the underlying regional plans used to develop the air quality management plan.

Demographic growth forecasts for various socioeconomic categories (e.g., population, housing, employment by industry) were developed by BCAG for its Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS) (BCAG 2016) based on general plans for cities in Butte County. The 2018 Plan relies on the land use and population projections provided in the RTP/SCS, which is generally consistent with the local plans; therefore, the air quality management plans are generally consistent with local government plans.

The proposed Master Plan would support an increase in on-campus student enrollment to 18,600 full-time equivalent students (FTES) by 2030, from a current FTES of 16,437 in the fall 2018. In addition, faculty and staff needed to support student growth would increase at a rate of 1% and 0.5%, respectively. The student population is currently supported by 989 instructional faculty and 1,106 staff in fall 2018. CSU, Chico's population growth associated with the proposed Master Plan would represent less than 1% of the total projected population in Butte County in 2030 (285,534 people). Therefore, the proposed project would not result in significant population growth that would substantially exceed BCAG growth projections for the County.

To address the criterion of whether the proposed project would exceed the BCAQMD significance thresholds for O_3 precursors and potentially delay the timely attainment of the ambient air quality standards or interim emission reductions of the 2018 Plan, an air quality modeling analysis that identified the proposed project's impact on air quality was performed and is presented below in the second impact criterion. In summary, the proposed project would not result in construction emissions or long-term operational emissions that would exceed the respective BCAQMD significance thresholds for ROG, NO_x, PM_{10}, and $PM_{2.5}$. Therefore, the proposed project would not conflict with or obstruct implementation of the 2018 Plan and this impact would be **less than significant.**

Impact AQ-2. The project would not result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard. (Less than Significant)

Construction Emissions

Construction of the proposed project is anticipated to occur from 2021 to 2030 and would result in the addition of pollutants to the local airshed caused by on-site sources (i.e., off-road construction equipment, soil disturbance, and ROG off-gassing) and off-site sources (i.e., on-road haul trucks and worker vehicle trips). Construction emissions can vary substantially from day to day, depending on the level of activity, the specific type of operation, and for dust—the prevailing weather condition. Therefore, such emission levels can only be approximately estimated with a corresponding uncertainty in precise ambient air quality impacts.

As discussed under Construction Emissions in Section 3.2.4, Analytical Method, the worst-case daily construction emissions for the proposed project were determined based on the near-term development construction scenario, which assumes that construction of two major near-term developments may overlap. Notably, the construction scenario modeling assumes emissions for the years 2021 to 2022. However, for the purposes of construction modeling, the models do not need to use the exact commencement and completion dates to accurately represent the proposed project construction emissions. This is because state and local regulations, restrictions, and increased market penetration of cleaner construction equipment are anticipated to continue to reduce emissions in the future. In other words, because California's construction-related emission sources are regulated and will foreseeably continue to be more strictly regulated in the future, proposed project emissions are reasonably expected to continue to decline. Thus, by utilizing a worst-case scenario, estimated levels would likely decrease over buildout of the proposed project. Therefore, the analysis and modeling included herein continue to provide an accurate and conservative assessment of the proposed project's construction-related air pollutant emissions.

Fugitive dust results from the exposure of earth surfaces to wind from the direct disturbance and movement of soil, as well as re-entrainment from on-road vehicles, resulting in PM_{10} and $PM_{2.5}$ emissions. Internal combustion engines used by construction equipment, haul trucks, and worker vehicles would result in emissions of ROG, NO_x, CO, PM_{10}, and $PM_{2.5}$. The application of architectural coatings, such as exterior application/interior paint and other finishes, and application of asphalt pavement would also produce ROG emissions. As mentioned in the local regulations discussed under Section 3.2.2, BCAQMD Rule 230 and 231 would limit ROG emissions from use of asphalt and architectural coatings, respectively.

Table 3.2-7 presents the estimated maximum daily construction emissions generated during construction. Details of the emission calculations are provided in Appendix B.

Table 3.2-7 Estimated Maximum Daily Construction Criteria Air Pollutant Emissions

Construction Year	ROG	NO_x	CO	SO_x	PM_{10}	$PM_{2.5}$
	Pounds per Day					
Year 2021	106.53	62.79	40.45	0.08	16.91	10.05
Year 2022	31.04	24.65	28.17	0.05	1.84	1.23
Maximum daily emissions	**106.53**	**62.79**	**40.45**	**0.08**	**16.91**	**10.05**
BCAQMD threshold	*137*	*137*	*N/A*	*N/A*	*80*	*80*
Threshold exceeded?	**No**	**No**	**N/A**	**N/A**	**No**	**No**

Notes: ROG = reactive organic gases; NO_x = oxides of nitrogen; CO = carbon monoxide; SO_x = sulfur oxides; PM_{10} = coarse particulate matter; $PM_{2.5}$ = fine particulate matter; BCAQMD = Butte County Air Pollution Control District; N/A = Not applicable.
See Appendix B for details.
The values shown are the maximum summer or winter daily emissions results from CalEEMod.

As shown in Table 3.2-7, maximum daily construction emissions associated with the proposed project would not exceed the BCAQMD significance thresholds for ROG, NO_x, PM_{10} or $PM_{2.5}$. Standard construction measures would be required for construction activities associated with the proposed project. The BCAQMD CEQA Handbook (2014) provides best practice measures recommended by the BCAQMD to minimize fugitive dust during construction. Measures that would be required by Rules 200 (Nuisance) and 205 (Fugitive Dust) to control emissions of fugitive dust include the following:

- Reduce the amount of the disturbed area where possible.
- Use of water trucks or sprinkler systems in sufficient quantities to prevent airborne dust from leaving the site. An adequate water supply source must be identified. Increased watering frequency would be required whenever wind speeds exceed 15 mph. Reclaimed (non-potable) water should be used whenever possible.
- All dirt stockpile areas should be sprayed daily as needed, covered, or a District approved alternative method will be used.
- Permanent dust control measures identified in the approved project revegetation and landscape plans should be implemented as soon as possible following completion of any soil disturbing activities.
- Exposed ground areas that will be reworked at dates greater than one month after initial grading should be sown with a fast-germinating non-invasive grass seed and watered until vegetation is established.
- All disturbed soil areas not subject to re-vegetation should be stabilized using approved chemical soil binders, jute netting, or other methods approved in advance by the District.
- All roadways, driveways, sidewalks, etc. to be paved should be completed as soon as possible. In addition, building pads should be laid as soon as possible after grading unless seeding or soil binders are used.
- Vehicle speed for all construction vehicles shall not exceed 15 mph on any unpaved surface at the construction site.
- All trucks hauling dirt, sand, soil, or other loose materials are to be covered or should maintain at least two feet of freeboard (minimum vertical distance between top of load and top of trailer) in accordance with local regulations.
- Install wheel washers where vehicles enter and exit unpaved roads onto streets, or wash off trucks and equipment leaving the site.
- Sweep streets at the end of each day if visible soil material is carried onto adjacent paved roads. Water sweepers with reclaimed water should be used where feasible.

- Post a sign in a prominent location visible to the public with the telephone numbers of the contractor and District for any questions or concerns about dust from the project.

In addition to the above measures, a Grading Plan would be required for submittal to the BCAQMD prior to the start of any construction activity for which a grading permit is required. As such, implementation of the required fugitive dust control measures would ensure air quality and fugitive dust-related impacts associated with construction would be **less than significant.**

Operational Emissions

As described in Operational Emissions in Section 3.2.4, Analytical Method, project-related operational sources of air pollutant emissions would include natural gas combustion, on-road vehicles, and area sources (i.e., use of consumer products, architectural coatings for repainting, and landscaping equipment). Table 3.2-8 presents the estimated maximum daily operational emissions generated during the first full year of proposed project operations after buildout (year 2030). The estimated existing campus emissions in 2018 were subtracted from the proposed project emissions, and the net change in emissions is compared with the BCAQMD significance thresholds. Details of the emission calculations are provided in Appendix B.

Table 3.2-8 Estimated Maximum Daily Operational Criteria Air Pollutant Emissions

Emission Source	ROG	NO_x	CO	SO_x	PM_{10}	$PM_{2.5}$
	Pounds per Day					
Project Buildout						
Area sources	99.08	3.55	308.07	0.02	1.71	1.71
Energy	4.48	40.73	34.21	0.24	3.10	3.10
Motor vehicles	80.19	607.90	1,170.34	5.73	497.23	135.39
Total project emissions	**183.75**	**652.18**	**1,512.62**	**5.99**	**502.04**	**140.20**
Existing Scenario						
Area sources	75.15	2.20	189.47	0.01	1.03	1.03
Energy	3.41	30.97	26.01	0.19	2.35	2.35
Motor vehicles	203.41	1,415.47	3,069.43	7.07	458.94	131.50
Total existing scenario emissions	**281.97**	**1,448.64**	**3,284.91**	**7.27**	**462.32**	**134.88**
Net increase (project minus existing scenario)	(98.22)	(796.46)	(1,772.29)	(1.28)	39.72	5.32
BCAQMD threshold	*25*	*25*	*N/A*	*N/A*	*80*	*80*
Threshold exceeded?	**No**	**No**	**N/A**	**N/A**	**No**	**No**

Notes: ROG = reactive organic gases; NO_x = oxides of nitrogen; CO = carbon monoxide; SO_x = sulfur oxides; PM_{10} = coarse particulate matter; $PM_{2.5}$ = fine particulate matter; BCAQMD = Butte County Air Pollution Control District; N/A = Not applicable. See Appendix D for details.
The values shown are the maximum summer or winter daily emissions results from CalEEMod.

As shown in Table 3.2-8, only particulate matter (PM_{10}, and $PM_{2.5}$) would increase as a result of project buildout. The daily operational emissions for PM_{10}, and $PM_{2.5}$ would not exceed the BCAQMD significance thresholds. As such, proposed project operational impacts would be **less than significant.**

Impact AQ-3. The project would not expose sensitive receptors to substantial pollutant concentrations. (Less than Significant)

Toxic Air Contaminants

TACs are defined as substances that may cause or contribute to an increase in deaths or in serious illness, or that may pose a present or potential hazard to human health. State law has established the framework for California's TAC identification and control program, which is generally more stringent than the federal program and aimed at TACs that are a problem in California. The state has formally identified more than 200 substances as TACs, including the federal HAPs, and is adopting appropriate control measures for sources of these TACs. During Project construction, DPM would be the primary TAC emitted from diesel-fueled equipment and trucks. The following measures are required by state law to reduce DPM emissions:

- Fleet owners of mobile construction equipment are subject to the CARB Regulation for In-Use Off-Road Diesel Vehicles (Cal. Code Regs., tit. 13, chapter 9, § 2449), the purpose of which is to reduce DPM and criteria pollutant emissions from in-use (existing) off-road diesel-fueled vehicles.
- All commercial diesel vehicles are subject to Title 13, section 2485 of the California Code of Regulations, limiting engine idling time. Idling of heavy-duty diesel construction equipment and trucks during loading and unloading shall be limited to 5 minutes; electric auxiliary power units should be used whenever possible (Cal. Code Regs., tit. 13, chapter 10, § 2485).

As previously discussed, the closest off-site sensitive receptors include residential uses located to the north, south, east and west of the project site's boundary, Chico High School, which is located to the north on Legion Avenue, adjacent to the project site's boundary, Chico Junior High, located approximately 0.25 miles to the east, and Citrus Avenue Elementary School, located approximately 0.23 miles to the north. Health effects from carcinogenic air toxics are usually described in terms of cancer risk. The BCAQMD recommends an incremental cancer risk threshold of 10 in 1 million. "Incremental cancer risk" is the net increased likelihood that a person continuously exposed to concentrations of TACs resulting from a project over a 9-, 30-, and 70-year exposure period will contract cancer based on the use of standard Office of Environmental Health Hazard Assessment risk-assessment methodology. In addition, some TACs have noncarcinogenic effects. The BCAQMD recommends that a non-cancer risk exceeding a hazard index of 1, or ambient diesel $PM_{2.5}$ exceeding an annual average of 0.3 ug/m^3. Non-cancer adverse health risks are measured against a hazard index, which is defined as the ratio of the predicted incremental exposure concentrations of the various noncarcinogens from the proposed project to published reference exposure levels that can cause adverse health effects.

DPM emissions would be emitted from off-road equipment operations and heavy-duty trucks. Off-road construction equipment and commercial trucks are subject to CARB Airborne Toxic Control Measures (ATCMs) to reduce diesel particulate emissions. In addition, as described in Table 3.2-4 above, PM_{10} (representative of DPM) emissions would be minimal. According to the Office of Environmental Health Hazard Assessment, health risk assessments, which determine the exposure of sensitive receptors to toxic emissions, should be based on a 30-year exposure period for the maximally exposed individual resident; however, such assessments should be limited to the period/duration of activities associated with the project. Total project construction is anticipated to occur over a temporary period spanning 10 years, from 2021 through 2030. However, since the proposed project involves construction of multiple phases in multiple areas within the CSU, Chico campus, the proposed project would not require the extensive use of heavy-duty construction equipment or diesel trucks in any one location over the duration of development, which would limit the exposure of any proximate individual sensitive receptor to TACs. Due to the relatively short period of exposure at any individual sensitive receptor and minimal particulate emissions generated, TACs emitted during construction would not be expected to result in concentrations causing significant health risks, therefore, impacts would be **less than significant.**

With regard to long-term operations, the proposed project could result in TAC emissions from on-site generators; however, the specifics from such sources are unknown at the time of this analysis. On-site generators would result in TAC emissions; however, stationary sources, such as these generators, would be required to comply with the BCAQMD permitting process, which would ensure that potential health risks would be less than significant before issuing a permit to operate. Therefore, the proposed project would not result in exposure of sensitive receptors to substantial TAC concentrations during long-term operations and impacts would be **less than significant.**

Health Effects of Carbon Monoxide

Mobile source impacts occur on two scales of motion. Regionally, proposed project-related travel would add to regional trip generation and increase the VMT within the local airshed and the SVAB. Locally, proposed project generated traffic would be added to the City's roadway system near the proposed project site. If such traffic occurs during periods of poor atmospheric ventilation, is composed of a large number of vehicles "cold-started" and operating at pollution-inefficient speeds, and is operating on roadways already crowded with non-project traffic, there is a potential for the formation of microscale CO hotspots in the area immediately around points of congested traffic. Because of continued improvement in vehicular emissions at a rate faster than the rate of vehicle growth and/or congestion, the potential for CO hotspots in the SVAB is steadily decreasing.

Projects contributing to adverse traffic impacts may result in the formation of CO hotspots. The construction associated with buildout of the Master Plan would be temporary and would not be a source of daily, long-term mobile-source emissions. The proposed project would result in additional vehicle trips to the campus resulting from buildout of the Master Plan. As discussed in Chapter 3.14, Transportation, the proposed project would be required to implement Transportation Demand Management (TDM) strategies as part of mitigation measure MM-TRA-1. Implementing these measures would help reduce CO emissions indicative of hotspots. In addition, due to continued improvement in vehicular emissions at a rate faster than the rate of vehicle growth and/or congestion, the potential for CO hotspots in the SVAB is steadily decreasing. Maximum background CO levels in Butte County in years preceding the Camp Fire, as shown in Table 3.2-2, are approximately 5 percent and 16 percent of the 1-hour and 8-hour NAAQS and CAAQS and would be expected to improve further due to reductions in motor vehicle emissions. Furthermore, as indicated in Table 3.2-8, the proposed project would result in a net decrease in operational CO emissions and would not exceed the BCAQMD significance thresholds. Based on these considerations, the proposed project would result in a **less than significant** impact to air quality with regard to potential CO hotspots.

Health Effects of Criteria Air Pollutants

As demonstrated above, construction and operation of the proposed project would not result in emissions that exceed the BCAQMD significance thresholds for any criteria air pollutants, including ROG, NO_x, PM_{10}, or $PM_{2.5}$. ROG emissions would be associated with motor vehicles, construction equipment, and architectural coatings as shown in Table 3.2-7 and Table 3.2-8. Generally, the VOCs in architectural coatings are of relatively low toxicity. Additionally, the proposed project would be required to comply with BCAQMD Rule 230, which restricts the VOC content of coatings.

ROG and NO_x are precursors to O_3, for which the County is designated as nonattainment with respect to the NAAQS and CAAQS. The health effects associated with O_3 are generally associated with reduced lung function.

The contribution of ROG and NO_x to regional ambient O_3 concentrations is the result of complex photochemistry. The increases in O_3 concentrations in the SVAB due to O_3 precursor emissions tend to be found downwind from the source location to allow time for the photochemical reactions to occur. However, the potential for exacerbating excessive O_3 concentrations would also depend on the time of year that the precursor emissions would occur because exceedances of the O_3 AAQS tend to occur between April and October when solar radiation is highest. The holistic effect of a single project's emissions of O_3 precursors is speculative due to the lack of quantitative methods to assess this impact. Nonetheless, because ROG and NO_x emissions associated with construction and/or operation would not exceed the BCAQMD significance thresholds, and are expected to decline relative to existing conditions, it is not anticipated the proposed project would contribute substantially to regional O_3 concentrations and the associated health effects.

Construction and operation of the proposed project would not contribute to exceedances of the NAAQS and CAAQS for NO_2. Health effects that result from NO_2 (a constituent of NO_x) include respiratory irritation, which could be experienced by nearby receptors during the periods of heaviest use of off-road construction equipment. However, off-road construction equipment would be operating at multiple locations within the CSU, Chico campus and would not be concentrated in one portion of the campus at any one time. In addition, existing NO_2 concentrations in the area are well below the NAAQS and CAAQS standards and construction and operation of the proposed project would not create substantial NO_x emissions. Therefore, the proposed project is not anticipated to result in potential health effects associated with NO_2.

Mobile source impacts occur on two scales. Regionally, project-related travel would add to regional trip generation and increase the VMT[3] within the local airshed and the SVAB. Locally, project-generated vehicles would be added to the roadway system near the CSU, Chico campus. If such vehicle travel occurs during periods of poor atmospheric ventilation, is composed of a large number of vehicles "cold-started" and operating at pollution-inefficient speeds, and is operating on roadways already crowded with non-project traffic, there is a potential for the formation of microscale CO hotspots in the area immediately around points of substantially elevated and localized CO emissions, such as around congested intersections. Since construction activities would be temporary and spread out across multiple work sites throughout the buildout duration, which would disperse localized CO emissions, a project-level construction hotspot analysis is not required as discussed previously. In regards to operations, the proposed project would result in additional vehicle trips to the campus, as discussed in Chapter 3.14, Transportation; the proposed project would be required to implement mitigation measure MM-TRA-1, which would help reduce CO emissions indicative of hotspots. Thus, the proposed project's CO emissions would not contribute to significant health effects associated with this pollutant.

Construction and operation of the proposed project would also not exceed thresholds for PM_{10} or $PM_{2.5}$ and would not contribute to exceedances of the NAAQS and CAAQS for particulate matter or obstruct the SVAB from coming into attainment for these pollutants. Due to the minimal contribution of PM_{10} and $PM_{2.5}$ during construction and operation, it is not anticipated that the proposed project would result in potential health effects related to particulate matter.

In summary, because construction and operation of the proposed project would not result in exceedances of the BCAQMD significance thresholds for ROG, NO_x, PM_{10}, and $PM_{2.5}$, and because the BCAQMD thresholds are based on levels that the SVAB can accommodate without affecting the attainment date for the AAQS and the AAQS are established to protect public health and welfare, it is anticipated that the proposed project would not result in health effects associated with criteria air pollutants and the impact would be **less than significant.**

3 While total VMT would increase with the proposed project, VMT per service population would decrease with buildout of the Master Plan, as indicated in Section 3.14, Transportation.

Impact AQ-4. The project would not result in other emissions (such as those leading to odors) adversely affecting a substantial number of people. (Less than Significant)

The occurrence and severity of potential odor impacts depends on numerous factors, including the nature, frequency, and intensity of the source; wind speed and direction; and the sensitivity of the receiving location. Although offensive odors seldom cause physical harm, they can be annoying and cause distress among the public and generate citizen complaints.

Odors would be potentially generated from vehicles and equipment exhaust emissions during proposed project construction. Potential odors produced during construction would be attributable to concentrations of unburned hydrocarbons from tailpipes of construction equipment, architectural coatings, and asphalt pavement application. Such odors would disperse rapidly from the proposed project sites and generally occur at magnitudes that would not affect substantial numbers of people. Therefore, impacts associated with odors during construction would be **less than significant.**

Typical sources of substantial operational odors include landfills, rendering plants, chemical plants, agricultural uses, wastewater treatment plants, and refineries. Regarding operations, the proposed project would involve development of additional CSU, Chico campus facilities (non-residential) and housing (residential) uses. Typical odors generated from operation of the proposed project would include vehicle exhaust generated by students, employees, or visitors traveling to and from the project site, through the periodic use of landscaping or maintenance equipment, from the temporary storage of typical solid waste (refuse), and from the dining facilities. Any odors produced would be minimal, would be similar to the existing uses, and would be confined to the immediate vicinity. Overall, operation of the proposed project would not result in odors that would affect a substantial number of people and this impact would be **less than significant.**

3.2.5 Cumulative Impacts

The cumulative context of an air pollutant is dependent on the specific pollutant being considered. O_3 precursors are a regional pollutant; therefore, the cumulative context would be existing and future development within the entire SVAB. This means that O_3 precursors generated in one location do not necessarily have O_3 impacts in that area. Instead, precursors from across the region can combine in the upper atmosphere and be transported by winds to various portions of the SVAB. Consequently, all O_3 precursors generated throughout the SVAB are part of the cumulative context.

The geographic scope for the proposed project's cumulative analysis includes the Butte County and surrounding areas within the SVAB for O_3. The SVAB includes Sacramento, Shasta, Tehama, Butte, Glenn, Colusa, Sutter, Yuba, Yolo, and portions of Solano and Placer counties. The SVAB extends from south of Sacramento to north of Redding and is bounded on the west by the Coast Ranges and on the north and east by the Cascade Range and the Sierra Nevada.

Cumulative localized impacts would potentially occur if a construction project were to occur concurrently with another off-site project. Construction schedules for potential future projects near the project site are currently unknown; therefore, potential construction impacts associated with two or more simultaneous projects would be considered speculative and is not further evaluated.[4]

[4] The State CEQA Guidelines state that if a particular impact is too speculative for evaluation, the agency should note its conclusion and terminate discussion of the impact (14 CCR 15145). This discussion is nonetheless provided in an effort to show good-faith analysis and comply with CEQA's information disclosure requirements.

As the proposed project is built out, future projects would be subject to CEQA and would require air quality analysis and, where necessary, mitigation if the project would exceed BCAQMD thresholds. Criteria air pollutant emissions associated with construction activity of future projects would be reduced through implementation of control measures required by the BCAQMD. Cumulative PM_{10} and $PM_{2.5}$ emissions would be reduced because all future projects would be subject to BCAQMD Rules 200 (Nuisance) and 205 (Fugitive Dust), which sets forth general and specific requirements for all construction sites in the BCAQMD. In addition, cumulative VOC emissions would be subject to BCAQMD Rules 230 (Architectural Coatings) and 231 (Cutback and Emulsified Asphalt). As presented in Tables 3.2-7 and 3.2-8, the proposed project would not result in the exceedance of the construction or operational BCAQMD significance thresholds. As a result, the proposed project would not result in a cumulatively considerable contribution to regional O_3 concentrations or other criteria pollutant emissions. Therefore, the project's contribution to cumulative impacts would be **less than significant.**

3.2.6 Mitigation Measures

No mitigation measures are required.

3.2.7 Level of Significance After Mitigation

All impacts are less than significant prior to any mitigation.

3.2.8 References

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3.3 Biological Resources

This section describes the existing biological resources conditions within the proposed Master Plan area and vicinity, identifies associated regulatory requirements, and evaluates potential project impacts related to special status species or their habitat, wetlands, migratory corridors, and consistency with habitat conservation plans. This section identifies mitigation measures to avoid or substantially reduce the potential impacts of implementation of the proposed Master Plan. No scoping comments were received regarding biological resources in response to the Notice of Preparation.

3.3.1 Environmental Setting

Regional Setting

The proposed Master Plan area is located within the Sacramento Valley geographic subdivision of the California Floristic Province (Jepson Flora Project 2019). Although this region primarily consists of agriculture and urban development, there are a variety of vegetation types also present, such as grasslands, vernal pools, riparian woodlands, and oak woodland (Jepson Flora Project 2019). The CSU, Chico campus is located in the City of Chico, California where average annual temperatures range from 46.8°F to 75.2°F, and the average annual precipitation is 25.66 inches (WRCC 2019). On average, the months with the highest rainfall are January and February, and July has the least precipitation.

The proposed Master Plan area is located within the Big Chico Creek, Angel Slough, and Middle Butte Creek subwatersheds (Hydrologic Unit Codes 1802015705, 1802015803 and 1802015802, respectively), within the Big Chico Creek-Sacramento River and Butte Creek watersheds (Hydrologic Unit Codes 18020157 and 18020157, respectively). Big Chico Creek is a tributary to the Sacramento River and flows roughly southwest through the CSU, Chico campus. No other rivers or streams flow through the campus.

Master Plan Setting

The proposed Master Plan area includes the CSU, Chico main campus, a 650-bed apartment complex identified as University Housing, located approximately one and one-half miles to the northwest, and the University Farm, an 800-acre farm located approximately five miles south of the main campus. Brief descriptions of these areas are provided below, followed by descriptions of associated soils, biological resources, sensitive species, jurisdictional features, and connections to wildlife corridors.

Main Campus

The approximately 132-acre main campus is mostly developed, with developed areas of the main campus consist of academic and administrative buildings, parking facilities, paved pathways and pedestrian bridges, landscaping, and recreational facilities, such as an outdoor amphitheater, sports stadium, baseball fields, and tennis courts. The exception is Big Chico Creek and its riparian corridor, which bisect the campus along an east-west alignment. Big Chico Creek is the only waterway or water feature on the main campus that constitutes potentially jurisdictional "waters of the United States"; see *Potentially Jurisdictional Waters* within this section for further discussion of this designation (UWFS 2019a; USGS 2019). The U.S. Fish and Wildlife Service (USFWS) National Wetlands Inventory (2019a) identifies Big Chico Creek on the main campus as a riverine feature and freshwater forested/shrub wetland; however, based on field observations, Big Chico Creek is a perennial creek and not a wetland. As further described below, Big Chico Creek supports a riparian corridor composed of riparian woodland vegetation through the main campus.

The main campus is generally level, sloping slightly toward Big Chico Creek, with elevations ranging from approximately 185 to 210 feet above mean sea level. The main campus is situated in Sections 26, 27, and 34 of Township 22 North, and Range 1 East on the U.S. Geological Survey (USGS) Chico 7.5-minute quadrangle. The approximate center of the main campus corresponds to 39°43′44″ north latitude and 121°50′52″ west longitude.

University Village Housing

The approximately 8.7-acre University Village housing site is entirely developed and consists of apartment buildings, paved parking, and ornamental landscaping. Vegetation is limited to landscape trees, primarily non-native, and small areas of turf grass. The site is generally level, with elevations ranging from approximately 175 to 185 feet above mean sea level. University Village is situated in Section 27 and 28 of Township 22 North, and Range 1 East on the USGS Chico 7.5-minute quadrangle. The approximate center of University Village corresponds to 39°43′55″ north latitude and 121°51’49″ west longitude.

University Farm

The approximately 800-acre University Farm comprises agricultural development, including croplands, orchards, and irrigated pastures. Outside of the planted row crops and orchards, the vegetation includes non-native grasses and scattered trees. Three ponds are located on the site, further described below. Manmade structures in the northern portion of the farm include storage buildings and barns, a dairy and meat laboratory, and cattle enclosures. There is also an approximately 1.3-acre residential parcel on the southeast corner of Hegan Lane and Nicholas Shouten Lane that is included in the proposed development area on the farm. The farm is generally level, with elevations ranging from approximately 170 to 190 feet above mean sea level. University Farm is situated in Sections 1, 2, 11, 12, 13, and 14 of Township 22 North, and Range 1 and 2 East on the USGS Chico 7.5-minute quadrangle. The approximate center of University Farm corresponds to 39°41′2″ north latitude and 121°49′16″ west longitude.

Soils

According to the Natural Resources Conservation Service (USDA 2019), a single soil type is mapped within the main campus and University Village housing (Vina fine sandy loam, sandy substratum, 0 to 2% slopes, Major Land Resource Area [MLRA] 17), and four soil types are mapped within the University Farm (Chico loam, 0 to 1% slopes; Almendra loam, 0 to 1% slopes; Vina fine sandy loam, sandy substratum, 0 to 2% slopes, MLRA 17; Conejo clay loam, 0 to 1% slopes). See Section 3.6, Geology Soils and Paleontology, for an in-depth discussion of soils on the Master Plan area.

Vegetation Communities and Land Cover Types

Land cover within the Master Plan area consists of a combination of non-vegetative land cover types as well as terrestrial natural vegetation communities. Table 3.3-1 provides a breakdown of the vegetation communities or land cover types present and Figure 3.3-1 graphically depicts this information. A total of 83 species of native or naturalized plants, 37 native (45%) and 46 non-native (55%), was recorded in the Master Plan area during the 2019 site assessment. A more detailed discussion is included below.

SOURCE: USDA 2016, USGS 2018, County of Butte 2018, CSU, Chico 2019

0 355 710 Feet

FIGURE 3.3-1A

Vegetation Communities and Land Covers - Main Campus

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SOURCE: USDA 2016, USGS 2018, County of Butte 2018, CSU, Chico 2019

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FIGURE 3.3-1B

Vegetation Communities and Land Covers - University Village

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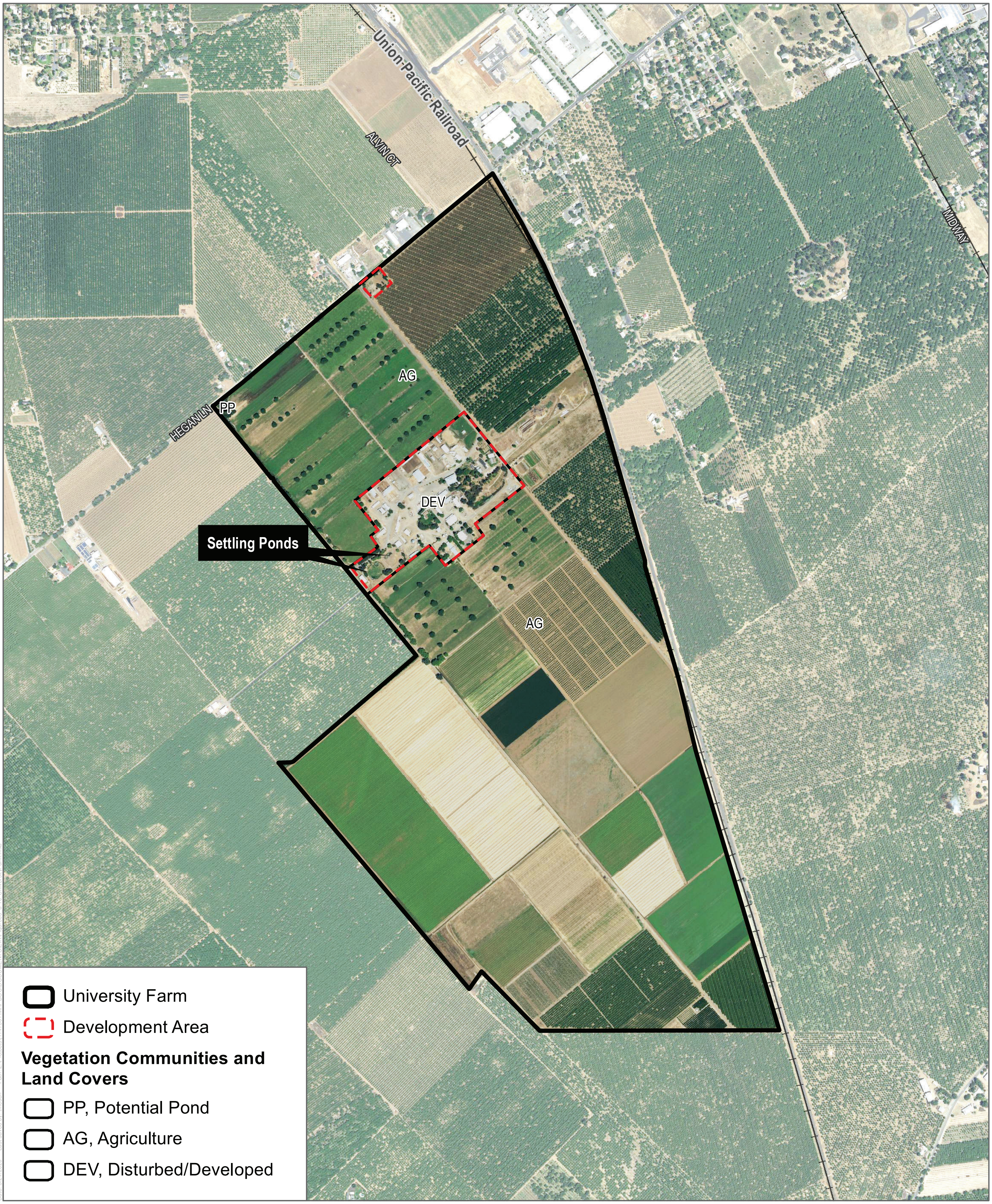

SOURCE: USDA 2016, USGS 2018, County of Butte 2018, CSU, Chico 2019

FIGURE 3.3-1C

Vegetation Communities and Land Covers - University Farm

California State University, Chico Master Plan EIR

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0 750 1,500 Feet

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Table 3.3-1. Vegetation Communities and Land Cover Types in the Master Plan Area

Vegetation Community and Land Cover Type	Acres		
	Main Campus	*University Village Housing*	*University Farm*
Vegetation Communities			
Riparian Woodland[1]	6.77	–	–
Anthropogenic Land Cover Types			
Agriculture	–	–	749.67
Disturbed/Developed	148.31	8.91	49.48
Aquatic Land Cover Types			
Big Chico Creek[1]	3.46	–	
Potential Pond	–	–	0.13

Notes:
[1]Identified as a sensitive natural community potentially under US Army Corps of Engineers (ACOE), Regional Water Quality Control Board (RWQCB), and/or California Department of Fish and Wildlife (CDFW) jurisdiction.

Riparian Woodland. Riparian woodland occurs along the north and south banks of Big Chico Creek on the main campus. This community supports multiple layers of dense vegetation, which provides horizontal complexity below the tree canopy. Overstory dominants include alder (*Alnus* sp.), western sycamore (*Platanus racemosa*), and valley oak (*Quercus lobata*). Common shrubs and vines include Himalayan blackberry (*Rubus armeniacus*), blue elderberry (*Sambucus nigra* ssp. *caerulea*), wild grape (*Vitis californica*), and western redbud (*Cercis occidentalis*). The herb layer contains a variety of species, such as California mugwort (*Artemisia douglasiana*), Santa Barbara sedge (*Carex barbarae*), slender wild oat (*Avena barbata*), and spreading hedgeparsley (*Torilis arvensis*).

Agriculture. This land cover is limited to the University Farm and consists of irrigated pasture, cropland, and orchards. Irrigated pastures onsite are mostly dominated by non-native grasses and forbs, such as Italian rye grass (*Festuca perennis*), barleys (*Hordeum* spp.), and clovers (*Trifolium* spp.). Within the irrigated pasture, there are scattered rows of white mulberry trees (*Morus alba*). Row crop species include sunflowers, alfalfa, tomato, and squash, and orchards contain almond trees (*Prunus* sp.) and walnut trees (*Juglans* sp.). Also included in this land cover is uncultivated cropland, which contains a similar assemblage of plant species found in the disturbed/developed land cover (discussed below).

Disturbed/Developed. This land cover type occurs on the main campus, University Village, and University Farm. Included in this land cover are hardscape areas, such as paved roads/walkways, parking lots, apartments, academic buildings and agricultural facilities (including settling ponds discussed below), as well as natural areas dominated by ruderal species indicative of disturbance. Where present, vegetation is usually dominated by non-native upland species, such as slender wild oat (*Avena barbata*), red stemmed filaree (*Erodium cicutarium*), foxtail barley (*Hordeum murinum*), and Bermuda grass (*Cynodon dactylon*).

Settling Ponds. There are two settling ponds (hereafter referred to as 'east pond' or 'west pond') located in the northern portion of the University Farm. These ponds contain stagnant run-off water unlikely to support fish, aquatic reptiles, or amphibians. Both ponds contain moderately sloped banks covered in rocky, barren soils below fragmented stands of pine (*Pinus* sp.), eucalyptus (*Eucalyptus* sp.), and oak (*Quercus* sp.). The east pond contains ruderal plant species along its margins (similar those found in the disturbed/developed land cover), emergent vegetation, and surface algae. The east pond empties into the west pond through a culvert.

Pond. Based on a review of the USFWS (2019a) NWI map and aerial photos (Google 2019), there is one seasonal pond located in the northern extent of the University Farm, on the southeast corner of Hengst Drive and Hegan Lane. The pond is situated below a moderately dense tree canopy consisting of mostly native oaks (*Quercus* spp.) Although the feature is mapped as a freshwater pond (USFWS 2019a), it appears to support seasonal hydrology that is primarily influenced by agricultural run-off from the adjacent irrigated pasture.

Big Chico Creek. Approximately 0.67 miles of Big Chico Creek flows southwesterly through the main campus. As previously discussed, most of Big Chico Creek in this area is heavily shaded by a riparian corridor. The banks of Big Chico Creek are moderately steep and overhang the waterway, supporting exposed roots and herbaceous plant species. The bed of Big Chico Creek is dominated by a mix of sand, small cobble, and gravel, and several gravel bars are present along the creek's margins. Some segments of the creek banks have been reinforced with retaining walls and rock slope protection, and multiple pedestrian bridges span the creek. Big Chico Creek is a perennial channel that supports a variety of native and non-native aquatic wildlife, such as bluegill (*Lepomis* spp.), bass (*Micropterus* spp.), salmonids (*Oncorhynchus* spp.), American bullfrog (*Lithobates catesbeianus*), Sierran treefrog (*Pseudacris sierra*), and western aquatic garter snake (*Thamnophis couchii*).

Common Wildlife Species

Two fish species, 18 bird species, one reptile species, and two mammal species were detected during the July 29, 2019 survey (Table 3.3-2).

Table 3.3-2. Common Wildlife Species Observed in the Master Plan Area

Common Name	Scientific Name
Fish	
Bass	*Micropterus* sp.
Sunfish	*Lepomis* sp.
Reptiles	
Western fence lizard	*Sceloporus occidentalis*
Birds	
Acorn woodpecker	*Melanerpes formicivorus*
American crow	*Corvus brachyrhynchos*
American robin	*Turdus migratorius*
Canada goose	*Branta canadensis*
California scrub-jay	*Aphelocoma californica*
California towhee	*Melozone crissalis*
Common raven	*Corvus corax*
Eurasian collared dove	*Streptopelia decaocto*
European starling	*Sturnus vulgaris*
Hooded oriole	*Icterus cucullatus*
House sparrow	*Passer domesticus*
Killdeer	*Charadrius vociferus*
Northern mockingbird	*Mimus polyglottos*
Red-tailed hawk	*Buteo jamaicensis*
Rock pigeon	*Columba livia*
Turkey vulture	*Cathartes aura*

Table 3.3-2. Common Wildlife Species Observed in the Master Plan Area

Common Name	Scientific Name
Western tanager	*Piranga ludoviciana*
Mammals	
California ground squirrel	*Otospermophilus beecheyi*
Field mouse	*Peromyscus californicus*

Source: Dudek 2019.

Special-Status Resources

For the purposes of this analysis, special-status plant species are those plants listed, proposed for listing, or candidates for listing as threatened or endangered by the U.S. Fish and Wildlife Service (USFWS) under the Endangered Species Act (ESA) (16 USC 1531 et seq.); those listed or proposed for listing as rare, threatened, or endangered by the CDFW under the California Endangered Species Act (CESA) (California Fish and Game Code, Section 2050 et seq.); and plants that have a California Rare Plant Rank (CRPR) of 1 or 2 in the CNPS online Inventory of Rare and Endangered Plants (CNPS 2019). Special-status wildlife species are those that are designated as either rare, threatened, or endangered (or candidates for designation) by CDFW or the USFWS; are protected under either the CESA or the ESA; meet the California Environmental Quality Act (CEQA) definition for endangered, rare, or threatened (14 CCR 15380[b],[d]); are considered fully protected under the California Fish and Game Code, Sections 3511, 4700, 5050, and 5515; or that are on the CDFW Special Animals List (CDFW 2018c) and determined by CDFW to be a Species of Special Concern.

Various agency databases were queried and reviewed to identify special-status species known to occur in the Master Plan Area or vicinity (Figure 3.3-2; see Section 3.3.3 for methods). For those species identified through this search, the potential for each species to occur in the three distinct sites of the proposed Master Plan (i.e., main campus, University Village, and University Farm) was determined from on a review of vegetation communities and available land cover types, habitat types, soils, and elevation preferences, as well as the known geographic range of each species. Species were assumed not to occur when the Master Plan area was clearly outside the known geographic range of the species or if there was no suitable habitat for the species within or adjacent to any portion of the proposed Master Plan area.

Special-Status Plants

Results of the CNDDB and CNPS searches revealed 26 special-status plant species as occurring in the Master Plan area and vicinity or having potential to occur in those areas (see Appendix C of this Draft EIR). Of these, 21 species were removed from consideration due to a lack of suitable habitat within or immediately adjacent to the Master Plan area or because the site is outside of the species' known range; these 21 species are therefore not addressed further in this EIR. The five remaining special-status plant species have a low or moderate potential to occur in the Master Plan area. These plant species are presented in Table 3.3-3 and discussed in detail following the table.

Table 3.3-3. Special-Status Plant Species Occurrence Potential in the Master Plan Area

Scientific Name	Common Name	Status (Federal/State/ CRPR) [1]	Potential to Occur		
			Main Campus	*University Village*	*University Farm*
Balsamorhiza macrolepis	big-scale balsamroot	--/--/1B.2	**Low potential to occur.**	Not expected to occur.	Low potential to occur.
Cryptantha crinita	silky cryptantha	--/--/1B.2	**Moderate potential to occur.**	Not expected to occur.	Not expected to occur.
Hibiscus lasiocarpos var. *occidentalis*	woolly rose-mallow	--/--/1B.2	**Moderate potential to occur.**	Not expected to occur.	Not expected to occur.
Imperata brevifolia	California satintail	--/--/2B.1	**Moderate potential to occur.**	Not expected to occur.	Not expected to occur.
Monardella venosa	veiny monardella	--/-- /1B.1	**Low potential to occur.**	Not expected to occur.	Not expected to occur.
Paronychia ahartii	Ahart's paronychia	--/--/1B.1	Not expected to occur.	Not expected to occur.	Not expected to occur.

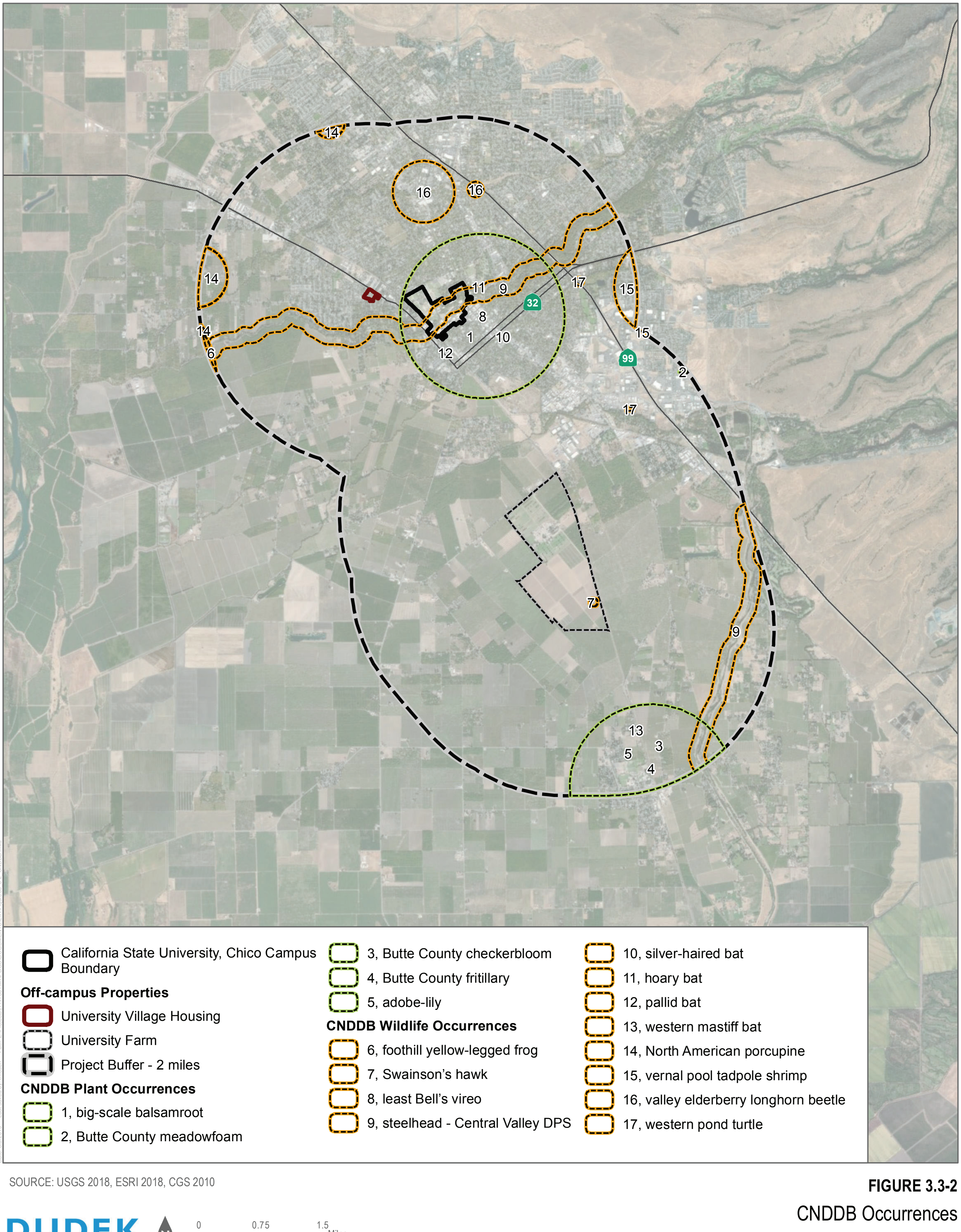
Source: Appendix C

1 **Status Legend:**
CRPR 1B: Plants Rare, Threatened, or Endangered in California and Elsewhere
CRPR 2B: Plants Rare, Threatened, or Endangered in California, But More Common Elsewhere
.1 Seriously threatened in California (over 80% of occurrences threatened/high degree and immediacy of threat)
.2 Moderately threatened in California (20–80% occurrences threatened/moderate degree and immediacy of threat)

Big-Scale Balsamroot (Balsamorhiza macrolepis; CRPR 1B.2). Big-scale balsamroot is a perennial herb found in open grassy or rocky slopes and valleys and sometimes serpentine soils in chaparral, cismontane woodland, and valley and foothill grassland from approximately 145 to 5,100 feet AMSL. Big-scale balsamroot blooms March through July (CNPS 2019; Jepson Flora Project 2019). On the main campus and the University Farm, this species has a low potential to occur, because potential habitat onsite is generally disturbed by mowing and trampling and is dominated by non-native species. It is not expected to occur within the University Village. This species was not identified in the Master Plan area during the July 2019 biological field assessment, which was conducted toward the end of the evident and identifiable period for this species.

Silky Cryptantha (Cryptantha crinita; CRPR 1B.2). Silky cryptantha is an annual herb found in gravelly streambeds in cismontane woodland, lower montane coniferous forest, riparian forest, riparian woodland, and valley and foothill grassland from approximately 200 to 3,985 feet AMSL. Silky cryptantha blooms March through June (CNPS 2019; Jepson Flora Project 2019). On the main campus, this species has a moderate potential to occur along Big Chico Creek while it is not expected to occur in the University Village or University Farm. This species was not identified in the Master Plan area during the July 2019 biological field assessment, which was conducted outside of the evident and identifiable period for this species.

Wooly Rose-Mallow (Hibiscus lasiocarpos var. occidentalis; CRPR 1B.2). Wooly rose-mallow is an emergent rhizomatous herb found in riprap on sides of levees or in freshwater marshes and swamps from approximately 0 to 395 feet AMSL. Wooly rose-mallow blooms June through September (CNPS 2019). On the main campus, this species has a moderate potential to occur along Big Chico Creek, where riprap is present while it is not expected to occur in the University Village or University Farm. This species was not identified in the Master Plan area during the July 2019 biological field assessment, which was conducted during the evident and identifiable period for this species.



SOURCE: USGS 2018, ESRI 2018, CGS 2010

FIGURE 3.3-2

CNDDB Occurrences

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California Satintail (Imperata brevifolia; CRPR 2B.1). California satintail is a perennial rhizomatous herb found in mesic soils in chaparral, coastal scrub, Mojavean desert scrub, meadows and seeps (often alkali), and riparian scrub from approximately 0 to 3,985 feet AMSL. California satintail blooms September through May (CNPS 2019). On the main campus, this species has a moderate potential to occur along Big Chico Creek while it is not expected to occur in the University Village or University Farm. This species was not identified in the Master Plan area during the July 2019 biological field assessment, which was conducted outside of the evident and identifiable period for this species.

Veiny Monardella (Monardella venosa; CRPR 1B.1). Veiny monadella is an annual herb found in heavy clay soils in cismontane woodland and valley and foothill grassland from approximately 195 to 1,345 feet AMSL. Veiny monardella blooms in May and July (CNPS 2019). On the main campus, this species has a low potential to occur, because potential habitat onsite is generally disturbed and lacks heavy clay soils. This species is not expected to occur in the University Village or University Farm. This species was not identified in the Master Plan area during the July 2019 biological field assessment, which was conducted toward the end of the evident and identifiable period for this species.

Special-Status Wildlife

Results of the CNDDB and USFWS Information, Planning, and Conservation (IPaC) Trust Resource Report searches indicated 28 special-status wildlife species as occurring in the Master Plan area or having potential to occur in the vicinity (see Appendix C). Of these, 15 species are not expected to occur on the Master Plan area or vicinity due to lack of potential habitat or area being outside of the species' known range. Nine special-status species have the potential to occur on the main campus and seven have a potential to occur on University Farm. Native and migratory birds are the only special-status species with potential to occur at the University Village. There are no streams on the University Village or University Farm sites, so no habitat for special-status fish species is present in these areas. These species are presented in Table 3.3-4 and discussed in detail below.

Table 3.3-4. Special-Status Wildlife Species Occurrence Potential in the Master Plan Area

Latin Name	Common Name	Status [1] (Federal/State)	Potential to Occur [2]		
			Main Campus	*University Village*	*University Farm*
Invertebrates					
Desmocerus californicus dimorphus	valley elderberry longhorn beetle (VELB)	FT/None	**High potential to occur.**	Not expected to occur.	Not expected to occur.
Fishes					
Oncorhynchus mykiss irideus pop. 11	steelhead - Central Valley DPS	FT/None	**High potential to occur.**	Not expected to occur.	Not expected to occur.
Oncorhynchus tshawytscha pop. 6	chinook salmon - Central Valley spring-run ESU	FT/ST	**High potential to occur.**	Not expected to occur.	Not expected to occur.
Reptiles					
Emys marmorata	western pond turtle	None/SSC	**Moderate potential to occur.**	Not expected to occur.	Not expected to occur.

Table 3.3-4. Special-Status Wildlife Species Occurrence Potential in the Master Plan Area

Latin Name	Common Name	Status 1 (Federal/State)	Potential to Occur 2		
			Main Campus	*University Village*	*University Farm*
Thamnophis gigas	giant gartersnake	FT/ST	Not expected to occur.	Not expected to occur.	**Low potential to occur.**
Birds					
Athene cunicularia	burrowing owl	BCC/SSC	Not expected to occur.	Not expected to occur.	**Moderate potential to occur.**
Buteo swainsoni	Swainson's hawk	BCC/ST	Not expected to occur.	Not expected to occur.	**High potential to occur.**
Coccyzus americanus occidentalis	western yellow-billed cuckoo	FT, BCC/SE	**Low potential to occur.**	Not expected to occur.	Not expected to occur.
Lanius ludovicianus	loggerhead shrike	BCC/SSC	**Low potential to occur.**	Not expected to occur.	**Moderate potential to occur.**
Setophaga petechia	yellow warbler	BCC/SSC	**Moderate potential to occur.**	Not expected to occur.	Not expected to occur.
Native and migratory birds protected by California Fish and Game Code and the MBTA			**Present**	**Present**	**Present**
Mammals					
Antrozous pallidus	pallid bat	None/SSC	**Low potential to occur.**	Not expected to occur.	**Low potential to occur.**
Lasiurus blossevillii	western red bat	None/SSC	**Moderate potential to occur.**	Not expected to occur.	**Moderate potential to occur.**
Taxidea taxus	American badger	None/SSC	Not expected to occur.	Not expected to occur.	**Low potential to occur.**

Source: Appendix C
Status Legend: FE: Federally listed as endangered; FT: Federally listed as threatened; PF: Proposed for federal listing; FDL: Federal delisted; SE: State listed as endangered; ST: State listed as threatened; PST: Proposed for state listing; SSC: State Species of Special Concern; SDL: State delisted; FP: Fully protected by state; BCC: U.S. Fish and Wildlife Service Bird of Conservation Concern.

Wildlife Species Potentially Occurring in the Master Plan Area

Valley Elderberry Longhorn Beetle (Desmocerus californicus dimorphus). Valley elderberry longhorn beetle (VELB) is a federal threatened species with a high potential to occur in the riparian woodland on the main campus. Elderberry shrubs, which provide habitat for the beetle, are ubiquitous in the riparian community lining Big Chico Creek. VELB, or evidence of VELB, was not detected during the July 29, 2019 biological field assessment, but has been previously documented along Big Chico Creek upstream of the main campus (CDFW 2019a). No habitat for this species is present at the University Village. Although elderberry shrubs exist on the University Farm, they are located in uplands surrounded by cropland and therefore do not provide habitat for VELB.

Central Valley Steelhead Distinct Population Segment (DPS; Oncorhynchus mykiss irideus). The Central Valley steelhead DPS is a federal threatened species known to occur in Big Chico Creek on the main campus (CDFW 2018c; CDFW 2019a). This species spawns downstream of dams on every major tributary within the Sacramento and San Joaquin River systems. For the first 1 to 2 years of life, individuals are found in cool, clear, fast-flowing permanent streams and rivers where riffles predominate over pools, there is ample cover from riparian vegetation or undercut banks, and invertebrate life is diverse and abundant (Moyle 2002). No steelhead were observed in Big Chico Creek during the July 29, 2019 biological field assessment. Big Chico Creek is designated as final critical habitat for this species (USFWS 2019b).

Central Valley Spring-Run Chinook Salmon Evolutionary Significant Unit (ESU; Oncorhynchus tshawytscha). The Central Valley chinook salmon ESU is a federal and state threatened species known to occur in Big Chico Creek on the main campus (CDFW 2018c; CDFW 2019a). This species spawns in the Sacramento and San Joaquin Rivers and their tributaries. Adults leave the ocean to begin their upstream migration in late January and early February, and enter the Sacramento River between March and September, primarily in May and June. Chinook generally enter rivers as sexually immature fish and must remain in freshwater for up to several months before spawning. While maturing, adults hold in deep pools with cold water. Spawning normally occurs between mid-August and early October, peaking in September (Moyle 2002). No chinook salmon were observed in Big Chico Creek during the July 29, 2019 biological field assessment. Big Chico Creek is designated as final critical habitat for this species (USFWS 2019b).

Western Pond Turtle (Emys marmorata). Western pond turtle is a CDFW Species of Special Concern that has a moderate potential to occur in Big Chico Creek on the main campus. This species utilizes rivers, lakes, streams, ponds, wetlands, ephemeral creeks, reservoirs, agricultural ditches, estuaries, and brackish waters, and upland habitats adjacent to these areas for nesting (CDFW 2019b). Big Chico Creek is well-shaded on the main campus and therefore provides limited basking opportunities for western pond turtle. In addition, the uplands surrounding the creek are disturbed, developed, or heavily compacted and provide poor habitat for nesting. The nearest documented occurrence is for one adult western pond turtle observed basking on a log in Little Chico Creek in May 2008, approximately 1.3 miles east of the main campus (CDFW 2019a) This species could use the creek and its adjacent riparian corridor onsite as a potential movement corridor. No western pond turtles were observed in the Master Plan area during the July 29, 2019 biological field assessment.

Giant Gartersnake (Thamnophis gigas). Giant gartersnake is a federal and state threatened species with a low potential to occur on the University Farm. This species occupies freshwater marsh habitat, low-gradient streams, canals, and irrigation ditches. Giant gartersnake require adjacent suitable upland habitat that provides refugia, such as rodent burrows and vegetative cover (CDFW 2019b). The nearest documented occurrence is for two adults and one juvenile giant gartersnake observed in a well-vegetated drainage ditch, approximately 4.1 miles west of the University Farm (CDFW 2019a). Irrigation ditches on the University Farm provide only marginal aquatic habitat due to insufficient upland refugia. No giant garter snakes were observed in the Master Plan area during the July 29, 2019 biological field assessment.

Burrowing Owl (Athene cunicularia). Burrowing owl is a CDFW Species of Special Concern with a moderate potential to occur on University Farm. This species utilizes abandoned ground squirrel burrows and other mammal burrows in open habitats, grasslands and disturbed areas where there are unobstructed views of possible predators, such as dogs, raptors, and corvids (e.g., common raven and American crow). No burrowing owls were observed in the Master Plan area during the July 29, 2019 biological field assessment. One ground squirrel was observed on the main campus, but no associated burrows were found. Several suitably-sized burrows were noted on the University Farm; however, no evidence of occupation was observed.

Swainson's Hawk (Buteo swainsoni). Swainson's hawk is a state threatened species with a high potential to occur on the farm. This species spends the breeding season in the Central Valley and is commonly found in agricultural areas or open grasslands containing solitary trees for nesting. Swainson's hawk may also nest in open woodland and riparian habitat. They forage on small mammals and reptiles in nearby grasslands and agricultural areas such as wheat and alfalfa fields and pasture (CDFW 2019b). Although no Swainson's hawk were observed in the Master

Plan area during the July 29, 2019 biological field assessment, they were previously documented nesting in a walnut tree near the southeast portion of the University Farm in 1998 (CDFW 2019a).

Western Yellow-Billed Cuckoo (Coccyzus americanus occidentalis). Western yellow-billed cuckoo is a federal and state threatened species with a low potential to occur in the riparian woodland on the main campus. This species requires large blocks of riparian habitats for breeding (particularly woodlands with cottonwoods and willows). Dense understory is an important factor in nest site selection, and cottonwood trees are an important foraging habitat. The riparian woodland on the main campus is narrow, generally lacks a dense understory, and therefore, provides poor nesting habitat for this species. No western yellow-billed cuckoos were detected during the July 29, 2019 biological field assessment.

Loggerhead Shrike (Lanius ludovicianus). Loggerhead shrike is a CDFW Species of Special Concern with a low potential to occur on the main campus and University Village, and a moderate potential to occur on the University Farm. This species nests and forages in open habitats with scattered shrubs, trees, and other perches, as well as bare ground, and low or sparse herbaceous cover. They rarely occur in heavily urbanized areas and are often found in open cropland (CDFW 2019b). The nearest documented occurrence is for loggerhead shrikes nesting in riparian habitat along Gold Run Creek in May 2002, approximately 9 to 13 miles southeast of the main campus and University Farm (CDFW 2019a). No loggerhead shrikes were detected during the July 29, 2019 biological field assessment.

Yellow Warbler (Setophaga petechial). Yellow warbler is a CDFW Species of Special Concern with a moderate potential to occur in the riparian woodland on the main campus, which provides potential nesting habitat. This species is associated with riparian habitat, particularly willow and alder thickets in montane areas and willow-cottonwood riparian habitats at lower elevations. No yellow warblers were detected during the July 29, 2019 biological field assessment.

Pallid Bat (Antrozous pallidus). Pallid bat is a CDFW Species of Special Concern with a low potential to occur on the main campus and University Farm. This species occupies a variety of habitats including grassland, shrubland, woodland, and forests from sea level up through mixed conifer forest. They utilize crevices of rock outcrops, caves, mine tunnels, buildings, bridges, and hollows of live or dead trees for day roosting. Maternity roosts are usually located in rock crevices or buildings, and hibernation may occur in caves and mines (NatureServe 2019). They are very sensitive to disturbance of their roosting sites. Pallid bat prefer foraging in open areas, such as grasslands, adjacent to suitable roosting sites (CDFW 2019b). Trees on the main campus and the University Farm provide only marginal roosting habitat as they are located in an area of regular human disturbance. No pallid bats or evidence of roosting (e.g., guano, urine stains, and insect prey remains) were noted during July 29, 2019 the biological field assessment.

Western Red Bat (Lasiurus blossevillii). Western red bat is a CDFW Species of Special Concern with a moderate potential to occur on the main campus and University Farm. This species primarily roosts in trees in forests, woodlands, riparian habitat, and orchards. They prefer roosts where leaves form a dense canopy above and branches do not obstruct the bats' flyway below. Western red bat usually roost solitarily, but gather in colonies for breeding. This species forages in small clearings, around street and flood lights, and along forest edges. Roosting is common in edge habitats near streams, open fields, orchards, and sometimes urban areas during the day (BCI 2019; CDFW 2019). Riparian woodland on the main campus and orchards on the University Farm provide potential roosting habitat for this species. No western red bat or evidence of roosting (e.g., guano, urine stains, and insect prey remains) were noted during the July 29, 2019 biological field assessment.

American Badger (Taxidea taxus). American badger is a CDFW Species of Special Concern with a low potential to occur on the farm. This species is most abundant in drier open stages of most shrub, forest and herbaceous habitats with friable soils. American badgers are elusive, nocturnal mammals with expansive home ranges. Undeveloped and agricultural areas on the University Farm provide marginal dispersal habitat due to regular human disturbance. No American badgers or their sign (e.g., burrows, hair, scat) were detected during the July 29, 2019 biological field assessment.

Other Nesting and Migratory Birds and Birds of Prey. The Master Plan area provides potential nesting habitat for a number of local and migratory bird species. Native birds of prey are protected by California Fish and Game Code Section 3503.5 and migratory bird species are protected by the federal Migratory Bird Treaty Act (MBTA). Although no active nests were detected during the July 29, 2019 biological field assessment, many common migratory birds and raptors were recorded (see Table 3.3-2 above).

Sensitive Natural Communities

There is one natural community considered sensitive by CDFW: riparian woodland (discussed in detail above). Any impacts to this habitat, including removal or trimming of vegetation, would potentially require a streambed alteration agreement with CDFW under Section 1602 of the California Fish and Game Code.

Potentially Jurisdictional Waters

Big Chico Creek on the main campus and one potential pond on the University Farm (located outside of the proposed development area), are potentially jurisdictional waters of the U.S. and/or State (i.e., wetlands, streams, and other aquatic sites; further defined in Section 3.3.2, Regulatory Setting, below) in the Master Plan area. Impacts to Big Chico Creek or the seasonal pond would require permit authorization from the ACOE, RWQCB, and/or CDFW.

Agricultural ditches present on the University Farm are not considered jurisdictional waters of the U.S. [33 CFR 328.3(b)(3)]. These features are human-made structures excavated in uplands and are primarily used for irrigation purposes. The hydrology of these ditches is solely reliant on artificial inputs and therefore, would revert to dry land if artificial inputs ceased. Thus, in accordance with *Regulatory Guidance Letter No. 07-02 - Exemptions for Construction or Maintenance of Irrigation Ditches and Maintenance of Drainage Ditches under Section 404 of Clean Water Act*, even if the ditches were determined to be waters of the U.S., they would be exempt from regulation under Section 404 of the Clean Water Act.

The two settling ponds present on the University Farm are not considered jurisdictional waters of the U.S. [33 CFR 328.3(b)(4)(ii)]. Similar to the irrigation ditches, the setting ponds are exempt from regulation under Section 404 of the Clean Water Act in accordance with *Regulatory Guidance Letter No. 87-09 – Section 404(f)(1)(c) Exemptions for Construction or Maintenance of Farm or Stock Ponds.*

Wildlife Corridors and Habitat Linkages

Wildlife corridors are landscape features, usually linear in shape, that facilitate the movement of animals (or plants) over time between two or more patches of otherwise disjunct habitat. Corridors can be small and even human made (e.g., highway underpasses, culverts, bridges), narrow linear habitat areas (e.g., riparian strips, hedgerows), or wider landscape-level extensions of habitat that ultimately connect even larger core habitat areas. Depending on the size and extent, wildlife corridors can be used during animal migration, foraging events, and juvenile dispersal, and ultimately serve to facilitate genetic exchange between core populations, provide avenues for plant seed dispersal, enable increased biodiversity and maintenance of ecosystem integrity within habitat patches, and help offset the negative impacts of habitat fragmentation. Habitat linkages are small patches that join larger blocks of habitat and help reduce the adverse effects of habitat fragmentation; they may be continuous habitat or discrete habitat islands that function as stepping stones for wildlife dispersal (Hilty et al. 2006).

The California Essential Habitat Connectivity Project, developed by CDFW and the California Department of Transportation, intends to describe and depict a functional network of connected wildlands that is essential to the continued support of California's diverse natural communities in the face of human development and climate change (Caltrans et al. 2010). The Essential Habitat Connectivity Project identifies large, relatively natural habitat blocks within California that support native biodiversity and depicts the relative permeability of areas to provide some level of ecological connectivity between these habitat blocks. The Essential Connectivity Map indicates that the Master Plan area is not located within an area that provides connectivity between similar habitat patches (Figure 3.3-3, Wildlife Corridors and Habitat Linkages). Big Chico Creek on the main campus provides a potential migratory corridor for wildlife.

3.3.2 Regulatory Setting

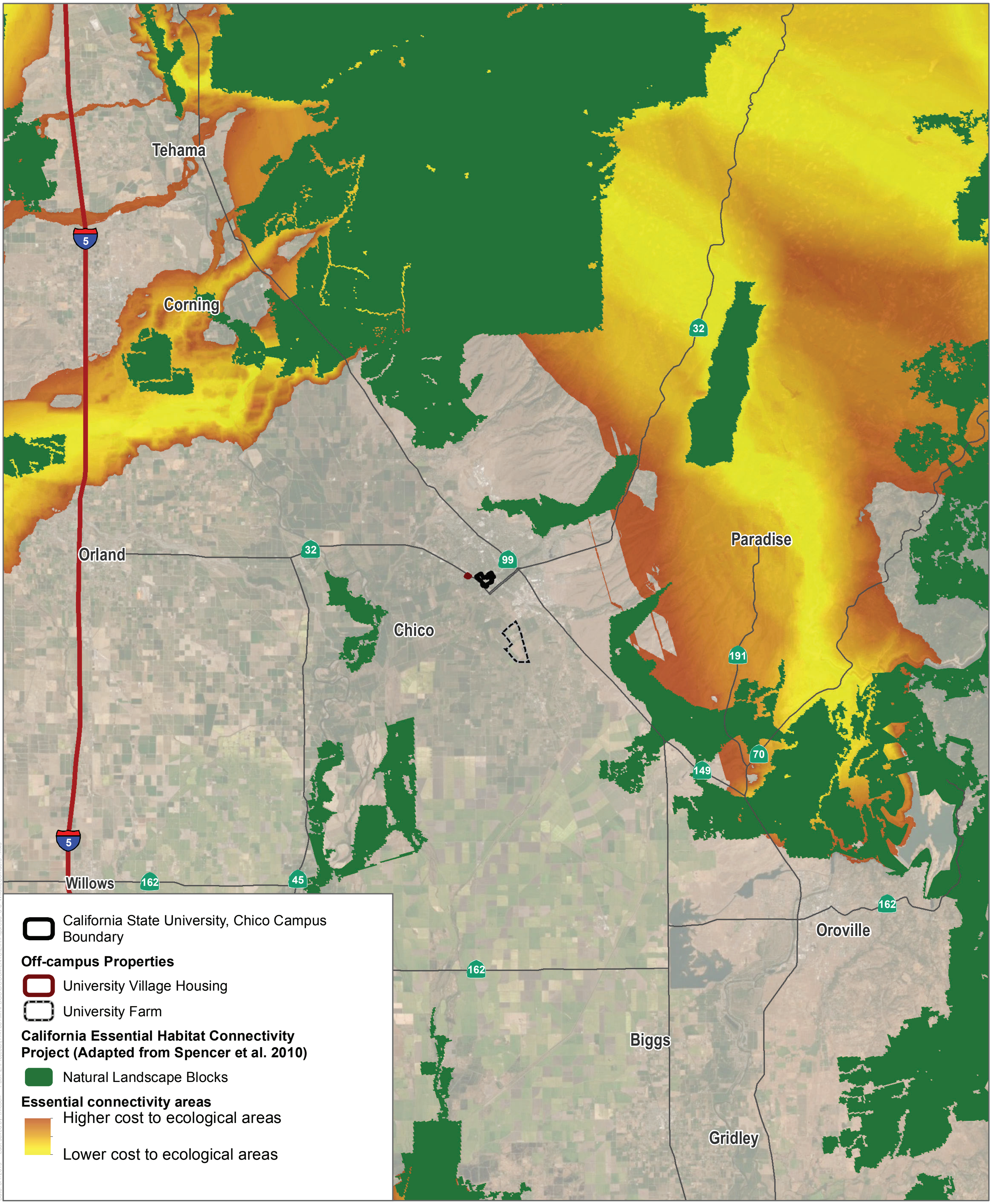
Federal

Federal Endangered Species Act

Section 9 of the federal Endangered Species Act (ESA) protects federally-listed endangered and threatened wildlife species from unlawful take (16 U.S.C. § 1538 (a)(1)). "Take" is defined to mean "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct" (16 U.S.C. § 1532 (19)) .In addition, federal agencies are required to determine whether the project is likely to jeopardize the continued existence of any species proposed to be listed under ESA or result in the destruction or adverse modification of critical habitat designated for such species (16 USC 1536[3], [4]). Projects that would result in "take" of any federally-listed threatened or endangered species are required to obtain authorization from NMFS and/or USFWS through either Section 7 (interagency consultation) or section 10(a) (incidental take permit) of ESA, depending on whether the federal government is involved in permitting or funding the project.

Federal Migratory Bird Treaty Act

The Migratory Bird Treaty Act (MBTA) prohibits the take of any migratory bird or any part, nest, or eggs of any such bird. Under the MBTA, "take" is defined as pursuing, hunting, shooting, capturing, collecting, or killing, or attempting to do so (16 U.S.C. 703 et seq.). In December 2017, Department of Interior Principal Deputy Solicitor Jorjani issued an opinion (M-37050) that interprets the above prohibitions as only applying to direct and purposeful actions the intent of which is to kill, take, or harm migratory birds; their eggs; or their active nests. Incidental take of birds, eggs, or nests that are not the purpose of such an action, even if there are direct and foreseeable results, are not prohibited under this opinion. Similarly, the Ninth Circuit Court of Appeals, like the Fifth Circuit and the Eighth Circuit, has held that the MBTA applies only to intended takes. See Seattle Audubon Soc'y v. Evans, 952 F.2d 297, 303 (9th Cir. 1991). On February 3, 2020, the USFWS issued a proposed rule in the Federal Register to codify this approach to defining the scope of the MBTA. Unintentional or accidental take is not prohibited. The USFWS reviews actions that might affect these species.



SOURCE: ESRI 2018, CDFW 2018

DUDEK

0 16,000 32,000 Feet

FIGURE 3.3-3

Wildlife Corridors and Habitat Linkages

INTENTIONALLY LEFT BLANK

Clean Water Act

The primary objective of the Clean Water Act is to restore and maintain the chemical, physical, and biological integrity of waters of the United States (as defined in the Code of Federal Regulations: 33 CFR 328.3[a]). The CWA established basic guidelines for regulating discharges of pollutants into the waters of the United States. The CWA requires that states adopt water quality standards to protect public health, enhance the quality of water resources, and ensure implementation of the CWA. Section 401 of the Act (33 U.S.C. 1341) prohibits the discharge of any pollutant into waters of the United States. Under Section 404 of the CWA, the U.S. Army Corps of Engineers has the authority to regulate activities that could discharge fill or dredge material or otherwise adversely modify wetlands or other waters of the United States. The U.S. Army Corps of Engineers implements the federal policy embodied in Executive Order 11990, which, when implemented, is intended to result in no net loss of wetland values or function. Project applicants for a federal license or permit to conduct activities including, but not limited to, the creation or operation of facilities, which may result in discharge into waters of the United States, must obtain certification that the project would not violate applicable effluent limitations and water quality standards. Section 404 of the Act (33 U.S.C. 1344) requires a federal license or permit from the U.S. Army Corps of Engineers prior to the discharge of dredge or fill material into waters of the United States, unless activity is exempt from Section 404 permit requirements. Permit applicants must demonstrate that they have attempted to avoid or minimize impacts on the resource; however, if no further minimization of impacts is possible, the applicant is required to mitigate remaining impacts on all federally regulated waters of the United States. In California, the State Water Resources Control Board (SWRCB) and its nine Regional Water Quality Control Boards (RWQCB) are responsible for the protection of water quality.

On January 23, 2020, the ACOE and Environmental Protection Agency (EPA) finalized the “Navigable Waters Protection Rule,” which establishes a new definition of “Waters of the U.S.” under the CWA. The new Navigable Waters Protection Rule (Rule) repeals the Obama-era 2015 Clean Water Rule and replaces it with a definition that drastically limits the scope of federal regulation to a much narrower collection of aquatic resource features. Among the greatest changes, the Rule eliminates “significant nexus” determinations to determine if potential tributaries have a significant effect on the “chemical, physical, and biological integrity of downstream traditional navigable waters.” The Rule also redefines the term “adjacent.” In order for an adjacent wetland to be jurisdictional, it must touch “at least one point or side of a jurisdictional water” or have a direct hydrological surface connection to a traditional navigable waterway. Hydrological connections through groundwater, which have been suggested to maintain federal jurisdiction in the past, are now outside of the scope of federal purview. Most importantly, the Rule identifies four specific categories of aquatic resource features that will be regulated by the federal government under the CWA, leaving oversight for other “excluded” waterbodies to states and tribes. The four specific categories of aquatic resources regulated under the CWA are:

1. Territorial seas and traditional navigable waters
2. Perennial and intermittent tributaries
3. Certain lakes, ponds, and impoundments
4. Wetlands that are adjacent to jurisdictional waters

The revised Rule does not expand federal regulation to include new categories of aquatic features; however, it does provide a list of excluded features that would no longer be considered Waters of the U.S. under the final Rule. Most significantly, “ephemeral” streams and other features that only flow in direct response to precipitation, and are particularly prevalent in the western United States, would no longer be subject to CWA regulation. The revised Rule redefining Waters of the U.S. goes into effect within 60 days of its publication in the Federal Register, the date of which has not yet been determined.

State

California Endangered Species Act

The CESA and Section 2081 of the California Department of Fish and Game Code identifies measures to ensure state-listed species and their habitats are conserved, protected, restored, and enhanced. The Act requires permits from the CDFW for activities that could result in the take of a state-listed threatened or endangered species. "Take" is defined as to hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture or kill (Cal. Fish and Game Code § 86). Section 2080 of the Fish and Game Code prohibits the take of state-listed plants and animals unless otherwise permitted under Sections 2080.1, 2081, and 2835. Section 20814(b) affords CDFW the authority to issue permits for incidental take for otherwise lawful activities. To authorize an incidental take, the impacts of the take must be minimized and fully mitigated. Issuance of incidental take permits may not jeopardize the continued existence of a state-listed species. For species listed as threatened or endangered under FESA, CDFW may rely on a federal incidental take statement or permit to authorize an incidental take under CESA.

The California Fish and Game Commission maintains a list of threatened and endangered species (Cal. Fish and Game Code § 2070). The California Fish and Game Commission maintains two additional lists: a Candidate species list, which identifies species under review for addition to either the endangered or threatened species list, and a Species of Special Concern list which serves as a watch list based on limited distribution, declining populations, diminishing habitat, or unusual scientific, recreational, or educational value.

California Fully Protected Species and Species of Special Concern

The classification of "fully protected" was the CDFW's initial effort to identify and provide additional protection to those animals that were rare or faced possible extinction. California Fish and Game Code sections (fish at Section 5515, amphibians and reptiles at Section 5050, birds at Section 3511, and mammals at Section 4700) dealing with "fully protected" species state that these species may not be taken or possessed at any time, and no provisions in this code or any other law shall be construed to authorize permits for the take of fully protected species.

In October 2011, the State passed legislation allowing take of a fully protected species covered under an approved Natural Community Conservation Plan. Species of Special Concern are broadly defined as animals not listed under the FESA or CESA, but which are nonetheless of concern to the CDFW because they are declining at a rate that could result in listing, or they historically occurred in low numbers and known threats to their persistence currently exist. This classification is intended to elicit special consideration for these animals by the CDFW, land managers, consulting biologists, and others. Additionally, this classification is intended to stimulate collection of additional information on the biology, distribution, and status of poorly known at-risk species, and focus research and management attention on them.

California Department of Fish and Game Code Sections 3503 and 4150

Birds of prey are protected in California under the Fish and Game Code Section 3503.5 (1992). Under Section 3503.5, it is "unlawful to take, possess, or destroy any birds in the order Falconiformes (diurnal birds of prey) or Strigiformes (owls) or to take, possess, or destroy any nest or egg of any bird except as otherwise provided by this code or any regulation adopted pursuant thereto." Disturbance during breeding season that results in the incidental loss of fertile eggs or nestlings or otherwise leads to nest abandonment is considered "taking" by the CDFW.

California Fish and Game Code Section 4150 states a mammal occurring naturally in California that is not a game mammal, fully protected mammal, or fur-bearing mammal is a nongame mammal. A nongame mammal may not be taken or possessed under this code. All bat species occurring naturally in California are considered nongame mammals and are therefore prohibited from take as stated in Fish and Game Code Section 4150.

California Native Plant Protection Act

The California Native Plant Protection Act (Cal. Fish and Game Code § 1900–1913) and the Natural Communities Conservation Planning Act provide guidance on the preservation of plant resources. Vascular plants which have no designated status or protection under state or federal endangered species legislation, but are ranked as rare or endangered by the CNPS, are defined as follows:

- Rank 1A: Plants presumed extinct
- Rank 1B: Plants rare, threatened, or endangered in California and elsewhere
- Rank 2: Plants rare, threatened, or endangered in California, but more numerous elsewhere
- Rank 3: Plants about which more information is needed – a review list
- Rank 4: Plants of limited distribution – a watch list

Generally, plants with California Rare Plant Rank (CRPR) of 1A, 1B, or 2 are considered to meet the criteria for endangered, threatened, or rare species as outlined by Section 15380 of the CEQA Guidelines. Additionally, plants listed on CNPS List 1A, 1B, or 2 also meet the definition of Section 1901, Chapter 10 (Native Plant Protection Act) and Sections 2062 and 2067 (CESA) of the California Fish and Game Code.

California Department of Fish and Game Code Sections 1600–1616

Under Sections 1600–1616 of the California Fish and Game Code, CDFW regulates activities that would substantially alter the flow, bed, channel, or bank of streams and lakes. Such activities require a 1602 Lake and Streambed Alteration Agreement from CDFW. The California Code of Regulations defines a stream as "a body of water that flows at least periodically or intermittently through a bed or channel having banks and supports fish or other aquatic life. This includes watercourses having a surface or subsurface flow that supports or has supported riparian vegetation" (Cal. Code Regs. tit. 14 § 1.72). The term "stream" includes rivers, creeks, ephemeral streams, dry washes, canals, aqueducts, irrigation ditches, and other means of water conveyance if they support aquatic life, riparian vegetation, or stream-dependent terrestrial wildlife. Removal of riparian vegetation also requires a Section 1602 Lake and Stream Alteration Agreement from CDFW.

State Water Resources Control Board

The SWRCB administers Section 401 of the Clean Water Act, which requires that an applicant for a Clean Water Act Section 404 permit first obtain a certification, or waiver thereof, that the project will not violate applicable state water quality standards. The SWRCB protects all waters of the state, but has special responsibility for isolated wetlands and headwaters. These water bodies have high resources value but are vulnerable to filling and may lack regulation by other programs. Projects that require a U.S. Army Corps of Engineers permit, or fall under other federal jurisdiction, and have the potential to impact waters of the state are required to comply with the terms of the Water Quality Certification Program.

If a proposed project does not require a federal license or permit, but does involve activities that may result in a discharge of harmful substances to waters of the state, the water boards have the option to regulate such activities under its state authority in the form of Waste Discharge Requirements or Certification of Waste Discharge Requirements pursuant to provisions of the Porter-Cologne Water Quality Control Act. The Porter–Cologne Water Quality Control Act established the SWRCB and each RWQCB as the principal state agencies responsible for the protection of water quality in California. The RWQCB regulates discharging waste, or proposing to discharge waste, within any region that could affect a water of the state (California Water Code, Section 13260(a)). The SWRCB defines a waters of the state as "any surface water or groundwater, including saline waters, within the boundaries of the state" (California Water Code, Section 13050(e)). As of April 2019, the SWRCB has narrowed their definition of a waters of the state to include the following:

1. *Natural wetlands,*
2. *Wetlands created by modification of a surface water of the state,*
3. *Artificial wetlands that meet any of the following criteria:*
    a. *Approved by an agency as compensatory mitigation for impacts to other waters of the state, except where the approving agency explicitly identifies the mitigation as being of limited duration;*
    b. *Specifically identified in a water quality control plan as a wetland or other water of the state;*
    c. *Resulted from historic human activity, is not subject to ongoing operation and maintenance, and has become a relatively permanent part of the natural landscape; or*
    d. *Greater than or equal to one acre in size unless the artificial wetland was constructed and is currently used and maintained, primarily for one or more of the following purposes: industrial or municipal wastewater treatment or disposal; settling of sediment; detention, retention, infiltration, or treatment of stormwater run-off and other pollutants or run-off subject to regulation under a municipal, construction, or industrial permitting program; treatment of surface waters; agricultural crop irrigation or stock watering; fire suppression; industrial processing or cooling water; active surface mining – even if the site is managed for interim wetlands functions and values; log storage; treatment, storage, or distribution of recycled water; maximizing groundwater recharge (this does not include wetlands that have incidental groundwater recharge benefits); or fields flooded for rice growing.*

All waters of the U.S. are also waters of the state. Wetlands such as isolated seasonal wetlands that are not generally considered waters of the U.S. are considered waters of the state if, "under normal circumstances, (1) the area has continuous or recurrent saturation of the upper substrate caused by groundwater, or shallow surface water, or both; (2) the duration of such saturation is sufficient to cause anaerobic conditions in the upper substrate; and (3) the area's vegetation is dominated by hydrophytes or the area lacks vegetation." (State Water Resources Control Board 2019).

Local

As a state entity, CSU, Chico is not subject to local government planning or ordinances, such as the general plans and ordinances for the City of Chico and Butte County. Accordingly, because neither local general plans or any other local land use plans or ordinances are applicable to CSU, Chico, such local plans and ordinances are not summarized here or further analyzed in this section. See Section 3.10, Land Use and Planning for an evaluation of environmental impacts due to conflicts with any land use plan, policy or regulation adopted for the purpose of avoiding or mitigating an environmental effect.

Butte Regional Conservation Plan

The Butte County Association of Governments is preparing the Butte Regional Conservation Plan (BRCP), which has not yet been adopted. The CRCP would provide streamlined state and federal endangered species act and wetlands permitting for covered activities for a term of 50 years. The BRCP participants include Butte County, the City of Chico, the City of Oroville, the City of Gridley, the City of Biggs, Caltrans District 3, Western Canal Water District, Richvale Irrigation District, Biggs West-Gridley Water District, and Butte Water District. CSU, Chico is not a participant of the proposed BRCP and there are no adopted habitat conservation plans or other regional or state conservation plans in the vicinity of the Master Plan area.

3.3.3 Thresholds of Significance

The significance criteria used to evaluate the project impacts to biological resources are based on Appendix G of the State CEQA Guidelines. Based on Appendix G =, a significant impact related to biological resources would normally occur if the project would:

1. Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service.
2. Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service.
3. Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means.
4. Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites.
5. Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.
6. Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan.

The significance of impacts to biological resources was assessed by comparing the potential changes resulting from the proposed Master Plan to the significance thresholds (listed above). An evaluation of whether or not an effect on biological resources would be substantial with respect to the significance thresholds generally considers the following:

- amount and/or extent of the resource (numbers, acres, etc.) to be affected versus preserved
- the biological value (rarity, functions and values) and/or sensitivity status of the resource and its relevance within a specified geographical area
- the type and severity of impact (i.e., would the project adversely affect wildlife through mortality, injury, displacement, or habitat loss or adversely impact vegetation through destruction of a sensitive plant population?)
- timing of the impact (i.e., would the impact occur at a critical time in the life cycle of a special-status plant or animal, such as breeding, nesting, or flowering periods?)
- duration of the impact (i.e., whether the impact is temporary or permanent)

The analysis of direct and indirect impacts covers construction, operation, and maintenance of the proposed Master Plan. Direct impacts include those that would occur immediately as a result of the proposed Master Plan on a particular biological resource. Indirect impacts include those that may be caused by the proposed Master Plan at a later point in time, but are still reasonably foreseeable.

3.3.4 Impact Analysis

Methodology

Field Assessment

Dudek biologists performed a biological field assessment of the proposed Master Plan area on July 29, 2019. The proposed Master Plan area includes the main campus, the University Farm, and the University Village housing site, as described above. The survey consisted of walking throughout the CSU, Chico campus to collect data related to biological resources present or potentially present onsite. Vegetation communities and land cover types were mapped in the field using a combination of field notes and a Trimble Geo 7X GPS unit. Incidental observations of wildlife (common and/or special-status) or wildlife sign (e.g., tracks, scat) were also recorded.

Literature Review

Special-status biological resources present or potentially present in the Master Plan area were identified through a desktop literature search using the following sources: USFWS IPaC Trust Resource Report (USFWS 2019); California Department of Fish and Wildlife (CDFW) California Natural Diversity Database (CNDDB); and the California Native Plant Society (CNPS) online Inventory of Rare and Endangered Vascular Plants. The database searches for the CNDDB and CNPS reports included the 7.5-minute U.S. Geological Survey Chico quadrangle and surrounding eight quadrangles, and the IPaC search included the Master Plan area. CRPR 1 and 2 plant species were included in the CNPS search (CNPS 2019). Following a review of these resources, Dudek determined the potential for each species to occur within the site based on a review of vegetation communities and available land cover types, habitat types, soils, and elevation preferences, as well as the known geographic range of each species. Species were not expected to occur when the site was clearly outside the known geographic range of the species or if there was no suitable habitat for the species on or adjacent to the site. Additionally, the Natural Resources Conservation Service (USDA 2019) Web Soil Survey was queried to determine soil types that exist within the boundary of the Master Plan area.

Impact Analysis

Impact BIO-1. The project would have a substantial adverse effect, either directly or through habitat modifications, on a species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service. (Potentially Significant)

Construction

Construction activities associated with implementation of the proposed Master Plan have the potential to directly or indirectly impact special-status species. A majority of special-status species present or potentially present in the Master Plan area are limited to the following: (1) Big Chico Creek and the riparian woodland on the main campus, and (2) the University Farm. Activities at these locations that could directly or indirectly impact special-status species include ground disturbance, vegetation removal and/or trimming, and construction activities that produce loud noises, such as building demolition with heavy equipment and other loud tools. Relevant construction and/or maintenance activities anticipated to support near-term development projects (identified in Chapter 2, Project Description) are summarized in Table 3.3-5.

Table 3.3-5. Near-Term Project Construction Activities with Potential to Impact Special-Status Species or Habitat

Near-Term Project	Loud Construction	Vegetation Removal/Trimming [1]		Ground-Disturbance		Structure Demolition
		Inside Riparian Woodland [2]	*Outside Riparian Woodland*	*Inside Riparian Woodland* [2]	*Outside Riparian Woodland*	
Main Campus						
Butte Hall Renovation	✓	✓	✓	✓	✓	
Physical Science Building Renovation	✓	✓	✓	✓	✓	✓
Facilities Management & Services Yard	✓		✓		✓	✓
Forensic Anthropology/ Admin Office Building	✓		✓		✓	
Athletic Field Improvements	✓		✓		✓	
Softball Stadium	✓		✓		✓	
New Creekside Housing	✓	✓	✓		✓	✓
Glenn Hall Replacement	✓		✓		✓	✓
WREC Expansion	✓		✓		✓	
Meriam Library Renovation	✓		✓		✓	
Deen House Renovation	✓		✓		✓	
Sapp Hall Renovation	✓		✓		✓	
Bike Path	✓	✓	✓	✓	✓	
Ivy/Warner Street Improvements	✓	✓	✓		✓	
Utility Infrastructure	✓	✓	✓	✓	✓	
University Farm						
Farm Store	✓		✓		✓	
Meats Lab Expansion	✓		✓		✓	
Farm PV Solar Array Expansion	✓		✓		✓	
Farm Buildings Demolition	✓		✓		✓	✓

Notes:

1 The potential impacts of proposed near-term projects that may involve vegetation removal activities were primarily determined based on the presence and proximity of vegetation, including ornamental plantings, near each near-term project site.

2 Proposed near-term projects that may involve construction activities within the riparian woodland were primarily determined by the proximity of the near-term project to Big Chico Creek, specifically where no existing built environment, such as roads or structures, occur between the near-term project location and creek.

Special-Status Plants. The potential for special-status plants to occur in the Master Plan area is generally low due to the existing level of disturbance and development. There are seven special-status plant species with potential to occur including: big-scale balsamroot, silky cryptantha, woolly rose-mallow, California satintail, veiny monardella, Ahart's paronychia, and Butte County golden clover. None of these species, nor species of the same genus (excluding the non-native *Trifolium hirtum*), were observed in the Master Plan area during the July 2019 field assessment. However, there is potential for individuals or populations of these species to become established in the Master Plan area during future growing seasons. Many special-status plant species are annuals and thus may lie dormant in seedbanks or shift geographic location based on annual weather conditions.

Implementation of the proposed Master Plan could result in impacts to special-status plants, including plants that could become special-status species within the 10-year master plan period. Impacts could include the destruction of individual plants or populations of plants that may become established in the construction footprint prior to ground disturbance. This is a **potentially significant** impact. Preconstruction surveys for special-status plants conducted in accordance with **MM-BIO-1** would ensure impacts to special-status plant species would be reduced to a less than significant level.

Special-Status Wildlife. There are 13 special-status wildlife species with potential to occur in the Master Plan area: VELB, Central Valley steelhead DPS, Central Valley spring-run chinook salmon ESU, western pond turtle, giant gartersnake, burrowing owl, Swainson's hawk, western yellow-billed cuckoo, loggerhead shrike, yellow warbler, pallid bat, western red bat, and American badger. None of these species, nor signs of presence, were observed in the Master Plan area during the July 2019 field assessment. Many special-status wildlife species are mobile, cryptic, and/or active during limited periods of day, and could therefore be easily missed during a single daytime field assessment.

> *Valley Elderberry Longhorn Beetle.* Within the Master Plan area, elderberry shrubs located in the riparian corridor along Big Chico Creek on the main campus provide potential habitat for the valley elderberry longhorn beetle. There are two documented occurrences from 1991 located along Big Chico Creek, approximately 2.5 to 3.5 miles northeast (upstream) of the main campus (CDFW 2019a). Given the presence of elderberry shrubs along Big Chico Creek on the main campus and records in the vicinity, implementation of the proposed Master Plan could result in impacts to valley elderberry longhorn beetle. Impacts could include direct destruction of habitat as a result of vegetation removal or trimming in the riparian woodland along Big Chico Creek. This impact would be **potentially significant.** Preconstruction surveys and flagging elderberry shrubs for avoidance prior to any ground disturbance in the riparian woodland, in accordance with **MM-BIO-2,** would avoid and/or minimize significant impacts to valley elderberry longhorn beetle.
>
> *Protected Fish (Central Valley Steelhead DPS and Central Valley Spring-Run Chinook Salmon ESU).* Within the Master Plan Area, Big Chico Creek on the main campus is designated as final critical habitat for the Central Valley steelhead DPS and Central Valley spring-run Chinook salmon ESU (USFWS 2019b). Steelhead and Chinook salmon are known to occur in Big Chico Creek and therefore, have a high potential to occur within the main campus. Implementation of the proposed Master Plan is not anticipated to involve work below the ordinary high water mark (OHWM) of Big Chico Creek on the main campus. Therefore, no direct impacts to steelhead or Chinook salmon are anticipated. However, indirect impacts resulting from construction activities within the riparian woodland habitat of Big Chico Creek would be **potentially significant.** In accordance with **MM-BIO-9**, temporarily disturbed areas in the riparian woodland would be revegetated following construction and prior to the first rain event, and contractors would be responsible for establishing and maintaining appropriate Best Management Practices (BMPs) prior to, during, and

following ground disturbance in the riparian woodland. As such, indirect impacts to steelhead and Chinook salmon via direct impacts to their critical habitat would be avoided.

If maintenance of existing vehicular/pedestrian crossings or utility crossings above and/or below the creek become necessary, the aquatic habitat may be impacted by the placement of fill material. This impact would be **potentially significant. MM-BIO-10** would require consultation with relevant resource agencies for potential impacts to the Central Valley steelhead DPS and Central Valley spring-run Chinook salmon ESU, obtaining appropriate resource permits from relevant resource agencies, and implementing the avoidance and minimization measures as recommended by the permitting agencies.

Western Pond Turtle. Within the Master Plan area, Big Chico Creek on the main campus provides potential habitat for western pond turtle. There are no CNDDB records for western pond turtle in Big Chico Creek in the vicinity of the main campus (CDFW 2019a). The nearest documented occurrence is for one adult western pond turtle observed basking on a log in Little Chico Creek in May 2008, approximately 1.3 miles east of the main campus (CDFW 2019a). Within the main campus, western pond turtle could use Big Chico Creek and the adjacent riparian woodland as a migratory corridor, as limited basking and upland nesting habitat exist along this segment of the creek. Given the presence of habitat and nearby records, implementation of the proposed Master Plan could result in impacts to western pond turtle. As stated above, no work within Big Chico Creek is anticipated. Direct impacts could include mortality or injury to turtles if present in the riparian corridor prior to vegetation removal or other ground-disturbing activities. Indirect impacts to western pond turtle could result from a temporary reduction of cover following vegetation removal activities in the riparian woodland. The direct or indirect effects could result in a **potentially significant** impact. With implementation of **MM-BIO-3** and **MM-BIO-11**, which require preconstruction plant and construction monitoring to ensure the avoidance of the species, to this species would be reduced to less than significant level.

As stated above, if maintenance of existing vehicular/pedestrian crossings or utility crossings above and/or below the creek become necessary, **MM-BIO-10** would involve obtaining a Streambed Alteration Agreement from CDFW, which would stipulate protection measures for western pond turtle.

Giant Gartersnake. Within the Master Plan area, irrigation ditches on University Farm provide poor habitat for giant garter snake (see Section 3.3.1 Existing Conditions). The nearest documented occurrence is for two adults and one juvenile giant garter snake observed in a well-vegetated drainage ditch, approximately 4.1 miles west of the University Farm (CDFW 2019a). Implementation of the proposed Master Plan would not result in impacts to irrigation ditches located on the University Farm as these ditches are located outside of the proposed development area (see Figure 2-2c, University Farm). In addition, giant garter snake has a low potential to occur onsite. Therefore, no impacts to giant garter snake are anticipated.

Burrowing Owl. Within the Master Plan area, the University Farm provides potential nesting habitat for burrowing owl. There is an extirpated record (as of May 2006) approximately 3.1 miles northeast of University Farm (CDFW 2019a). Given the presence of potential nesting habitat and nearby records, implementation of the proposed Master Plan could result in impacts to burrowing owl. Direct impacts could include mortality or injury to owls or destruction of burrows/nests if nesting in or adjacent to a construction site prior to ground-disturbing activities. In addition, loud construction activities could cause an adult owl to abandon an active nest that is in close proximity to construction, which could lead to nest failure. This impact would be potentially significant. Implementation of **MM-BIO-4** and **MM-BIO-11**, which involve worker environmental awareness training (WEAT) and preconstruction surveys for active burrowing owl nests, would avoid and/or minimize potential impacts to this species.

Swainson's Hawk. Within the Master Plan area, the University Farm provides potential nesting habitat for Swainson's hawk. In 1998, Swainson's hawks were documented nesting in a walnut tree on the University Farm, near the southeast portion of the site (CDFW 2019a). Nesting has not been observed in that tree since that date. Given the presence of habitat and nearby records, implementation of the proposed Master Plan could result in impacts to Swainson's hawk. Direct and indirect impacts to Swainson's hawk would be similar to those described above for burrowing owl. This would be a **potentially significant** impact. Implementation of **MM-BIO-5** and **MM-BIO-11**, which involve WEAT training and preconstruction surveys for active Swainson's hawk nests, would avoid and/or minimize potential impacts to this species.

Western Yellow-Billed Cuckoo. Within the Master Plan area, the riparian woodland along Big Chico Creek provides poor nesting habitat for western yellow-billed cuckoo due to the limited extent and low structural complexity of riparian habitat, as well as a general lack of potential foraging habitat nearby (i.e., cottonwoods). Given that nesting habitat on the main campus is poor, western yellow-billed cuckoo is not expected to nest in this area. Therefore, direct and indirect impacts to western yellow-billed cuckoo from implementation of the proposed Master Plan are not anticipated.

Loggerhead Shrike. The main campus and the University Farm within the Master Plan area provide potential nesting habitat for loggerhead shrike. The nearest documented occurrence is for loggerhead shrikes nesting in riparian habitat along Gold Run Creek in May 2002, approximately 9 to 13 miles southeast of the main campus and University Farm (CDFW 2019a). Given the presence of habitat, implementation of the proposed Master Plan could result in impacts to loggerhead shrike. Direct and indirect impacts to loggerhead shrike would be similar to those described above for burrowing owl. This would be a **potentially significant** impact. Implementation of **MM-BIO-6** and **MM-BIO-11**, which involve WEAT training and preconstruction surveys for nesting birds (during the nesting season March through August), would avoid and/or minimize potential impacts to this species.

Yellow Warbler. Within the Master Plan area, the riparian woodland along Big Chico Creek provides potential nesting habitat for yellow warbler. Although CNDDB records for yellow warbler are sparse in the vicinity of the City of Chico, there are numerous citizen-science records of this species along Big Chico Creek on and upstream of the main campus, as well as along the Sacramento River to the west (CDFW 2019a; eBird 2019). Given the presence of habitat and nearby records, implementation of the proposed Master Plan could result in impacts to yellow warbler. Direct and indirect impacts to yellow warbler would be similar to those described above for burrowing owl. This impact would be **potentially significant.** Implementation of **MM-BIO-6** and **MM-BIO-11**, which involve WEAT training and preconstruction surveys for nesting birds, would avoid and/or minimize potential impacts to this species.

Other Nesting and Migratory Birds and Birds of Prey. The main campus, University Farm, and University Village provide nesting habitat for a variety of native birds and raptors protected by California Fish and Game Code and the Migratory Bird Treaty Act. Should any protected birds or raptors nest in the Master Plan area, they could be impacted by implementation of the proposed Master Plan. Direct and indirect impacts to nesting birds and raptors would be similar to those described above for burrowing owl. This impact would be **potentially significant.** Implementation of **MM-BIO-6** and **MM-BIO-11**, which involve WEAT training and preconstruction surveys for nesting birds (during the nesting season March through August), would avoid and/or minimize potential impacts to these species.

Native Bats (including Pallid Bat and Western Red Bat). Within the Master Plan area, native bats, including pallid bat and western red bat, could roost in trees, buildings, and/or other man-made structures on the main campus and University Farm. There is an occurrence for pallid bat that overlaps the main campus, approximately 1.4 miles north of the University Farm (CDFW 2019a). Numerous occurrences for western red bat are documented along the Sacramento River, approximately 5 to 6 miles west of the main campus and University Farm (CDFW 2019a). If roosting onsite, native bats could be impacted by implementation of the proposed Master Plan. Indirect impacts to native bats could include noise-related disturbance or destruction of roost sites, and direct impacts could include mortality or injury to bats roosting in a tree that is removed or a structure that is demolished. This would be a **potentially significant** impact. Implementation of **MM-BIO-7** and **MM-BIO-11**, which involve WEAT training, limited operating periods, and preconstruction surveys for roosting bats, would avoid and/or minimize potential impacts to these species.

American Badger. Within the Master Plan area, the University Farm provides potential habitat for American badger. Documented occurrences in the vicinity of the Master Plan area are sparse (one record within 15 miles of the University Farm); however, American badgers are extremely cryptic species with expansive home ranges and are therefore difficult to track. If American badger were to burrow on the University Farm, they could be impacted by future development under the proposed Master Plan. Indirect impacts to American badger could include noise-related disturbance or destruction of burrow sites, and direct impacts could include mortality or injury to badgers occupying burrows in an area subject to disturbance. This would be a **potentially significant** impact. Implementation of **MM-BIO-8** and **MM-BIO-11**, which involve WEAT training and a preconstruction surveys for occupied badger dens, would avoid and/or minimize potential impacts to this species.

As explained above for special-status species with potential to occur in the Master Plan area, certain activities, such as ground disturbance and vegetation removal/trimming could result in destruction of individual plants or populations of plants that may be located near or within the proposed footprint, and result in direct mortality or injury of individual animals. Without the proper use of BMPs, ground-disturbing activities adjacent to Big Chico Creek could impact water quality and subsequently aquatic species present in the creek during the activity. Construction-related noise could disturb individual animals breeding or taking shelter in the Master Plan area. Potential impacts to special-status species would require mitigation.

Operation and Maintenance

Within the main campus, operation and maintenance activities associated with the proposed Master Plan are not expected to be substantially different then operations and maintenance under existing conditions. The proposed bike path along the north side of Big Chico Creek may require seasonal tree or vegetation trimming to prevent encroachment onto the path. This maintenance activity has a potential to impact nesting special-status birds and bats, if present during vegetation disturbance. This impact would be **potentially significant**. Implementation of **MM-BIO-6** and **MM-BIO-7**, which involve preconstruction surveys for active bird nests or bat maternity roosts if trimming is conducted during nesting or roosting seasons (between March through August), would avoid and/or minimize potential impacts to this species.

Within the University Farm, operation and maintenance activities associated with the proposed Master Plan are not expected to be substantially different then operations and maintenance under existing conditions. New building construction may result in increased human and mechanized activity in the area. However, new building construction is limited to the already developed or disturbed areas within the center of the University Farm, which is surrounded by land actively under cultivation. As such, any impacts to special-status species from additional activity or person(s) associated with maintenance and operation of the proposed Master Plan at University Farm would be **less than significant**.

Within the University Village, operation and maintenance activities associated with the proposed Master Plan are not expected to be substantially different than operations and maintenance under existing conditions, nor result in direct or indirect impacts to special-status species. The University Village site is developed, surrounded by dense urban infrastructure, and experiences frequent human disturbance. Any impacts to special-status species from additional activity or person(s) associated with maintenance and operation of the proposed Master Plan at University Village would be **less than significant**.

Impact BIO-2. The project would have a substantial adverse effect on riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service. (Potentially Significant)

The following describes direct and indirect impacts that could potentially occur as a result of construction and/or operation associated with the proposed Master Plan to sensitive natural communities identified within the Master Plan area.

Construction

The riparian woodland along Big Chico Creek on the main campus is the only sensitive natural community that was identified in the Master Plan area during the biological field assessment. Direct impacts to this community on the main campus include vegetation removal or disturbance and ground disturbance during building demolition and/or construction. Vegetation removal within the riparian woodland may be necessary to facilitate access during construction. Demolition of Selvester's Café and Glenn Hall, as well as construction of one academic building and two student housing structures would be near the riparian woodland, and as a result, may involve disturbance to this community (see Figure 2-2a, Main Campus). Additionally, three near-term projects on the main campus may also impact the riparian woodland: renovations of Butte Hall and the Physical Sciences building, and construction of the bike path along the north side of Big Chico Creek (refer to Table 3.3-5).

Removal of vegetation within riparian areas, or any disturbance to the bed, bank, and/or channel of Big Chico Creek would require authorization from CDFW in the form of a Streambed Alteration Agreement pursuant to Section 1602 of the California Fish and Game Code. Any riparian vegetation trimming or removal would be minimized to the maximum extent feasible. Avoided riparian woodland would be fenced during construction to ensure that no additional impacts would occur to this community. No construction, staging areas, or other ground-disturbing activities would be allowed beyond the fencing.

Indirect impacts to the riparian woodland include potential runoff and siltation during and immediately after construction, which would be avoided and/or minimized with the implementation of appropriate BMPs prior to any ground disturbance at the project site. This would be a **potentially significant** impact. Vegetation removal, if any, from this community would be minimized to maintain the erosion control functions that these species provide. Implementation of **MM-BIO-9** and **MM-BIO-10**, would avoid and/or minimize direct and indirect effects.

Operation and Maintenance

Within the main campus, operation and maintenance activities associated with the proposed Master Plan are not expected to be substantially different then operations and maintenance under existing conditions. The proposed bike path along the north side of Big Chico Creek may require seasonal tree or vegetation trimming to prevent encroachment onto the path. Although vegetation disturbance has a potential to impact the riparian woodland, the impact would be temporary, minimal, and localized to the segment of riparian corridor immediately adjacent to the proposed path. Therefore, any sensitive natural community impacts resulting from vegetation management along the bike path would be **less than significant**.

Within the University Farm and University Village, operation and maintenance activities associated with the proposed Master Plan are not expected to impact any riparian habitat or other sensitive natural communities. There are no sensitive natural communities present on the University Farm or within University Village. Operations and maintenance within University Farm and University Village would have **no impact** to sensitive natural communities.

Impact BIO-3. The project would have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means. (Potentially Significant)

As discussed in Section 3.3.1 Existing Conditions, Big Chico Creek on the main campus and one potential pond on the farm (located outside of the proposed development area), are potentially jurisdictional wetlands or other waters in the Master Plan Area.

The proposed Master Plan includes removal of an abandoned stilling well (a type of water flow gauge). Removal of the landward support structures for the stilling well are not expected to result in impacts to Big Chico Creek. However, the stilling well is of older construction and it is not certain whether it can be removed without interacting with jurisdictional portions of Big Chico Creek. Therefore, these or other construction activities affecting Big Chico Creek or the seasonal pond could result in a **potentially significant impact.** Such activities would require permit authorization from the Army Corps of Engineers (ACOE), RWQCB, and/or CDFW in accordance with **MM-BIO-10.**

The two settling ponds present on the farm are not considered jurisdictional waters of the U.S. [33 CFR 328.3(b)(4)(ii)]. Similar to the irrigation ditches, the setting ponds are exempt from regulation under Section 404 of the Clean Water Act in accordance with *Regulatory Guidance Letter No. 87-09 – Section 404(f)(1)(c) Exemptions for Construction or Maintenance of Farm or Stock Ponds.*

In accordance with **MM-BIO-9**, temporarily disturbed areas in the riparian woodland would be revegetated following construction and prior to the first rain event, and contractors would be responsible for establishing and maintaining appropriate Best Management Practices (BMPs) prior to, during, and following ground disturbance in the riparian woodland. As such, indirect impacts to Big Chico Creek from sedimentation or incidental spills would be avoided.

Impact BIO-4. The project would interfere substantially with the movement of a native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites. (Potentially Significant)

The proposed Master Plan does not involve activities with the potential to impede fish passage, such as dam or culvert construction along Big Chico Creek. No in-water work is proposed.

As discussed in Section 3.3.1 Environmental Setting, the Essential Connectivity Map indicates that the proposed Master Plan is not located within an area that provides connectivity between similar habitat patches (Figure 3.3-3, Wildlife Corridors and Habitat Linkages). Big Chico Creek on the main campus provides a potential migratory corridor for wildlife and is likely used by wildlife species as a corridor for both local and regional movement events. However, the existing level of disturbance and frequent human activity on the main campus likely precludes many wildlife species from migrating through the area. Common urban wildlife species such as raccoon (*Procyon lotor*) and Virginia opossum (*Didelphis virginiana*) may move through the main campus on a regular basis in search of food and cover habitat. As noted in Impact BIO-1, implementation of the proposed Master Plan could result in potentially significant indirect impacts to Big Chico Creek and its associated riparian woodland habitat. With the implementation of **MM-BIO-4, MM-BIO-5, MM-BIO-6, MM-BIO-7, MM-BIO-8, MM-BIO-9, and MM-BIO-10**, potential impacts to native resident or migratory fish or wildlife species, or native wildlife nursery sites, such as active bird nests, bat maternity roosts, and badger dens, would be avoided and/or minimized.

Construction

Construction activities within the riparian woodland along Big Chico Creek on the main campus would occur during daylight hours when fewer animals would be moving through the area, and as a result, wildlife movement is not expected to be substantially affected. For those species that are also active, or more active, during daylight hours, construction fencing installed along the limits of disturbance adjacent to the creek would also minimize the potential for harassment or disturbance associated with construction that could potentially inhibit wildlife movement and activity during the daytime. Construction would be temporary in nature and the creek would be avoided, such that disturbance associated with construction would not substantially affect daytime wildlife movements. In addition, measures would be taken such that any wildlife encounter in the construction footprint would be avoided and allowed to leave the site or relocated elsewhere by a qualified biologist permitted to handle the species. Therefore, no substantial direct impacts to local or regional wildlife movements are anticipated as a result of the proposed Master Plan. **Potentially significant** indirect impacts would be avoided and/or minimized with implementation of **MM-BIO-11.**

Operation and Maintenance

Within the main campus, operation and maintenance activities are not expected to substantially impact wildlife movement or nursery sites, such as bird nests or maternity roosts. Any potential operation or maintenance activities, such as vegetation management along the proposed bike path, would be temporary, minor, and localized to the segment of riparian woodland immediately adjacent to the path. Nevertheless, impacts to bird nests or maternity roosts would be considered **potentially significant.** Implementation of **MM-BIO-6** and **MM-BIO-7**, which involve preconstruction surveys for active bird nests or bat maternity roosts (during the nesting season March through August), would avoid and/or minimize potential impacts to wildlife nursery sites.

Within the University Farm, operation and maintenance activities are not expected to substantially impact wildlife movement or nursery sites. The project would add new fencing to the boundary of the University Farm, which has the potential to interfere with movement of larger mammalian species. The fencing design was not determined at the time of EIR preparation, but could be wire, woven wire, barbed wire, or chain link. Wire and barbed wire fencing remains somewhat permeable to wildlife movement because of the available gaps; however, chain link fencing and woven wire fencing presents a barrier to any mammals that do not jump the fence (e.g., Harrington and Conover 2006). Any fencing has a potential to interfere with movement of birds and bats, including risk of collision and mortality or fatality (Allen and Ramirez 1990). However, the proposed development area is not crossed by any natural drainage channels and is bounded by actively cultivated farmland, which provides low to moderate movement potential due to the existing level of disturbance, lack of available prey species, and/or lack of vegetative cover. Further, as noted in Section 3.2.2, the California Essential Connectivity Project determined that the Master Plan area, including University Village, is not located within an area that provides connectivity between similar habitat patches. Any potential impacts to nursery sites, such as active bird nests or bat maternity roosts, would be avoided and/or minimized through the implementation of **MM-BIO-6** and **MM-BIO-7**, which involve preconstruction surveys for active bird nests or bat maternity roosts (during the nesting season March through August). It is recommended tree and vegetation removal occurs outside of the breeding bird season (September through February) to avoid impacts to nesting birds.

Within the University Village, operation and maintenance activities associated with the proposed Master Plan are not expected to substantially impact wildlife movement or nursery sites. The potential for wildlife movement through the University Village is generally low as the site is bounded by dense urban development and distant from potential movement corridors, such as undeveloped land with vegetative cover or natural drainages. Any potential impacts to nursery sites, primarily active bird nests, would be avoided and/or minimized through implementation of **MM-BIO-6**, which involves preconstruction surveys for active bird nests.

Impact BIO-5. The project would not conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance. (No Impact)

As discussed in Section 3.3.2 Regulatory Setting, CSU, Chico is not subject to local government planning or ordinances, such as the general plans and ordinances for the City of Chico and Butte County. See Section 3.10, Land Use and Planning for an evaluation of environmental impacts due to conflicts with any land use plan, policy or regulation adopted for the purpose of avoiding or mitigating an environmental effect. Therefore, there would be **no impact.**

Impact BIO-6. The project would not conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan. (No Impact)

The proposed Master Plan would not conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan. The proposed BRCP has not yet been adopted. CSU, Chico is not a participant of the proposed BRCP and there are no adopted habitat conservation plans or other regional or state conservation plans in the vicinity of the Master Plan area. Therefore, there would be **no impact.**

3.3.5 Cumulative Impacts

Because very little new development is proposed, as well as the existing level of human disturbance within the Master Plan Area, no considerable cumulative impacts related to habitat conversion or increased building utilization are anticipated. The Master Plan area is located in an area that has been developed for urban (main campus and University Village) or agricultural (University Farm) purposes; therefore, implementation of the proposed Master Plan would not result in the reduction of available habitat, migration corridors, or other essential elements required by special-status species in the region. Due to the lack of biological value provided by the Master Plan area, the proposed Master Plan's contribution to any effects on biological resources would be considered negligible.

Through mitigation and compliance with regulatory requirements, construction or operation of the proposed Master Plan itself would not create significant risks that could combine with other impacts to create a significant and cumulatively considerable impact on biological resources. For these reasons, the proposed Master Plan would not result in cumulatively considerable impacts related to biological resources.

3.3.6 Mitigation Measures

MM-BIO-1 **Rare Plant Survey.** Prior to ground-disturbance in the riparian woodland on the main campus, a qualified botanist shall conduct surveys during the appropriate blooming period for potentially occurring special-status plant species. The purpose of the survey shall be to delineate and flag populations of special-status plant species for avoidance. Special-status plant populations identified during the pre-construction survey shall be mapped using a hand-held GPS unit and avoided where possible. Plant individuals or populations plus a 10-foot buffer shall be temporarily fenced during construction activities with high-visibility fencing or prominently flagged. If complete avoidance of populations is infeasible, further measures, as described below, shall be necessary.

If avoidance of special-status plant species is not feasible, a Rare Plant Salvage and Translocation Plan shall be prepared by a qualified botanist and approved by CSU prior to implementation. The Rare Plant Salvage and Translocation Plan shall include, at a minimum: identification of occupied habitat to be preserved and removed; identification of on-site or off-site preservation, restoration, or enhancement locations; methods for preservation, restoration, enhancement, and/or translocation; goals and objectives; replacement ratio and success standard of 1:1 for impacted to established acreage; a monitoring program to ensure mitigation success; adaptive management and remedial measures in the event that the performance standards are not achieved; and financial assurances and a mechanism for conservation of any mitigation lands required in perpetuity.

MM-BIO-2 **VELB Protection and Habitat Avoidance.** Per the U.S. Fish and Wildlife Service *Framework for Assessing Impacts to the Valley Elderberry Longhorn Beetle (Desmocerus californicus dimorphus)* (Framework; USFWS 2017), the below measures shall be implemented to avoid and minimize potential impacts to VELB. These measures apply to all construction and maintenance work with the potential to affect elderberry shrubs located along Big Chico Creek on the main campus.

1. All areas to be avoided during construction activities shall be fenced and/or flagged as close to construction limits as feasible.
2. Activities that may damage or kill an elderberry shrub (e.g., trenching, paving, etc.) may need an avoidance area of at least 6 meters (20 feet) from the drip-line of elderberry shrubs, depending on the type of activity.
3. A qualified biologist shall provide training for all contractors, work crews, and any onsite personnel on the status of the VELB, its host plant and habitat, the need to avoid damaging the elderberry shrubs, and the possible penalties for noncompliance.
4. A qualified biologist shall monitor the work area at project appropriate intervals to assure that all avoidance and minimization measures are implemented. The amount and duration of monitoring shall depend on the project specifics and should be discussed with the U.S. Fish and Wildlife Service biologist.
5. As much as feasible, all activities that could occur within 50 meters (165 feet) of an elderberry shrub, shall be conducted outside of the flight season of the VELB (March - July).
6. Trimming may remove or destroy VELB eggs and/or larvae and may reduce the health and vigor of the elderberry shrub. In order to avoid and minimize adverse effects to VELB, trimming shall only occur between November and February and shall avoid the removal of any branches or stems that are ≥ 1 inch in diameter. Measures to address regular and/or large scale maintenance (trimming) should be established in consultation with the U.S. Fish and Wildlife Service biologist.
7. Herbicides shall not be used within the drip-line of the shrub. Insecticides shall not be used within 30 meters (98 feet) of an elderberry shrub. All chemicals shall be applied using a backpack sprayer or similar direct application method.
8. Mechanical weed removal within the drip-line of the shrub shall be limited to the season when adults are not active (August - February) and shall avoid damaging the elderberry.
9. Erosion control shall be implemented and the affected area shall be re-vegetated with appropriate native plants.
10. For all unavoidable adverse impacts to VELB or its habitat, consultation with the U.S. Fish and Wildlife Service shall be necessary to determine the appropriate type and amount of compensatory mitigation. Per Tables 1 and 2 of the Framework, suitable riparian habitat may be replaced, at a minimum of 3:1 for all acres that will be permanently impacted by the project. Suitable non-riparian habitat may be replaced, at a minimum of 1:1 for all acres that will be permanently impacted by the project.

MM-BIO-3 **Preconstruction Surveys for Western Pond Turtle.** A qualified biologist shall conduct a survey for western pond turtle within 48 hours prior to the start of construction activities within areas near the riparian woodland on the main campus. Concurrently with the preconstruction survey, searches for nest sites shall be conducted and any identified sites shall be delineated with high-visibility flagging or fencing and avoided during construction activities. If avoidance is not possible, the nest and/or turtle shall be removed by a qualified biologist and relocated to an appropriate location in coordination with California Department of Fish and Wildlife biologists.

If turtles and/or nests are encountered during the preconstruction survey, a qualified biologist shall be present during grubbing and clearing activities in suitable habitat to monitor for western pond turtle. If a turtle is observed in the active construction zone, construction shall cease and a qualified biologist will be notified. Construction may resume when the biologist has either relocated the turtle to nearby suitable habitat outside the construction zone, or, after thorough inspection, determined that the turtle has moved away from the construction zone.

MM-BIO-4 **Preconstruction Surveys for Burrowing Owl.** A qualified biologist shall conduct surveys for burrowing owl within 30 days prior to ground-disturbing activities in undeveloped areas of the University Farm. The survey shall cover the limits of ground disturbance and potentially suitable nesting habitat within 300 feet. If ground-disturbing activities are delayed, then additional surveys shall be conducted such that no more than 7 days elapse between the survey and ground-disturbing activities.

If non-nesting burrowing owls are observed in or adjacent to the construction footprint during the survey, construction shall be postponed until the qualified biologist can fully implement a California Department of Fish and Wildlife-approved burrow exclusion plan (to be prepared by the qualified biologist). The exclusion plan shall be conducted in accordance with the *Staff Report on Burrowing Owl Mitigation* (CDFW 2012). Once owls have been successfully excluded and unoccupied burrows evacuated, construction in the area may proceed.

If nesting burrowing owls are observed during the survey, construction activities within 300 feet of occupied burrows shall be delayed until young owls have fledged and are independent of the burrow, as determined by a qualified biologist. The qualified biologist may reduce the 300-foot buffer based on the type, timing, extent, and intensity of the construction activity and other factors such as site topography and vegetation cover between the construction activity and the burrow. Once all young have fledged and are no longer dependent upon the nest burrow, the same burrow exclusion procedure described above shall be implemented prior to resuming construction activities in the area.

MM-BIO-5 **Preconstruction Surveys for Swainson's Hawk.** A qualified biologist shall conduct surveys for Swainson's hawk prior to tree removal or building demolition activities on the University Farm, if undertaken during the Swainson's hawk nesting season (March 1 – August 31). The surveys shall be conducted in accordance with the Swainson's Hawk Technical Advisory Committee (TAC) *Recommended Timing and Methodology for Swainson's Hawk Nesting Surveys in California's Central Valley* (TAC 2000). The survey shall cover the limits of construction and suitable nesting habitat within 500 feet. If an active nest is observed in the survey area, construction within 500 feet of the nest shall be delayed until young hawks have fledged and are independent of the nest, as determined by a qualified biologist. In consultation with California Department of Fish and Wildlife biologists, the qualified biologist may reduce the 500-foot buffer based on the type, timing, extent, and intensity of the construction activity and other factors such as site topography and vegetation cover between the construction activity and the nest. Construction within 500 feet of the nest may reinitiate once all young have fledged and are no longer dependent upon the nest.

MM-BIO-6 **Preconstruction Surveys for Nesting Birds (including Yellow Warbler and Loggerhead Shrike).** A qualified biologist shall conduct a survey for nesting birds approximately two days prior to vegetation removal activities on the main campus, University Village and University Farm conducted during the nesting season (March through August). The survey shall cover the limits of vegetation removal and suitable nesting habitat within 500 feet for raptors and 100 feet for other nesting birds.

If any active nests are observed during surveys, a qualified biologist shall establish a suitable avoidance buffer from the active nest. The buffer distance, to be determined by the qualified biologist, will typically range from 50 to 300 feet, and shall be determined based on factors such as the species of bird, topographic features, intensity and extent of the disturbance, timing relative to the nesting cycle, and anticipated ground disturbance schedule. Limits of construction to avoid active nests shall be established in the field with flagging, fencing, or other appropriate barriers and shall be maintained until the chicks have fledged and the nests are no longer active, as determined by the qualified biologist.

If vegetation removal activities are delayed, additional nest surveys shall be conducted such that no more than 7 days elapse between the survey and vegetation removal activities.

MM-BIO-7 **Preconstruction Surveys for Roosting Bats.** If feasible, building demolition and tree removal activities shall be conducted outside of the bat maternity season (March 1 – August 31) to avoid potential impacts to maternity colonies.

If building demolition and tree removal activities must occur during the bat maternity season, a qualified biologist (i.e., biologist with knowledge of California bat species, as well as experience conducting bat surveys and preparing and implementing bat exclusion plans) shall conduct a survey for maternity roosts within 14 days prior to construction. The survey shall include a visual inspection of potential roosting features (bats need not be present) and presence of guano in the construction footprint and within 50 feet. Potential roosting features found during the survey shall be flagged or marked. If a bat roosting or maternity colony cannot be completely avoided, the individuals shall be safely evicted under the direction of the qualified bat biologist. If individuals cannot be safely evicted due to factors such as lack of alternative roosting sites or the young still being reliant on adults, as determined by the qualified bat biologist, ground-disturbing activities within a specified distance of the roost (specified distance to be determined by the bat biologist, based on surroundings and vulnerability of roost site, etc.) shall be postponed or halted until conditions are suitable for safe eviction or the roost has vacated naturally.

MM-BIO-8 **Preconstruction Surveys for American Badger.** A qualified biologist shall conduct focused surveys for American badger dens within 2 weeks prior to ground-disturbing activities in undeveloped areas of the University Farm. The survey shall cover the limits of ground disturbance and a 100-foot buffer. Any winter or natal American badger dens located during the survey shall be evaluated (typically with remote cameras) to determine activity status.

Prior to construction, the qualified biologist shall establish a 100-foot no-disturbance buffer (e.g., mesh exclusion fencing, flagging, or similar) around any active American badger natal dens identified during the survey. The buffer shall be maintained until the qualified biologist determines that the den is no longer active and the young are no longer dependent upon the den for survival.

If construction occurs during the non-breeding period (typically from June through February) and an active non-natal den is found in or adjacent to the construction footprint, a qualified biologist (with the appropriate permits and credentials) shall attempt to trap or flush the individual and relocate it to suitable habitat away from construction. If no dens are observed, and/or after a trapping or flushing effort is completed, and/or after it is confirmed that a natal den is no longer active, the vacated or unoccupied den can be excavated and construction can proceed.

MM-BIO-9 **Riparian Woodland and Creek Protection.** Prior to the initiation of ground-disturbing activities in the riparian woodland on the main campus, the limits of disturbance and avoided habitat shall be fenced (e.g., mesh exclusion fencing, flagging, or similar). No construction, staging, or other ground-disturbing activities shall be permitted beyond the construction fence. Construction contractors shall be responsible for establishing and maintaining appropriate Best Management Practices (BMPs) prior to, during, and following ground disturbance in the riparian woodland. Implementation of MM-BIO-11 would also ensure riparian woodland and creek protection during construction.

Temporarily disturbed areas in the riparian woodland shall be revegetated following construction and prior to the first rain event (more than one half inch of precipitation in a 24-hour period). Reseeded areas shall be covered with a biodegradable erosion control fabric to prevent erosion and downstream sedimentation. The project engineer shall determine the specifications needed for erosion control fabric (e.g., sheer strength) based on anticipated maximum flow velocities and soil types. No seed of nonnative species shall be used unless certified to be sterile.

MM-BIO-10 **Contingency Plan for In-Water Work.** If CSU, Chico facilities staff determines that a project has the potential to impact Big Chico Creek or other aquatic habitat by the placement of fill material, an individual or nationwide permit from the Army Corps of Engineers (ACOE) shall be obtained prior to such activity. As part of the ACOE permit, compensatory mitigation may be required, at a ratio to be determined by the ACOE, to offset the loss of wetland/waters habitat. If so, and as part of the permit application process, a qualified biologist shall draft a mitigation and monitoring plan to address implementation and monitoring requirements under the permit to ensure that the project would result in no net loss of habitat functions and values. The plan shall contain, at a minimum, mitigation goals and objectives, mitigation location, a discussion of actions to be implemented to mitigate the impact, monitoring methods and performance criteria, extent of monitoring to be conducted, actions to be taken in the event that the mitigation is not successful, and reporting requirements. The plan shall be approved by ACOE and compensatory mitigation shall take place either on site or at an appropriate off-site location as approved by the ACOE.

Concurrent with the ACOE permit, CSU shall also obtain a Water Quality Certification from the RWQCB, subject to the same mitigation plan requirements stated above. Any work within the bed or bank of Big Chico Creek, or within the abutting riparian woodland, or within the seasonal pond at the University Farm, would require authorization from CDFW under a California Fish and Game Code Section 1600 Streambed Alteration Agreement. Trimming or removal of riparian vegetation may also require compensatory mitigation.

MM-BIO-11 **Worker Environmental Awareness Training.** For activities that require preconstruction surveys for special-status species, CSU shall retain a qualified biologist to provide worker environmental awareness training (WEAT) for all construction workers and field inspectors. The WEAT may also be conducted through a video or electronic presentation created by a qualified biologist specifically for the project. The WEAT shall instruct workers on how to recognize all special-status plant and wildlife species and their preferred habitat potentially present in the project site, applicable laws and regulations regarding each species, actions to take if a special-status species is observed during construction activities including the name/contact information of the monitoring biologist, and the nature and purpose of protective measures including best management practices and other required mitigation measures. They shall also be instructed as to sensitive resource areas, including wetlands or other water, to avoid impacts within the project site other than where impacts have been authorized, and regarding relevant laws and regulations for each resource.

Table 3.3-6. Summary of Construction Activities and Relevant Impacts, Species, and Mitigation

Land Cover or Habitat Type	Construction Activity	Affected Species	MM
Main Campus			
Riparian Woodland	Ground-disturbance, including vegetation removal or trimming	Special-status plants	MM-BIO-1
		Valley elderberry longhorn beetle	MM-BIO-2
		Western pond turtle	MM-BIO-3
		Native and migratory birds, including yellow warbler	MM-BIO-4
		Native bats	MM-BIO-7
Disturbed/Developed	Vegetation removal/ trimming, including tree removal	Native and migratory birds	MM-BIO-4
	Structure demolition	Native bats	MM-BIO-7
University Villages			
Disturbed/Developed	Vegetation removal/ trimming	Native and migratory birds	MM-BIO-4
University Farm			
Disturbed/Developed	Ground-disturbance, including vegetation removal or trimming	Native and migratory birds, including loggerhead shrike	MM-BIO-4
		Burrowing owl	MM-BIO-5
		American badger	MM-BIO-8
	Tree removal	Native and migratory birds, including loggerhead shrike	MM-BIO-4
		Swainson’s hawk	MM-BIO-6
		Native bats	MM-BIO-7
	Structure demolition	Native bats	MM-BIO-7

3.3.7 Level of Significance After Mitigation

Implementation of the proposed Master Plan would be conducted in accordance with **MM-BIO-1** through **MM-BIO-11**, which involve preconstruction surveys for special-status plants and wildlife, WEAT training for construction activities with potential to impact species and their habitats, and habitat avoidance and protection via the use of BMPs and/or avoidance fencing, as appropriate. If special-status species or common wildlife are encountered during construction, measures would be taken to avoid harming these species. In addition, preconstruction surveys would ensure avoidance of biological resources such as elderberry shrubs, active bird nests, or roosting bats, if present prior to vegetation removal or ground-disturbing activities. With implementation of the above discussed mitigation measures, potential impacts to biological resources in the Master Plan Area would be mitigated to **less than significant** levels. A summary of construction activities and relevant impacts, affected species, and mitigation measures is included in Table 3.3.6.

3.3.8 References Cited

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3.4 Cultural Resources and Tribal Cultural Resources

This section describes the existing cultural resources conditions of the Master Plan Area and vicinity, identifies associated regulatory requirements, evaluates potential impacts, and identifies mitigation measures related to implementation of the proposed project. The information in this section is based on and summarized from the *Cultural Resources Inventory and Evaluation* report prepared by Dudek (2019) and included as Appendix D.

A scoping comment letter was received from the Native American Heritage Commission (NAHC) reiterating the lead agency's consultation requirements under Assembly Bill (AB) 52 regarding tribal cultural resources.

3.4.1 Existing Conditions

The effort to identify cultural resources in the Master Plan Area included a records search and a review of the archaeological, ethnographic, and historical literature; a Native American Heritage Commission (NAHC) Sacred Lands File Search; examination of historic maps; historical research; and field surveys. The following section provides abbreviated archaeology and built environment contexts, the methods used to identify cultural resources, and inventory and evaluation findings for the Master Plan Area regarding cultural resources.

Contextual Overview

Pre-history Archaeology

Various attempts to parse information provided through recorded archaeological assemblages from throughout California for the past 12,000 years have led to the development of several cultural chronologies. Some of these are based on geologic time, most are interpreted through temporal trends derived from archaeological assemblages, and others are interpretive reconstructions. Each of these chronologies describes essentially similar trends in assemblage composition in more or less detail. California's archaeological assemblage composition is generally accepted as falling within the following overarching patterns: Paleoindian (pre-5500 BC), Archaic (8000 BC–AD 500), Late Prehistoric (AD 500–1750), and Ethnohistoric (post-AD 1769).

Occupation of the area is likely to have occurred 9,000–11,000 years ago; however, only a handful of Paleoindian Period lithic bifacial points have been recorded. Fluted points from this area have generally been recorded as isolated finds, or recovered from contexts of mixed provenience. The primary examples of the Paleoindian pattern, to which such fluted and stemmed points are generally assigned, have been recorded east of the Sierra Nevada. The typical assemblage includes large stemmed projectile points, high proportions of formal lithic tools, bifacial lithic reduction strategies, and relatively small proportions of groundstone tools. Some of the most pertinent of such sites were studied by Davis (1978) on China Lake Naval Air Weapons Station, near Ridgecrest, California. These sites contained fluted and unfluted stemmed points and large numbers of formal flaked tools (e.g., shaped scrapers, blades). Other typical Paleoindian sites include the Komodo site (MNO-679), a multi-component fluted point site, and MNO-680, a single-component Great Basin stemmed point site (Basgall et al. 2002). At MNO-679 and MNO-680, groundstone tools were rare, whereas finely made projectile points were common.

Although the limited available data relating to the earliest occupation in the region have provided for a relatively broad and consistent interpretation of the Paleoindian Period, subsequent prehistoric temporal sequences are much more geographically defined and variable due to the greater amount of available data. Regional syntheses were developed primarily by Heizer and Elsasser (1953) and Elston et al. (1977). The Martis and the Kings Beach

Complexes are most applicable to the current project area; however, this may be further broken down to include the more locally relevant Mesilla, Bidwell, Sweetwater, and Oroville Complexes.

The Martis complex has been identified to extend from Lassen County to Alpine County (Elsasser 1960). The date range, 4000 BC to approximately AD 500, has been substantiated by obsidian hydration and radiocarbon dates provided by Elsasser and Gortner (1991). Subsistence during the Martis Complex was based on a hunting and seed-collecting economy, with highly mobile populations that exploited both upper and lower regions based on the relative seasonal abundance of resources. Projectile points are variable during this period, and were most commonly heavy with low formality, providing some resemblance to those identified in the Great Basin regions. Temporally representative tools include finger-held drills or punches, retouched volcanic flake scrapers, spokeshave-notched tools, and large biface blades and cores. During this period, there is a more intensive exploitation of local materials, rather than non-local cherts and obsidian, for the manufacture of formed flaked tools.

Similar to the Martis Complex, the Kings Beach Complex was characterized by populations that migrated between upper areas in the warmer months and lower elevations during the fall and winter. Subsistence during this period shifted toward a focus on fishing and gathering. A reduction in size and weight of projectile points corresponded with adoption of bow and arrow technology. Typical point forms within this region included desert side-notched, Cottonwood, and Rosegate series (CRM 2011). Obsidian and chert replaced volcanic materials such as basalt as the preferred materials for the manufacture of lithic tools. As both high-quality cherts and obsidian are not local, the greater presence of such exotic materials suggests that there was an increase in trade with neighboring tribes during this period.

The Kings Beach Complex additionally included a greater reliance on exploitation of acorns. This trend is exemplified by the increased presence of bedrock mortars and pestles formed from local cobbles. It should be noted that although bedrock mortars were predominantly used for crushing and grinding acorns, they were also employed for the processing of a variety of other foods, including deer meat, camas roots, and seeds (CRM 2011). Although the creation of mortars indicated a relatively high investment of time and energy, such bedrock milling features are as frequently found at sites with limited-to-no subsurface cultural deposits as at intensive use occupation areas with well-developed midden soils.

By comparing Lake Oroville area site assemblages to those associated with Martis Valley and Kings Beach sites, a chronology for this area was developed spanning the past 3,000 years. These periods included the Mesilla, Bidwell, Sweetwater, and Oroville Complexes, as well as the ethnographic Maidu era (Moratto 1984; Pacific Legacy 2016).

The Mesilla Complex included limited, periodic occupation of the foothills by people who used spear-throwing technology and processed food using stone mortar bowls and millingstones. Shell beads, charmstones, and bone pins predominantly emerge during the Mesilla Complex within the Sacramento Valley between 1000 BC and AD 1 (Moratto 1984; Pacific Legacy 2016). This period transitioned to the Bidwell Complex (AD 1–800), during which inhabitants favored permanent or semi-permanent villages, hunted deer and smaller game with slate and basalt projectile points, fished, ground acorns on millingstones, and collected freshwater mussels. This period also introduced the use and manufacture of steatite cooking vessels (Moratto 1984).

During the subsequent Sweetwater Complex (AD 800–1500), additional shell ornament types, steatite vessels and pipes, and points characteristic of bow-and-arrow technology became common (Pacific Legacy 2016). The following Oroville Complex (AD 1500–1833) represented a transition to the practices of the inhabitants of this area that were encountered during the Ethnohistoric Period.

Ethnohistoric (post-AD 1750)

Central California indigenous populations derived their linguistic roots from a common Penution stock. The degree of internal variation among these three decedent language groups (Yokution, Maiduan, and Wintuan) is similar to Indo-European, suggesting a time depth of approximately 6,500 years (Golla 2007). The Konkow spoke one of four closely related Maiduan languages, including Konkow, Chico Maidu, Mountain Maidu, and Nisenan. Shared Hokan phonological and morphological substratal components identified within all Miduan languages indicate past interactions between these two language populations (Hokan time depth is approximately 8,000 years). Miduan language structure suggests that all four Miduan languages were descended from the same proto-Maiduan speaking population to the north. The most likely scenario is that these populations spread southward in the last 1,200 years (Golla 2007).

The region surrounding the project area would have been in Konkow (also known as the Northeastern Maidu) tribal territory during the ethnohistoric period. They inhabited a portion of the Sacramento Valley as well as the Sierra Foothills east of Chico (Riddell 1978). Konkow habitation areas were most commonly situated along river canyons in the foothills and along drainages in the Valley floor (Riddell 1978). Structures consisted of three types and were used at particular times of the year. Oak branch shade structures without walls were used during the warmer months for more than half a year. During the wet winters, the Konkow would built conical bark structures or a semicircular earthen hut, constructed by digging a shallow pit in the ground and using that earth to make a part of the roof (Kroeber 1925). The Konkow would move in a yearly cycle between resource areas, travelling from their winter habitations on river ridges to the valley floor in spring to gather seeds and grasses, then to hunting grounds in the mountains during the summer (Kroeber 1925).

The Konkow subsistence strategy was centered on fishing, hunting, and collecting vegetative resources. This group was highly mobile, with larger central habitation areas and surrounding satellite sites used during hunting excursions and for pre-processing of collected plant resources such as acorns. Common food items included deer, rabbits, birds, bear, rodents, other mammals of small and moderate size, as well as various insects. A ceremony among the Konkow involved the hunting of a bear at the end of hibernation season. During the ceremony, hunters would tell the bear to stand up and let them kill the bear since its life had been paid for. To kill the bear, one hunter would shoot it and then run, as other hidden hunters would shoot additional arrows into the bear until it collapsed (Dixon 1905).

The dead were typically dressed in their finest clothing and would be buried in a flexed position facing west (Riddell 1978). Tribal groups included extended and unmarried relatives. Groups of Konkow did have defined chiefs who were chosen by the local shaman. The position was not hereditary and these individuals were chosen based on maturity, ability, wealth, and generosity (Dixon 1905). Conflict did occur over resources and hunting areas within the tribe taking the form of feuds between villages or blood feuds (Riddell 1978).

Historic Era

European activity in California began as early as AD 1542, when Juan Rodríguez Cabrillo landed in San Diego Bay. Sebastián Vizcaíno returned in 1602, and it is possible that there were subsequent contacts that went unrecorded. These brief encounters made the local native people aware of the existence of other cultures that were technologically more complex than their own. Epidemic diseases may also have been introduced into the region at an early date, either by direct contacts with the infrequent European visitors or through waves of diffusion emanating from native peoples farther to the east or south. Father Juan Crespí, a member of the 1769 Spanish Portolá expedition, authored the first written account of interaction between Europeans and the indigenous population in the region that makes up Orange County today. It is possible, but yet unproven, that the precipitous demographic decline of native peoples had already begun prior to the arrival of Gaspar de Portolá and Junípero Serra in 1769.

Spanish colonial settlement was initiated in 1769, when multiple expeditions arrived in San Diego by land and sea, and then continued northward through the coastal plain toward Monterey. A military presidio and a mission were soon firmly established at San Diego, despite violent resistance to them from a coalition of native communities in 1776. Mission San Juan Capistrano was established this same year, on November 1st. Private ranchos subsequently established by Spanish and Mexican soldiers, as well as other non-natives, appropriated much of the remaining coastal or near-coastal locations (Pourade 1960–1967).

Mexico's separation from the Spanish empire in 1821 and the secularization of the California missions in the 1830s caused further disruptions to native populations. Some former mission neophytes were absorbed into the work forces on the ranchos, while others drifted toward the urban centers at San Diego and Los Angeles or moved to the eastern portions of the county where they were able to join still largely autonomous native communities. United States conquest and annexation, together with the gold rush in Northern California, brought many additional outsiders into the region. Development during the following decades was fitful, undergoing cycles of boom and bust.

Early Exploration, Settlement, and the Formation of Butte County (1808-1848)

Early recorded exploration of present-day Butte County began around 1808 with Spanish excursions to the valley to locate a suitable site for a Mission, however, they did not ultimately establish any long-term settlements in the area. Later were fur trappers from the Hudson's Bay Company with explorer, Jedediah Strong Smith who arrived in 1828, shortly after the territory came under Mexican control. Settlers were drawn to the area by the prospect of receiving one of the many sizable land grants being distributed by the Mexican government to increase and distribute the inland population of California. Edward A. Farwell received the Farwell Grant of 22,194 acres to the south of the Sacramento River in 1844, and William Dickey chose the 22,214-acres on the north side of the Sacramento River in 1844 and named it *Rancho Arroyo Chico* (small creek) (Wells 1882: 129; Mansfield 1918: 36, 39). John Bidwell traveled through the Butte County area for the first time in 1844 while under employ by John Sutter, but returned in 1845 and settled on the Arroyo Chico grant (DC 2017).

The Mexican–American War ended with the Treaty of Guadalupe Hidalgo in 1848, ushering California into its American Period. Butte was designated as one of the 27 original counties of California on February 18, 1850, shortly before California officially became a state with the Compromise of 1850. At this time, the county also covered some areas of present-day Tehama, Plumas, Colusa and Sutter counties. The new state of California recognized the ownership of lands in the state distributed under the Mexican land grants of the previous several decades (Cleland 2005; Waugh 2003).

Establishment of the City of Chico

In 1848, while traveling near Oroville, Bidwell discovered traces of gold on the Feather River. After making a sizeable fortune at the mining camp-turned-prosperous-city he founded called Bidwell's Bar (presently below Oroville Reservoir), Bidwell returned to *Rancho Arroyo Chico* and purchased half of the land from William Dickey in 1849 and the remainder in 1851. Bidwell constructed "Bidwell's Adobe" in 1852 along the old pack trail through the land, which had by then graduated to the Marysville-Shasta Road as explorers and miners in search of gold flooded the Valley. The adobe featured a small store selling various goods grown on Rancho Chico, and constituted Chico's first commercial market (Wells 1882: 129; DC 2017).

Until 1860, all of the improvements south of Chico Creek were confined to Bidwell's property. In 1860, the town-plat of Chico was laid out by county surveyor J.S. Henning, who had been commissioned by Bidwell and his wife, Annie. E.B. Pond constructed the town's first brick-and-mortar store, on the corner of First and Main Streets, which he operated beginning in 1861 (Wells 1882: 222-223).

Educational Institutions in Chico and the Establishment of the State Normal School at Chico

As a young schoolmaster, Bidwell placed a high value on education and donated sizeable portions of land to schools and congregations during the founding of Chico to ensure that educational institutions were established. In 1862, Woodman's Academy, Chico's most prominent and long-lasting 19th century private school, opened on Block 81 (CHA 1983: 3). The Salem Street School, Chico's first public schoolhouse, was built in 1866 and served the area for nearly 10 decades (CHA 1983: 3).

In 1887, Bidwell donated an 8-acre cherry orchard to the northern branch of the State Normal School towards the establishment of the campus in Chico to offer higher education training for elementary school teachers. The second State Normal School campus in California opened in a new, three-story, brick Italianate building in 1889 with five faculty members and 90 students (CSUC 2019a; CSU 2019). In 1910, Annie Bidwell donated two more acres for use as an elementary training farm (CSUC 2019a).

From Normal School to State College

In 1921, the Chico State Normal School became Chico State Teachers College and added a two-year junior college certificate curriculum and later a four-year baccalaureate degree in 1924. In 1922, the Bidwell Mansion was purchased by the State for use as a women's dormitory, and in 1927 a new gymnasium was built on the Bidwell Mansion property. When the original, brick Normal School building was destroyed in a 1927 fire, three new Romanesque-style brick buildings were designed to take its place: an Administration building (Kendall Hall) and a Library building (Trinity Hall) designed by architect, Chester Cole, and an Auditorium building (Laxson Auditorium) designed by the State Division of Architecture (CSUC 2019b). An addition was subsequently added to the auditorium in 1932 (CSUS 2019f).

In 1935, the school underwent another change when the California Legislature converted Chico State Teachers College to Chico State College. Prior to the United States entrance into WWII in 1941, limited development on Campus included the purchase of an athletic field in 1937, and the installation of chimes in Trinity Tower in 1938 (CSUC 2019c). Like other educational institutions during the war years, Chico State College experienced relatively little expansion between 1940 through 1947. In 1945, President Aymer J. Hamilton moved into the newly-acquired Moulton House (now, Albert E. Warrens Reception Center), which was originally a private residence designed by Julia Morgan in the Mediterranean Revival Style in 1923 (CSUC 2019f).

Like other colleges throughout the nation, Chico State College saw significant increases in enrollments in the post-war years, reaching 1156 students by 1947. The rapid expansion of the student population meant new facilities were needed to house and educate the enlarging student body. In 1947, temporary housing was established for veterans with the creation of 57 one- and two-bedroom apartments for married college veterans on the east side of Warner Street. In 1948, several two-story modular dormitories were transported to Chico and constructed on either side of Warner Street to house an additional 144 students (CSUC 2019c). In 1949, a new heating building (now the Center for Continuing Education) was constructed to the north of Colusa Hall to accommodate the present and anticipated future growth of the campus, and the Campus Laboratory School (Aymer Jay Hamilton) replaced the 1910 Training School. Other post-war growth and development on campus included the expansion of the 1932 Laxson Auditorium addition in 1950, forming the Music, Speech and Science Building (now, Ayres Hall); the Softball Field in 1953; the Physical Education Building (Shurmer Gymnasium) and the University Center in 1956; Applied Arts and Sciences (former Siskiyou Hall) and a cafeteria building (Selvester's Café) in 1957; a library building in 1958; a pair of residence halls (Lassen Hall and Shasta Hall) followed in 1959, as well as the Business and Social

Sciences building (Glenn Hall). Overall, approximately twenty-five (25) buildings were added to the main campus between 1939 and 1961, including five (5) major academic buildings and twenty (20) ancillary support buildings.

By 1960, the college was one of 15 in the California State College System, and building development on the campus continued to expand. The new campus buildings moved away from the traditional brick material used in the early buildings on campus towards Neo-Formalist and International influences that were designed by a number of private architects. John Carl Warnecke and Assoc. designed the Education and Psychology Building (Modoc Hall) in 1962 and the Life Sciences Complex (Vesta Holt Hall) in 1972. Cox, Liske, Lionakis & Beaumont Architects & Engineers designed the Student Health Center in 1971, Theodore Osmundson and Assoc. designed the Applied Arts Building (Plumas Hall) in 1972 and Crawford and Banning designed Glenn Hall in 1972 (CSUC 2019c; Lindsay 1979: 16).

As a result of California State legislation passed in 1971, the college became California State University, Chico in 1972. Reflecting this change, the University underwent more program changes, including switching academic departments previously congregated by schools into colleges (CSUC 2019c; CSCU 2019d). Between the 1980s to end of the 20th century, the campus experienced subsequent phases of growth in the early 1980s as the student population jumped from 9,661 students in 1971 to 14,300 in 1986. During the 2018 school term, the CSU, Chico campus hosted a population of 17,488 full and part-time students and employed 989 instructional faculty members and 1,106 staff. Presently, the campus contains 132 acres of main campus, 800 acres of farmland, and 4,043 acres of ecological reserves (CSUC 2019e).

CHRIS Records Search

Dudek requested a CHRIS records search from the Northeast Information Center (NEIC), which houses cultural resources records for Butte County. Dudek received the results on October 1, 2019. The search included any previously recorded cultural resources and investigations within a 0.5-mile radius of the Master Plan Area. The CHRIS search also included a review of the NRHP, CRHR, California Inventory of Historic Resources, historical maps, and local inventories. A full summary of the records received from NEIC are provided in Confidential Appendix D of this report.

Previous Technical Studies

Dudek requested a CHRIS records search from the Northeast Information Center (NEIC), which houses cultural resources records for Butte County (see Methodology, below). The NEIC identified nineteen (19) previously conducted studies within the three Master Plan Area and twenty (20) previously conducted studies within a 0.5-mile radius of the Master Plan Area (Table 3.4-1).

Table 3.4-1. Previously Conducted Cultural Resources Studies within the Master Plan Area

Report No.	Authors	Year	Title	Publisher
007362	Arrington, Cindy, and Bryon Bass	2006	Cultural Resources Final Report of Monitoring and Findings for the Qwest Network Construction Project, State of California	SWCA
009464	Reid, Jeff	2008	Cultural Resources Survey for the University Farm Utilities Improvement Project, Chico, California	n/a
009916	Brookshear, Cheryl	2008	Architectural Evaluation of the former Blacksmith Shop, CSU, Chico	n/a

Table 3.4-1. Previously Conducted Cultural Resources Studies within the Master Plan Area

Report No.	Authors	Year	Title	Publisher
000601	Desautels, Roger	1981	Archaeological/Historical Report on the Proposed Student Housing Project Area Located on the Campus of California State University at Chico.	Scientific Resource Surveys, Inc.
000839 (regional overview)	Kowta, Makoto	1988	The Archaeology and Prehistory of Plumas and Butte Counties, California: In Introduction and Interpretive Model	CSU Chico
000874	Johnson, Keith	1987	In Search of John Bidwell's Carriage House: Archaeological Investigations at Bidwell Mansion State Historic Park, Chico, California	CSU, Chico Archaeological Research Program
004905	White, Gregory, G., Kathleen Hillman, Elin Pynchon, Michael Magliari, and William A. Silva	2002	Bidwell Mansion State Historic Park: Results of 2002 Mansion Grounds Historical and Archaeological Research	Archaeological Research Program, California State University, Chico
005721	White, Gregory G.	2003	CSU, Chico, TII Project: Cultural Resources Found in Trench Located in the Quad Between Glenn Hall, Trinity Hall, and the Meriam Library Building	CSU, Chico- Anthropological Research Program
006685	Peak & Associates	2004	Cultural Resource Assessment of the California State University, Chico Master Plan 2004 Area, Butte County, California	Peak & Associates, Inc.
006810	Leach-Palm, Laura and Kimberly Carpenter	2005	Archaeological Survey and Test Augering of the Proposed Natural History Museum Parcel at California State University, Chico, Butte County	Far Western
007939	Reid, Jeff and Josh Peabody	2007	Cultural Resource Survey for the Wildcat Activity Center	URS Corporation
007944	Reid, Jeff and Heath Browning	2007	Cultural Resource Survey for the University Housing and Food Services Phase I Project	URS Corporation
008087	Texier, Bruno and Carole Denardo	2007	Archaeological Survey Report for the Pacific Gas and Electric Company (PG&E) Chico-1 Former Manufactured Gas Plant Soil Removal Project Chico California	Garcia and Associates
	Carole Denardo	2007	Historic Resources Evaluation Report for the Pacific Gas and Electric Chico-1 Former Manufactured Gas Plant Generator Building, Chico, California, APN 04-038-004	Natural and Cultural Resource Consultants, Garcia and Associates (GANDA)
	Texier, Bruno and Carole Denardo	2007	Archaeological Monitoring, Testing, and Evaluation at the Chico-1 Former Manufactured Gas Plant Site City Block 62 Chico, California	Garcia and Associates

Table 3.4-1. Previously Conducted Cultural Resources Studies within the Master Plan Area

Report No.	Authors	Year	Title	Publisher
	Rodman, Tobin	2007	Archaeological Monitoring and Phase II Evaluations, Chico-1 Former Manufactured Gas Plant Site City Block 63, Chico, California	Garcia and Associates
009465	Reid, Jeff	2008	Cultural Resources Survey for the CSU, Chico Track Restroom Improvement Project, Butte County, California	URS Corporation
009800	Reid, Jeff	2008	Cultural Resources Survey for the CSU, Chico Alumni Glenn Rehabilitation Project, Chico, California	URS Corporation
009917	Brookshear, Cheryl	2008	Architectural Evaluation of the University Center Building, CSU, Chico	JRP Historical Consulting
008108	Manning, James P.	1979	Archaeological Reconnaissance of the proposed storm drain pipe route within the Sacramento Avenue Assessment District.	B.P. Enterprises
012970	Baxter, R. Scott and Katherine Anderson	2014	CSU Chico - Bridge Replacement/Restoration Project, Cultural Resources Survey Report	ESA
013254	White, Gregory	2015	Loveliest of Places: A Study of the Pre-Mansion Historical Resources of Bidwell Mansion State Historic Park	Sub Terra Consulting

Previously Recorded Cultural Resources

Researchers at the NEIC identified 129 previously recorded resources within the records search boundaries. A total of 25 previously recorded cultural resources are located within the Master Plan area boundaries and an additional 104 cultural resources are located within 0.5 miles of the Master Plan Area. Table 3.4-2 provides a comprehensive list of these resources.

Table 3.4-2. Previously Recorded Cultural Resources within the Study Area

Primary No.	Trinomial	Resource Name	NRHP/ CRHR Eligibility Status	Age	Attribute Codes	Recording Events
n/a	n/a	Isolate Hopper Mortar Pestle	7: Not Evaluated	Prehistoric	AP16	unknown
P-04-000295	CA-BUT-000295/H		7: Not Evaluated	Prehistoric, Historic	AH16; AP07, AP15, AP16	1968 (Dorothy Hill)
P-04-000574	CA-BUT-000574	Mechoopda Ind. Rancheria; Chico Rancheria	7: Not Evaluated	Prehistoric, Historic	AH16; AP09	1967 (J. Chartkoff and K. Johnson)

Table 3.4-2. Previously Recorded Cultural Resources within the Study Area

Primary No.	Trinomial	Resource Name	NRHP/ CRHR Eligibility Status	Age	Attribute Codes	Recording Events
P-04-002886			7: Not Evaluated	Historic	AH04	2004 (N. Neuenschwander, Peak & Associates)
P-04-002887		ATRC Dairy Residence	6Z (not eligible) Demolished	Historic	demolished	2004 (N. Neuenschwander); 2008 (Jeff M. Reid)
P-04-002888		ATRC Blacksmith Shop	6Z (not eligible)	Historic	HP4, AH15	2004 (Neal Neuenschwander); 2008 (Jeff M. Reid))
P-04-002936			7: Not Evaluated	Historic	AH04	2006 (H. Browning and E. Nilsson, URS Corporation)
P-04-003000	CA-BUT-003000H	Chico Soda Works warehouses	Likely not eligible; to be confirmed	Historic	AH02, AH04, AH05, AH07	2007 (Bruno Texier and Carole Denardo); 2007 (Carole Denardo); 2007 Tobin Rodman
P-04-003136		University Center	6Z: Not Eligible	Historic	HP15	2008 (Cheryl Brookshear & Jarma Jones, JRP Historical Consulting, LLC)
P-04-003820	CA-BUT-003820/H	Bidwell Mansion State Historic Park	1S: Individually Listed in NRHP	Historic	AH02, AH03, AH05, AH06, AH15; AP02; HP02, HP05, HP06, HP13, HP15, HP19, HP29, HP30, HP31, HP33, HP36, HP37, HP38, HP44	2015 (Greg White, Leslie Steidl, Sub Terra Consulting, Dept. of Parks & Recreation)
P-04-003928		Annie E. K. Bidwell Children's Playground	5: Not eligible but of local interest	Historic	HP29	1983 (Will Shapiro, Chico Heritage Association)
P-04-003931		Bidwell Memorial Presbyterian Church	3: Appears eligible for NRHP	Historic	HP16	1982 (Nanette Coulter, Yochio Kusaba, Chico Heritage Association)
P-04-003932		California Packing Corp. Plant No. 64	5D: Not eligible but of local interest	Historic	HP06	1983 (William Hood, Chico Heritage Association)
P-04-003933		Central Valley Pipe Company	5D: Not eligible but of local interest	Historic	HP06	1983 (William Hood, Emily Newton, Chico Heritage Association)

Table 3.4-2. Previously Recorded Cultural Resources within the Study Area

Primary No.	Trinomial	Resource Name	NRHP/ CRHR Eligibility Status	Age	Attribute Codes	Recording Events
P-04-003936		Madison Bear Garden	3: Appears eligible for NRHP	Historic	HP06	1983 (Emily Newton, Yosio Kusaba, Chico Heritage Association)
P-04-003939		Sierra Hall	3: Appears eligible for NRHP	Historic	HP15	1983 (Maribeth Ross, Yoshio Kusaba, Chico Heritage Association)
P-04-004011		Mavis Todd Brown House	3: Appears eligible for NRHP	Historic	HP02	1982 (Jeanne Boston, Giovanna R. Jackson, Chico Heritage Association)
P-04-004020		Van Liew House	5: Not eligible but of local interest	Historic	HP02	1983 (S. S. Newton, Chico Heritage Association)
P-04-004021		E. I. Miller House	5: Not eligible but of local interest	Historic	HP02	1983 (John Michael, Giovanna Jackson, Chico Heritage Association)
P-04-004022			5: Not eligible but of local interest	Historic	HP02	1983 (Lynn Hoffman, Giovanna Jackson, Chico Heritage Association)
P-04-004023		Chico Museum	5: Not eligible but of local interest	Historic	HP15	1981 (Beth Tausczik-Olsen, Chico Heritage Association)
P-04-004038		F. J. Boucher House	5: Not eligible but of local interest	Historic	HP02	1984 (Dave M. Brown, Chico Heritage Association)
P-04-004049		President's Residence/ Warrens Center	3S:Appears Eligible for NR as an individual property through survey evaluation	Historic	HP02	1983 (Karl Wahl, CSU, Chico)
P-04-004064		C. Robert Laxson Auditorium	3B:Appears Eligible for NRHP both individually and as a contributor to a NR district through survey evaluation	Historic	HP12	1983 (Karl Wahl, CSU, Chico)

Table 3.4-2. Previously Recorded Cultural Resources within the Study Area

Primary No.	Trinomial	Resource Name	NRHP/ CRHR Eligibility Status	Age	Attribute Codes	Recording Events
P-04-004065		Trinity Hall	3B:Appears Eligible for NRHP both individually and as a contributor to a NR district through survey evaluation	Historic	HP15	1983 (Karl Wahl, CSU, Chico)
P-04-004066		Glenn Kendall Hall	3B:Appears Eligible for NRHP both individually and as a contributor to a NR district through survey evaluation	Historic	HP15	1983 (Karl Wahl, CSU, Chico)

Summary of Previously Recorded Cultural Resources within the Master Plan Areas

As noted above, 25 previously recorded resources were identified within the Master Plan boundaries for the main campus, University Village, and the University Farm. Of the 25, two are prehistoric habitation sites (CA-BUT-000295/H and CA-BUT-000574); two are historic trash scatters (P-04-002886 and P-04-002936); one is a blacksmith shop (P-04-002888); one is the remains of an industrial warehouse (CA-BUT-003000H); three are 1-3 story commercial buildings (P-04-003932; P-04-003933; P-04-003936); five are education buildings (P-04-003136; P-04-003939; P-04-004023; P-04-004065; P-04-004066); six are single-family residence properties (P-04-004011; P-04-004020; P-04-004021; P-04-004022; P-04-004038; P-04-004049); one is a civic auditorium (P-04-004064); one is a landscape architecture site: park (P-04-003928); one is a religious building (P-04-003931); one is a demolished dairy (P-04-002887); one is the NRHP-listed Bidwell mansion site, which contains multiple property types (CA-BUT-003820/H), and one is an isolated Hopper Mortar Pestle found in the University Farm area.

A brief summary of the resources follows. It is organized by Master Plan Area: main campus, University Village, and the University Farm. It is further divided by archaeological and built environment resource types.

Main Campus Study Area

The Main Campus Study Area contained five (5) archaeological sites, one historic-era site categorized as an isolate, and seventeen (17) historic built environment resources. Of these sites, several were individually eligible, but two were eligible as contributing features of the South of Campus Historic District (discussed further below), and another four were individually eligible and contributing to an unnamed, as-yet-unlisted district.

Archaeology

<u>CA-BUT-000295/H</u>

This prehistoric/ethnohistoric period habitation site is the relocation site of the Native Americans removed from Bidwell's rancho land, dating to approximately 1849-1868. The habitation site contains middens, clam shell discs, and glass beads. It has been noted in historical records but was first recorded by Dorothy Hill in 1968.

<u>CA-BUT-000574</u>

This prehistoric/ethnohistoric period habitation site is the Mechoopda Indian Rancheria (Chico Rancheria) and was still occupied by some Maidu at the time of its recording in 1967. The site's historical significance was not discussed in the site record. The site was in the process of demolition in 1967 and was recorded by J. Chartkoff and K. Johnson.

<u>P-04-002886</u>

This archaeological record was for isolate historic glass and ceramic artifacts, located on CSU, Chico campus. The isolates were recorded by Neal Neuenschwander in 2004 in support of the *Cultural Resource Assessment of the California State University, Chico Master Plan 2004 Area, Butte County, California* report. The isolate's historical significance was not discussed in the site record. Isolates are not eligible for CRHR/NRHP listing.

<u>P-04-002936</u>

This archaeological site is a historic refuse deposit on the CSU, Chico Campus. The site was roughly dated to the late 1800s and contained nails, ceramics, complete bottles and various domestic artifacts. The site's historical significance was not discussed in the site record. It was recorded by URS Corporation in 2006 in support of a construction monitoring project.

<u>CA-BUT-003000H</u>

This historic archaeological site consist of the various ruined features and foundations for the Chico Soda Works, the Manufactured Gas Plant of Chico Gas Works, and the abandoned railroad tracks of the Union Pacific Railroad, all of which were roughly occupied from 1880s to the mid-1910s. The site's historical significance was not discussed in the site record.

Built Environment: Off-Campus Resources

<u>CA-BUT-003820/H (P-04-003820)</u>

This historic built environment record is for the Bidwell Mansion State Historic Park (BMSHP), and includes a wide range of prehistoric, ethnohistoric, and historic era buildings, structures, and features. The Bidwell Mansion building portion of the site was designed in the Italian Villa architectural style and built in 1864 by San Francisco Architect Henry William Cleaveland. The historic park site is listed in the NRHP under Criteria A, B, and C (1S) and it is California State Landmark No. 329. The latest site record dates to 2015, by Greg White of Sub Terra Consulting in support of *The Loveliest of Places: A Study of the Pre-Mansion Historical Resources of Bidwell Mansion State Historic Park* report.

P-04-003928

This historic park, the Annie E. K. Bidwell Children's Playground, was originally set aside in 1911 as a children's play lot. The park has been added to over the years, notably by the WPA (1938). It contains planned, landscaped open space, play equipment, and an amphitheater structure. The site was recorded in 1983 appears eligible for NRHP as an individual resource (3S) according to by Will Shapiro of the CSU Chico Heritage Association.

P-04-003931

This historic built environment record is for the Bidwell Memorial Presbyterian Church, designed in the "English Perpendicular Style" by Sacramento architecture firm Dean & Satterlee and built in 1932 by local contractor D.H. Bennett. This site appeared eligible for the NRHP as an individual resource (3S), when recorded by Nanette Coulter and Yoshio Kusaba of the Chico Heritage Association in 1982.

P-04-003936

This historic built environment record is for the Lusk Building, or Madison Bear Garden commercial space, formerly the Native Daughters of the Golden West building, located at 316 W. Second Street. This building is designed in the Italianate style, by an unknown architect, but was constructed by contractor Swain & Hudson of Marysville in 1883. This building was recorded in 1983 and appears eligible for NRHP as an individual resource (3S) according to Emily Newton and Yoshio Kusaba of the Chico Heritage Association.

P-04-003932

This historic built environment record is for the First Street Warehouse, formerly the California Packing (Calpak) Corporation Plant No. 64. The building is a gable-ended wood frame utilitarian warehouse building with heavy wood siding and a metal roof. The original architect is unknown and the estimated date of construction is 1900. The warehouse was record in 1983 and appears eligible at the local level (5S2) according to William Hood of the Chico Heritage Association.

P-04-003933

This historic built environment record is for the Central Valley Pipe Company, formerly the Diamond Match Company warehouse. This building is a shed style, metal-clad, utilitarian structure with a long arcade on Orange Street. The architect is unknown and the estimated date of construction is 1910. The warehouse was record in 1983 and appears eligible at the local level (5S2) according to William Hood and Emily Newton of the Chico Heritage Association.

P-04-004020

This historic built environment record is for the Van Liew House, a residential building at 811-813 Rio Chico Way. This building is built in the Colonial Revival style for Charles C. Van Liew, a professor and president of the Chico Normal School, in 1904. The architect is unknown. The building is one of the plots of the Rio Chico Subdivision developed by F.C. Lusk in 1904. This building was recorded in 1983 and appears to be eligible at the local level (5S2) according to Emily Newton of the Chico Heritage Association.

P-04-004021

This historic built environment record is for the E. I. Miller House, a residential building at 825 Rio Chico Way. This building is built in the Colonial Revival style for Elmer Isiah Miller, a professor at the Chico Normal School, in 1906. Miller is also known for aiding in creating both the City of Chico and Butte County charter documents. The architect is unknown. The building is one of the plots of the Rio Chico Subdivision developed by F.C. Lusk in 1904. This building was recorded in 1983 and appears to be eligible at the local level (5S2) according to John Michael and Giovanna Jackson of the Chico Heritage Association.

P-04-004022

This historic built environment record is for a residential building at 847 Rio Chico Way. This building is built in the vernacular style for W.J. Baker in 1906. The architect is unknown. The building is one of the plots of the Rio Chico Subdivision developed by F.C. Lusk in 1904. This building was recorded in 1983 and appears to be eligible at the local level (5S2) according to Lynn Hoffman and Giovanna Jackson of the Chico Heritage Association.

P-04-004023

This historic built environment record is for the Chico Museum (historically the Chico Free Public Library) located at 141 Salem Street. This building was built in the Mediterranean Revival style as one of the 142 Carnegie Libraries in 1904. The building was extensively remodeled in 1939 by architect Louis Brouchoud into its current Mediterranean Revival appearance. The Chico Free Public Library was the first public library in Chico. The building was adaptively reused as the Chico Museum in 1983, when the Public Library moved to a larger building. This building was recorded in 1981 and appears to be eligible at the local level (5S2) according to Beth Tausczik-Olson of the Chico Heritage Association.

P-04-004038

This historic built environment record is for the F.J. Boucher House located at 831 Rio Chico Way. This building is built in the Queen Anne style for Mandana Boucher in 1906. The building is one of the plots of the Rio Chico Subdivision developed by F.C. Lusk in 1904. The architect is unknown. The building changed from a single family residence to a multi-family boarding house as early as the 1920s. This building was recorded in 1984 and appears to be eligible at the local level (5S2) according to Dave M. Brown of the Chico Heritage Association.

P-04-003136

This historic built environment record was for the 1956 University Center, a Contemporary-style education building. No architect was recorded in the site record. The site was recorded by Cheryl Brookshear and Jarma Jones in 2008 in support of *The Architectural Evaluation of the University Center Building, CSU, Chico* report. It was determined ineligible for NRHP by consensus through Section 106 process, but has not been evaluated for CR or Local Listing (Status Code 6Y).

South of Campus Neighborhood Historic District (NR # 91000636)

This historic district is a 520-acre historic district encompassing 114 contributing buildings and located south of the CSU, Chico campus. It is bounded by West Second Street on the north, West Sixth Street on the south, Normal Avenue on the east, and Cherry Street on the west. The district was determined eligible and listed in the NRHP for Criterion A and C, with a period of significance from 1862 to 1949, and represents a microcosm of the architectural history and city settlement of the City of Chico from 1862 when John Bidwell laid out the City of Chico town site to just after World War II. Two buildings within this district, Deen House and Sapp Hall, are owned by the University and are therefore included within the Main Campus Study Area, and several other buildings in the district are within the 0.5-mile study area buffer.

P-04-003939

This historic built environment record is for Sierra Hall, formerly the W.B. Dean House, on 430 West Third Street. This building was designed in the Prairie Style by an unknown architect and was estimated to be constructed in 1920. This building was recorded in 1983 and appears to be eligible for the NRHP as an individual resource (3S), and eligible as a contributor to the South of Campus Neighborhood NRHP-listed historic district (1D) according to Maribeth Ross and Yoshio Kusaba of the Chico Heritage Association.

P-04-004011

This historic built environment record is for the Mavis Todd Brown House (historically the Barnard House, now known as Sapp Hall), a residential building at 238 Normal Avenue. This building is built in the Italianate style for Dr. Carnot Courtland Mason in 1884. The architect is unknown. This building was recorded in 1982 and appears to be eligible for the NRHP as an individual resource (3S), and eligible as a contributor to the South of Campus Neighborhood NRHP-listed historic district (1D) according to Jeanne Boston of the Chico Heritage Association.

Built Environment: On-Campus Resources

P-04-004049

This historic built environment record is for the President's Residence, currently known as the Warrens Center (historically the Dr. Moulton House) located at 341 Mansion Avenue. This building is built in the Mediterranean Revival style in 1923, by architect Julia Morgan (other important works include Hearst Castle). This building was recorded in 1983 and appears to be individually eligible for the NRHP (3S)).

P-04-004064

This historic built environment record is for the C. Robert Laxson Auditorium (historically the Auditorium and Assembly Building) located at the First and Salem Street intersection. This building is built in the Mediterranean Revival style in 1923, by the Office of California State Architecture in 1933. The building is one of three architectural theme buildings on campus which established the architectural vocabulary for the most recent permanent buildings. This building was recorded in 1983 and appears to be eligible for the NRHP both individually and as a contributor to a NRHP-eligible potential historic district (3B).

P-04-004065

This historic built environment record is for Trinity Hall (historically the Old Library and the Campus Activity Center) located at the First and Chestnut Street intersection. This building is a 2-story faculty office building designed in the Romanesque-Renaissance Revival style by architect Chester Cole in 1933. The building is one of three architectural theme buildings on campus which established the architectural vocabulary found throughout the campus to the present day. This building was recorded in 1983 and eligible for the NRHP both individually and as a contributor to a potential NRHP-eligible historic district (3B) according to Karl Wahl of the Chico Heritage Association (CHA 1983).

P-04-004066

This historic built environment record is for Glenn Kendall Hall (historically the Administration Building and New Main Building) located at the First and Normal Street intersection. This building is a 2-story faculty office building built in the Romanesque-Renaissance Revival style by the Office of California State Architecture in 1929. The building is one of three architectural theme buildings on campus which established the architectural vocabulary for the most recent permanent buildings. This building was recorded in 1983 and eligible for the NRHP both individually and as a contributor to a potential NRHP-eligible historic district (3B) according to Karl Wahl of the Chico Heritage Association (CHA 1983).

University Village Study Area

The record search did not return records for any previously recorded archaeological sites or built environment resources located within the University Village Study Area.

University Farm Study Area

The University Farm Study Area contained one (1) archaeological site and one (1) historic built environment resource, which are described below.

Archaeology

P-04-002887

This historic archaeological site was the former location of a Minimal Traditional-style residence associated with the dairy complex at the CSU, Chico Agriculture Teaching and Research Center (ATRC). The building was originally recorded in 2004 by Neal Neuenschwander for the 2004 CSU, Chico Master Plan, but was razed between 2004 and 2008.

Built Environment

P-04-002888

This historic built environment record is for a 1.5-story Blacksmith Shop building, which has been extensively altered and converted to a garage. The building is associated with the CSU, Chico Agriculture Teaching and Research Center (ATRC), but was originally used as a blacksmith shop when it was owned by the Patrick Ranch. From the description, the building appears to have been found ineligible during a prior survey, but does not have an official status code or finding. Integrity was greatly compromised by the 1963 development of the University Farm. The building was originally recorded in 2004 by Neal Neuenschwander for the 2004 CSU, Chico Master Plan.

Tribal Cultural Resources

A project with an effect that may cause a substantial adverse change in the significance of a tribal cultural resource (TCR) is a project that may have a significant effect on the environment (Pub. Resources Code, § 21084.2.). An appropriate approach to potential impacts to TCRs is developed in response to the identified presence of a TCR by California Native American Tribes through the process of consultation. Under Assembly Bill (AB) 52 a tribal cultural resource must have tangible, geographically defined properties that can be impacted by project implementation. A NAHC Sacred Lands File Search and CHRIS records search failed to identify any previously recorded cultural resources of Native American origin within the Master Plan Area or a surrounding half-mile area.

Formal notification of the Master Plan Update was sent to tribes which had filed standing letters of request for project notification and consultation with CSU, Chico on December 17, 2019. A response from the Mechoopda Tribe requesting to consult occurred the following day, indicating that the project falls in the ancestral lands of the Mechoopda Tribe. The University responded by email on December 18, 2019 indicating that they would notify the tribe when the EIR was ready for public review. The Mechoopda Tribe expressed agreement that same day by email, and consultation under AB52 was agreed to be closed as of March 6, 2020. An additional response was received from United Auburn Indian Tribe (UAIC), which later clarified via email on December 10, 2019 that they no longer required formal notification from CSU, Chico for this project under AB52, as the University's location is not within UAIC's boundary. Consolation between the University and traditionally geographically affiliated Native American tribes has been completed in good faith pursuant to AB 52. No known geographically-defined TCRs were identified within, or in the immediate vicinity of, the project area through consultation. As such, no TCRs have been identified in the Master Plan Area.

Additional Studies

There is one additional study of note: the 1983 *City of Chico Historic Resources Inventory*, conducted by the Chico Heritage Association, a local non-profit organization dedicated to the preservation of historically significant properties. All pre-1942 areas of City of Chico were surveyed by the windshield method to identify known and previously unidentified properties for the inventory. The group eventually produced a master list of properties, which incorporated survey results and revised results of previous studies. The inventory did not initially cover all of City of Chico, but was expanded after extra funding was secured in 1985. The inventory was verified in 1984 by the SHPO, saying that the survey met the highest professional standard and was a good basis for the foundation of a historic preservation program for the city (Chico Heritage Association 1983).

Other Previously Recorded Resources within the Master Plan Area

Three other projects within the Master Plan Areas were identified by Dudek, which are not on file with the NEIC. Each report is summarized below.

Significance Evaluation of the Schouten House Property at 2979 Hegan Lane, Butte County, California (2016)

In April 2016, Dudek was retained by the CSU, Chico Research Foundation to provide cultural resources services for a property located at 2979 Hegan Lane, Butte County, California (hereafter "the subject property"). The Foundation was considering demolition of the existing building, and Dudek completed an evaluation of the building in consideration of all applicable designation criteria and integrity considerations, in support of this project. As a result of the evaluation study, 2979 Hegan Lane was found not eligible under all NRHP and CRHR designation criteria due to a lack of significant historical associations and architectural merit. This site is located within the University Farm Study Area. The building was demolished in 2016.

Historical Resources Technical Report for Siskiyou Hall, CSU Chico Campus, Butte County, California (2017)

In April 2017, Dudek was retained by CSU, Chico to complete a Historical Resources Technical Report for a project that proposes demolition of the Siskiyou Hall building located on the CSU, Chico campus in the City of Chico, Butte County, California. The Project proposed to replace the existing Siskiyou Hall with a new science building located on Ivy Street, near West First Street, within the main CSU, Chico campus. Because CSU, Chico buildings are state owned properties, the report was also completed in compliance with PRC (Public Resource Code) Sections 5024 and 5024.5 which mandate that state agencies must provide notification and submit documentation to the SHPO early in the planning process for any project having the potential to affect state-owned historical resources on or eligible for inclusion in the Master List. As a result of the technical report, Siskiyou Hall was found not eligible under all NRHP, CRHR, and CHL designation criteria due to a lack of significant historical associations and architectural merit. This site is located within the Main Campus Study Area. The building was demolished in 2018.

Cultural Resources Report for the College Park Demolition Project (2018)

In October 2018, Dudek was retained by CSU, Chico to complete a cultural resources study for a project that proposes demolition of 21 single-family residences in the College Park neighborhood north of the CSU, Chico campus. The Project proposed to acquire 21 parcels of land near campus, and demolish all residential units and accessories from the parcels. All 21 parcels were built at least 50 years ago and evaluated for historical significance in consideration of NRHP, CRHR, CHL, and City of Chico designation criteria and integrity requirements. Because CS,U Chico buildings are state owned properties, the report was also completed in compliance with PRC (Public Resource Code) Sections 5024 and 5024.5 which mandate that state agencies must provide notification and submit documentation to the SHPO early in the planning process for any project having the potential to affect state-owned historical resources on or eligible for inclusion in the Master List. All 21 parcels win the College Park neighborhood were found not eligible under all NRHP, CRHR, CHL and City of Chico designation criteria both as individual resources or as potential district resources due to a lack of significant historical associations, integrity, and architectural merit. This site is located within the Main Campus Study Area. Most of the buildings have since been demolished.

Additional Building Development and Archival Research

Dudek conducted additional background research to identify the presence of other historic era built environment properties that were not identified through the CHRIS record search sited within and adjacent to the proposed project area. The research included identifying any previously recorded, NRHP and/or CRHR eligible, or locally designated CEQA historical resources. Research was also undertaken at the programmatic level to document the presence of properties within or adjacent to the Project that contain properties with buildings 45 years old or older. This group of properties are not known to be significant but could require further study and analysis in the future if project level activities result in potential impacts. This additional research also assisted in the preparation of the historical context for the proposed project area; contributing to a larger understanding of the historic era development of the region.

Specifically, Dudek consulted the City of Chico Historic Resources Inventory (HRI), Chico Historical GIS, Sanborn Fire Insurance maps, and aerial photograph collections. Dudek also conducted research through the following repositories:

- Meriam Library Special Collections and University Archives, California State University Chico
- California State University, Chico Facilities Information System
- California State University, Chico Digital Collections
- California State Archives, Sacramento, California

Native American Coordination

The NAHC was contacted by Dudek on November 1, 2019 to request a search of the Sacred Lands File. The NAHC responded on November 13, 2019 indicating that the search failed to identify any Native American resources in the vicinity of the Project site and provided a list of nine individuals and organizations to contact that may have additional information. Absence of this information does not present any specific constraint relating to cultural resources. Potential impacts to resources of importance to Native American tribes that are on file with the NAHC will be identified and addressed through the process of AB 52 Project notification and consultation.

The proposed Project is subject to compliance with AB 52 (California Public Resources Code, Section 21074), which requires consideration of impacts to tribal cultural resources as part of the CEQA process and requires the CEQA lead agency to notify any groups (who have requested notification) of the proposed Project who are traditionally or culturally affiliated with the geographic area of the Project. Because AB 52 is a government-to-government process, all records of correspondence related to AB 52 notification and any subsequent consultation are on file with the lead agency. The University traditionally most closely consults with the Mechoopda Indian Tribe of the Chico Rancheria (Mechoopda Tribe). Formal notification of the Master Plan Update occurred on December 17, 2019. A response from the Mechoopda Tribe requesting to consult occurred the following day, indicating that the project falls in the ancestral lands of the Mechoopda Tribe. The University responded by email on December 18, 2019 indicating that they would notify the tribe when the EIR was ready for public review. The Mechoopda Tribe expressed agreement that same day by email. Tribal consultation is underway between the University and the Mechoopda Tribe.

The United Auburn Indian Community (UAIC) had previously requested notification under AB 52, and was notified of the proposed project. However, UAIC has notified CSU, Chico that the University is not within an area geographically associated with the tribe.

Study Area and Areas of Direct Impact for Cultural Resources

The Study Area for cultural resources takes into account the boundaries of the Master Plan Area, which includes the main campus, University Village, and the University Farm. The proposed Master Plan provides the basis for the physical development of the CSU, Chico campus over the next 10 years. Cultural resources investigations for the overarching Master Plan are limited to constraints level analysis. This level of analysis identifies existing cultural resources within the Master Plan area and provides guidance on treatment of resources should future project move towards implementation. Since a great deal of the proposed Master Plan are considered future projects that are still in early conceptual planning stages, the primary focus of this cultural resources technical study is based on work proposed under Near-Term Projects. These Near-Term Projects, intended to take place within the next 5 years are further along in the planning and design stages, constitute the Areas of Direct Impact (ADI) for cultural resources. The following text defines the approach to determine the ADI for Archaeological and Built Environment Cultural Resources. **Figure 3.4-1** shoes the Near-Term Projects within the main campus. **Figure 3.4-2** shows the Near-Term Projects at the University Farm.

Archaeological ADI

The archaeological ADI consists of the direct project footprints where earth-disturbing activities are anticipated to occur. This includes areas of demolition, new construction, and areas used for staging.

Built Environment ADI

The Built Environment ADI includes the areas within the Master Plan Areas where implementation of proposed Near-Term Projects may result in impacts to historical resources. This includes properties (buildings or structures) that have been previously identified as significant historical resources and those that were found to be at least 45 years of age and were evaluated for significance as part of this study. The ADI consists of the project footprints, which includes areas of demolition, new construction, building renovation, and areas used for staging, if known. The ADI also takes into consideration the maximum extent of potential visual and noise-related impacts that the near-term projects could have on historic built environment resources.

Field Methods

Archaeology

Dudek Archaeologist Ross Owen, MA, RPA conducted a pedestrian survey of the ADI on August 16, 2019. All fieldwork was performed using standard archaeological procedures and techniques that meet the Secretary of the Interior's standards and guidelines for cultural resources inventory and evaluation (48 FR 44720–44726). The only areas with exposed ground surface within the ADI is located within the Farm area. These exposed areas were subject to a 100% survey. Survey crew was equipped with a Global Positioning System (GPS) receiver with sub-meter accuracy. Field recording and photo documentation of context was completed. A series of overview photographs was taken to document the current conditions. Location-specific photographs were taken using an Apple iPad equipped with 8-megapixel resolution and georeferenced PDF maps of the Project site. Accuracy of this device ranged between 2 meters and 5 meters. Evidence for buried cultural deposits was opportunistically sought through inspection of natural or artificial erosion exposures and the spoils from rodent burrows. Ground surface conditions were highly disturbed from existing development. No cultural resources were observed. All field notes, photographs, and records related to the current study are on file at Dudek's Auburn, California office.

Built Environment

Dudek Architectural Historian Fallin Steffen, MPS, and Dudek Senior Architectural Historian, Kathryn Haley, MA, conducted a pedestrian survey of the Study Area including the Main CSU, Chico Campus and the University Farm Complex between August 12 and August 14, 2019. The survey focused on the Built Environment ADI and documenting buildings and structures potentially impacted by Near-Term Projects (see project description). The survey entailed walking all portions of the exterior of the building requiring survey and documenting each building with notes and photographs, specifically noting character-defining features, spatial relationships, observed alterations, and examining any historic landscape features on the property. Dudek documented the fieldwork using field notes, digital photography, close-scale field maps, and aerial photographs. Photographs of the subject property were taken with a digital camera. All field notes, photographs, and records related to the current study are on file at Dudek's Sacramento, California, office.

California State University (CSU) Chico Campus Boundry

Near Term Projects

1 - Butte Hall Renovation
2 - Physical Science Building Renovation
3 - Facilities Management & Services Yard
4 - Forensic Anthropology/Admin Office
5 - Athletic Field
6 - New Creekside Housing
7 - Glenn Hall Replacement
8 - WREC Expansion - New Construction
9 - Meriam Library Renovation
10 - Deen House Renovation
11 - Sapp Hall Renovation
12 - Bike Path
13 - Ivy/Warner Street Improvements

SOURCE: ESRI 2018
CSU Chico 2019

DUDEK

0 212.5 425 Feet

FIGURE 3.4-1

CSU, Chico Near Term Projects

California State University Chico Master Plan EIR

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SOURCE: USDA 2016, CSU, Chico 2019

DUDEK

FIGURE 3.4-2

University Farm Near Term Projects

California State University Chico Master Plan EIR

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Results of Identification and Evaluation Efforts

Archaeology

Survey of the Main Campus Master Plan Boundary ADI did not result in the identification of previously recorded or newly recorded archaeological resources. The survey area consisted primarily of extant structures and infrastructure (paved roads and paths), manicured lawn and landscaping. Evidence for buried cultural deposits was opportunistically sought through inspection of natural or artificial erosion exposures and the spoils from rodent burrows. Ground surface conditions were highly disturbed from existing development.

The University Farm Complex ADI exhibited substantial ground disturbance and land development from the construction and continued use of the existing agricultural infrastructure. During survey of the University Farm Complex proposed fence line a portion of the Schouten House property at 2979 Hegan Lane was re-visited. Artifacts associated with the demolished historic structure included remnants of the gravel drive originating at Nicholas C. Shouten Lane, and a portion of a brick path which extends southeast from Hegan Lane. Additional artifacts included ceramic, glass, and brick fragments associated with the demolished structure. This property was previously evaluated and determined not eligible for inclusion on the CRHR and NRHP (Murrary 2016). Archaeological survey and inventory efforts did not result in the identification of any other previously recorded or newly recorded archaeological resources within the University Farm Complex ADI.

Built Environment

Eighteen properties located within the Main Campus Master Plan Boundary ADI and the University Farm Complex (comprised of 65 buildings and structures) are located within the ADI of the University Farm Master Plan boundary and were documented and evaluated under NRHP/CRHR Criteria in the technical report. These built environment properties required intensive level recordation because they were found to be potentially impacted by Near-Term Projects, over 45 years of age and required evaluation under NRHP/CRHR Criteria, and/or previously identified as historical resources under CEQA. Table 3.4-3 provides a list of the 15 properties found ineligible for listing in the NRHP, CRHR, or at the local level of significance as a result of technical work conducted in support of this project. None of the 15 properties presented in this table are considered CEQA historical resources.

Table 3.4-3. CSU Chico Buildings Found Not Eligible for Listing in the NRHP, CRHR, CHL, or a Local rRgister (Not CEQA Historical Resources)

Identifier/ Building Number	Current Building Name/ Architectural Style	Year Built	Property Type	Current CHRS Status Code	Criteria (if applicable)	Near-Term Project Name - Project Action
002	Aymer Jay Hamilton building/ Mid-Century Modern w/ International elements	1949	Educational Building	6Z	N/A	Modoc II – Demolition of Existing Building[1]
006	Glenn Hall/Mid-Century Modern w/ International elements	1959	Educational Building	6Z	N/A	Glenn Hall - Demolition of existing building

Table 3.4-3. CSU Chico Buildings Found Not Eligible for Listing in the NRHP, CRHR, CHL, or a Local rRgister (Not CEQA Historical Resources)

Identifier/ Building Number	Current Building Name/ Architectural Style	Year Built	Property Type	Current CHRS Status Code	Criteria (if applicable)	Near-Term Project Name - Project Action
008	Physical Science Building/International (1961 section), brutalist (1969)	1961	Educational Building	6Z	N/A	Physical Science Building - Renovation
011	Student Health Center/Brutalist	1971	Medical Facility - Hospital	6Z	N/A	Arena – Demolition of Existing Building[2]
022	Bell Memorial Union & Bookstore/1969: New Formalist, 2001: Recent Construction	1969	Educational Building, Community Center/ Social Hall	6Z	N/A	Bell Memorial Union - Renovation
029	Butte Hall/Brutalist	1972	Educational Building	6Z	N/A	Butte Hall - Renovation
034	Softball Field/Utilitarian	1953	Stadium/Sports Arena	6Z	N/A	Softball Stadium - Demolition of Existing Facility
050	Continuing Education/Romanesque Revival	1949	HP 15. Educational Building	6Z	N/A	Center for Regional & Continuing Education - Renovation (interior)
051	Selvester Café/Mid-Century Modern with International elements	1956	1-3 Story Commercial Building	6Z	N/A	Selvester's Café-By-The-Creek - Renovation
065	Physical Science Greenhouse/Utilitarian	1959	HP4. Ancillary Building	6Z	N/A	Physical Science Building – Demolition of accessory buildings
066	Physical Sciences Head House/Utilitarian	1959	Ancillary Building	6Z	N/A	Physical Science Building Renovation – Demolition of accessory buildings

Table 3.4-3. CSU Chico Buildings Found Not Eligible for Listing in the NRHP, CRHR, CHL, or a Local rRgister (Not CEQA Historical Resources)

Identifier/ Building Number	Current Building Name/ Architectural Style	Year Built	Property Type	Current CHRS Status Code	Criteria (if applicable)	Near-Term Project Name - Project Action
069	Physical Education Storage/Utilitarian	1959	Ancillary Building	6Z	N/A	Creek Residence Hall 1 & 2 - Demolition of existing building
082	FMS Administration/ Utilitarian	1921 to 1941; 1974 (remodeled)	1-3 Story Commercial Building	6Z	N/A	Facilities Management & Services Yard - Demolition of existing building
083	FMS Warehouse/Utilitarian		Industrial Building	6Z	N/A	Facilities Management & Services Yard - Renovation of existing building
University Farm Complex/ Multiple Buildings	65 Farm Buildings and Structures/Utilitarian	c. 1960 to 2008	Farm Complex	6Z	N/A	University Farm - New Construction, Expansion of existing buildings, demolition of multiple existing buildings

Notes:

1. The Modoc II Academic Building is not currently identified as a Near-Term Project, but the potential demolition of the Aymer J. Hamilton Building was included in the ADI.
2. The Arena Project is not currently identified as a Near-Term Project, but the demolition of the existing Student Health Center may occur after the WREC Expansion is completed (Near-Term Project) and is therefore considered.
3. The renovation of Selvester's Café is not currently identified as a Near-Term Project, but was included within the ADI.

Of the remaining 18 properties, two located within the Main Campus Master Plan Boundary ADI were previously recorded and update documentation was prepared as part of the technical report for this project. These two properties were identified as historically significant, as contributors to a NRHP listed historic district, and are listed in the CRHR (Sapp Hall and Deen House, in the south campus on W. Third Street). Lastly, one main campus building, Meriam Library, was found individually eligible for listing in the NRHP/CRHR. All three buildings were found significant architecturally. Table 3.4-3 below provides details on their eligibility including the character-defining features which help the buildings convey their significance.

Table 3.4-4. CSU Chico Buildings Found eligible for listing in the NRHP, CRHR, CHL, or a local register (CEQA Historical Resources)

Identifier/ Building Number	Current Building Name/ Architectural Style	Year Built	Character Defining Features	Property Type	CHRS Status Code[1]	Criteria (if ap-plicable)	Near-Term Project Name - Project Action
012	Ella Caroline Sapp Hall/Italianate	1884	Exterior: Prominent full-height entry porch supported by groups of composite columns and first story, full-width porch Triangular entablature with central oval window Prominent bracketed cornice Paired and single windows with elaborate bracketed crowns Wide, horizontal wood siding Leaded glass transom and sidelights surrounding primary entrance door and the door leading off the second story porch Prominent Porte-cochére supported by tall columns with no capital Interior: Central Stairs Prominent carved wood newel posts and balustrades Double columned parlor screen with egg and dart details Wide profiled baseboards Wood floors with inlaid geometric design Tall interior doors with corresponding operable transom Paneled ceiling in Dining room Delicate carved picture rail in upstairs offices	1-3 Story Com-mercial Building	1D (Chico Heritage Assoc., 1991)	C/3	Sapp Hall Renovation

Table 3.4-4. CSU Chico Buildings Found eligible for listing in the NRHP, CRHR, CHL, or a local register (CEQA Historical Resources)

Identifier/ Building Number	Current Building Name/ Architectural Style	Year Built	Character Defining Features	Property Type	CHRS Status Code[1]	Criteria (if ap-plicable)	Near-Term Project Name - Project Action
054	Meriam Library/Brutalist	1958/ 1975	Use of brick in Flemish and vertical stacked bonds Stepped brick corbels Concrete stepped corbels with inset windows Projecting brick bays between glass corner sections Wide, flat, scored concrete eaves Light-filled atrium area Prominent projecting window surrounds on corner window sections and interior atrium	Education-al Building	3S	C/3	Meriam Library Renovation
078	Deen House/ Craftsman Bungalow	c. 1915	Modest bungalow massing L-shaped, full-width porch with arched openings and inset stone ceiling Flared dormers Wood shingle siding Decorative cut exposed rafter tails on main and dormer roof sections Projecting frame of front main front window Wood window and door surrounds Boxy, concrete front stairs Projecting window-filled side bays	Single Family Property	1D (Chico Heritage Assoc., 1991)	C/3	Deen House Renovation

Notes: 1. Status Code 1D refers to the California Historical Resource Status Code that states the following "Contributor to a district or multiple resource property listed in NR by the Keeper. Listed in CR." Status Code 3S refers to the California Historical Resource Status Code that states the following "Appears eligible for NR as an individual property through survey evaluation."

3.4.2 Regulatory Setting

Federal

National Register of Historic Places

Although there is no federal nexus for this project, the subject properties were evaluated in consideration of the NRHP designation criteria and integrity requirements to comply with PRC Sections 5024 and 5024.5. The NRHP is the United States' official list of districts, sites, buildings, structures, and objects worthy of preservation. Overseen by the National Park Service (NPS) under the U.S. Department of the Interior, the NRHP was authorized under the National Historic Preservation Act, as amended. Its listings encompass all National Historic Landmarks, as well as historic areas administered by NPS.

NRHP guidelines for evaluation of historic significance were developed to be flexible and to recognize the accomplishments of all who have made significant contributions to the nation's history and heritage. Its criteria are designed to guide state and local governments, federal agencies, and others in evaluating potential entries in the NRHP. For a property to be listed in or determined eligible for listing, it must be demonstrated to possess integrity and to meet at least one of the following criteria listed below:

The quality of significance in American history, architecture, archaeology, engineering, and culture is present in districts, sites, buildings, structures, and objects that possess integrity of location, design, setting, materials, workmanship, feeling, and association, and:

A. That are associated with events that have made a significant contribution to the broad patterns of our history; or
B. That are associated with the lives of persons significant in our past; or
C. That embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or
D. That have yielded, or may be likely to yield, information important in prehistory or history.

Integrity is defined in NRHP guidance, How to Apply the National Register Criteria for Evaluation, as "the ability of a property to convey its significance. To be listed in the NRHP, a property must not only be shown to be significant under the NRHP criteria, but it also must have integrity" (NPS 1990). NRHP guidance further states that properties must have been completed at least 50 years ago to be considered for eligibility. Properties completed fewer than 50 years before evaluation must be proven to be "exceptionally important" (criteria consideration G) to be considered for listing.

A historic property is defined as "any prehistoric or historic district, site, building, structure, or object included in, or eligible for inclusion in, the NRHP maintained by the Secretary of the Interior. This term includes artifacts, records, and remains that are related to and located within such properties. The term includes properties of traditional religious and cultural importance to an Indian tribe or Native Hawaiian organization and that meet the NRHP criteria" (36 Code of Federal Regulations (CFR) Section 800.16(i)(1)).

Effects on historic properties under Section 106 of the National Historic Preservation Act are defined in the assessment of adverse effects in 36 CFR Sections 800.5(a)(1) as follows:

An adverse effect is found when an undertaking may alter, directly or indirectly, any of the characteristics of a historic property that qualify the property for inclusion in the National Register in a manner that would diminish the integrity of the property's location, design, setting, materials, workmanship, feeling, or association. Consideration shall be given to all qualifying characteristics of a historic property, including those that may have been identified subsequent to the original evaluation of the property's eligibility for the National Register. Adverse effects may include reasonably foreseeable effects caused by the undertaking that may occur later in time, be farther removed in distance, or be cumulative.

Adverse effects on historic properties are defined as follows (36 CFR 800.5 (2)):

(i) Physical destruction of or damage to all or part of the property;

(ii) Alteration of a property, including restoration, rehabilitation, repair, maintenance, stabilization, hazardous material remediation and provision of handicapped access, that is not consistent with the Secretary's Standards for the Treatment of Historic Properties (36 CFR Part 68) and applicable guidelines;

(iii) Removal of the property from its historic location;

(iv) Change of the character of the property's use or of physical features within the property's setting that contributes to its historic significance;

(v) Introduction of visual, atmospheric or audible elements that diminish the integrity of the property's significant historic features;

(vi) Neglect of a property which causes its deterioration, except where such neglect and deterioration are recognized qualities of a property of religious and cultural significance to an Indian tribe or Native Hawaiian organization; and

(vii) Transfer, lease, or sale of property out of Federal ownership or control without adequate and legally enforceable restrictions or conditions to ensure long-term preservation of the property's historic significance.

To comply with Section 106 of the National Historic Preservation Act, the criteria of adverse effects are applied to historic properties, if any exist in the project area of potential effects, pursuant to 36 CFR Sections 800.5(a)(1). If no historic properties are identified in the area of potential effects, a finding of "no historic properties affected" would be made for the proposed project. If there are historic properties in the area of potential effects, application of the criteria of adverse effect (as described above) would result in project-related findings of either "no adverse effect" or of "adverse effect." A finding of no adverse effect may be appropriate when the undertaking's effects do not meet the thresholds in criteria of adverse effect (36 CFR Sections 800.5(a)(1)), in certain cases when the undertaking is modified to avoid or lessen effects, or if conditions are imposed to ensure review of rehabilitation plans for conformance with the Secretary of the Interior's Standards for the Treatment of Historic Properties (codified in 36 CFR Part 68).

If adverse effects were expected to result from a project, mitigation would be required, as feasible, and resolution of those adverse effects by consultation may occur to avoid, minimize, or mitigate adverse effects on historic properties pursuant to 36 CFR Part 800.6(a).

State

Public Resources Code Sections 5024 and 5024.5

PRC Sections 5024 and 5024.5 provide the following guidance:

5024 (a–h): Describes the process of inventorying and evaluating state-owned historical resources in consultation with the SHPO.

5024.5 (a–g): Describes the process of identifying adverse effects and development of alternatives and mitigation for state-owned historical resources in consultation with, and as determined by, the SHPO.

Review of Projects Affecting State-Owned Historical Resources

Under PRC Sections 5024(f) and 5024.5, state agencies must provide notification and submit documentation to the SHPO early in the planning process for any project having the potential to affect state-owned historical resources on or eligible for inclusion in the Master List (buildings, structures, landscapes, archaeological sites, and other nonstructural resources). Under PRC Section 5024(f), state agencies request the SHPO's comments on the project.

Under PRC Section 5024.5, it is the SHPO's responsibility to comment on the project and to determine if it may cause an adverse effect (PRC Section 5024.5), defined as a substantial adverse change in the significance of a historical resource (PRC Section 5020.1(q)). In this case, historical resources are defined as resources eligible for or listed in the NRHP and/or resources registered for or eligible for registering as a CHL.

California Historical Landmarks

CHLs are buildings, structures, sites, or places that have been determined to have statewide historical significance by meeting at least one of the criteria listed below (OHP 2017):

The first, last, only, or most significant of its type in the state or within a large geographic region (Northern, Central, or Southern California).

Associated with an individual or group having a profound influence on the history of California.

A prototype of, or an outstanding example of, a period, style, architectural movement or construction or is one of the more notable works or the best surviving work in a region of a pioneer architect, designer or master builder.

The resource also must have written consent of the property owner, be recommended by the State Historical Resources Commission, and be officially designated by the Director of California State Parks. CHLs #770 and above are automatically listed in the CRHR (OHP 2017).

California Register of Historical Resources

In California, the term "historical resource" includes "any object, building, structure, site, area, place, record, or manuscript which is historically or archaeologically significant, or is significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California" (PRC Section 5020.1(j)). In 1992, the California legislature established the CRHR "to be used by state and local agencies, private groups, and citizens to identify the state's historical resources and to indicate what properties are to be protected, to the extent prudent and feasible, from substantial adverse change" (PRC Section 5024.1(a)). The criteria for listing resources on the CRHR were expressly developed to be in accordance with previously established criteria developed for listing in the NRHP, enumerated below. According to PRC Section 5024.1(c)(1–4), a resource is considered historically significant if it (i) retains "substantial integrity," and (ii) meets at least one of the following criteria:

(1) Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage.
(2) Is associated with the lives of persons important in our past.
(3) Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values.
(4) Has yielded, or may be likely to yield, information important in prehistory or history.

To understand the historic importance of a resource, sufficient time must have passed to obtain a scholarly perspective on the events or individuals associated with the resource. A resource fewer than 50 years old may be considered for listing in the CRHR if it can be demonstrated that sufficient time has passed to understand its historical importance (see California Code of Regulations, Title 14, Section 4852(d)(2)).

The CRHR protects cultural resources by requiring evaluations of the significance of prehistoric and historic resources. The criteria for the CRHR are nearly identical to those for the NRHP, and properties listed or formally designated as eligible for listing in the NRHP are automatically listed in the CRHR, as are state landmarks and points of interest. The CRHR also includes properties designated under local ordinances or identified through local historical resource surveys.

California Environmental Quality Act

As described further below, the following CEQA statutes and guidelines are of relevance to the analysis of archaeological, historic, and tribal cultural resources:

PRC Section 21083.2(g) defines "unique archaeological resource."

PRC Section 21084.1 and CEQA Guidelines Section 15064.5(a) defines "historical resources." In addition, CEQA Guidelines Section 15064.5(b) defines the phrase "substantial adverse change in the significance of an historical resource"; it also defines the circumstances when a project would materially impair the significance of an historical resource.

PRC Section 21074(a) defines "tribal cultural resources."

PRC Section 5097.98 and CEQA Guidelines Section 15064.5(e) set forth standards and steps to be employed following the accidental discovery of human remains in any location other than a dedicated ceremony.

PRC Sections 21083.2(b)-(c) and CEQA Guidelines Section 15126.4 provide information regarding the mitigation framework for archaeological and historic resources, including examples of preservation-in-place mitigation measures; preservation-in-place is the preferred manner of mitigating impacts to significant archaeological sites because it maintains the relationship between artifacts and the archaeological context, and may also help avoid conflict with religious or cultural values of groups associated with the archaeological site(s).

Under CEQA, a project may have a significant effect on the environment if it may cause "a substantial adverse change in the significance of an historical resource" (PRC Section 21084.1; CEQA Guidelines Section 15064.5(b)). If a site is either listed or eligible for listing in the CRHR, or if it is included in a local register of historic resources, or identified as significant in a historical resources survey (meeting the requirements of PRC Section 5024.1(q)), it is a "historical resource" and is presumed to be historically or culturally significant for the purposes of CEQA (PRC Section 21084.1; CEQA Guidelines Section 15064.5(a)). The lead agency is not precluded from determining that a resource is a historical resource even if it does not fall within this presumption (PRC Section 21084.1; CEQA Guidelines Section 15064.5(a)).

A "substantial adverse change in the significance of an historical resource" reflecting a significant effect under CEQA means "physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of an historical resource would be materially impaired" (CEQA Guidelines Section 15064.5(b)(1); PRC Section 5020.1(q)). In turn, the significance of a historical resource is materially impaired when a project (CEQA Guidelines section 15064.5(b)(2)):

(1) Demolishes or materially alters in an adverse manner those physical characteristics of an historical resource that convey its historical significance and that justify its inclusion in, or eligibility for, inclusion in the California Register; or

(2) Demolishes or materially alters in an adverse manner those physical characteristics that account for its inclusion in a local register of historical resources pursuant to Section 5020.1(k) of the PRC or its identification in an historical resources survey meeting the requirements of Section 5024.1(g) of the PRC, unless the public agency reviewing the effects of the project establishes by a preponderance of evidence that the resource is not historically or culturally significant; or

(3) Demolishes or materially alters in an adverse manner those physical characteristics of a historical resource that convey its historical significance and that justify its eligibility for inclusion in the California Register as determined by a lead agency for purposes of CEQA.

Pursuant to these sections, the CEQA inquiry begins with evaluating whether a project site contains any historical resources, then evaluates whether that project would cause a substantial adverse change in the significance of a historical resource such that the resource's historical significance is materially impaired.

If it can be demonstrated that a project would cause damage to a unique archaeological resource, the lead agency may require reasonable efforts be made to permit any or all of these resources to be preserved in place or left in an undisturbed state. To the extent that they cannot be left undisturbed, mitigation measures are required (Section 21083.2(a), (b), and (c)).

Section 21083.2(g) defines a unique archaeological resource as an archaeological artifact, object, or site about which it can be clearly demonstrated that without merely adding to the current body of knowledge, there is a high probability that it meets any of the following criteria:

(1) Contains information needed to answer important scientific research questions and that there is a demonstrable public interest in that information.

(2) Has a special and particular quality such as being the oldest of its type or the best available example of its type.

(3) Is directly associated with a scientifically recognized important prehistoric or historic event or person.

Impacts to non-unique archaeological resources are generally not considered a significant environmental impact (PRC Section 21083.2(a); CEQA Guidelines Section 15064.5(c)(4)). However, if a non-unique archaeological resource qualifies as tribal cultural resource (PRC Sections 21074(c) and 21083.2(h)), further consideration of significant impacts is required.

CEQA Guidelines Section 15064.5 assigns special importance to human remains and specifies procedures to be used when Native American remains are discovered. As described below, these procedures are detailed in PRC Section 5097.98.

California Health and Safety Code

California law protects Native American burials, skeletal remains, and associated grave goods, regardless of their antiquity, and provides for the sensitive treatment and disposition of those remains. Health and Safety Code Section 7050.5 requires that if human remains are discovered in any place other than a dedicated cemetery, no further disturbance or excavation of the site or nearby area reasonably suspected to contain human remains can occur until the County Coroner has examined the remains (Health and Safety Code Section 7050.5b). PRC Section 5097.98 outlines the process to be followed in the event that remains are discovered. If the coroner determines or has reason to believe the remains are those of a Native American, the coroner must contact the NAHC within 24 hours (Health and Safety Code Section 7050.5c). The NAHC would notify the most likely descendant (MLD). With the permission of the landowner, the MLD may inspect the site of discovery. The inspection must be completed within 48 hours of notification of the MLD by the NAHC. The MLD may recommend means of treating or disposing of, with appropriate dignity, the human remains and items associated with Native Americans.

Local

Under the California Constitution, the California State University (CSU) is a "state agency created by the Legislature in the field of public higher education which is charged with the management, administration, and control of the State College System of California" (Cal. Const., art. XX, § 23).

The California State University system, therefore, is the State of California acting in its higher education capacity. In creating the CSU, the California State Legislature expressly granted it a variety of powers, including the "full power and responsibility in the construction and development of any state university campus, and any buildings or other facilities or improvements connected with the California State University." (Cal. Ed. Code § 66606.)

As a result, Government Code sections 53090 and 53091, which require that local agencies comply with zoning and building ordinances, do not apply to the CSU. Accordingly, as a component of the CSU, the CSU, Chico campus is not subject to municipal regulation of uses on property owned or controlled by CSU, Chico in furtherance of the University's education purposes.

For purposes of cultural resources, because CSU, Chico is located within the City boundaries local historic preservation criteria apply for those properties that have been previously recommended as eligible for listing or formally designated under the City of Chico Municipal Code, Historic Preservation Ordinance (Chapter 19.37, Historic Preservation) and criteria (Subsection 19.37.040, Historic Resource Designation Criteria). The City of Chico historic resource designation criteria closely follows those of the NRHP and CRHR with regard to consideration of important events, people, and architectural merit. For properties not previously evaluated, Dudek considered NRHP/CRHR/CHL Criteria at the local level in property evaluations.

3.4.3 Thresholds of Significance

The significance criteria used to evaluate the project impacts to cultural resources are based on Appendix G of the CEQA Guidelines. According to Appendix G of the CEQA Guidelines, a significant impact related to cultural resources would occur if the project would:

1. Cause a substantial adverse change in the significance of a historical resource pursuant to §15063.4.
2. Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15063.4.
3. Disturb any human remains, including those interred outside of dedicated cemeteries.
4. Cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:
    a. Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k).
    b. A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.

3.4.4 Impact Analysis

Methodology

The effort to identify cultural resources in the Master Plan Area included a records search and a review of the archaeological, ethnographic, and historical literature; a Native American Heritage Commission (NAHC) Sacred Lands File Search; examination of historic maps; historical research; and field surveys. These efforts are described above in Section 3.4.2, Existing Conditions.

Impact Analysis

Impact CUL-1. The project may cause a substantial adverse change in the significance of a historical resource pursuant to §15063.4. (Potentially Significant)

As described in the Project Description (Chapter 2), CSU, Chico is proposing various improvements to the campus that include new construction, renovation, and demolition. Potential project impacts to the historical resources identified Table 3.4-3, above, are assessed. The impact assessment considers both the buildout of the Master Plan as a whole (the "program level") and assesses certain Near-Term Projects at a more detailed level ("project level" analysis).

Near-Term Projects

Types of actions which constitute a substantial adverse change in the significance of a historical resource include physical demolition, destruction, relocation, renovation (interior and exterior) or alteration of the resource or its immediate surroundings such that the significance of a historical resource would be materially impaired (State CEQA Guidelines Section 15064.5). The Near-Term Projects do not include the demolition or replacement of historic resources within the Built Environment ADI. The Near-Term Projects do include renovations to the following campus buildings that are considered historical resources: Sapp Hall, Deen House, and Meriam Library. Therefore, it is necessary to examine potential impacts to these buildings resulting from the proposed renovation activities. **Table 3.4-5** provides an overview of all identified near-term project-related impacts to historical resources. Impacts associated with the renovation of historical resources will be less than significant if project design plans can demonstrate conformance with the Secretary of the Interior's Standards for Rehabilitation (**MM-CUL-1** below).

Table 3.4-5

Building Number	Building Name	Near-Term Project	Proposed Project Action	Near-term Project Detail	Level of Impact Prior to Mitigation	Identified Impacts
054	Meriam Library	Meriam Library Renovation	Renovation - Interior	Meriam Library was built in two phases in 1956 and 1972. Numerous system upgrades are necessary, including IT, the addition of a fire sprinkler system, lighting upgrades for energy efficiency, HVAC replacement, hazardous material removal, upgraded restrooms for required access, and interior finishes improvements. The internal programming of the building may also be revised, particularly at such time as the Museum of Anthropology is located to a new dedicated facility in the northeast area of the campus.	Potentially Significant	Meriam Library was found to be an historical resource; therefore, proposed renovation activities have the potential to significantly impact the building.

Table 3.4-5

Building Number	Building Name	Near-Term Project	Proposed Project Action	Near-term Project Detail	Level of Impact Prior to Mitigation	Identified Impacts
078	Deen House	Deen House Renovation	Renovation - Interior and Exterior	Located within the NRHP listed South Campus Neighborhood Historic District on West Third Street, the Deen House requires substantial interior and exterior renovation to restore the building to its original character. Once renovated, the building could house the Office of University Advancement, thereby bringing that office in closer proximity to Sapp Hall, which serves a similar function.	Potentially Significant	Deen House was found to be an historical resource; therefore, proposed renovation activities have the potential to significantly impact the building.
012	Ella Caroline Sapp Hall	Sapp Hall Renovation	Renovation - Interior and Exterior	Also located within the NRHP South Campus Neighborhood Historic District on West Third Street, Ella Caroline Sapp Hall houses part of University Advancement, Alumni and Parent Engagement, and the Chico State Calling Center. Substantial interior and exterior upgrades are necessary for maintenance and to restore this building to its original character.	Potentially Significant	Sapp Hall was found to be an historical resource; therefore proposed renovation activities have the potential to significantly impact the building.

Master Plan Implementation

The main campus contains several buildings that qualify as historical resources for the purposes of CEQA. In addition to the three historical resources discussed in the context of near-term Master Plan projects (Sapp Hall, Deen House, and Meriam Library), five historical resources were previously recorded on the main campus: Sierra Hall, Warrens Center, Laxson Auditorium, Trinity Hall, and Kendall Hall. Implementation of the Master Plan includes renovation of Laxson, Trinity, and Kendall, and therefore may have a potentially significant impact on historical resources. In addition, four houses within the Rio Chico neighborhood (which is not within the boundaries of the campus but is analyzed as part of the Master Plan buildout) have been previously identified as potentially eligible for local listing and are therefore considered CEQA historical resources. Construction of new student housing in the Rio Chico neighborhood could potentially impact these previously identified resources. Implementation of the

Master Plan would not include demolition or relocation of these resources. Impacts associated with the future potential renovation of historical resources will be considered less than significant if project design plans can demonstrate conformance with the Secretary of the Interior's Standards for Rehabilitation (MM-CUL-1 below).

Future master-planned projects could also potentially impact buildings and structures 45 years old or older that have not been identified as historical resources. Properties that meet the 45-year threshold and have not been evaluated under NRHP/CRHR criteria should be further studied for potential impacts to historical resources in the event they are included in a future project. Consequently, these future activities could result in significant impacts to previously unidentified CEQA historical resources in the Master Plan area. Implementation of mitigation measure **MM-CUL-2**, which requires that properties 45 years old or older be evaluated for historical significance prior to initiation of any project-related activities that could result in impacts. Master-planned projects that may affect a historical resource, either identified herein or as a result of MM-CUL-2, would be subject to MM-CUL-1.

Impact CUL-2. The project may cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5. (Potentially Significant)

One archaeological site (CA-BUT-003000H) intersects the ADI for the WREC Expansion, a Near Term Project. This historic-era archaeological site consists of the various ruined features and foundations for the Chico Soda Works, the Manufactured Gas Plant of Chico Gas Works, and the abandoned railroad tracks of the Union Pacific Railroad, all of which were roughly occupied from 1880s to the mid-1910s. The site has been subject to previous monitoring and evaluation efforts, and is understood to not be eligible for CRHR/NRHP listing. However, this site is considered sensitive and the additional investigation is warranted. Implementation of MM-CUL-3 addresses this potentially significant impact.

Implementation of the proposed Master Plan, including Near-Term Projects, would avoid all other areas with documented potentially significant archeological resources.

Impact CUL-3. The project may disturb human remains interred outside of dedicated cemeteries. (Potentially Significant)

CA-BUT-000295/H has been recoded within the main campus. This prehistoric/ethnohistoric period habitation site is the relocation site of the Native American's removed from Bidwell's rancho land, dating to approximately 1849-1868. The habitation site contains middens, clam shell discs, and glass beads. It has been noted in historical records but was first recorded by Dorothy Hill in 1968.

No other known human remains have been identified in the Master Plan Area, and CA-BUT-000295/H does not fall within any near term project areas. However, the potential to encounter human remains during project construction still exists. Per Section 7050.5 of the California Health and Safety Code, if human remains are discovered during project construction, no further work shall occur in the immediate vicinity of the discovered remains until the County Coroner has made the necessary findings as to the origin of the remains. Furthermore, pursuant to California Public Resources Code Section 5097.98(b), remains shall be left in place and free from disturbance until recommendations for treatment have been made. These regulations are incorporated into **MM-CUL-5**. Compliance with existing regulations would reduce potential impacts to human remains to less than significance.

Impact CUL-4. The project would not cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074. (Less Than Significant)

A NAHC Sacred Lands File Search and CHRIS records search failed to identify any previously recorded cultural resources of Native American origin within the Master Plan Area or a surrounding half-mile area. No prehistoric Native American resources were identified within the Master Plan Area were identified during intensive-pedestrian archaeological survey. CSU, Chico notified tribes traditionally associated with the Master Plan Area and having requested notice under AB 52 on December 17, 2019.

Government to government consultation initiated by CSU, Chico, acting in good faith and after a reasonable effort, has not resulted in the identification of a TCR within or near the project area. No known geographically-defined TCRs were identified within, or in the immediate vicinity of, the project area through consultation. As such, no TCRs have been identified in the Master Plan Area.

3.4.5 Cumulative Impacts

Cumulative impacts on cultural resources consider whether the impacts of the proposed project together with other related projects substantially diminish the number of historic or archeological resources within the same or similar context or property type. Two of the resources identified in the Master Plan Area, the Deen House and Sapp Hall, are contributors to the South of Campus Historic District. A significant impact to these resources might be deemed to have a cumulative impact upon the district. These two resources are planned for restoration, and with the required mitigation, potential impacts would be less than significant. Therefore, the proposed project would not contribute to a cumulative effect.

3.4.6 Mitigation Measures

The following mitigation measures would reduce potentially significant impacts to cultural resources (historic era-built environment and archaeological) and human remains to a less-than-significant level.

MM-CUL-1 Subsequent technical work must be conducted prior to the start of new construction, additions, renovations (including Americans with Disabilities Act (ADA) compliance work), or site improvements, involving work that could possibly constitute a substantial adverse change in the significance of a historical resource by means of physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings, such that the significance of a historical resource would be materially impaired (State CEQA Guidelines Section 15064.5) within or adjacent to CEQA historical resources. The subsequent technical work must include preparation of a report where the proposed project design plans and/or schematics are analyzed in conformance with the Secretary of the Interior's Standards (SOIS) for the Treatment of Historic Properties, specifically, the Standards for Rehabilitation and Guidelines for Rehabilitating Historic Buildings. As CSU Chico is subject to PRC 5024 and 5024.5 regulations which results in requiring consultation with SHPO on state owned historical resources, this SOIS analysis of the proposed project plans will also need to be reviewed and approved by SHPO. Further, all proposed ADA compliance work shall reference both the "Accessibility Considerations" section of the Rehabilitation Guidelines and National Park Service Preservation Brief 32, Making Historic Properties Accessible to ensure that ADA compliance work minimizes changes to historic materials and features. The project plan/schematic design review (technical report) shall be completed by a qualified architectural historian or historic preservation specialist who meets the SOIS Professional Qualifications for Architectural History. Upon review, the qualified specialist and SHPO may recommend changes/revisions to project plans in order to obtain conformance with the Standards for Rehabilitation. Alternatively, CSU, Chico may choose to work with a preservation architect who meets the SOIS Professional Qualifications.

As part of this subsequent technical reporting, if the subject building is located within an existing historic district or directly adjacent to a historical resources possible indirect impacts to those buildings will need to be addressed. If deemed necessary, an appropriate level of protection shall be provided for those buildings adjacent to historical resources during proposed new construction and renovation activities. A preservation plan shall be developed to provide these details. At a minimum, protective fencing shall be used during construction activities so historic buildings are not inadvertently impacted. The preservation plan shall also examine the potential effects of vibration resulting from nearby demolition and construction activities. The final preservation plan shall be appended to the final set of construction plans. All SHPO consultation, subsequent reporting on the project meeting the SOIS guidelines, and any necessary preservation plans must be completed prior to the start of construction.

MM-CUL-2 Implementation of the Master Plan will result in future project-level activities that involve construction and ground disturbing activities within the Master Plan areas. As such, future projects involving these types of activities could constitute a substantial adverse change in the significance of a historical resource by means of physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings, such that the significance of a historical resource would be materially impaired (State CEQA Guidelines Section 15064.5). To mitigate the potential impacts of future projects developed under the Master Plan, CSU, Chico shall be required to ensure that potential impacts to historical resources be assessed as part of planning and environmental clearance for their individual project(s). Prior to the initiation of any construction and/or ground disturbing activities, subsequent identification and impact analysis, including consideration of previously identified historical resources and evaluation of buildings and structures over the age 45 years old that have not been previously identified for historical significance in accordance with the guidance of the State of California Office of Historic Preservation, shall be conducted. As such, a Historic Resource Evaluation (HRE) report must be prepared. If the HRE identifies the presence of CEQA historical resources and impacts cannot be avoided through project redesign (MM-CUL-1) than more documentation may be required and mitigation will be necessary. A qualified architectural historian, meeting the SIOS Professional Qualifications, shall conduct all work related to the preparation of a HRE, impact analyses, mitigation recommendations (if deemed necessary), and/or subsequent technical reports, should the proposed construction and implementation of the Facilities Master Plan result in potential impacts to CEQA historical resources. MM-CUL-1 would apply to resources found to be historical under CEQA.

MM-CUL-3 Prior to initiation of WREC Expansion work, and subsequent to development of the plans for this activity, previous findings associated with CA-BUT-003000H should be reviewed by a qualified archaeologist. If appropriate, a monitoring and treatment plan may be required prior to project construction.

MM-CUL-4 In the event that archaeological resources (sites, features, or artifacts) are exposed during construction activities for the proposed project, all earth-disturbing work occurring in the vicinity (generally within 100 feet of the find) shall immediately stop. The archaeologist shall evaluate the significance of the find and determine whether or not additional study is warranted. If the discovery proves significant under

California Environmental Quality Act (14 CCR 15064.5(f); PRC Section 21082) or Section 106 of the National Historic Preservation Act (36 CFR 60.4), additional work such as preparation of an archaeological treatment plan, testing, or data recovery may be warranted.

MM-CUL-5 In compliance with California Health and Safety Code, Section 7050.5, if human remains are discovered in any place other than a dedicated cemetery, no further disturbance or excavation of the site or nearby area reasonably suspected to contain human remains can occur until the County coroner has examined the remains (California Health and Safety Code, Section 7050.5b). Public Resources Code, Section 5097.98, also outlines the process to be followed in the event that remains are discovered. If the County coroner determines or has reason to believe the remains are those of a Native American, the coroner must contact the California NAHC within 24 hours (California Health and Safety Code, Section 7050.5c). The NAHC will notify the Most Likely Descendant. With the permission of the landowner, the Most Likely Descendant may inspect the site of discovery. The inspection must be completed within 48 hours of notification of the Most Likely Descendant by the NAHC. The Most Likely Descendant may recommend means of treating or disposing of, with appropriate dignity, the human remains and items associated with Native Americans.

3.4.7 Level of Significance After Mitigation

MM-CUL-1 requires that projects which may affect a historical resource demonstrate conformance with the Secretary of the Interior's Standards for Rehabilitation. Where a project has been determined to conform with the Standards, the project's impact on historical resources would be considered **less than significant** (14 CCR 15126.4(b)(1)).

MM-CUL-2 requires evaluation of potential historic resources prior to initiation of projects per the Master Plan that have not been previously evaluated. MM-CUL-1 would apply to projects found to be historical resources under CEQA. Combined, these two measures would mitigate potential impacts to historical resources at the program level to **less than significant.**

With implementation of MM-CUL-3 and MM-CUL-4, potential impacts to archaeological resources would be **less than significant.**

With implementation of MM-CUL-5, impacts to previously undiscovered human remains would be **less than significant.**

Cumulative impacts on cultural resources would be **less than significant** with mitigation incorporated (mitigation measures **MM-CUL-1** through **MM-CUL-6**).

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3.5 Energy

This section evaluates the potential for implementation of the proposed Master Plan to result in wasteful, inefficient, or unnecessary consumption of energy resources, and consistency with state or local plans for renewable energy or energy efficiency. The capacity of existing and proposed infrastructure to serve the project is evaluated in Section 3.15, Utilities and Service Systems. Supporting data for this analysis is provided in Appendix D.

No scoping comments were received regarding energy in response to the Notice of Preparation.

3.5.1 Existing Conditions

Energy Types and Sources

Electricity

In 2017, California's estimated electricity usage was approximately 257,268 gigawatt hours of electricity (EIA 2019a). Electricity usage in California varies substantially by the types of uses in a building, types of construction materials used in a building, and the efficiency of all electricity-consuming devices within a building. Due to the state's energy efficiency building standards and efficiency and conservation programs, California's electricity use per capita has remained stable for more than 30 years, while the national average has steadily increased (CEC 2015a).

California State University (CSU), Chico receives electricity from Pacific Gas & Electric Company (PG&E), as does the City of Chico and Butte County. PG&E provides electric services to 5.4 million customers, including 106,681 circuit miles of electric distribution lines and 18,466 circuit miles of interconnected transmission lines over a 70,000-square-mile service area that includes in Northern California and central California (PG&E 2016). As presented in Table 3.5-1, according to PG&E, customers consumed 79,776 million kilowatt-hours (kWh) of electricity in 2018 (CEC 2019a).

Table 3.5-1. Pacific Gas & Electric Company 2018 Electricity Consumption

Sector	Total Electricity (in millions of kWh)
Agricultural and Water Pump	5,735.14
Commercial Buildings	29,649.98
Commercial Other	4,195.09
Industry	10,344.74
Mining and Construction	1,567.31
Residential	27,964.84
Streetlight	318.62
Total Consumption	**79,775.71**

Source: CEC 2019a.
Notes: kWh = kilowatt-hour.

PG&E receives electric power from a variety of sources. According to California Public Utilities Commission's (CPUC's) *2018 Renewable Portfolio Standard (RPS) Annual Report to the Legislature*, 33% of PG&E's power came from eligible renewable energy sources in 2017, including biomass/waste, geothermal, small hydroelectric, solar, and wind sources (CPUC 2018).

Based on recent energy supply and demand projections in California, statewide annual peak electricity demand is projected to grow an average of 890 megawatts per year for the next decade, or 1.4% annually, and consumption per capita is expected to remain relatively constant at 7,200–7,800 kWh per person (CEC 2015a).

In Butte County, PG&E reported an annual electrical consumption of approximately 1,474.66 million kWh in 2018, with 746.36 million kWh for non-residential uses and 728.30 million kWh for residential uses (CEC 2019b).

Natural Gas

In 2017, California's estimated natural gas usage was approximately 2,110,829 million cubic feet (MMcf) (EIA 2019b). Natural gas is supplied to the campus by PG&E. PG&E provides natural gas service to most of Northern California, including Butte County. As provided in Table 3.5-2, PG&E customers consumed approximately 4,794 million therms of natural gas, in 2018 (CEC 2019b).

Table 3.5-2. Pacific Gas & Electric Company 2018 Natural Gas Consumption

Sector	Total Natural Gas (in millions of therms)
Agricultural and Water Pump	37.24
Commercial Buildings	899.08
Commercial Other	59.02
Industry	1,776.01
Mining and Construction	190.22
Residential	1,832.78
Total Consumption	**4,794.35**

Source: CEC 2019b.

Natural gas is used for cooking, space heating, generating electricity, and as an alternative transportation fuel. The majority of California's natural gas customers are residential and small commercial customers (core customers). These customers accounted for approximately 30% of the natural gas delivered by California utilities in 2017. Large consumers, such as electric generators and industrial customers (noncore customers), accounted for approximately 70% of the natural gas delivered by California utilities in 2017 (EIA 2019b).

Demand for natural gas can vary depending on factors such as weather, price of electricity, the health of the economy, environmental regulations, energy efficiency programs, and the availability of alternative renewable energy sources. As previously indicated, natural gas is available from a variety of in-state and out-of-state sources and is provided throughout the state in response to market supply and demand. Complementing available natural gas resources, biogas may soon be available through existing delivery systems, thereby increasing the availability and reliability of resources.

CPUC regulates California natural gas rates and natural gas services, including in-state transportation over transmission and distribution pipeline systems, storage, procurement, metering, and billing. The CPUC regulates natural gas utility service for approximately 10.8 million customers who receive natural gas from PG&E, Southern California Gas, San Diego Gas & Electric, Southwest Gas, and several smaller natural gas utilities. Most of the natural gas used in California comes from out-of-state natural gas basins (CPUC 2017).

In 2012, California customers received 35% of their natural gas supply from basins located in the Southwest, 16% from Canada, 40% from the Rocky Mountains, and 9% from basins located within California (CPUC 2017). Natural gas from out-of-state production basins is delivered into California through the interstate natural gas pipeline system. The major interstate pipelines that deliver out-of-state natural gas to California are the Gas Transmission Northwest Pipeline, Kern River Pipeline, Transwestern Pipeline, El Paso Pipeline, Ruby Pipeline, Southern Trails Pipeline, and Mojave Pipeline. The North Baja–Baja Norte Pipeline takes gas off the El Paso Pipeline at the California/Arizona border and delivers it through California into Mexico. The Federal Energy Regulatory Commission regulates the transportation of natural gas on interstate pipelines, and CPUC often participates in Federal Energy Regulatory Commission regulatory proceedings to represent the interests of California natural gas consumers (CPUC 2017).

Most of the natural gas transported through interstate pipelines, as well as some California-produced natural gas, is delivered through the PG&E and Southern California Gas intrastate natural gas transmission pipeline systems (commonly referred to as California's "backbone" natural gas pipeline system). Natural gas on the backbone pipeline system is then delivered into local transmission and distribution pipeline systems or to natural gas storage fields. Some large noncore customers take natural gas directly off the high-pressure backbone pipeline system, and some core customers and other noncore customers take natural gas off the utilities' distribution pipeline systems. CPUC has regulatory jurisdiction over 150,000 miles of utility-owned natural gas pipelines, which transported 82% of the natural gas delivered to California's gas consumers in 2012 (CPUC 2017).

PG&E and Southern California Gas own and operate several natural gas storage fields located in Northern and Southern California. These storage fields and four independently owned storage utilities—Lodi Gas Storage, Wild Goose Storage, Central Valley Storage, and Gill Ranch Storage—help meet peak-season natural gas demands and allow California natural gas customers to secure natural gas supplies more efficiently (CPUC 2017).

California's regulated utilities do not own any natural gas production facilities. All natural gas sold by these utilities must be purchased from suppliers and/or marketers. The price of natural gas sold by suppliers and marketers was deregulated by the Federal Energy Regulatory Commission in the mid-1980s and is determined by market forces. However, CPUC decides whether California's utilities have taken reasonable steps to minimize the cost of natural gas purchased on behalf of its core customers (CPUC 2017).

In 2018 (the most recent year for which data is available), PG&E had delivered 41.98 millions of therms to Butte County, with the majority going to nonresidential uses (24.99 million therms) (CEC 2019d).

Alternative Fuels

A variety of alternative fuels are used to reduce demand for petroleum-based fuel. The use of these fuels is encouraged through various statewide regulations and plans as discussed under Section 3.5.2, Regulatory Setting, including the Low Carbon Fuel Standard and Assembly Bill (AB) 32 Scoping Plan. Conventional fuels may be replaced (depending on the capability of the vehicle) with many transportation fuels including:

- Electricity,
- Natural Gas (compressed natural gas (CNG) and liquefied natural gas (LNG)),
- Renewable Diesel,
- Biodiesel,
- Propane, and
- Hydrogen,

As of August 2020, California contained 27,661 of the country's 92,609 alternative fueling stations with the primary type consisting of electric (6,558 stations and 27,015 charging outlets) (Alternative Fuels Data Center (AFDC) 2020).

Vehicle Miles Traveled and Gasoline Consumption

There are more than 35 million registered vehicles in California, and those vehicles consume an estimated 18 billion gallons of fuel each year (CEC 2017; DMV 2018). Petroleum currently accounts for approximately 92% of California's transportation energy consumption (CEC 2017). However, technological advances, market trends, consumer behavior, and government policies could result in significant changes in fuel consumption by type and in total. At the federal and state levels, various policies, rules, and regulations have been enacted to improve vehicle fuel efficiency, promote the development and use of alternative fuels, reduce transportation-source air pollutants and greenhouse gas (GHG) emissions, and reduce vehicle miles traveled. Market forces have driven the price of petroleum products steadily upward over time, and technological advances have made use of other energy resources or alternative transportation modes increasingly feasible.

Largely as a result of and in response to these multiple factors, gasoline consumption within the state has declined in recent years, and availability of other alternative fuels/energy sources has increased. The quantity, availability, and reliability of transportation energy resources have increased in recent years, and this trend may likely continue and accelerate (CEC 2017). Increasingly available and diversified transportation energy resources act to promote continuing reliable and affordable means to support vehicular transportation within the state.

Based on the BCAG Travel Demand Model, in 2018, the daily VMT within the City of Chico was 3,326,300 and within the BCAG region was 6,347,400. In 2019, the average fuel efficiency in Butte County was 28.31 miles per gallon for a gasoline-powered light-duty vehicle and 21.85 miles per gallon for a gasoline-powered light-duty truck (CARB 2019).

Campus Energy Facilities and Services

The main campus is currently served from a 115 kilovolt (kV) transmission service originating from a switchyard located on the southwest side of the campus. The main campus derives its power from PG&E's 115kV system, which provides redundancy through two circuits provided from two PG&E switching stations. The PG&E service is metered at 12kV using two transformers located on the southwest side of campus. The campus is currently in the process of replacing the existing 12kV switchgear with a new switchgear as part of an electrical infrastructure upgrade project funded by the Chancellor's office. The 12kV switchgear will be housed in a new switchgear building adjacent to the existing Thermal Energy Storage tanks. University Village and the University Farm are also served by PG&E and is connected by existing City distribution lines.

Natural gas is supplied to the main campus, University Village, and the University Farm by PG&E. Most of the main campus is served by the main campus gas distribution system. Some buildings are connected directly to PG&E's gas service, including the University Farm buildings. University Village is connected to existing City distribution lines. Natural gas is piped to serve hot water boilers and domestic water heaters to provide space heating and domestic hot water needs. Natural gas is also used for dedicated boilers at various campus buildings for generating steam and industrial hot water.

In fiscal year 2018-19, CSU, Chico consumed approximately 28,582,609 kWh kilowatt-hours (kWh) of electricity (CSUC 2019a). Furthermore, CSU, Chico generated 478,511 kWh of electricity in 2018-19 through the use of photovoltaic panels installed on the roofs of Yolo Hall, Acker Gymnasium, and the Parking II structure (CSUC 2019a). This renewable energy source is used to offset electricity provided by PG&E. Regarding natural gas, in fiscal year 2018-19, CSU, Chico consumed 1,147,933 therms of natural gas (CSUC 2019a).

3.5.2 Regulatory Setting

Federal

Federal Energy Policy and Conservation Act

In 1975, Congress enacted the Federal Energy Policy and Conservation Act, which established the first fuel economy standards for on-road motor vehicles in the United States. Pursuant to the act, the National Highway Traffic Safety Administration is responsible for establishing additional vehicle standards. In 2012, new fuel economy standards for passenger cars and light trucks were approved for model years 2017 through 2021 (77 FR 62624–63200). Fuel economy is determined based on each manufacturer's average fuel economy for the fleet of vehicles available for sale in the United States.

Intermodal Surface Transportation Efficiency Act of 1991

The Intermodal Surface Transportation Efficiency Act (ISTEA) of 1991 promoted the development of intermodal transportation systems to maximize mobility and address national and local interests in air quality and energy. ISTEA contained factors for metropolitan planning organizations to address in developing transportation plans and programs, including some energy-related factors. To meet the new ISTEA requirements, metropolitan planning organizations adopted policies defining the social, economic, energy, and environmental values guiding transportation decisions.

Transportation Equity Act for the 21st Century

The Transportation Equity Act for the 21st Century was signed into law in 1998 and builds on the initiatives established in the ISTEA legislation (previously discussed). The act authorizes highway, highway safety, transit, and other efficient surface transportation programs. The act continues the program structure established for highways and transit under ISTEA, such as flexibility in the use of funds, emphasis on measures to improve the environment, and focus on a strong planning process as the foundation of transportation decisions. The act also provides for investment in research and its application to maximize the performance of the transportation system through, for example, deployment of intelligent transportation systems to help improve operations and management of transportation systems and vehicle safety.

Energy Independence and Security Act of 2007

On December 19, 2007, the Energy Independence and Security Act (EISA) of 2007 was signed into law. In addition to setting more stringent Corporate Average Fuel Economy standards for motor vehicles, the EISA includes the following other provisions related to energy efficiency:

- Renewable Fuel Standard (RFS) (Section 202)
- Appliance and Lighting Efficiency Standards (Sections 301–325)
- Building Energy Efficiency (Sections 411–441)

This federal legislation (the RFS) requires ever-increasing levels of renewable fuels to replace petroleum (EPA 2013, 2015). The U.S. Environmental Protection Agency is responsible for developing and implementing regulations to ensure that transportation fuel sold in the United States contains a minimum volume of renewable fuel. The RFS program regulations were developed in collaboration with refiners, renewable fuel producers, and many other stakeholders.

The RFS program was created under the Energy Policy Act of 2005 and established the first renewable fuel volume mandate in the United States. As required under the act, the original RFS program (RFS1) required 7.5 billion gallons of renewable fuel to be blended into gasoline by 2012. Under the EISA, the RFS program was expanded in several key ways that lay the foundation for achieving significant reductions in GHG emissions from the use of renewable fuels, reducing imported petroleum, and encouraging the development and expansion of the renewable fuels sector in the United States. The updated program is referred to as "RFS2" and includes the following:

- Expands the RFS program to include diesel, in addition to gasoline
- Increases the volume of renewable fuel required to be blended into transportation fuel from 9 billion gallons in 2008 to 36 billion gallons by 2022
- Establishes new categories of renewable fuel, and sets separate volume requirements for each one
- Requires the U.S. Environmental Protection Agency to apply lifecycle GHG performance threshold standards to ensure that each category of renewable fuel emits fewer GHGs than the petroleum fuel it replaces

Additional provisions of the EISA address energy savings in government and public institutions, research for alternative energy, additional research in carbon capture, international energy programs, and the creation of "green" jobs.

State

Warren–Alquist Act

The California Legislature passed the Warren–Alquist Act in 1974. The Warren–Alquist Act was created by the CEC. The legislation also incorporated the following three key provisions designed to address the demand side of the energy equation:

- It directed the CEC to formulate and adopt the nation's first energy conservation standards for both buildings constructed and appliances sold in California.
- The act removed the responsibility of electricity demand forecasting from the utilities, which had a financial interest in high demand projections, and transferred it to a more impartial CEC.
- The CEC was directed to embark on an ambitious research and development program, with a particular focus on fostering what were characterized as non-conventional energy sources.

Senate Bill 1078

Senate Bill (SB) 1078 (2002) established the California RPS Program and required that a retail seller of electricity purchase a specified minimum percentage of electricity generated by eligible renewable energy resources as defined in any given year, culminating in a 20% standard by December 31, 2017. These retail sellers include electrical corporations, community choice aggregators, and electric service providers. The bill also required the CEC to certify eligible renewable energy resources, design and implement an accounting system to verify compliance with the RPS by retail sellers, and allocate and award supplemental energy payments to cover above-market costs of renewable energy.

Senate Bills 107, X1-2, 350, and 100

SB 107 (2006) accelerated the RPS established by SB 1078 by requiring that 20% of electricity retail sales be served by renewable energy resources by 2010 (not 2017). Additionally, SB X1-2 (2011) requires all California utilities to generate 33% of their electricity from eligible renewable energy resources by 2020. Specifically, SB X1-2 sets a three-stage compliance period: by December 31, 2013, 20% had to come from renewables; by December 31, 2016, 25% had to come from renewables; and by December 31, 2020, 33% will come from renewables.

SB 350 (2015) requires retail seller and publicly owned utilities to procure 50% of their electricity from eligible renewable energy resources by 2030, with interim goals of 40% by 2024 and 45% by 2027.

SB 100 (2018) increased the standards set forth in SB 350 establishing that 44% of the total electricity sold to retail customers in California per year by December 31, 2024; 52% by December 31, 2027; and 60% by December 31, 2030, be secured from qualifying renewable energy sources. SB 100 states that it is the policy of the state that eligible renewable energy resources and zero-carbon resources supply 100% of the retail sales of electricity to California. This bill requires that the achievement of 100% zero-carbon electricity resources do not increase the carbon emissions elsewhere in the western grid and that the achievement not be achieved through resource shuffling.

Consequently, utility energy generation from non-renewable resources is expected to be reduced based on implementation of the 60% RPS in 2030.

Assembly Bill 1007

Assembly Bill (AB) 1007 (2005) required the CEC to prepare a statewide plan to increase the use of alternative fuels in California (State Alternative Fuels Plan). The CEC prepared the plan in partnership with the California Air Resources Board (CARB) and in consultation with the other state, federal, and local agencies. The plan assessed various alternative fuels and developed fuel portfolios to meet California's goals to reduce petroleum consumption, increase alternative fuels use, reduce GHG emissions, and increase in-state production of biofuels without causing a significant degradation of public health and environmental quality.

Assembly Bill 32 and Senate Bill 32

In 2006, the Legislature enacted AB 32, the California Global Warming Solutions Act of 2006. AB 32 requires California to reduce its GHG emissions to 1990 levels by 2020. In 2016, the Legislature enacted SB 32, which extended the horizon year of the state's codified GHG reduction planning targets from 2020 to 2030, requiring California to reduce its GHG emissions to 40% below 1990 levels by 2030. In accordance with AB 32 and SB 32, CARB prepares scoping plans to guide the development of statewide policies and regulations for the reduction of GHG emissions. Many of the policy and regulatory concepts identified in the scoping plans focus on increasing energy efficiencies and the use of renewable resources and reducing the consumption of petroleum-based fuels (e.g., gasoline and diesel). As such, the state's GHG emissions reduction planning framework creates co-benefits for energy-related resources. Additional information on AB 32 and SB 32 is provided in Section 4.6 of this Draft EIR.

California Building Standards

Part 6 of Title 24 of the California Code of Regulations was established in 1978 and serves to enhance and regulate California's building standards. Part 6 establishes energy efficiency standards for residential and non-residential buildings constructed in California to reduce energy demand and consumption. Part 6 is updated periodically (every 3 years) to incorporate and consider new energy efficiency technologies and methodologies. The 2016 Title 24 building energy efficiency standards, which became effective on January 1, 2017, further reduce energy used in the state. In general, single-family homes built to the 2016 standards are anticipated to use approximately 28% less energy for lighting, heating, cooling, ventilation, and water heating than those built to the 2013 standards, and non-residential buildings built to the 2016 standards will use an estimated 5% less energy than those built to the 2013 standards (CEC 2015a).

The 2019 Title 24 standards were approved and adopted by the California Building Standards Commission in December 2018. The 2019 standards will become effective January 1, 2020. The standards would require that all low-rise residential buildings shall have a photovoltaic system meeting the minimum qualification requirements such that annual electrical output equal to or greater than the dwelling's annual electrical usage. Notably, net energy metering rules limit residential rooftop solar generation to produce no more electricity than the home is expected to consume on an annual basis. Single-family homes built with the 2019 standards will use about 7% less energy due to energy efficiency measures versus those built under the 2016 standards, while new nonresidential buildings will use about 30% less energy.

The CPUC, CEC, and CARB previously established a goal of achieving zero net energy (ZNE) for new construction in California. The key policy timelines include (1) all new residential construction in California will be ZNE by 2020 and (2) all new commercial construction in California will be ZNE by 2030 (CPUC 2013). As most recently defined by the CEC in its 2015 Integrated Energy Policy Report, a ZNE code building is "one where the value of the energy produced by on-site renewable energy resources is equal to the value of the energy consumed annually by the building" using the CEC's Time Dependent Valuation metric (CEC 2015b).

The 2019 Title 24 standards take a significant step towards the state's ZNE goal. However, as explained by the CEC, California's energy landscape has changed since the ZNE target was set. Electricity produced for the grid now comes substantially from renewables, and 60% renewable electricity generation is required by 2030. Further, new net energy metering rules also limit the amount of residential rooftop solar generation to no more electricity production than the home is annually expected to consume.

The 2019 Title 24 standards, therefore, focus on building energy efficiency and ensuring solar electricity generated on site is used on site.

Looking beyond the 2019 standards, the most important energy characteristic for a building will be that it produces and consumes energy at times that are appropriate and responds to the needs of the grid, which reduces the building's emissions.

In furtherance of that characteristic, the 2019 standards require that new homes include solar photovoltaic to meet the home's expected annual electric needs and also encourage demand responsive technologies, including battery storage, heat pump water heaters, and improving the building's thermal envelope through high performance attics, walls, and windows. These smarter homes perform better and affect the grid less, which reduces the building's GHG emissions.

Title 24 also includes Part 11, the California Green Building Standards Code (CALGreen). CALGreen institutes mandatory minimum environmental performance standards for all ground-up, new construction of commercial, low-rise residential, and state-owned buildings, as well as schools and hospitals. The 2016 CALGreen standards became effective on January 1, 2017. The mandatory standards require the following:

- 20% mandatory reduction in indoor water use
- 50% diversion of construction and demolition waste from landfills
- Mandatory inspections of energy systems to ensure optimal working efficiency

State Vehicle Standards

In a response to the transportation sector accounting for more than half of California's carbon dioxide (CO_2) emissions, AB 1493 was enacted in 2002. AB 1493 required CARB to set GHG emission standards for passenger vehicles, light-duty trucks, and other vehicles determined by the state board to be vehicles whose primary use is noncommercial personal transportation in the state. The bill required that CARB set GHG emission standards for motor vehicles manufactured in 2009 and all subsequent model years. The 2009–2012 standards resulted in a reduction in approximately 22% GHG emissions compared to emissions from the 2002 fleet, and the 2013–2016 standards resulted in a reduction of approximately 30%.

In 2012, CARB approved a new emissions-control program for model years 2017 through 2025. The program combines the control of smog, soot, and global warming gases and requirements for greater numbers of zero-emission vehicles into a single package of standards called Advanced Clean Cars. By 2025, when the rules would be fully implemented, new automobiles would emit 34% fewer global warming gases and 75% fewer smog-forming emissions (CARB 2011).

Although the focus of the state's vehicle standards is on the reduction of air pollutants and GHG emissions, one co-benefit of implementation of these standards is a reduced demand for petroleum-based fuels.

Sustainable Communities Strategy

The Sustainable Communities and Climate Protection Act of 2008, or SB 375, coordinates land use planning, regional transportation plans, and funding priorities to help California meet its GHG emissions reduction mandates. As codified in California Government Code, Section 65080, SB 375 requires metropolitan planning organizations to include a sustainable communities strategy in its regional transportation plan. The main focus of the sustainable communities strategy is to plan for growth in a fashion that will ultimately reduce GHG emissions, but the strategy is also a part of a bigger effort to address other development issues within the general vicinity, including transit and vehicle miles traveled, which influence the consumption of petroleum-based fuels.

CSU

CSU, Chico Climate Action Plan

The CSU, Chico Climate Action Plan (CAP) recommends a series of actions that the campus must implement to reduce its contributions to global climate change by reducing GHG emissions (CSUC 2011). CSU, Chico's CAP seeks to provide a path in order to achieve 1990 emissions levels by the year 2020. In addition, the CAP discusses actions necessary to reach climate neutrality by 2030 and opportunities that the University has to meet in order to achieve the target. The following campus-related strategies have been identified to reduce GHG emissions by 40 percent:

- Select an electrical services provider that provides a more climate-friendly power content label,
- Retrofit lighting systems in 15 campus buildings,
- Upgrade Heating Ventilation and Air Conditioning (HVAC) systems, boiler-chiller, and air handler efficiency,
- Retrofit domestic H_2O booster pump in Housing,
- Install PowerSave power management software,
- Implement server virtualization,
- Reduce single-occupancy vehicle traffic to campus, and
- Promote University-sponsored travel education

CSU Sustainability Policy

The CSU Sustainability Policy adopted by the Board of Trustees in 2014, directs the CSU system to take actions to reduce GHG emissions, improve energy efficiency, reduce reliance on fossil fuels, and generate additional on-site energy through the use of renewable energy sources (CSUC 2014). The policy encompasses water conservation, waste reduction, sustainable building practices, and sustainable food practices, all of which have implications for energy conservation.

The CSU Sustainability Policy established the following goals related to energy:

- Reduce GHG emissions to 1990 levels by 2020,
- Reduce GHG emissions 80 percent below 1990 levels by 2040,
- Procure 33 percent of energy supply from renewable sources by 2020,
- Increase on-site energy generation from 44 to 80 megawatts by 2020, and
- Promote use of alternative fuels and transportation programs.
- Operate all CSU buildings/facilities in the most energy efficient manner possible.
- Identify energy efficiency improvement measures to the greatest extent possible.
- Cooperate with all federal, state and local governments to accomplish energy conservation and utilities management objectives and inform /create awareness to entire campus community.
- Designate an energy/utilities manager to carry out energy conservation and utilities management programs.
- Monitor monthly energy and utilities usage and provide the Chancellor's Office the necessary data.
- Develop and maintain a campuswide integrated strategic energy resource plan.
- Design all future and current building projects to consider energy efficient and sustainability.
- Monitor building sustainability/energy performance at systemwide level.
- Design and build all new buildings to meet or exceed LEED Silver.

Energy Use Index

Energy use is the primary metric used by the CSU to track progress toward energy conservation goals, referred to as the Energy Use Index (EUI). EUI represents total annual electricity and natural gas use per square foot of building space, measured in British thermal units per square foot. To normalize this metric between different CSU campuses, the square footage is adjusted to prorate or remove buildings and structures that are very low or zero energy users, such as parking structures, stadiums, and farm buildings such as barns and storage sheds. The last two CSU Executive Orders on energy and sustainability (i.e., 917 of 2004, 987 of 2006) established goals to reduce British thermal units per square foot by 15 percent over two consecutive 5-year periods. Cal Poly has met or exceeded these goals.

Executive Order 987

Executive Order 987 is the CSU Policy Statement on Energy Conservation, Sustainable Building Practices, and Physical Plant Management. Cal Poly operates under this Executive Order, which sets minimum efficiency standards for new construction and renovations, and establishes operating practices intended to ensure CSU buildings are used in the most energy efficient and sustainable manner possible while still meeting the programmatic needs of the University.

Local

Because CSU, Chico is a component of the CSU, which is a state agency, the project is not subject to local government planning or ordinances. Accordingly, because neither local general plans nor any other local land use plans or ordinances are applicable to CSU, Chico, such local plans and ordinances are not summarized here or further analyzed in this section. See Section 3.10, Land Use and Planning for an evaluation of environmental impacts due to conflicts with any land use plan, policy or regulation adopted for the purpose of avoiding or mitigating an environmental effect.

3.5.3 Thresholds of Significance

The significance criteria used to evaluate the project impacts to energy are based on Appendix G of the State CEQA Guidelines. According to Appendix G, a significant impact related to energy would occur if the project would:

1. Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation.
2. Conflict with or obstruct a state or local plan for renewable energy or energy efficiency.

3.5.4 Impact Analysis

Methodology

Existing and project related energy usage were derived from the air quality and GHG modeling prepared for the project using CalEEMod. Usage was compared to relevant standards applicable to the proposed project.

Impact Analysis

Impact ENG-1. The project would not result in a potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation. (Less than Significant)

Electricity

Construction Use. Temporary electric power for as-necessary lighting and electronic equipment such as computers may be needed inside temporary construction trailers. However, the electricity used for such activities would be temporary and would be substantially less than that required for proposed project operation and would have a negligible contribution to the proposed project's overall energy consumption.

Operational Use. The operational phase of the Project would require electricity for multiple purposes including, but not limited to, building heating and cooling, lighting, appliances, and electronics.

CalEEMod (version 2016.3.2) was used to estimate proposed project emissions from energy uses (see Appendix B for calculations). Default electricity generation rates in CalEEMod were updated based on the existing energy and forecast energy usage provided by CSU, Chico in the Master Plan Report. The baseline (2018-19) electricity usage at CSU, Chico is 28,582,609 kWh (CSU, Chico 2019). At buildout, the proposed project electricity consumption would be approximately 37,136,769 kWh of electricity.

As described in Section 2.6, Project Description, the proposed project would promote energy efficiency and new buildings would be developed meet or exceed the minimum requirements equivalent to LEED Silver. In addition, all future CSU, Chico new construction, remodeling, renovation, and repair projects would be designed with consideration of optimum energy utilization, low life cycle operating costs, compliance with all applicable energy codes (enhanced Title 24 energy codes) and regulations. The proposed project would be required to meet the California Building Energy Efficiency Standards (24 CCR Part 6) which improve the energy efficiency of non-residential and residential buildings. The Title 24, Part 6, standards are updated every three years. The most recent standards are the 2019 Title 24 Building Energy Efficiency Standards, which become effective January 1, 2020. Furthermore, the proposed project would establish direct-scale on-site energy production and distribution strategies and would implement standards for campus-scale energy conversion systems to help the campus meet carbon neutrality and net zero energy goals. The proposed project would provide approximately 1,027,000 additional kWh of on-site solar energy (CSUC 2019b) in the near-term.

Although electricity consumption would increase due to the implementation of the proposed project, the building envelope, HVAC, lighting, and other systems, such as electric motor equipment, would be designed to maximize energy performance pursuant to applicable regulations. The proposed project is subject to statewide mandatory energy requirements as outlined in Title 24, Part 6, of the California Code of Regulations. Title 24, Part 11, contains voluntary energy measures that are applicable to proposed project under CALGreen. CSU, Chico would ensure that the proposed project would meet Title 24 requirements applicable at the time of construction of specific components, as required by state regulations and provided in the Project Design Features (PDFs) discussed in Section 2.6. For these reasons, the electricity consumption of the proposed project would not be considered inefficient or wasteful, and impacts would be **less than significant.**

Natural Gas

Construction Use. Natural gas is not anticipated to be required during construction of the proposed project. Fuels used for construction would primarily consist of diesel and gasoline, which are discussed below under the "petroleum" subsection. Any minor amounts of natural gas that may be consumed as a result of proposed project construction would be substantially less than that required for proposed project operation and would have a negligible contribution to the proposed project's overall energy consumption.

Operational Use. Natural gas consumption during operation would be required for various purposes, including, but not limited to, building heating and cooling. In 2018-19, CSU, Chico consumed approximately 1,152,957 therms of natural gas. At buildout, the proposed project, as estimated by CalEEMod, would consume approximately 1,516,225 therms of natural gas per year.

As with electricity demand, natural gas demand for the proposed project would comply with and would at minimum meet the current Title 24 standards at the time of development. Although natural gas consumption would increase due to the implementation of the proposed project, the building envelope, HVAC, and other systems would be designed to maximize energy performance in accordance with applicable regulations. The Project is subject to statewide mandatory energy requirements as outlined in Title 24, Part 6, of the California Code of Regulations. Title 24, Part 11, contains energy measures that are applicable to proposed project under CALGreen. CSU, Chico would ensure that the proposed project would meet Title 24 requirements applicable at the time of construction of specific components, as required by state regulations through their plan review process. For these reasons, the natural gas consumption of the proposed project would not be considered inefficient or wasteful, and impacts would be **less than significant.**

Petroleum

Construction Demand. Petroleum would be consumed throughout construction of the proposed project. Fuel consumed by construction equipment would be the primary energy resource expended over the course of construction, and on-road vehicles associated with the transportation of construction materials and construction worker commutes would also result in petroleum consumption. Heavy-duty construction equipment associated with construction activities and haul trucks involved in transport of demolished material would rely on diesel fuel. Construction workers would travel to and from the project site throughout the duration of construction. It is assumed that construction workers would travel to and from the project site in gasoline-powered vehicles. For purposes of estimating project emissions, construction was based on a worst-case construction scenario assuming no more than two development projects would be constructed concurrently under the proposed Master Plan. Therefore, this analysis is based on the construction scenarios described in Section 3.2, Analytical Method (Construction Emissions). While construction specifics for buildout of the proposed project are not currently available, the petroleum estimated from each construction scenario were assumed to represent a worst-case for the phased development over the buildout duration of 10 years (2030). In order to estimate proposed project construction petroleum consumption, the petroleum consumption over the worst-case construction scenario were multiplied over the 10-year buildout duration.

Heavy-duty construction equipment of various types would be used during construction. CalEEMod was used to estimate construction equipment usage; results are included in Appendix B of this EIR. Based on that analysis, diesel-fueled construction equipment would operate for an estimated 215,287 hours over buildout of the proposed project, as summarized in Table 0.

Table 0 Hours of Operation for Construction Equipment

Phase	Hours of Equipment Use (2021-2022)	Hours of Equipment Use (Total Project Buildout)
Demolition	1,760.00	11,733.33
Site preparation	214.00	1,426.67
Grading	444.00	2,960.00
Building construction	28,480.00	189,866.67
Paving	1,215.00	8,100.00
Architectural coating	180.00	1,200.00
Total	**32,293.00**	**215,286.67**

Source: Appendix B.
Note: Estimates provided in this table are based on a worst-case construction scenario, with construction of the Creek Housing and Glenn Hall Replacement buildings as an example and assuming that no more than two development projects would be constructed concurrently.

Fuel consumption from construction equipment was estimated by converting the total CO_2 emissions from each construction phase to gallons using conversion factors for CO_2 to gallons of gasoline or diesel. The conversion factor for gasoline is 8.78 kilograms per metric ton CO_2 per gallon, and the conversion factor for diesel is 10.21 kilograms per metric ton CO_2 per gallon (The Climate Registry 2018). The estimated diesel fuel use from construction equipment is shown in Table , Construction Equipment Diesel Demand.

Table 3.5-4 Construction Equipment Diesel Demand

Phase	Pieces of Equipment[a]	Equipment CO_2 (MT)[a]	kg CO_2/ Gallon[b]	Gallons (2021-2022)	Gallons (Buildout)
Demolition	11	55.07	10.21	5,393.94	35,959.58
Site preparation	10	6.53	10.21	639.29	4,261.97
Grading	11	11.78	10.21	1,153.65	7,691.02
Building construction	18	207.36	10.21	20,309.74	135,398.24
Paving	12	21.11	10.21	2,067.19	13,781.26
Architectural coating	2	3.83	10.21	375.10	2,500.69
			Total	**29,938.91**	**199,592.75**

Sources:
[a] Appendix B.
[b] The Climate Registry 2018.
Notes: CO_2 = carbon dioxide; kg = kilogram; MT = metric ton.
Estimates provided in this table are based on a worst-case construction scenario, assuming construction of the Creek Housing and Glenn Hall Replacement buildings, which assumes that no more than two development projects would be constructed concurrently.

Fuel consumption from worker and vendor trips was estimated by converting the total CO_2 emissions from the construction phase to gallons using the conversion factors for CO_2 to gallons of gasoline or diesel. Worker vehicles are assumed to be gasoline fueled, and vendor/hauling vehicles are assumed to be diesel fueled.

Calculations for total worker, vendor, and hauler fuel consumption are provided Table 3.5-5, Construction Worker Vehicle Gasoline Demand; Table 3.5-6, Construction Vendor Truck Diesel Demand; and Table 3.5-7, Construction Haul Truck Diesel Demand.

Table 03.5-5 Construction Worker Vehicle Gasoline Demand

Phase	Number of Trips[a]	Vehicle CO_2 (MT)[a]	kg CO_2/ Gallon[b]	Gallons (2021-2022)	Gallons (Buildout)
Demolition	600	2.43	8.78	276.86	1,845.71
Site preparation	46	0.19	8.78	21.22	141.46
Grading	148	0.60	8.78	68.29	455.28
Building construction	19800	79.63	8.78	9,069.77	60,465.15
Paving	450	1.79	8.78	203.60	1,357.33
Architectural coating	300	1.19	8.78	136.03	906.83
			Total	**9,775.76**	**65,171.75**

Sources:
[a] Appendix B.
[b] The Climate Registry 2018.
Notes: CO_2 = carbon dioxide; kg = kilogram; MT = metric ton.
Estimates provided in this table are based on a worst-case construction scenario, assuming construction of the Creek Housing and Glenn Hall Replacement buildings, which assumes that no more than two development projects would be constructed concurrently.

Table 3.5-6 Construction Vendor Truck Diesel Demand

Phase	Number of Trips[a]	Vehicle CO_2 (MT)[a]	kg CO_2/ Gallon[b]	Gallons (2021-2022)	Gallons (Buildout)
Demolition	0	0.00	10.21	0.00	0.00
Site preparation	0	0.00	10.21	0.00	0.00
Grading	0	0.00	10.21	0.00	0.00
Building construction	8,000	145.86	10.21	14,285.94	95,239.57
Paving	0	0.00	10.21	0.00	0.00
Architectural coating	0	0.00	10.21	0.00	0.00
			Total	**14,285.94**	**95,239.57**

Sources:
[a] Appendix B.
[b] The Climate Registry 2018.
Notes: CO_2 = carbon dioxide; kg = kilogram; MT = metric ton.
Estimates provided in this table are based on a worst-case construction scenario, assuming construction of the Creek Housing and Glenn Hall Replacement buildings, which assumes that no more than two development projects would be constructed concurrently.

Table 3.5-7 Construction Haul Truck Diesel Demand

Phase	Number of Trips[a]	Vehicle CO_2 (MT)[a]	kg CO_2/ Gallon[b]	Gallons (2021-2022)	Gallons (Buildout)
Demolition	228	8.75	10.21	857.10	5,714.01
Site preparation	0	0.00	10.21	0.00	0.00
Grading	0	0.00	10.21	0.00	0.00
Building construction	0	0.00	10.21	0.00	0.00
Paving	0	0.00	10.21	0.00	0.00
Architectural coating	0	0.00	10.21	0.00	0.00
			Total	**857.10**	**4,285.50**

Sources:
[a] Appendix B.
[b] The Climate Registry 2018.
Notes: CO_2 = carbon dioxide; kg = kilogram; MT = metric ton.
Estimates provided in this table are based on a worst-case construction scenario, assuming construction of the Creek Housing and Glenn Hall Replacement buildings, which assumes that no more than two development projects would be constructed concurrently.

As shown in Table 3.5-5 through Table 3.5-7 the proposed project is estimated to consume 364,290 gallons of petroleum during the construction phase. By comparison, approximately 193 billion gallons of petroleum would be consumed in California over the course of the proposed project's construction phase based on the California daily petroleum consumption estimate of approximately 52.9 million gallons per day (CEC 2019). Therefore, because petroleum use during construction would be temporary and relatively minimal, and would not be wasteful or inefficient, impacts would be **less than significant.**

Operational Demand. The majority of fuel consumption resulting from the proposed project's operational phase would be attributable to students and faculty traveling to and from the project site, and worker vehicles traveling around the project site.

Petroleum fuel consumption associated with motor vehicles and delivery trucks traveling to and from the project site during operation is a function of vehicle miles traveled (VMT). As discussed in Section 3.14, Transportation, of this Draft EIR, the annual VMT at buildout of the proposed project is expected to be 633,700 VMT per day. By comparison, the existing campus's VMT is approximately 569,700 VMT per day. Similar to construction worker and vendor trips, fuel consumption for operation was estimated by converting the total CO_2 emissions to gallons using the conversion factors for CO_2 to gallons of gasoline or diesel. The worker vehicles were assumed to be gasoline powered and the delivery trucks were assumed to be diesel.

Calculations for annual mobile-source fuel consumption are provided in Table 3.5-8, Petroleum Consumption – Operation. Mobile sources from the propose project would result in approximately 7,451,373 gallons of gasoline per year and 914,462 gallons of diesel consumed per year beginning in 2030. The total existing mobile source consumption in 2018 was approximately 8,786,121 gallons of gasoline per year and 1,371,933 gallons of diesel. Therefore, the proposed project would result in a decrease of approximately 1,792,219 gallons of petroleum per year. By comparison, California as a whole consumes approximately 19.3 billion gallons of petroleum per year (CEC 2019c).

Table 3.5-8 Petroleum Consumption – Operation

Fuel	Vehicle MT CO_2	kg CO_2/Gallon	Gallons
Project Buildout			
Gasoline	65,423.06	8.78	7,451,373.36
Diesel	9,336.66	10.21	914,462.26
		Total	**8,365,835.62**
Existing Scenario			
Gasoline	77,142.14	8.78	8,786,120.92
Diesel	14,007.44	10.21	1,371,933.40
		Total	**10,158,054.32**
Net total Petroleum Consumption			**(1,792,218.70)**

Sources:
[a] Appendix B.
[b] The Climate Registry 2018.
Notes: CO_2 = carbon dioxide; kg = kilogram; MT = metric ton.

Over the lifetime of the proposed project, the fuel efficiency of the vehicles being used by students, employees, visitors, and delivery trucks is expected to increase. As such, the amount of petroleum consumed as a result of vehicular trips to and from the project site during operation would decrease over time. There are numerous regulations in place that require and encourage increased fuel efficiency. For example, CARB has adopted an approach to passenger vehicles by combining the control of smog-causing pollutants and GHG emissions into a single, coordinated package of standards. The approach also includes efforts to support and accelerate the number of plug-in hybrids and zero-emissions vehicles in California (CARB 2013). Additionally, in response to SB 375, CARB adopted the goal of reducing per-capita GHG emissions by 6 percent and nearly 7 percent from passenger vehicles by 2020 and 2035, respectively (BCAG 2016). As such, operation of the proposed project would be expected to use decreasing amounts of petroleum over time due to advances in fuel economy.

In summary, the proposed project would decrease petroleum use during operation as a result of students, employees, and visitors commuting to the site, as well as delivery trucks, the use would be a small fraction of the statewide use and, due to efficiency increases, would diminish over time. Given these considerations, petroleum consumption associated with the proposed project would not be considered inefficient or wasteful and would result in a **less than significant** impact. Furthermore, although not quantified herein, Chapter 3.14, Transportation includes mitigation measures required to be implanted by the proposed project including MM-TRA-1, requires implementation of a Transportation Demand Management (TDM) strategies, MM-TRA-2, would increase available housing in walking distance of campus, and MM-TRA-3, would provide fair share contribution to improve available transit. Implementation of these measures would help to reduce would help reduce petroleum use during operation.

Impact ENG-2. The project would not conflict with or obstruct a state or local plan for renewable energy or energy efficiency.

Title 24 of the California Code of Regulations contains energy efficiency standards for residential and non-residential buildings based on a state mandate to reduce California's energy demand. Specifically, Title 24 addresses a number of energy efficiency measures that impact energy used for lighting, water heating, heating, and air conditioning, including the energy impact of the building envelope such as windows, doors, skylights, wall/floor/ceiling assemblies, attics, and roofs.

Part 6 of Title 24 specifically establishes energy efficiency standards for residential and non-residential buildings constructed in the State of California in order to reduce energy demand and consumption. The proposed project would also implement various PDFs as discussed in Section 2.6, which include energy conservation measures such as at minimum meeting Title 24 regulations for all new development and all new buildings and major renovations to meet or exceed the minimum requirements equivalent to LEED Silver. Furthermore, the proposed project would look to implement energy conservation systems that would move towards achieving carbon neutrality and net zero energy goals.

Title 24, Part 11, contains voluntary and mandatory energy measures that are applicable to the proposed project under CALGreen. As discussed under the previous impact criterion, the proposed project would result in a net decrease demand for electricity, natural gas, and petroleum. In accordance with Title 24 Part 11 mandatory compliance, the proposed project would have: (a) 50 percent of its construction and demolition waste diverted from landfills; (b) mandatory inspections of energy systems to ensure optimal working efficiency; (c) low-pollutant-emitting exterior and interior finish materials, such as paints, carpets, vinyl flooring, and particle boards; and (d) a 20-percent reduction in indoor water use. In addition, the proposed project would include PDFs, which would help the campus become more sustainable. The proposed Master Plan strategies would relate to topics such as transportation and energy efficiency. Implementation and compliance with these PDFs would minimize the consumption of electricity, natural gas, and petroleum. For the reasons stated, the proposed project would not conflict with or obstruct a state or local plan for renewable energy or energy efficiency, and impacts would be **less than significant.**

3.5.5 Cumulative Impacts

Cumulative projects that could exacerbate the proposed project's impacts include any projects that could result in wasteful, inefficient, or unnecessary use of energy. However, the proposed project would not result in wasteful, inefficient, or unnecessary use of energy, in large part due to the short-term and temporary nature of the construction period. Additionally, the operational activity of the proposed project would be minimized through energy reduction strategies pursuant to Title 24, as described in Section 3.7. For all other projects in the City are required to comply with Title 24, the long-term energy consumption of those projects would also be reduced. Therefore, cumulative impacts to energy use would be **less than significant.**

3.5.6 Mitigation Measures

No mitigation measures are required.

3.5.7 Level of Significance After Mitigation

All impacts are less than significant prior to any mitigation.

3.5.8 References

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3.6 Geology, Soils, and Paleontology

This section of the Draft EIR summarizes existing geological conditions on the CSU, Chico campus and in the proposed Master Plan area and analyzes potential impacts related to seismic concerns (fault rupture, ground shaking, and seismically-induced ground failure (liquefaction) and landslides), unstable soils (liquefaction, lateral spreading, subsidence, liquefaction, or collapse), expansive soils, soil suitability for septic tank or alternative wastewater systems, and the potential for paleontological resources to be present. No scoping comments regarding geology, soils, or paleontology were received in response to the Notice of Preparation (NOP).

3.6.1 Existing Conditions

Topography

The topography of the main campus, University Farm, and University Village are relatively flat to gently sloping to the southwest. Total topographic relief across the main campus is approximately 45 feet. Topographic relief across the University Farm, located approximately 2.3 miles to the southeast of the main campus, is 25 feet. Topographic relief across University Village, located approximately 1.5 miles to the northwest of the main campus, is 5 feet. Topographic relief in the region is likewise relatively gentle with no pronounced topographic highs or lows.

Regional Geologic Setting

The Master Plan area is in the eastern Sacramento Valley, in the northern portion of the Great Valley Geomorphic Province of California. Formation of the Sacramento Valley occurred by a tectonic shifting of the Sierran Block; the western side dropped to form the valley and the eastern side uplifted to form the Sierra Nevada. The valley is filled with a relatively thick deposit of heterogeneous marine and lacustrine (lake) sediments, and surficial alluvial materials derived from erosion of the adjacent Sierra Nevada Range to the east and the Coast Ranges to the west. The sedimentary rocks are mainly Cretaceous. The depth of the sediments varies from a thin veneer at the edges of the valley to depths in excess of 50,000 feet in the central portion of the valley (CSU, Chico 2005).

General Soil/Geologic Conditions

The *Geologic Map of the Late Cenozoic Deposits of the Sacramento Valley and Northern Sierran Foothills, California* (Helley and Harwood 1985: 1:62,500) indicates that the near-surface deposits in the vicinity of the Master Plan area, including the main campus, the University Farm, and University Village, consist of the upper member of the Modesto Formation. The Modesto formation underlies a significant portion of the City of Chico and central Butte County (City of Chico 2010). These deposits generally consist of gravelly sand, silt, and clay, formed by Pleistocene river flow, from 14,000 to 42,000 years ago, and varying in thickness from a few feet along the valley perimeter to as much as 200 feet in the center of the valley (CSU, Chico 2005; City of Chico 2010).

Areas of existing development are underlain by artificial fill overlying the Modesto Formation, as the result of cut-and-fill grading.

Soils

Based on the U.S. Department of Agriculture (USDA), Natural Resources Conservation Service (NRCS) *Soil Survey of Butte Area, California*, the main campus and University Village is underlain by Vina fine sandy loam, while the University Farm is underlain by Almendra Loam and Chico Loam (USDA NRCS 2005).

Vina Fine Sandy Loam

The entire main campus and University Village are underlain by this soil unit. This soil forms on 2% sloped alluvial fans and consists of fine sandy loam, sandy loam, loamy coarse sand, and coarse sand, to a depth of 80 inches. These soils are well-drained and have negligible runoff (USDA NRCS 2005).

Almendra Loam

The central lower half of the University Farm overlies this soil unit. This soil is part of a broader alluvial fan and consists of loam and fine sandy loam to a depth of more than 80 inches, on a gentle 1% slope. These soils are well-drained and have a negligible runoff (USDA NRCS 2005).

Chico Loam

The northern portion of the University Farm overlies this soil unit. This soil forms on 2% sloped alluvial fans and consists of loam and clay loam to a depth of more than 80 inches. These soils are well-drained and have negligible runoff (USDA NRCS 2005).

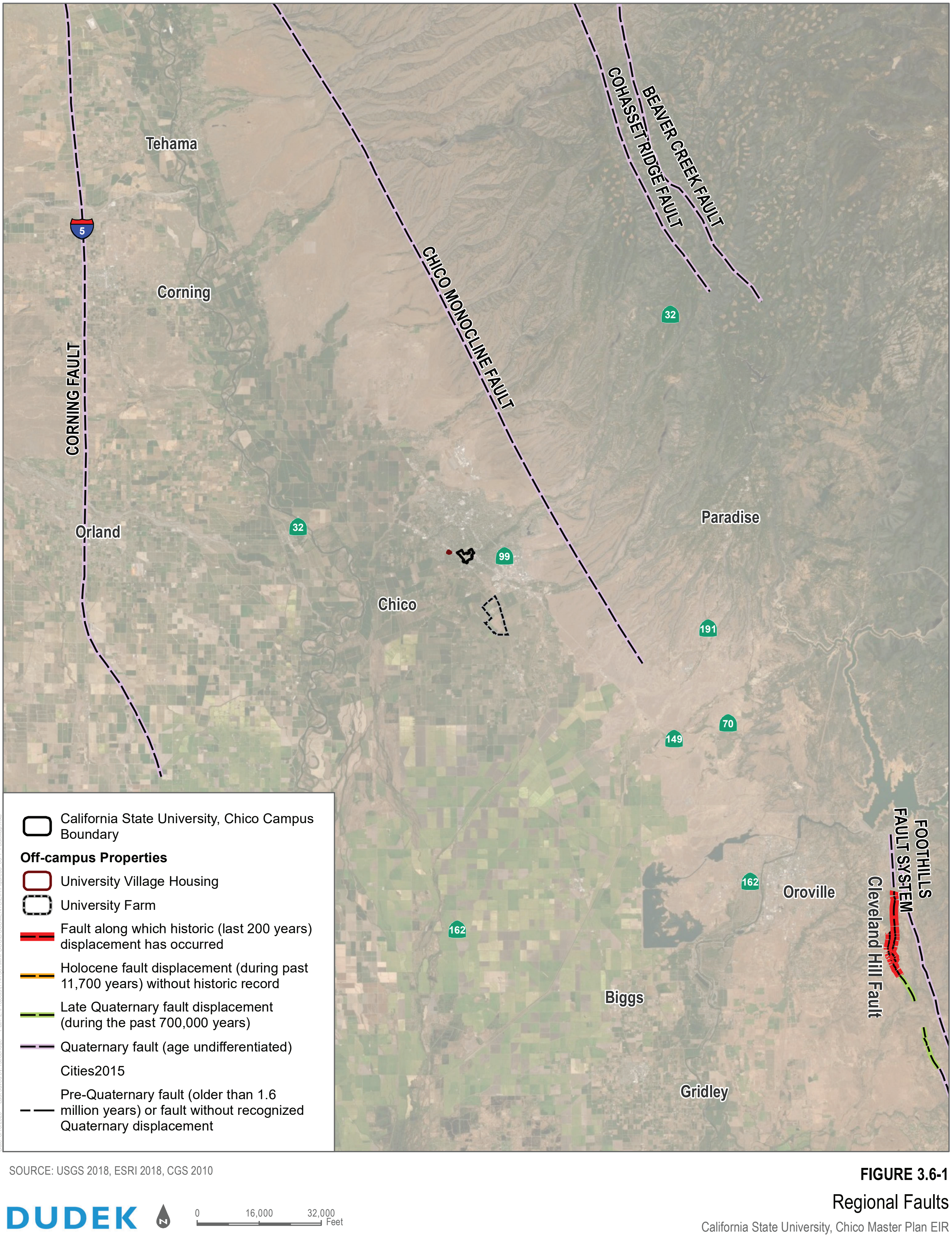
Seismicity and Faulting

The City of Chico and the surrounding area are not characterized by significant seismic and geologic hazards. There are, however, faults within the region that have the potential to affect the Master Plan area , including the Holocene-active Cleveland Hill Fault, located approximately 26 miles southeast of the main campus, and the potentially active Chico Monocline Fault, located approximately 3 miles from the main campus (City of Chico 2010; CGS 2010). Other active faults and fault zones located as distant as 100 miles away from Butte County have the potential to cause shaking in the county, including the Master Plan area. These faults include the Coast Ranges Faults, the San Andreas Fault, the Midland-Sweitzer Fault, and Eastern Sierra Faults (County of Butte 2018).

The California Geological Survey (2018) classifies faults as:

- Holocene-active faults, which are faults that have moved during the past approximately 11,700 years. These faults are capable of surface rupture.
- Pre-Holocene faults, which are faults that have not moved in the past 11,700 years. This class of fault may be capable of surface rupture but is not regulated under the Alquist-Priolo Special Studies Zones Act of 1972, which regulates the construction of buildings to be used for human occupancy.
- Age-undetermined faults, which are faults where the recency of fault movement has not been determined.

Faults that exhibit signs of geologically recent (active within the past 11,700 years) movement are considered Holocene-active and are the most likely to experience movement in the future and have the greatest fault rupture potential. However, this analysis considers potentially active faults (active within the past two million years) as being capable of generating future earthquakes. Faults classified as inactive are not considered a significant fault rupture hazard or seismic event source. A brief description of major active faults in the region is provided below and illustrated in Figure 3.6-1, Regional Faults.



SOURCE: USGS 2018, ESRI 2018, CGS 2010

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FIGURE 3.6-1

Regional Faults

California State University, Chico Master Plan EIR

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Cleveland Hill Fault

The Holocene-active Cleveland Hill Fault comprises the northern portion of the Foothills Fault System, which extends northward into southern Butte County, approximately 26 miles southeast of the main campus, approximately 23 miles southeast from the University Farm, and approximately 27 miles southeast from University Village. The Cleveland Hills Fault segment of this fault system is responsible for the 1975 Oroville earthquake, which produced an earthquake of 5.7 M (Richter magnitude scale, also known as the local magnitude (M) scale, assigns a number to quantify the amount of seismic energy released by an earthquake), an event that produced surface displacement along about 2.2 miles of the fault (CGS 2010, City of Chico 2010).

Chico Monocline Fault

The Chico Monocline Fault, which is approximately 3 miles east of the main campus, approximately 4.5 miles east of the University Farm, and approximately 5.5 miles east of University Village (CGS 2010), was considered potentially active in an unpublished 1988 report by the California Geological Survey. Based on its length of approximately 42 miles, this fault could produce at least a 7.0 M earthquake, which could cause major damage in the Master Plan area (City of Chico 2010).

Coast Range Thrust Zone

The Coast Ranges thrust zone is approximately 42 miles west from the main campus and the University Farm and approximately 38 miles to the west of University Village (CGS 2010). This fault zone could potentially produce an 8.0 M earthquake, which could be experienced within the region (City of Chico 2010).

San Andreas Fault System

The San Andreas Fault, along with related faults such as the Hayward and Calaveras, is one of the most active faults in California. Total displacement along this fault has been at least 450 miles and could possibly be as much as 750 miles. This fault system was responsible for the magnitude 8.0 M San Francisco earthquake of 1906 as well as numerous other damaging earthquakes, including the 1989 Loma Prieta earthquake. At its nearest point, the San Andreas Fault is about 108 miles west of the Master Plan area. The 1906 earthquake was strongly felt in Butte County. However, earthquakes along this fault are not anticipated to result in major damage throughout the City of Chico (City of Chico 2010).

Midland-Sweitzer Fault

The 80-mile-long Midland-Sweitzer fault lies approximately 88 miles southwest of the main campus, 86 miles southwest of the University Farm, and 90 miles southwest of the University Village (CGS 2010). Historically, earthquakes between 6.0 and 6.9 M have occurred on or near this fault, including two strong earthquakes in 1892. Based on the fault length and the historic activity, this fault could produce a 7.0 M earthquake (City of Chico 2010).

Eastern Sierra Faults

The Eastern Sierra contains several active faults including the Russell Valley Fault, which produced the 1966 Truckee earthquake, with an approximate 6.0 M, and several faults in the Last Chance and Honey Lake Fault Zones, which have produced several 5.0 to 5.9 M earthquakes (City of Chico 2010). These fault zones are approximately 89 miles to the northeast of the main campus, approximately 88 miles to the northeast of the University Farm, and approximately 91 miles to the northeast of University Village (CGS 2010).

Ground Shaking

Ground shaking is the movement of the earth's surface as a result of an earthquake. Ground motion produced by seismic waves emanates from slow or sudden slip on a fault. The degree of ground shaking felt at a given site depends on the distance from the earthquake source, the magnitude of the earthquake, the type of subsurface material on which the site is situated, and topography. Generally, ground shaking is less severe on rock than on alluvium or fill, but other local phenomena may override this generalization. Ground shaking can produce significant ground horizontal and vertical movement that can result in severe damage to structures that are generally not equipped to withstand it.

Surface Rupture

Surface rupture involves the displacement and cracking of the ground surface along a fault trace. Surface ruptures are visible expressions of horizontal or vertical displacement, or a combination of the two, typically confined to a narrow zone along the fault. Surface rupture is more likely to occur in conjunction with Holocene-active fault segments where earthquakes are large, or where the location of the movement (earthquake hypocenter) is shallow.

CSU, Chico is located within the U.S. Geological Survey 7.5-minute Chico Quadrangle. No fault, liquefaction, or seismically-induced landslide studies have been performed by the California Geological Survey for the Chico Quadrangle. The closest Holocene-active fault to the Master Plan area is the Cleveland Hills Fault, located approximately 23 miles to the southeast, at the closest point (CGS 2010).

Liquefaction/Lateral Spreading

Liquefaction occurs when loose sand and silt that is saturated with water behaves like a liquid when shaken by an earthquake. Earthquake waves cause water pressures to increase in the sediment and the sand grains to lose contact with each other, leading the sediment to lose strength and behave like a liquid. Three factors are required for liquefaction to occur: (1) loose, granular sediment (typically “made” land and beach and stream deposits that are young enough (late Holocene) to be loose); (2) groundwater saturation of the sediment (water fills the spaces between sand and silt grains); and (3) strong shaking. The soil can lose its ability to support structures, flow down even very gentle slopes, and erupt to the ground surface to form sand boils. Many of these phenomena are accompanied by settlement of the ground surface, usually in uneven patterns that damage buildings, roads, and pipelines (City of Chico 2010).

The Seismic Hazards Mapping Act of 1990 directs the California Department of Conservation, Division of Mines and Geology (now the California Geological Survey), to identify and mitigate seismic hazards. As previously discussed, seismic hazard zones, including potential liquefaction (and associated lateral spreading) and seismically induced landslide areas, have not been evaluated by the California Geological Survey for the Chico Quadrangle. However, according to the Butte County Local Hazard Mitigation Plan, the CSU, Chico main campus, the University Farm, and University Village are all located in a zone of generally moderate liquefaction potential (Butte County 2013).

Subsidence

Land subsidence results in a slow-to-rapid downward movement of the ground surface as a result of the vertical displacement of the ground surface, usually resulting from groundwater withdrawal. Subsidence is common in the Sacramento Valley and in large areas of the San Joaquin Valley. Subsidence is a greater hazard in areas where the subsurface geology includes compressible layers of silt and clay. The amount of subsidence caused by groundwater withdrawal depends on several factors, including the extent of water-level decline, the thickness of the water-bearing strata tapped, the thickness and compressibility of silt-clay layers within the vertical sections where groundwater withdrawal occurs, the duration of maintained groundwater level decline, the number and magnitude of water withdrawals in a given area, and the general geology and geologic structure of the groundwater basin. Subsidence can result in gradient changes in roads, streams, canals, drains, sewers, and dikes that may be significantly damaged by even small elevation changes. Other damaging effects of subsidence include damage to water wells resulting from sediment compaction and increased likelihood of flooding of low-lying areas. No land subsidence has been recorded in Butte County. However, land subsidence is considered a potential hazard for the portions of Butte County within the Sacramento Valley, such as the CSU, Chico campus, particularly if an extended drought were to necessitate large groundwater draw-downs (City of Chico 2010, Butte County 2018).

Landslides and Slope Instability

Steep slopes, in conjunction with certain soil types, can be prone to landslides. Some of the natural causes of this instability are earthquakes, weak soils, erosion, heavy rainfall, and fire. Human activities such as poor grading that undercuts steep slopes or overloads them with fill, excessive irrigation, and removal of vegetation can also contribute to landslides. Landslides occur in Butte County but are not common. Most landslides in Butte County occur on slopes greater than 15%, and most new landslides occur in areas that have experienced previous landslides. The areas of highest landslide potential are in the mountainous central area of the county where well-developed soils overlay impervious bedrock on steep slopes, which at times undergo heavy rainfall (Butte County 2018). The CSU, Chico main campus, the University Farm, and University Village are located on gradually sloping topography, not in proximity to hillslopes. As such, according to Butte County Landslide Risk Map, the CSU, Chico main campus, the University Farm, and University Village are in a zone with low to no potential for landslides (Butte County 2013).

Expansive Soils

Expansive soils are soils that tend to shrink or swell depending on their moisture content. These swelling soils typically contain clay minerals, as many types of clay minerals are expansive. When soil contains a high content of expansive minerals, it has the potential for significant expansion. When saturated, the clay minerals in expansive soils absorb water molecules and expand. Conversely, when dry, the clay minerals shrink, leaving large voids in the soil. When structures are located on expansive soils, foundations tend to rise during the wet season and shrink during the dry season. This movement can create new stresses on various sections of the foundation and connected utilities and can lead to structural failure and damage to infrastructure. Cracked foundations, floors, and basement walls are typical types of damage caused by swelling soils. Damage to the upper floors of buildings can occur when motion in the structure is significant (City of Chico 2010).

Soils of high expansion potential generally occur in the level areas of the Sacramento Valley, including around the population centers such as Chico (Butte County 2013. As such, some soils underlying the CSU, Chico main campus contain clay minerals and have a potential for soil expansion. In addition, the City of Chico 2030 General Plan (2017) Expansive Soils Map indicates that the main campus, the University Farm and University Village are all underlain by a moderate to highly expansive soil type.

Paleontological Resources

The Pleistocene-age Modesto Formation (map unit Qm) is mapped throughout the Master Plan area boundaries and represents older Quaternary alluvial deposits from the Sierra Nevada Mountains located to the east (Saucedo and Wagner, 1992). The alluvium was deposited by Big Chico Creek, which flows through the main campus and within a half-mile of University Village (McLeod, 2019).

Older Quaternary alluvial deposits like the Modesto Formation, characteristically reddish-brown in color, have been known to produce Ice Age mammals throughout the region, as confirmed by the records search results obtained from the Natural History Museum of Los Angeles County (LACM, or museum), and is considered to have the potential to yield scientifically significant paleontological resources (Appendix D). According to the museum, the closest fossil locality, LACM[1] () 197, is in Humboldt County, near Newburg and Fortuna, east of the Eel River in Strong's creek, from which a Columbian mammoth (*Mammuthus columbi*) was discovered (McLeod, 2019). Additional fossil specimens of bird and mammoth are known from the Oroville area of Butte County, approximately 25 miles to the southeast of the Master Plan area, and are housed at the Museum of Paleontology on the main campus of the University of California, Berkeley (UCMP V37039)(Jefferson, 1991a,b).

3.6.2 Regulatory Setting

Federal

No federal laws, plans, or policies related to geology and soils are applicable to the proposed Master Plan. Nonetheless, installation of underground infrastructure/utility lines must comply with national industry standards specific to the type of utility (e.g., National Clay Pipe Institute for sewers, American Water Works Association for water lines), and the discharge of contaminants must be controlled through the National Pollutant Discharge Elimination System (NPDES) permitting program for management of construction and municipal stormwater runoff. These standards contain specifications for installation, design, and maintenance to reflect site-specific geologic and soils conditions.

State

Alquist-Priolo Earthquake Fault Zoning Act

The Alquist-Priolo Earthquake Fault Zoning Act (Cal. Pub. Resources Code § 2621) was enacted by the State of California in 1972 to address the hazard of surface faulting to structures for human occupancy. The Alquist-Priolo Earthquake Fault Zoning Act was a direct result of the 1971 San Fernando Earthquake in southern California, which was associated with extensive surface fault ruptures that damaged homes, commercial buildings, and other structures. The primary purpose of the Alquist-Priolo Earthquake Fault Zoning Act is to prevent the construction of buildings intended for human occupancy on the surface traces of active faults. The Alquist-Priolo Earthquake Fault Zoning Act is also intended to provide citizens with increased safety and minimize the loss of life during and immediately following earthquakes, by facilitating seismic retrofitting to strengthen buildings against ground shaking.

The Alquist-Priolo Earthquake Fault Zoning Act requires the State Geologist to establish regulatory zones, known as "earthquake fault zones," around the surface traces of active faults and to issue appropriate maps to assist cities and counties in planning, zoning, and building regulation functions. Maps are distributed to all affected cities and counties for the controlling of new or renewed construction and are required to sufficiently define potential surface rupture or fault creep. The State Geologist is charged with continually reviewing new geologic and seismic data and revising existing zones and delineating additional earthquake fault zones when warranted by new information.

Local agencies must enforce the Alquist-Priolo Earthquake Fault Zoning Act in the development permit process, where applicable, and may be more restrictive than state law requires. According to the Alquist-Priolo Earthquake Fault Zoning Act, before a project can be permitted, cities and counties shall require a geologic investigation,

1 Formerly the California Institute of Technology, or CIT; this collection is now housed at the LACM.

prepared by a licensed geologist, to demonstrate that buildings will not be constructed across a Holocene-active faults. If an active fault is found, a structure for human occupancy cannot be place over the trace of the fault and must be set back a minimum of 50 feet. The Alquist-Priolo Earthquake Fault Zoning Act and its regulations are presented in California Department of Conservation, California Geological Survey, Special Publication 42, Fault-Rupture Hazard Zones in California.

Seismic Hazards Mapping Act

In order to address the effects of strong ground shaking, liquefaction, landslides, and other ground failures due to seismic events, the State of California passed the Seismic Hazards Mapping Act of 1990 (Cal. Pub. Resources Code § 2690-2699). Under the Seismic Hazards Mapping Act, the State Geologist is required to delineate "seismic hazard zones." Cities and counties must regulate certain development projects within these zones until the geologic and soil conditions of the project site are investigated and appropriate mitigation measures, if any, are incorporated into development plans. The State Mining and Geology Board provides additional regulations and policies to assist municipalities in preparing the Safety Element of their General Plan and encourage land use management policies and regulations to reduce and mitigate those hazards to protect public health and safety.

State publications supporting the requirements of the Seismic Hazards Mapping Act include the California Geological Survey Special Publication 117A, *Guidelines for Evaluating and Mitigating Seismic Hazards in California*, and Special Publication 118, *Recommended Criteria for Delineating Seismic Hazard Zones in California*. The objectives of Special Publication 117A are to assist in the evaluation and mitigation of earthquake-related hazards for projects within designated zones of required investigations and to promote uniform and effective statewide implementation of the evaluation and mitigation elements of the Seismic Hazards Mapping Act. Special Publication 118 implements the requirements of the Seismic Hazards Mapping Act in the production of Probabilistic Seismic Hazard Maps for the state.

California Building Standards Code

The state regulations protecting structures from geo-seismic hazards are contained in the California Building Code (CBC; Cal. Code Regs. tit. 24, Part 2), which is updated on a triennial basis. These regulations apply to public and private buildings in the state. Until January 1, 2008, the CBC was based on the then-current Uniform Building Code and contained additions, amendments, and repeals specific to building conditions and structural requirements of the State of California. The 2016 CBC, effective January 1, 2017, is based on the current (2015) International Building Code and enhances the sections dealing with existing structures. Seismic-resistant construction design is required to meet more stringent technical standards than those set by previous versions of the CBC.

Chapters 16 and 16A of the 2016 CBC include structural design requirements governing seismically resistant construction, including (but not limited to) factors and coefficients used to establish seismic site class and seismic occupancy category for the soil/rock at the building location and the proposed building design. Chapters 18 and 18A include (but are not limited to) the requirements for foundation and soil investigations (Sections 1803 and 1803A); excavation, grading, and fill (Sections 1804 and 1804A); damp-proofing and water-proofing (Sections 1805 and 1805A); allowable load-bearing values of soils (Sections 1806 and 1806A); the design of foundation walls, retaining walls, embedded posts and poles (Sections 1807 and 1807A), and foundations (Sections 1808 and 1808A); and design of shallow foundations (Sections 1809 and 1809A) and deep foundations (Sections 1810 and 1810A). Chapter 33 of the 2016 CBC includes (but is not limited to) requirements for safeguards at work sites to ensure stable excavations and cut or fill slopes (Section 3304).

Construction activities are subject to occupational safety standards for excavation and trenching, as specified in the California Safety and Health Administration regulations (Title 8 of the California Code of Regulations) and in Chapter 33 of the CBC. These regulations specify the measures to be used for excavation and trench work where workers could be exposed to unstable soil conditions. Development under the proposed Master Plan would be required to employ these safety measures during excavation and trenching.

As indicated previously, the CBC is updated and revised every three years. The 2019 version of the CBC will be effective January 1, 2020. It is anticipated that individual phases of the proposed Master Plan would use the most current CBC at the time of building permit issuance. The CSU is responsible for enforcement of the CBC. The Chief of Architecture and Engineering in Capital Planning, Design, and Construction (CPDC) at the Office of the Chancellor, is the Building Official for the CSU. By delegation, one person at each campus is a Campus Deputy Building Official for that campus and its other administrative locations. This person is responsible for enforcing the requirements of the California Building Code for all construction at the campus. An assigned CSU Peer Reviewer provides the technical review of the seismic aspects of projects (CSU 2018).

State Earthquake Protection Law

The State Earthquake Protection Law (Cal. Health and Safety Code § 19100 *et seq.*) requires that structures be designed and constructed to resist stresses produced by lateral forces caused by wind and earthquakes, as provided in the CBC. Chapter 16 of the CBC sets forth specific minimum seismic safety and structural design requirements, requires a site-specific geotechnical study to address seismic issues, and identifies seismic factors that must be considered in structural design. Because the Master Plan area is not located within an Alquist-Priolo Earthquake Fault Zone, as noted above, no special provisions would be required for project development related to fault rupture.

CSU Seismic Requirements

The CSU Seismic Requirements (CSU 2018), prepared by the CSU Office of the Chancellor, include specific requirements for the construction of new buildings and the rehabilitation of existing buildings to ensure that all CSU buildings provide an acceptable level of earthquake safety, per the California Building Code. The policy adopted by the CSU Board of Trustees in 1993 supplements the requirements of the CBC and is provided below.

> *It is the policy of the Trustees of the California State University that to the maximum extent feasible by present earthquake engineering practice to acquire, build, maintain, and rehabilitate buildings and other facilities that provide an acceptable level of earthquake safety for students, employees, and the public who occupy these buildings and other facilities at all locations where University operations and activities occur. The standard for new construction is that it meets the life safety and damageability objectives of Title 24 provisions; the standard for existing construction is that it provides reasonable life safety protection, consistent with that for typical new buildings. The California State University shall cause to be performed independent technical peer reviews of the seismic aspects of all construction projects from their design initiation, including both new construction and remodeling, for conformance to good seismic resistant practices consistent with this policy. The feasibility of all construction projects shall include seismic safety implications and shall be determined by weighing the practicality and cost of protective measures against the severity and probability of injury resulting from seismic occurrences.*

The CSU Seismic Requirements describe the CSU framework used to implement the Board of Trustees' Seismic Policy. All new construction is required to meet the life, safety, and damage objectives of Title 24 of the CBC, while the standard for rehabilitating existing structures is that reasonable life safety protection is provided. The CSU Seismic

Requirements include seismic design parameters to be used at all sites within a given campus that supersede those provided in the CBC. These parameters are used by the geotechnical engineer during project design. Independent technical peer reviews shall be conducted concerning the seismic aspects of all construction projects from their design initiation, including both new construction and remodeling, for conformance with good seismic resistant practice consistent with this policy. The CSU Seismic Review Board is charged with implementing the independent peer review requirements and advises CSU on structural engineering issues for specific projects.

Construction General Permit (SWRCB Order 2009-0009-DWQ, as amended)

For stormwater discharges associated with construction activity in the State of California, the State Water Resources Control Board (SWRCB) has adopted the General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities (Construction General Permit) to avoid and minimize water quality impacts attributable to such activities. In accordance with National Pollutant Discharge Elimination System (NPDES) Phase I Permit requirements, the Construction General Permit applies to all projects in which construction activity disturbs one acre or more of soil. Construction activity subject to this permit includes clearing, grading, and disturbances to the ground, such as stockpiling and excavation. The Construction General Permit requires the development and implementation of a stormwater pollution prevention plan (SWPPP), which would include and specify water quality Best Management Practices (BMPs) designed to prevent pollutants from contacting stormwater and keep all products of erosion from moving off site into receiving waters. Routine inspection of all BMPs is required under the provisions of the Construction General Permit, and the SWPPP must be prepared and implemented by qualified individuals as defined by the SWRCB.

Paleontological Resources

Paleontological resources are limited, nonrenewable resources of scientific, cultural, and educational value and are afforded protection under state laws and regulations. Paleontological resources are explicitly afforded protection by CEQA, specifically in Section VII(f) of CEQA Guidelines Appendix G, the “Environmental Checklist Form,” which addresses the potential for adverse impacts to “unique paleontological resource[s] or site[s] or … unique geological feature[s].” This provision covers fossils of signal importance – remains of species or genera new to science, for example, or fossils exhibiting features not previously recognized for a given animal group – as well as localities that yield fossils significant in their abundance, diversity, preservation, and so forth. Further, CEQA provides that generally, a resource shall be considered “historically significant” if it has yielded or may be likely to yield information important in prehistory (Cal. Pub. Resources Code § 15064.5 [a][3][D]). Paleontological resources would fall within this category. The Public Resources Code, Chapter 1.7, sections 5097.5 and 30244 also regulates removal of paleontological resources from state lands, defines unauthorized removal of fossil resources as a misdemeanor, and requires mitigation of disturbed sites.

Local

Because CSU, Chico is a component of the CSU, which is a state agency, the project is not subject to local government planning or ordinances. Accordingly, because neither local general plans nor any other local land use plans or ordinances are applicable to CSU, Chico, such local plans and ordinances are not summarized here or further analyzed in this section. See Section 3.10, Land Use and Planning for an evaluation of environmental impacts due to conflicts with any land use plan, policy or regulation adopted for the purpose of avoiding or mitigating an environmental effect.

3.6.3 Thresholds of Significance

The significance criteria used to evaluate potential project impacts related to geology, soils, and paleontology are based on Appendix G of the CEQA Guidelines. According to Appendix G of the CEQA Guidelines, a significant impact related to geology, soils, and paleontology would normally occur if the project would:

1. Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:
   a. Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area based on other substantial evidence of as known fault. Refer to Division of Mines and Geology Special Publication 42.
   b. Strong seismic ground shaking.
   c. Seismic-related ground failure, including liquefaction.
   d. Landslides.
2. Result in substantial soil erosion or the loss of topsoil.
3. Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse.
4. Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property.
5. Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water.
6. Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature.

3.6.4 Impact Analysis

Methodology

Analysis of impacts to geology, soils, and paleontological resources are assessed by comparing existing conditions to changes that could occur associated with implementation of the proposed Master Plan. The analysis evaluates if the project would directly or indirectly result in increased exposure to health and/or safety risks associated with soil, geologic, or seismic hazards. It should be noted that existing conditions do not constitute a significant impact for the purposes of CEQA. "[T]he purpose of an EIR is to identify the significant effects of a project on the environment, not the significant effects of the environment on the project" (Ballona Wetlands Land Trust v. City of Los Angeles (2011) 201 Cal.App.4th 455, 473 and California Building Industry Association v. Bay area Air Quality Management District (2015) Cal.App 4th.). No project-specific technical studies (e.g., geotechnical reports) have been prepared for the project at this time. As a result, the soils, geologic conditions, and seismic hazards are assessed based on publicly available geologic/soils documents and with respect to significance within the context of Appendix G of the CEQA Guidelines. As previously discussed, the project is not subject to local government planning or ordinances. Accordingly, consistency with local plans and ordinances are not analyzed in this section.

Impact Analysis

Impact GEO-1. The project would not directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:

a. ***Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area based on other substantial evidence of as known fault. Refer to Division of Mines and Geology Special Publication 42. (No Impact)***

The project is not located within an Alquist-Priolo Earthquake Fault Zone. The closest Holocene-active fault to the Master Plan area is the Cleveland Hills Fault, located approximately 23 miles to the southeast, at the closest point. As such, no active fault segments traverse the main campus, the University Farm, or University Village, and there is no evidence that fault rupture could occur on any of the proposed Master Plan building sites, including the sites of near-term projects, long-term projects, and related utility infrastructure. Furthermore, construction and operation of the project would not directly or indirectly cause fault rupture or exacerbate existing fault rupture risks. For these reasons, the project would not directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving surface rupture of a known earthquake fault, and **no impact** would occur.

b. ***Strong seismic ground shaking. (Less than Significant)***

The proposed Master Plan would generally increase density on underdeveloped sites within the main campus and the University Farm by demolishing outdated and inefficient campus buildings and structures and replacing them with new buildings. Multiple existing surface parking lots would also be redeveloped with buildings and/or parking structures.

As indicated in Section 3.6.1, Existing Conditions, the City of Chico and the surrounding area are relatively free from significant seismic and geologic hazards. There are, however, faults within the region that have the potential to have a significant impact on the Master Plan area, including the Holocene-active Cleveland Hill Fault, located approximately 26 miles southeast of the main campus, and the potentially active Chico Monocline Fault, located approximately 3 miles from the main campus. Other active faults and fault zones located as distant as 100 miles away from Butte County have the potential to cause shaking in the county, including the project area. These faults include the Coast Ranges Faults, the San Andreas Fault, the Midland-Sweitzer Fault, and Eastern Sierra Faults. Therefore, it is reasonable to assume that the site would experience significant seismic shaking episodically during the lifetime of the project.

In the event of a major earthquake, ground shaking is a main cause of structural damage. The strength of ground shaking depends on the magnitude of the earthquake, type of fault, and distance from the epicenter. Although onsite soils are not prone to liquefaction, the entire campus would be susceptible to damage from ground shaking in the event of an earthquake, including seismically-induced settlement. However, all proposed buildings and infrastructure would be constructed and/or renovated to meet the CBC and CSU Seismic Requirements and would provide an acceptable level of earthquake safety for students, employees, and the public who occupy these building and facilities.

Geotechnical investigations would be required for compliance with the CSU Seismic Requirements to assess soils and geologic hazard conditions for each proposed new building. Site-specific geotechnical investigation would be required for these projects and would include consideration of all seismically-induced site failure hazards including liquefaction, differential settlement, and lateral spreading. All new buildings would also be subject to review and plan approval by CSU building officials, prior to and during construction, to ensure that all new buildings and building renovations provide an acceptable level of earthquake safety, per the CBC. In addition, an independent technical peer review regarding seismic design is required for major capital projects and all minor capital projects are required to be seismically assessed per the CSU Seismic Requirements.

Compliance with the CBC and the CSU Seismic Requirements, including preparation and implementation of geotechnical investigations, would help to offset potential risks to structures and people associated with a major earthquake event. The project would not exacerbate the potential for seismic activity to occur and therefore would not directly or indirectly cause potential adverse effects, including the risk of loss, injury, or death involving strong seismic ground shaking and seismic-related ground failure. Therefore, the seismic-related impacts during renovation, new construction, and operation of near-term projects, long-term projects, and related utility infrastructure under the proposed Master Plan would be **less than significant.**

c. Seismic-related ground failure, including liquefaction. (Less than Significant)

As previously discussed, the Master Plan area is in an area that is seismically active with known Holocene-active faults traversing the region. The main campus, the University Farm, and University Village are all located in a zone of generally moderate liquefaction potential. Proposed structures would be susceptible to damage from ground shaking in the event of an earthquake. As previously discussed, project development would comply with the CBC and the CSU Seismic Requirements, including preparation and implementation of geotechnical investigations, which would help to offset potential risks to structures and people associated with a major earthquake event. In addition, the project would not exacerbate the potential for seismic activity to occur and therefore would not directly or indirectly cause potential adverse effects, including the risk of loss, injury, or death involving seismic-related ground failure, including liquefaction. Therefore, the seismic-related impacts during renovation, new construction, and operation of near-term projects, long-term projects, and related utility infrastructure of the proposed Master Plan would be **less than significant.**

d. Landslides. (Less than Significant)

As indicated in section 3.6.1, Existing Conditions, there are no known landslides on or near the main campus, the University Farm, or University Village. Based on the relatively flat to gently sloping topography, the potential for slope instability is low. In addition, as previously discussed, development proposed under the Master Plan would be required to comply with the CBC, which outlines specific design, engineering, and development standards for structures proposed in areas with unstable soils. Additionally, all new buildings would be subject to review and plan approval by CSU building officials, prior to and during construction. Compliance with the current CBC would ensure that all structures are designed and built to current standards to minimize impacts associated with ground failure, including landslides. The relatively flat to gently sloping nature of the proposed campus building locations would reduce the risk of landslide hazards. In addition, the project would not exacerbate the potential for landslides to occur and therefore would not directly or indirectly cause potential adverse effects, including the risk of loss, injury, or death involving landslides. Therefore, landslide-related impacts during renovation and new construction of near-term projects, long-term projects, and related utility infrastructure of the proposed Master Plan would be **less than significant.**

Impact GEO-2. The project would not result in substantial soil erosion or the loss of topsoil. (Less than Significant)

As indicated in Section **Error! Reference source not found.**, Existing Conditions, the Master Plan area is underlain by gravelly sand, silt, and clay of the Modesto Formation. Demolition and construction activities associated with the project, including vegetation removal, excavations, and grading, would temporarily expose underlying soils, thereby increasing the potential to cause wind- and water-induced soil erosion. The effects of erosion are intensified with an increase in slope (as water moves faster, it gains momentum to carry more debris) and the narrowing of runoff channels (which increases the velocity of water).

As the project proposes new construction primarily in developed areas, as shown in Figures 2-4 and 2-5 in chapter 2, Project Description, erosion would be minimized. During demolition activities, new construction, and building renovation, CSU, Chico would be required to implement erosion control measures stipulated in a SWPPP, pursuant to the NPDES discharge requirements (see Section 3.9, Hydrology and Water Quality for details regarding SWPPPs). Therefore, during renovation and construction of near-term projects, long-term projects, and related utility infrastructure, erosion induced stormwater discharges would be reduced to levels that are **less than significant.**

Impact GEO-3. The project would not be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse. (Less than Significant)

As previously discussed, the topography of the main campus, the University Farm, and University Village is relatively flat to gently sloping and not prone to slope instability. Cut-and-fill grading associated with proposed new construction would result in small temporary cut slopes during grading and creation of small engineered cut and fill slopes as part of the final design. On- or off-site landslides would not occur in association with grading and construction due to the flat topography and low instability risk within the Master Plan area.

No land subsidence has been recorded in Butte County. However, land subsidence is a potential hazard for the Master Plan area, particularly if an extended drought were to necessitate large groundwater draw-downs. Development associated with the proposed Master Plan would not exacerbate the potential for subsidence to occur (see Section 3.9, Hydrology and Water Quality regarding groundwater withdrawals).

The main campus, the University Farm, and University Village are all located in a zone of generally moderate liquefaction (and associated lateral spreading) potential. Proposed structures would be susceptible to damage from ground shaking in the event of an earthquake. As previously discussed, project development would comply with the CBC and the CSU Seismic Requirements, including preparation and implementation of geotechnical investigations, which would help to offset potential risks to structures and people associated with a geologic hazards. In addition, the project would not exacerbate the potential for seismic activity, subsidence, or collapse to occur. Therefore, impacts related to unstable soils during renovation, new construction, and operation of near-term projects, long-term projects, and related utility infrastructure of the proposed Master Plan would be **less than significant.**

Impact Geo-4. The project may be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), but would not result in substantial direct or indirect risks to life or property. (Less than Significant)

The main campus, the University Farm, and University Village are all underlain by a moderate to highly expansive soils. Project development would comply with the CBC, including preparation and implementation of geotechnical investigations, which would mitigate potential risks to proposed structures associated with expansive soils. Typical mitigation for expansive soils includes over-excavation of clay-rich expansive soils beneath proposed slab-on-grade foundations and replacement with sandy, non-expansive soils. Alternatively, post-tension foundations would reduce or eliminate concrete cracking due to expansive soils. Therefore, impacts related to expansive soils during renovation, new construction, and operation of near-term projects, long-term projects, and related utility infrastructure of the proposed Master Plan would be **less than significant.**

Impact GEO-5. The project would not have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater. (Less than Significant)

The main campus and University Village are serviced by existing sewer systems, which would continue to be used for new development proposed under the Master Plan. The University Farm utilizes an existing septic/leach field system and animal waste lagoons for wastewater disposal. Groundwater is estimated to be between 59 and 111 feet below ground surface, depending on the season (CSU 2005). Sewer mains would not be extended to serve the University Farm as part of the Master Plan; therefore, a septic system would continue to be used. Several phased improvements are planned at the University Farm, including replacing out-of-date buildings, a new food science building, a University Farm Store, on-site residential space, and remodeling several buildings. Based on the presence of an existing septic/leach field wastewater disposal system, it is assumed that onsite soils are capable of adequately supporting this wastewater disposal system. The primary soils constraint with respect to septic/leach line systems is soil permeability. The soils must be permeable enough for downward percolation of wastewater. The existing wastewater disposal system would potentially be expanded as a result of proposed development at the University Farm. Based on the existing septic/leach field system, onsite project soils would be considered adequate in supporting the use of similar wastewater disposal systems in association with project buildout. Impacts would be **less than significant.**

Impact GEO-6. The project could directly or indirectly destroy a unique paleontological resource or site or unique geologic feature. (Potentially Significant)

The majority of the Master Plan area is underlain by the Modesto Formation. Excavations completed within the Modesto Formation, at any depth below native topsoil and artificial fill, have the potential to encounter important and unique paleontological resources. Repair and replacement of utility lines and activities affecting non-native fill would have no impact, as these soils have been previously disturbed and consist of artificial fill. However, excavation beneath native topsoil, which is generally the upper 1 to 3 feet, or artificial fill, which can be to any depth, has the potential to encounter important and unique paleontological resources. This is a **potentially significant** impact. Projects, such as expansion or replacement of buildings within previously disturbed soils, are less likely to encounter important and unique paleontological resources. These projects are subject to MM-GEO-1A, which addresses unanticipated discoveries. For projects that involve mass grading within undisturbed Modesto Formation, MM-GEO-1B shall be implemented. Near-Term Projects that would be subject to MM-GEO-1B include Creekside Housing, the WREC Expansion, and the Forensic Anthropology/Admin/Office Building. The other Near-Term Projects consist of reconstruction, expansion, or replacement within the same site, and are not likely to affect previously undisturbed Modesto Formation sediments.

3.6.5 Cumulative Impacts

Geologic hazard impacts would only be considered significant in the event that individual projects would cause or exacerbate geologic hazards (e.g., grading-induced landslides). No significant geologic hazards or soils impacts would occur in association with proposed Master Plan build-out. However, potentially significant but mitigable paleontological impacts would occur due to Master Plan build-out, as individual projects would potentially destroy a unique paleontological resource.

Impacts resulting from seismic-related ground shaking and/or failure, landslides, soil erosion, and/or unstable soils impacts are generally site-specific. Impacts related to geologic and seismic hazards depend on the specific conditions and features on the particular project site and its immediate vicinity, such as soil composition and slope. Thus, these site-specific impacts would not result in a considerable contribution to cumulatively significant impacts. Similarly, paleontological resource impacts are generally site-specific would not result in a considerable contribution to cumulatively significant impacts. Therefore, the geographic area considered for potential cumulative seismic-related ground shaking and/or failure, landslides, soil erosion, unstable soils, and paleontological impacts consists of the main campus, the University Farm, and University Village, and areas immediately adjacent to these Master Plan areas.The effects of the proposed Master Plan and other cumulative development would not result in significant cumulative impacts related to seismic-related ground shaking and/or failure, landslides, soil erosion, or unstable soils. Such impacts would be similar to what is described for the project. Such impacts would be addressed on a project-by-project basis through compliance with the CBC, NPDES general construction permit discharge requirements, California Safety and Health Administration regulations, Occupational Safety and Health Administration regulations, CSU Seismic Requirements for CSU Chico development projects, and local agency code requirements for local development projects. Compliance with these requirements would: (1) offset potential risks to structures and people associated with a major earthquake event; (2) ensure that all structures are designed and built to current standards to minimize impacts associated with ground failure and landslides; (3) avoid or minimize erosion and sedimentation; and (4) prevent caving of collapsible soils and associated risks to construction workers. Additionally, the project and other cumulative development would not exacerbate the potential for seismic activity to occur and therefore would not directly or indirectly cause potential adverse effects, including the risk of loss, injury, or death involving strong seismic ground shaking and seismic-related ground failure. Given the above, cumulative impacts related to seismic-related ground shaking and/or failure, landslides, soil erosion, and unstable soils during development of near-term and long-term development projects would be less than significant.

Implementation of the proposed Master Plan has the potential to aadversely affect significant paleontological resources to the extent that excavations extend into previously undisturbed, older Quaternary alluvial deposits (Modesto Formation). The Modesto formation underlies a significant portion of the City of Chico and central Butte County (City of Chico 2010). Cumulatively, additional development in the project vicinity (City) could affect paleontological resources. As indicated above, the project impact related to paleontological resources would be reduced to less than significant with mitigation through the implementation of MM-GEO-1. With implementation of MM-GEO-1, the contribution of the project to a cumulative paleontological impact would be less than significant. Furthermore, the impacts of off-campus cumulative development on significant paleontological resources that may be located on cumulative development sites would be reduced through the implementation of similar mitigation measures required through the CEQA process for these off-campus cumulative projects. Therefore, the project and other cumulative development would not result in a significant cumulative impact related to paleontological resources.

3.6.6 Mitigation Measures

MM-GEO-1A In the event that paleontological resources (e.g., fossils) are encountered during grading/excavations, the paleontological monitor shall temporarily halt and/or divert grading activity to allow recovery of paleontological resources. The area of discovery shall be roped off with a 50-foot-radius buffer. Once documentation and collection of the find is completed, the monitor shall allow grading/excavations to recommence in the area of the find.

MM-GEO-1B Prior to commencement of any construction project within the scope of the proposed Master Plan that may affect previously undisturbed Modesto Formation sediments, CSU shall retain a qualified paleontologist per the Society of Vertebrate Paleontology (SVP) (2010) guidelines. Previously undisturbed Modesto Formation sediments would constitute those sediments anywhere within Master Plan area boundaries, beneath native topsoil (i.e., generally the upper 1 to 3 feet) and artificial fill, as determined by a qualified geologist/paleontologist. The geologist/paleontologist shall be consulted prior to project grading and excavations to determine whether Modesto Formation sediments may be encountered during construction.

In the event that it is determined that Modesto Formation sediments may be encountered during grading/excavations, a paleontologist shall prepare a Paleontological Resources Impact Mitigation Program (PRIMP) for the project.

The PRIMP shall be consistent with the SVP (2010) guidelines and shall outline requirements for

- preconstruction meeting attendance and worker environmental awareness training,
- where monitoring is required within the project area based on construction plans and/or geotechnical reports,
- procedures for adequate paleontological monitoring and discoveries treatment, and paleontological methods (including sediment sampling for microvertebrate fossils),
- reporting, and collections management.

Pursuant to the PRIMP, the qualified paleontologist may attend the preconstruction meeting and a paleontological monitor shall be required to be on-site during rough grading and other ground-disturbing activities in previously undisturbed Modesto Formation sediments. Activities such as repair and replacement of utility lines and activities affecting non-native fill are generally exempt from this requirement.

3.6.7 Level of Significance After Mitigation

Implementation of **MM-GEO-1B** would require preparation of a Paleontological Resources Impact Mitigation Program (PRIMP) for Master planned projects with the potential to encounter paleontological resources. The PRIMP outlines the procedures to follow in the event paleontological resources are unearthed during construction activities and worker environmental awareness training if monitoring is determined necessary.For projects that are unlikely to affect undisturbed Modesto Formation soils, **MM-GEO-1A** would address the possibility that previously unidentified paleontological resources are encountered With implementation of the above mitigation measure, Impact GEO-6, potential impacts to paleontological resources, would be reduced to **less than significant**. In addition, geology and soils impacts GEO-1 through GEO-5 would be **less than significant** and no mitigation is required.

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3.7 Greenhouse Gas Emissions

This section describes the existing greenhouse gas conditions of the project site and vicinity, identifies associated regulatory requirements, evaluates potential impacts, and identifies mitigation measures related to implementation of the proposed project.

No comments regarding GHG emissions or climate change were received in response to the Notice of Preparation (NOP).

3.7.1 Existing Conditions

Climate Change Overview

Climate change refers to any significant change in measures of climate—such as temperature, precipitation, or wind patterns—lasting for an extended period of time (decades or longer). The Earth's temperature depends on the balance between energy entering and leaving the planet's system. Many factors, both natural and human, can cause changes in Earth's energy balance, including variations in the sun's energy reaching Earth, changes in the reflectivity of Earth's atmosphere and surface, and changes in the greenhouse effect, which affects the amount of heat retained by Earth's atmosphere (EPA 2017).

The greenhouse effect is the trapping and buildup of heat in the atmosphere (troposphere) near the Earth's surface. The greenhouse effect traps heat in the troposphere through a three-part process as follows: Short-wave radiation emitted by the Sun is absorbed by the Earth, the Earth emits a portion of this energy in the form of long-wave radiation, and GHGs in the upper atmosphere absorb this long-wave radiation and emit it into space and toward the Earth. The greenhouse effect is a natural process that contributes to regulating the Earth's temperature and creates a pleasant, livable environment on the Earth. Human activities that emit additional GHGs to the atmosphere increase the amount of infrared radiation that gets absorbed before escaping into space, thus enhancing the greenhouse effect and causing the Earth's surface temperature to rise.

The scientific record of the Earth's climate shows that the climate system varies naturally over a wide range of time scales and that, in general, climate changes prior to the Industrial Revolution in the 1700s can be explained by natural causes, such as changes in solar energy, volcanic eruptions, and natural changes in GHG concentrations. However, recent climate changes, in particular the warming observed over the past century, cannot be explained by natural causes alone. Rather, it is extremely likely that human activities have been the dominant cause of warming since the mid-twentieth century, and are the most significant driver of observed climate change (IPCC 2013; EPA 2017). Human influence on the climate system is evident from the increasing GHG concentrations in the atmosphere, positive radiative forcing, observed warming, and improved understanding of the climate system (IPCC 2013). The atmospheric concentrations of GHGs have increased to levels unprecedented in the last 800,000 years, primarily from fossil fuel emissions and secondarily from emissions associated with land use changes (IPCC 2013). Continued emissions of GHGs will cause further warming and changes in all components of the climate system.

Greenhouse Gases

A GHG is any gas that absorbs infrared radiation in the atmosphere; in other words, GHGs trap heat in the atmosphere. As defined in California Health and Safety Code, section 38505(g), for purposes of administering many of the State's primary GHG emissions reduction programs, GHGs include carbon dioxide (CO_2), methane

(CH_4), nitrous oxide (N_2O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), sulfur hexafluoride (SF_6), and nitrogen trifluoride. (See also State CEQA Guidelines, § 15364.5.)[1] Some GHGs, such as CO_2, CH_4, and N_2O, occur naturally and are emitted into the atmosphere through natural processes and human activities. Of these gases, CO_2 and CH_4 are emitted in the greatest quantities from human activities. Manufactured GHGs, which have a much greater heat-absorption potential than CO_2, include fluorinated gases, such as HFCs, PFCs, and SF_6, which are associated with certain industrial products and processes. The following paragraphs provide a summary of the most common GHGs and their sources.[2]

Carbon Dioxide

CO_2 is a naturally-occurring gas and a by-product of human activities; it is the principal anthropogenic GHG that affects the Earth's radiative balance. Natural sources of CO_2 include respiration of bacteria, plants, animals, and fungus; evaporation from oceans; volcanic out-gassing; and decomposition of dead organic matter. Human activities that generate CO_2 include the combustion of fuels such as coal, oil, natural gas, and wood, and changes in land use.

Methane

CH_4 is produced through both natural and human activities. CH_4 is a flammable gas and is the main component of natural gas. CH_4 is produced through anaerobic (without oxygen) decomposition of waste in landfills, flooded rice fields, animal digestion, decomposition of animal wastes, production and distribution of natural gas and petroleum, coal production, and incomplete fossil fuel combustion.

Nitrous Oxide

N_2O is produced through natural and human activities, mainly through agricultural activities and natural biological processes, although fuel burning and other processes also create N_2O. Sources of N_2O include soil cultivation practices (microbial processes in soil and water), especially the use of commercial and organic fertilizers, manure management, industrial processes (such as in nitric acid production, nylon production, and fossil-fuel-fired power plants), vehicle emissions, and using N_2O as a propellant (such as in rockets, racecars, and aerosol sprays).

Global Warming Potential

Gases in the atmosphere can contribute to climate change both directly and indirectly. Direct effects occur when the gas itself absorbs radiation. Indirect radiative forcing occurs when chemical transformations of the substance produce other GHGs, when a gas influences the atmospheric lifetimes of other gases, and/or when a gas affects atmospheric processes that alter the radiative balance of the Earth (e.g., affect cloud formation or albedo) (EPA 2017). The Intergovernmental Panel on Climate Change developed the GWP concept to compare the ability of each GHG to trap heat in the atmosphere relative to another gas. The GWP of a GHG is defined as the ratio of the time-integrated radiative forcing from the instantaneous release of 1 kilogram of a trace substance relative to that of 1 kilogram of a reference gas (IPCC 2014). The reference gas used is CO_2; therefore, GWP-weighted emissions are measured in metric tons of CO_2 equivalent (MT CO_2e).

1 Climate forcing substances include GHGs and other substances such as black carbon and aerosols.
2 The descriptions of GHGs are summarized from the IPCC Fourth Assessment Report (2007), CARB's "Glossary of Terms Used in GHG Inventories" (2018a), and EPA's "Climate Change" (2017).

Notably, this analysis assumes that the GWP for CH_4 is 25 (so emissions of 1 MT of CH_4 are equivalent to emissions of 25 MT of CO_2), and the GWP for N_2O is 298, based on the Intergovernmental Panel on Climate Change's Fourth Assessment Report (IPCC 2007).

Sources of Greenhouse Gas Emissions

Federal Inventory

Per the 2019 U.S. Environmental Protection Agency (EPA) Inventory of U.S. GHG Emissions and Sinks: 1990–2017, total U.S. GHG emissions were approximately 6,457 million metric tons (MMT) CO_2e in 2017 (EPA 2019). The primary GHG emitted by human activities in the United States was CO_2, which represented approximately 81.6 percent of total GHG emissions (6,457 MMT CO_2e). The largest source of CO_2, and of overall GHG emissions, was fossil-fuel combustion, which accounted for approximately 93.2 percent of CO_2 emissions in 2017 (4,912.0 MMT CO_2e). Relative to the 1990 emissions level, gross U.S. GHG emissions in 2017 are 1.3 percent higher; however, the gross emissions are down from a high of 15.7 percent above the 1990 level that occurred in 2007. GHG emissions decreased from 2016 to 2017 by 0.5 percent (35.5 MMT CO_2e) and, overall, net emissions in 2017were 13 percent below 2005 levels (EPA 2019).

State Inventory

According to California's 2000–2016 GHG emissions inventory (2018 edition), California emitted 429.4 MMT CO_2e in 2016, including emissions resulting from out-of-state electrical generation (CARB 2018b). The sources of GHG emissions in California include transportation, industrial uses, electric power production from both in-state and out-of-state sources, commercial and residential uses, agriculture, high global-warming potential substances, and recycling and waste. Table 3.7-1 presents California GHG emission source categories (as defined in CARB's 2008 Scoping Plan) and their relative contributions in 2016.

Table 3.7-1. Greenhouse Gas Emissions Sources in California

Source Category	Annual GHG Emissions (MMT CO_2e)	Percent of Total[a]
Transportation	169.38	39%
Industrial uses[b]	89.61	21%
Electricity generation[c]	68.58	16%
Residential and commercial uses	39.36	9%
Agriculture	33.84	8%
High GWP substances	19.78	5%
Recycling and waste	8.81	2%
Totals	**429.40**	**100%**

Source: CARB 2018b.
Notes: GHG = greenhouse gas; MMT CO_2e = million metric tons of carbon dioxide equivalent; GWP = global warming potential.
Emissions reflect 2016 California GHG inventory.
[a] Percentage of total has been rounded and total may not sum due to rounding.
[b] The Aliso Canyon natural gas leak event released 1.96 MMT CO_2e of unanticipated emissions in 2015 and 0.53 MMT CO_2e in 2016. These leak emissions will be fully mitigated according to legal settlement and are tracked separately from routine inventory emissions.
[c] Includes emissions associated with imported electricity, which account for 26.28 MMT CO_2e.

Between 2000 and 2016, per capita GHG emissions in California dropped from a peak of 14.0 MT per person in 2001 to 10.8 MT per person in 2016, representing a 23 percent decrease. In addition, total GHG emissions in 2016 were approximately 12 MMT CO_2e less than 2015 emissions. The declining trend in GHG emissions, coupled with programs that will continue to provide additional GHG reductions going forward, demonstrates that California will continue to reduce emissions below the 2020 target of 431 MT CO_2e (CARB 2018b).

CSU, Chico Inventory

Table 3.7-2 presents the University's 2008 GHG emissions and the percent contribution of each emissions source (electricity, natural gas, commute, travel, waste, landscaping and agriculture, fleet, and refrigerant).

Table 3.7-2. CSU, Chico Baseline Greenhouse Gas Emissions Inventory (2008)

Emissions Source	Annual GHG Emissions ($MT\ CO_2e$/year)	Percent of Total[a]
Electricity	16,268	39%
Commute	11,709	28%
Natural gas	5,762	14%
Travel	5,318	13%
Landscaping and agriculture	1,105	3%
Fleet	743	2%
Waste	280	0.7%
Refrigerant	77	0.2%
Total[a]	**41,262**	**100%**

Source: CSU, Chico 2011.
Notes: GHG = greenhouse gas; MT CO_2e = metric tons of carbon dioxide equivalent per year.
[a] Total may not sum due to rounding.

As shown on Table 3.7-2, the primary generators of GHGs from University activities were attributed to electricity and commuting, accounting for 39% and 28% of the University's GHG emissions in 2008, respectively.

Potential Effects of Climate Change

Globally, climate change has the potential to affect numerous environmental resources through uncertain impacts related to future air temperatures and precipitation patterns. The 2014 *Intergovernmental Panel on Climate Change Synthesis Report* (IPCC 2014) indicated that warming of the climate system is unequivocal, and since the 1950s, many of the observed changes are unprecedented over decades to millennia. Signs that global climate change has occurred include warming of the atmosphere and ocean, diminished amounts of snow and ice, and rising sea levels (IPCC 2014).

In California, climate change impacts have the potential to affect sea-level rise, agriculture, snowpack and water supply, forestry, wildfire risk, public health, frequency of severe weather events, and electricity demand and supply. The primary effect of global climate change has been a rise in average global tropospheric temperature. Reflecting the long-term warming trend since pre-industrial times, observed global mean surface temperature for the decade 2006–2015 was 0.87°C (likely between 0.75°C and 0.99°C) higher than the average over the 1850–1900 period (IPCC 2018). Scientific modeling predicts that continued emissions of GHGs at or above current rates would induce more extreme climate changes during the twenty-first century than were observed during the twentieth century. Human activities are estimated to have caused approximately 1.0°C (1.8 degrees Fahrenheit (°F)) of global warming above pre-industrial levels, with a likely range of 0.8°C to 1.2°C (1.4°F to 2.2°F) (IPCC 2018). Global warming is likely to reach 1.5°C (2.7°F) between 2030 and 2052 if it continues to increase at the current rate (IPCC 2018).

Although climate change is driven by global atmospheric conditions, climate change impacts are felt locally. A scientific consensus confirms that climate change is already affecting California. The Office of Environmental Health Hazard Assessment identified various indicators of climate change in California, which are scientifically-based measurements that track trends in various aspects of climate change. Many indicators reveal discernable evidence that climate change is occurring in California and is having significant, measurable impacts in the state. Changes in the state's climate have been observed including an increase in annual average air temperature with record warmth from 2012 to 2016, more frequent extreme heat events, more extreme drought, a decline in winter chill, an increase in cooling degree days and a decrease in heating degree days, and an increase in variability of statewide precipitation (OEHHA 2018).

Warming temperatures and changing precipitation patterns have altered California's physical systems – the ocean, lakes, rivers and snowpack – upon which the state depends. Winter snowpack and spring snowmelt runoff from the Sierra Nevada and southern Cascade Mountains provide approximately one-third of the state's annual water supply. Impacts of climate on physical systems have been observed such as high variability of snow-water content (i.e., amount of water stored in snowpack), decrease in snowmelt runoff, glacier change (loss in area), rise in sea levels, increase in average lake water temperature and coastal ocean temperature, and a decrease in dissolved oxygen in coastal waters (OEHHA 2018).

Impacts of climate change on biological systems, including humans, wildlife, and vegetation, have also been observed including climate change impacts on terrestrial, marine, and freshwater ecosystems. As with global observations, species responses include those consistent with warming: elevational or latitudinal shifts in range, changes in the timing of key plant and animal life cycle events, and changes in the abundance of species and in community composition. Humans are better able to adapt to a changing climate than plants and animals in natural ecosystems. Nevertheless, climate change poses a threat to public health as warming temperatures and changes in precipitation can affect vector-borne pathogen transmission and disease patterns in California as well as the variability of heat-related deaths and illnesses. In addition, since 1950, the area burned by wildfires each year has been increasing.

The California Natural Resources Agency (CNRA) has released four California Climate Change Assessments (2006, 2009, 2012, and 2018), which have addressed the following: acceleration of warming across the state, more intense and frequent heat waves, greater riverine flows, accelerating sea level rise, more intense and frequent drought, more severe and frequent wildfires, more severe storms and extreme weather events, shrinking snowpack and less overall precipitation, and ocean acidification, hypoxia, and warming. To address local and regional governments need for information to support action in their communities, the Fourth Assessment (2018) includes reports for nine regions of the state, including the Sacramento Valley Region, where the proposed project is located. Key projected climate changes for the Sacramento Valley Region include the following (CNRA 2018):

- Continued future warming over the Sacramento Valley Region. Across the region, average maximum temperatures are projected to increase around 2.7°F to 10.8°F by the late-century.
- Extreme temperatures are also expected to increase. The hottest day of the year may be up to 10°F warmer for many locations across the Sacramento Valley Region by the late-century under certain model scenarios. The number of extremely hot days is also expected to increase across the region.
- In the Sacramento Valley Region, annual precipitation is expected to remain about the same on average or would increase slightly this century while dry and wet extremes are both expected to increase. The Southern Sierras are partially buffered against rising temperatures by their higher elevation but are still expected to have declines in total snow water of about 40% by the end-of-century, with the greatest losses at lower elevations.

- Tule fog during California's winter season has important implications for crops and ecosystems. Reductions in Tule fog have been observed in recent years because conditions have been either too wet or too dry for fog to form.
- Wetter winters and drier summers are likely to increase summer and fall wildfire activity. Wetter winters increase plant growth, which increases the amount of fuel for wildfire in the spring and summer months. Increases in large wildfires are posited to be driven by an earlier spring season and less summer moisture

3.7.2 Regulatory Setting

International

United Nations Framework Convention on Climate Change, Kyoto Protocol, and Paris Agreement

In 1992, numerous countries joined an international treaty, the United Nations Framework Convention on Climate Change (UNFCCC), as a framework for international cooperation to combat climate change by limiting average global temperature increases and the resulting climate change, and coping with associated impacts. Currently, there are 197 Parties (196 States and 1 regional economic integration organization) in the UNFCCC (UNFCCC 2019).

By 1995, countries launched negotiations to strengthen the global response to climate change, and, two years later, adopted the Kyoto Protocol, which was the first international agreement to regulate GHG emissions. The Kyoto Protocol legally binds developed country Parties to emission reduction targets. The Protocol's first commitment period started in 2008 and ended in 2012. The second commitment period began on January 1, 2013 and will end in 2020. More than 160 countries signed the Kyoto Protocol (UNFCCC 2019). In 2001, President George W. Bush indicated that he would not submit the treaty to the U.S. Senate for ratification, which effectively ended the United States involvement in the Kyoto Protocol.

The 2015 Paris Agreement, adopted in Paris on December 12, 2015, marks the latest step in the evolution of the UN climate change regime and builds on the work undertaken under the Convention. The Paris Agreement charts a new course in the global effort to combat climate change. The Paris Agreement central aim is to strengthen the global response to the threat of climate change by keeping a global temperature rise this century well below 2°C above pre-industrial levels and to pursue efforts to limit the temperature increase even further to 1.5°C (UNFCCC 2019). The Paris Agreement also aims to strengthen the ability of countries to deal with the impacts of climate change. The Paris Agreement requires all Parties to put forward their best efforts through nationally determined contributions and to strengthen these efforts in the years ahead.

The Paris Agreement entered into force on November 4, 2016, thirty days after the date on which at least 55 Parties to the Convention accounting in total for at least an estimated 55% of the total global GHG emissions have deposited their instruments of ratification, acceptance, approval or accession with the Depositary (UNFCCC 2019). On June 2, 2017 President Donald Trump announced his intention to withdraw from the Paris Agreement. The United Sates formally announced its resignation on November 4, 2019. Subsequently, withdrawal would be effective one year after notification in 2020, with the earliest withdrawal date on November 4, 2020.

Federal

Massachusetts v. U.S. Environmental Protection Agency

On April 2, 2007, in *Massachusetts v. U.S. Environmental Protection Agency*, the U.S. Supreme Court ruled that CO_2 was a pollutant and directed the EPA administrator to determine whether GHG emissions from new motor vehicles cause or contribute to air pollution that may reasonably be anticipated to endanger public health or welfare, or whether the science is too uncertain to make a reasoned decision. In making these decisions, the EPA administrator is required to follow the language of Section 202(a) of the Clean Air Act. On December 7, 2009, the administrator signed a final rule with two distinct findings regarding GHGs under Section 202(a) of the Clean Air Act:

- The elevated concentrations of GHGs—CO_2, CH_4, N_2O, hydrofluorocarbons, perfluorocarbons, and SF_6—in the atmosphere threaten the public health and welfare of current and future generations. This is referred to as the "endangerment finding."
- The combined emissions of GHGs—CO_2, CH_4, N_2O, and hydrofluorocarbons—from new motor vehicles and new motor vehicle engines contribute to the GHG air pollution that endangers public health and welfare. This is referred to as the "cause or contribute finding."

These two findings were necessary to establish the foundation for regulation of GHGs from new motor vehicles as air pollutants under the Clean Air Act.

Energy Independence and Security Act

On December 19, 2007, President George W. Bush signed the Energy Independence and Security Act of 2007. Among other key measures, the act would do the following to aid in the reduction of national GHG emissions:

1. Increase the supply of alternative fuel sources by setting a mandatory Renewable Fuel Standard requiring fuel producers to use at least 36 billion gallons of biofuel by 2022.
2. Set a target of 35 miles per gallon (mpg) for the combined fleet of cars and light trucks by model year 2020 and direct the National Highway Traffic Safety Administration (NHTSA) to establish a fuel economy program for medium- and heavy-duty trucks and create a separate fuel economy standard for work trucks.
3. Prescribe or revise standards affecting regional efficiency for heating and cooling products and procedures for new or amended standards, energy conservation, energy efficiency labeling for consumer electronic products, residential boiler efficiency, electric motor efficiency, and home appliances.

EPA and National Highway Traffic Safety Administration Joint Final Rule for Vehicle Standards

In response to the U.S. Supreme Court ruling discussed above, the Bush Administration issued Executive Order (EO) 13432 in 2007 directing the EPA, the Department of Transportation, and the Department of Energy to establish regulations that reduce GHG emissions from motor vehicles, non-road vehicles, and non-road engines by 2008. In 2009, the National Highway Traffic Safety Administration (NHTSA) issued a final rule regulating fuel efficiency and GHG emissions from cars and light-duty trucks for model year 2011; and, in 2010, the EPA and NHTSA issued a final rule regulating cars and light-duty trucks for model years 2012–2016 (75 FR 25324–25728).

In 2010, President Obama issued a memorandum directing the Department of Transportation, Department of Energy, EPA, and NHTSA to establish additional standards regarding fuel efficiency and GHG reduction, clean fuels, and advanced vehicle infrastructure. In response to this directive, the EPA and NHTSA proposed stringent, coordinated federal GHG and fuel economy standards for model years 2017–2025 light-duty vehicles. The proposed standards projected to achieve 163 grams per mile of CO_2 in model year 2025, on an average industry fleet-wide basis, which is equivalent to 54.5 miles per gallon if this level were achieved solely through fuel efficiency. The final rule was adopted in 2012 for model years 2017–2021 (77 FR 62624–63200). On January 12, 2017, EPA finalized its decision to maintain the current GHG emissions standards for model years 2022–2025 cars and light trucks (EPA 2017b).

In August 2016, the EPA and NHTSA announced the adoption of the phase two program related to the fuel economy and GHG standards for medium- and heavy-duty trucks. The phase two program will apply to vehicles with model year 2018 through 2027 for certain trailers, and model years 2021 through 2027 for semi-trucks, large pickup trucks, vans, and all types and sizes of buses and work trucks. The final standards are expected to lower CO_2 emissions by approximately 1.1 billion MT and reduce oil consumption by up to 2 billion barrels over the lifetime of the vehicles sold under the program (EPA and NHTSA 2016).

In August 2018, EPA and NHTSA proposed to amend certain fuel economy and GHG standards for passenger cars and light trucks and establish new standards for model years 2021 through 2026. Compared to maintaining the post-2020 standards now in place, the 2018 proposal would increase U.S. fuel consumption by about half a million barrels per day (2%–3% of total daily consumption, according to the Energy Information Administration) and would impact the global climate by 3/1000th of one degree Celsius by 2100 (EPA and NHTSA 2018). California and other states have stated their intent to challenge federal actions that would delay or eliminate GHG reduction measures and have committed to cooperating with other countries to implement global climate change initiatives. Thus, the timing and consequences of the 2018 federal proposal are speculative at this time.

State

The statewide GHG emissions regulatory framework is summarized as follows by category: state climate change targets, building energy, renewable energy and energy procurement, mobile sources, solid waste, water, and other state regulations and goals. The following text describes executive orders (EOs), assembly bills (ABs), senate bills (SBs), and other regulations and plans that would directly or indirectly reduce GHG emissions. The State's adoption and implementation of various legislation demonstrates California's leadership in addressing the critical challenge of addressing climate change. Of importance, the proposed project and/or users of the proposed project would be required to comply with the various regulatory measures that would reduce GHG emissions, which would reduce the proposed project's contribution to cumulative GHG emissions and associated climate change impacts.

State Climate Change Targets

The state has taken a number of actions to address climate change. These include EOs, legislation, and CARB plans and requirements. These are summarized as follows.

EO S-3-05. EO S-3-05 (June 2005) established California's GHG emissions reduction targets and laid out responsibilities among the state agencies for implementing the EO and for reporting on progress toward the targets. This EO established the following targets:

- By 2010, reduce GHG emissions to 2000 levels
- By 2020, reduce GHG emissions to 1990 levels
- By 2050, reduce GHG emissions to 80% below 1990 levels

AB 32. In furtherance of the goals established in EO S-3-05, the Legislature enacted AB 32 (Núñez and Pavley). The bill is referred to as the California Global Warming Solutions Act of 2006 (September 27, 2006). AB 32 provided initial direction on creating a comprehensive multiyear program to limit California's GHG emissions at 1990 levels by 2020 and initiate the transformations required to achieve the state's long-range climate objectives.

SB 32 and AB 197. SB 32 and AB 197 (enacted in 2016) are companion bills. SB 32 codified the 2030 emissions reduction goal of EO B-30-15 by requiring CARB to ensure that statewide GHG emissions are reduced to 40% below 1990 levels by 2030.

CARB's Climate Change Scoping Plan. One specific requirement of AB 32 is for CARB to prepare a "scoping plan" for achieving the maximum technologically feasible and cost-effective GHG emission reductions by 2020 (Cal. Health and Safety Code § 38561[a]), and to update the plan at least once every 5 years. In 2008, CARB approved the first scoping plan. The *Climate Change Scoping Plan: A Framework for Change* (*Scoping Plan*) included a mix of recommended strategies that combined direct regulations, market-based approaches, voluntary measures, policies, and other emission reduction programs calculated to meet the 2020 statewide GHG emission limit and initiate the transformations needed to achieve the state's long-range climate objectives.

In 2014, CARB approved the first update to the Scoping Plan. The *First Update to the Climate Change Scoping Plan: Building on the Framework* (*First Update)* defined the state's GHG emission reduction priorities for the next 5 years and laid the groundwork to start the transition to the post-2020 goals set forth in EOs S-3-05 and B-16-2012. The *First Update* concluded that California is on track to meet the 2020 target but recommended a 2030 mid-term GHG reduction target be established to ensure a continuum of action to reduce emissions (CARB 2014).

In 2015, as directed by EO B-30-15, CARB began working on an update to the Scoping Plan to incorporate the 2030 target of 40% below 1990 levels by 2030 to keep California on its trajectory toward meeting or exceeding the long-term goal of reducing GHG emissions to 80% below 1990 levels by 2050 as set forth in S-3-05.

In December 2017, CARB adopted the *2017 Climate Change Scoping Plan Update (2030 Scoping Plan)* (CARB 2017a). The 2030 Scoping Plan builds on the successful framework established in the initial Scoping Plan and First Update, while identifying new, technologically feasible and cost-effective strategies that will serve as the framework to achieve the 2030 GHG target and define the state's climate change priorities to 2030 and beyond.

EO B-30-15. EO B-30-15 (April 2015) identified an interim GHG reduction target in support of targets previously identified under S-3-05 and AB 32. EO B-30-15 set an interim target goal of reducing GHG emissions to 40% below 1990 levels by 2030 to keep California on its trajectory toward meeting or exceeding the long-term goal of reducing GHG emissions to 80% below 1990 levels by 2050 as set forth in S-3-05.

EO B-55-18. EO B-55-18 (September 2018) establishes a statewide policy for the state to achieve carbon neutrality no later than 2045, and achieve and maintain net negative emissions thereafter.

Building Energy

Title 24, Part 6. Title 24 of the California Code of Regulations was established in 1978 and serves to enhance and regulate California's building standards. While not initially promulgated to reduce GHG emissions, Part 6 of Title 24 specifically established Building Energy Efficiency Standards that are designed to ensure new and existing buildings in California achieve energy efficiency and preserve outdoor and indoor environmental quality. These regulations are carefully scrutinized and analyzed for technological and economic feasibility (Cal. Pub. Resources Code § 25402[d]) and cost effectiveness (Cal. Pub. Resources Code § 25402[b][2] and [b][3]). As a result, these standards save energy, increase electricity supply reliability, increase indoor comfort, avoid the need to construct new power plants, and help preserve the environment.

The current Title 24 standards are the 2016 Title 24 Building Energy Efficiency Standards, which became effective January 1, 2017. The 2019 Title 24 Building Energy Efficiency Standards, which will be effective January 1, 2020, will further reduce energy used and associated GHG emissions compared to current standards. In general, single-family residences built to the 2019 standards are anticipated to use approximately 7% less energy due to energy efficiency measures than those built to the 2016 standards; once rooftop solar electricity generation is factored in, single-family residences built under the 2019 standards will use approximately 53% less energy than those under the 2016 standards (CEC 2018). Nonresidential buildings built to the 2019 standards are anticipated to use an estimated 30% less energy than those built to the 2016 standards (CEC 2018).

Title 24, Part 11. In addition to the CEC's efforts, in 2008, the California Building Standards Commission adopted the nation's first green building standards. The California Green Building Standards Code (Cal. Code Regs. tit. 24 Part 11) is commonly referred to as CALGreen, and establishes minimum mandatory standards as well as voluntary standards pertaining to the planning and design of sustainable site development, energy efficiency (in excess of the California Energy Code requirements), water conservation, material conservation, and interior air quality.

Title 20. Title 20 of the California Code of Regulations requires manufacturers of appliances to meet state and federal standards for energy and water efficiency. The CEC certifies an appliance based on a manufacturer's demonstration that the appliance meets the standards.

Renewable Energy and Energy Procurement

SB 1078, EO S-14-08, SBX1-2, SB 350, and SB 100. SB 1078 (Sher) (September 2002) established the Renewable Portfolio Standard (RPS) program, which required an annual increase in renewable generation by the utilities equivalent to at least 1% of sales, with an aggregate goal of 20% by 2017. EO S-14-08 (November 2008) required that all retail suppliers of electricity in California serve 33% of their load with renewable energy by 2020. SB X1 2 expanded the RPS by establishing a renewable energy target of 20% of the total electricity sold to retail customers in California per year by December 31, 2013, and 33% by December 31, 2020, and in subsequent years. SB 350 (October 2015) further expanded the RPS by establishing a goal of 50% of the total electricity sold to retail customers in California per year by December 31, 2030. SB 100 (2018) increased the standards set forth in SB 350 establishing that 44% of the total electricity sold to retail customers in California per year by December 31, 2024, 52% by December 31, 2027, and 60% by December 31, 2030, be secured from qualifying renewable energy sources. SB 100 states that it is the policy of the state that eligible renewable energy resources and zero-carbon resources supply 100% of the retail sales of electricity to California.

Mobile Sources

AB 1493. AB 1493 (Pavley) (July 2002) was enacted in a response to the transportation sector accounting for more than half of California's CO_2 emissions. AB 1493 required CARB to set GHG emission standards for passenger vehicles, light-duty trucks, and other vehicles determined by the state board to be vehicles that are primarily used for noncommercial personal transportation in the state. The bill required that CARB set GHG emission standards for motor vehicles manufactured in 2009 and all subsequent model years. CARB adopted the standards in September 2004. When fully phased in, the near-term (2009–2012) standards will result in a reduction of about 22% in GHG emissions compared to the emissions from the 2002 fleet, while the mid-term (2013–2016) standards will result in a reduction of about 30%.

EO S-1-07. EO S-1-07 (January 2007, implementing regulation adopted in April 2009) sets a declining LCFS for GHG emissions measured in CO_2e grams per unit of fuel energy sold in California. The target of the LCFS is to reduce the carbon intensity of California passenger vehicle fuels by at least 10% by 2020 (17 CCR 95480 et seq.).

SB 375. SB 375 (Steinberg) (September 2008) addresses GHG emissions associated with the transportation sector through regional transportation and sustainability plans. SB 375 requires CARB to adopt regional GHG reduction targets for the automobile and light-truck sector for 2020 and 2035 and to update those targets every 8 years. SB 375 requires the state's 18 regional metropolitan planning organizations (MPOs) to prepare a Sustainable Communities Strategy (SCS) as part of their Regional Transportation Plan (RTP) that will achieve the GHG reduction targets set by CARB.

In September 2010, CARB adopted the first SB 375 targets for the regional metropolitan planning organizations. The targets for the Butte County Association of Governments (BCAG) are a 1% increase in emissions per capita by 2020 and a 1% increase by 2035. Achieving these goals through adoption of a SCS is the responsibility of the metropolitan planning organizations. On December 8, 2016, the BCAG Regional Council adopted the 2016 RTP/SCS, which builds upon the progress made in the 2012 RTP/SCS. The updated RTP/SCS quantified a 6% reduction by 2020 and a 7% reduction by 2030 (BCAG 2016). In December 2016, CARB accepted BCAG's quantification of GHG reductions and its determination the SCS, if implemented, would achieve BCAG targets

Advanced Clean Cars Program and Zero-Emissions Vehicle Program. The Advanced Clean Cars program (January 2012) is a new emissions-control program for model years 2015 through 2025. The program combines the control of smog- and soot-causing pollutants and GHG emissions into a single coordinated package. To improve air quality, CARB has implemented new emission standards to reduce smog-forming emissions beginning with 2015 model year vehicles. It is estimated that in 2025 cars will emit 75% less smog-forming pollution than the average new car sold today. To reduce GHG emissions, CARB, in conjunction with the EPA and the NHTSA, adopted new GHG standards for model year 2017 to 2025 vehicles; the new standards are estimated to reduce GHG emissions by 34% in 2025. The ZEV program will act as the focused technology of the Advanced Clean Cars program by requiring manufacturers to produce increasing numbers of ZEVs and plug-in hybrid electric vehicles in the 2018 to 2025 model years.

Water

EO B-29-15. In response to the ongoing drought in California, EO B-29-15 (April 2015) set a goal of achieving a statewide reduction in potable urban water usage of 25% relative to water use in 2013. The term of the EO extended through February 28, 2016, although many of the directives have become permanent water-efficiency standards and requirements. The EO includes specific directives that set strict limits on water usage in the state.

Solid Waste

AB 939 and AB 341. In 1989, AB 939, known as the Integrated Waste Management Act (Cal. Pub. Resources Code, § 40000 *et seq*.), was passed because of the increase in waste stream and the decrease in landfill capacity. AB 939 mandated a reduction of waste being disposed where jurisdictions were required to meet diversion goals of all solid waste through source reduction, recycling, and composting activities of 25% by 1995 and 50% by the year 2000. AB 341 (Chapter 476, Statutes of 2011) amended the California Integrated Waste Management Act of 1989 to include a provision declaring that it is the policy goal of the state that not less than 75% of solid waste generated be source-reduced, recycled, or composted by the year 2020, and annually thereafter.

California State University

CSU, Chico Climate Action Plan

The California State University (CSU) Chico Climate Action Plan (CAP) recommends a series of actions that the campus must implement to reduce its contributions to global climate change by reducing GHG emissions (CSU, Chico 2011). CSU, Chico's CAP seeks to provide a path in order to achieve 1990 emissions levels by the year 2020. In addition, the CAP discusses actions necessary to reach climate neutrality by 2030 and opportunities that the University has to meet in order to achieve the target. Notably, CSU, Chico has started an update process for the CAP. The updated CAP would not be adopted prior to the update of the Master Plan. The following campus-related strategies have been identified to reduce GHG emissions by 40 percent:

- Select an electrical services provider that provides a more climate-friendly power content label,
- Retrofit lighting systems in 15 campus buildings,
- Upgrade Heating Ventilation and Air Conditioning (HVAC) systems, boiler-chiller, and air handler efficiency,
- Retrofit domestic H_2O booster pump in Housing,
- Install PowerSave power management software,
- Implement server virtualization,
- Reduce single-occupancy vehicle traffic to campus, and
- Promote University-sponsored travel education

CSU Sustainability Policy

In May 2014, the CSU Board of Trustees approved the systemwide sustainability policy focused on integrating sustainability into all facets on all CSU campuses, including academics, facilities operations, the built environment, and student life. The CSU Sustainability Policy directs CSU campuses to reduce solid waste disposal by 50 percent by 2016 and by 80 percent by 2020 and move toward zero waste. Zero waste requires full life-cycle considerations of products, from purchase to end-of-life (CSU 2014).

The CSU Sustainability Policy established the following goals related to reducing GHG emissions:

- Reduce GHG emissions to 1990 levels by 2020,
- Reduce GHG emissions 80 percent below 1990 levels by 2040,
- Procure 33 percent of energy supply from renewable sources by 2020,
- Increase on-site energy generation from 44 to 80 megawatts by 2020, and
- Promote use of alternative fuels and transportation programs.
- Operate all CSU buildings/facilities in the most energy efficient manner possible.
- Identify energy efficiency improvement measures to the greatest extent possible.
- Cooperate with all federal, state and local governments to accomplish energy conservation and utilities management objectives and inform /create awareness to entire campus community.
- Designate an energy/utilities manager to carry out energy conservation and utilities management programs.
- Monitor monthly energy and utilities usage and provide the Chancellor's Office the necessary data.
- Develop and maintain a campuswide integrated strategic energy resource plan.
- Reduce 10% by 2016 , reduce 20% by 2020, and use recycled/reclaim water where possible,

- Reduce per capita landfill 50% by 2016, 80% by 2020, and move to zero waste,
- Reduce hazardous waste to the extent possible,
- Promote use of environmentally preferred vendors and use recycled/reusable/refillable products,
- Move toward Zero Waste, reduce or use recycled packaging, and participate in CalRecycle "Buy Recycled" Program,
- Report on all recycled content product categories and improve tracking and reporting procedures,
- Design all future and current building projects to consider energy efficient and sustainability.
- Monitor building sustainability/energy performance at systemwide level.
- Design and build all new buildings to meet or exceed LEED Silver.

Local

It should be noted that because CSU, Chico is a part of the California State University system, CSU, Chico is exempt from local regulations provided below. The exemption is based on the doctrine of sovereign immunity. The immunity applies where, as here, the state is operating in a governmental capacity by utilizing its power and responsibility in connection with the construction and development of CSU, Chico - a state university campus. Therefore, the regulations discussed herein have been provided for informational purposes.

Butte County Association of Governments

The BCAG region includes all local governments within Butte County. BCAG is responsible for the development of federal and state transportation plans and programs that secure funding for transportation improvements in the County. BCAG adopted the 2016 RTP/SCS in November 2016. Notably, growth projected for CSU, Chico has been incorporated into the long-term regional growth forecasts as a component of the City of Chico projections. For Butte County, the 2016 RTP/SCS sets a regional target of a 6% reduction in per capita GHG emissions for the planning year 2020 and a 7% reduction in per capita GHG emissions in planning year 2035, as compared to baseline per capita emissions levels in 2005. The 2016 RTP/SCS outlines the region's proposed transportation network, emphasizing multimodal system enhancements, system preservation, and improved access to high quality transit, as well as land use development that complements this transportation network (BCAG 2016). In December 2016, CARB accepted BCAG's determination that the 2016 RTP/SCS would meet the region's GHG reduction targets.

Butte County Air Quality Management District

California has 35 Air Pollution Control Districts and Air Quality Management Districts, many of which are currently addressing climate change issues by developing significance thresholds, performance standards, and mitigation measures. The Butte County Air Quality Management District (BCAQMD) is the regional agency responsible for the regulation and enforcement of federal, state, and local air pollution control regulations in the County where the proposed project is located. Neither the University, the BCAQMD, nor the City have adopted GHG emissions thresholds adopted for the purpose of evaluating a project's GHG emissions. Notably, the City of Chico's 2020 Climate Action Plan establishes a goal of reducing communitywide GHG emissions for the year 2020 to 385,749 MT CO_2e which is 25% below the base year of 2005. The University's CAP provides goals of reducing campus wide GHG emissions by 40% from baseline emissions levels by 2020 and a goal of carbon neutrality by 2030. Therefore, this assessment evaluates the net operational GHG emissions, including amortized construction emissions, with the goals set forth in the University's CAP.

3.7.3 Thresholds of Significance

The significance criteria used to evaluate the project impacts to greenhouse gases/climate change are based on Appendix G of the CEQA Guidelines. According to Appendix G of the CEQA Guidelines, a significant impact related to greenhouse gas emissions would occur if the project would:

1. Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment.
2. Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases.

As discussed previously, the BCAQMD has not adopted GHG thresholds for the evaluation of projects. Furthermore, the CSU, Chico CAP is not a qualified CAP under CEQA Section 15183.5, and does not include project-level screening or a significance threshold. Therefore, an efficiency metric was calculated by dividing the allowable GHG emissions inventory in a selected calendar year by the service population (sum number of faculty, staff, and students), which then leads to the identification of a quantity of emissions that can be permitted on a per service population basis without significantly impacting the environment. This approach is appropriate for the proposed project because it measures the project's emissions on a per service population basis to determine its overall GHG efficiency relative to statewide regulatory GHG reduction goals, as opposed to applying a relatively arbitrary threshold limit that may not be well substantiated. Under the efficiency metric, the proposed project's GHG emissions are evaluated herein relative to the emissions level in the proposed project's build-out year and the build-out year's associated efficiency metric. To that end, an efficiency metric was calculated based on the 2030 emissions level (year of project build-out) and the proposed project's service population (sum of number of faculty, staff, and students provided by the proposed project).

The CSU, Chico 2008 GHG emissions inventory was adjusted to assess consistency with state goals where an efficiency metric was calculated from using the 2030 Scoping Plan. The 2008 GHG emissions inventory was adjusted by 59 percent to achieve SB 32's 2030 reduction target (40% below 1990 levels). Therefore, the 2030 efficiency metric was estimated to be 0.80 MT CO_2e service population year. The 0.80 MT CO_2e service population per year was arrived at by dividing CSU, Chico's GHG emissions reduction limit required for 2020 (17,423 MT CO_2e) by the total number of faculty, staff, and students (i.e., service population) provided by CSU, Chico in 2030 (21,883 people). This impact analysis, therefore, adds amortized construction emissions over the life of the proposed project, 30 years, to the estimated annual operational emissions and then compares net operational emissions to the calculated efficiency threshold of 0.8 MT CO_2e per service population per year.

3.7.4 Impact Analysis

Methodology

The proposed Master Plan identifies anticipated development by land use type and square footage. However, proposed project specifics for construction and operation of the proposed project are currently not available. Nonetheless, project-generated emissions were estimated in a good-faith effort to disclose the magnitude of potential GHG emissions generated during construction and operation of the proposed project. Emissions from the existing land uses were estimated using CalEEMod to present the net change in GHG emissions. The estimation of operational emissions generated under existing conditions was based on the square footage of buildings, existing energy consumption, and traffic data.

Construction Emissions

CalEEMod Version 2016.3.2 was used to estimate potential project-generated GHG emissions during construction. Construction of the proposed project would result in GHG emissions primarily associated with use of off-road construction equipment, on-road hauling and vendor (material delivery) trucks, and worker vehicles. The analysis of GHG emissions used the same methodology and assumptions as the analysis of air quality impacts in Section 3.2, Air Quality, of this EIR. All details for construction criteria air pollutants discussed in Section 3.2.4, Analytical Method (Construction Emissions) are also applicable for the estimation of construction-related GHG emissions. As such, see Section 3.2 for a discussion of construction emissions calculation methodology and assumptions used in the GHG emissions analysis.

Operational Emissions

Emissions from the operational phase of the proposed project were estimated using CalEEMod Version 2016.3.2. Operational year 2030 was assumed to be consistent with the traffic impact analysis (TIA) prepared for the Project (Fehr and Peers 2019).

Emissions from the existing land uses (Existing Scenario) were also estimated using CalEEMod to present the net change in GHG emissions. Operational year 2018 was assumed for the existing scenario. The total existing land use within the CSU, Chico campus that is currently occupied and therefore, evaluated in the existing scenario is approximately 2,187,026 square feet of non-residential campus facilities and 536,356 square feet (2,260 beds) of student housing.

Potential proposed project-generated and existing scenario operational GHG emissions were estimated for area sources (landscape maintenance), energy sources (natural gas and electricity), mobile sources, solid waste, and water and wastewater treatment. Emissions from each category are discussed in the following text with respect to the proposed project. For additional details, see Section 3.2.4, Analytical Method (Operational Emissions), for a discussion of operational emission calculation methodology and assumptions, specifically for area, energy (natural gas), and mobile sources.

Area

CalEEMod was used to estimate GHG emissions from the proposed project's area sources, which would include operation of gasoline-powered landscape maintenance equipment, which produce minimal GHG emissions. See Section 3.2.4 for a discussion of landscaping equipment emissions calculations. Consumer product use and architectural coatings result in VOC emissions, which are analyzed in the air quality analysis only (see Section 3.2), and would generate little to no GHG emissions.

Energy

The estimation of operational energy emissions was based on consumption and future forecast data provided presented in the CSU, Chico Master Plan Report as discussed in Section 3.2.4, Air Quality, for both the proposed project's and the existing scenario land uses.

CalEEMod default energy intensity factors (CO_2, CH_4, and N_2O mass emissions per kilowatt-hour) for Pacific Gas and Electric Company (PG&E) is based on the value for PG&E's energy mix in 2008. As explained in Section 3.7.2, State, SB 100 increased the standards set forth by SB 350 calling for 52 percent of the total electricity sold to retail customers in California to come from renewable energy sources by 2027 and 60 percent by 2030. The CO_2 emissions intensity factor for utility energy use in CalEEMod was adjusted consistent with PG&E's 2017 Power Content Label, which reported that 33 percent of the power mix was generated by eligible renewable sources (PG&E 2018). The CO_2 emissions intensity factor in CalEEMod was updated in accordance with SB 100 for Project operations (2030), which would reflect the increase in the percentage of renewable energy in PG&E's energy portfolio.

Mobile Sources

All details for criteria air pollutants discussed in Section 3.2.4 are also applicable for the estimation of operational mobile source GHG emissions. Regulatory measures related to mobile sources include AB 1493 (Pavley) and related federal standards. AB 1493 required that CARB establish GHG emission standards for automobiles, light-duty trucks, and other vehicles determined by CARB to be vehicles that are primarily used for noncommercial personal transportation in the state. In addition, the NHTSA and EPA have established corporate fuel economy standards and GHG emission standards, respectively, for automobiles and light-, medium-, and heavy-duty vehicles. Implementation of these standards and fleet turnover (replacement of older vehicles with newer ones) will gradually reduce emissions from the Project's motor vehicles. The effectiveness of fuel economy improvements was evaluated by using the CalEEMod emission factors for motor vehicles in 2030 for the proposed project and 2018 for the existing scenario to the extent it was captured in EMFAC 2014.

Solid Waste

The proposed project and existing scenario would generate solid waste and, therefore, result in CO_2e emissions associated with landfill off-gassing. CalEEMod default values for solid waste generation were used to estimate GHG emissions associated with solid waste for the proposed project and the existing scenario. It was assumed that the proposed project would have an 80-percent solid waste diversion rate, consistent with the solid waste diversion requirements of CSU Sustainability Policy. For the existing scenario, a 50-percent diversion rate was assumed, which is consistent with the 2016 waste disposal rate goal as presented in the CSU Sustainability Policy.

Water and Wastewater Treatment

Supply, conveyance, treatment, and distribution of water for the proposed project and the existing scenario require the use of electricity, which would result in associated indirect GHG emissions. Similarly, wastewater generated by the proposed project requires the use of electricity for conveyance and treatment, along with GHG emissions generated during wastewater treatment. CalEEMod default values were adjusted based on the 2018-19 consumption data provided by CSU, Chico. In 2018-19, the campus consumed approximately 48,005,803 gallons for indoor use and 9,786,764 gallons for irrigation. Consistent with the CSU Sustainability Policy, it was assumed that the proposed project would reduce water consumption by 20 percent by 2020.

Impact Analysis

Impact GHG-1. The project would not generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment. (Less than Significant)

Construction Emissions

Construction of the proposed project would result in GHG emissions, which would primarily be generated by the use of off-road construction equipment and on-road vehicles (haul trucks, vendor trucks, and worker vehicles). CalEEMod was used to calculate the annual GHG emissions based on the construction scenario described in Section 3.7.2, Methodology (Construction Emissions). Construction of the proposed project was assumed to last a total of approximately 10 years, the period assumed for Master Plan buildout as stated in Chapter 2, Project Description. On-site sources of GHG emissions would include off-road equipment and off-site sources including haul trucks, vendor/delivery trucks, and worker vehicles used during commutes. Table 3.7-3 presents construction emissions for the proposed project from on-site and off-site emission sources.

Table 3.7-3 Estimated Annual Construction GHG Emissions

Year	CO_2	CH_4	N_2O	CO_2e
	Metric Tons per Year			
2021	229.15	0.012	0.00	631.05
2022	146.96	0.02	0.00	147.50
Total	**376.11**	**0.14**	**0.00**	**778.55**

Notes: GHG = greenhouse gas; CO_2 = carbon dioxide; CH_4 = methane; N_2O = nitrous oxide; CO_2e = carbon dioxide equivalent.
See Appendix B for complete results.

As shown in Table 3.7-3, the estimated total GHG emissions from the worst-case construction scenario would be approximately 779 MT CO_2e. Therefore, the average annual construction emissions over the worst-case construction scenario would be approximately 389 MT CO_2e. Over the assumed 10-year construction period, it is estimated that proposed project construction would result in approximately 3,893 MT CO_2e. Estimated project-generated construction emissions amortized over 30 years would be approximately 130 MT CO_2e per year. Because there is no separate GHG threshold for construction, the evaluation of significance is discussed in the operational emissions analysis in the following text.

Operational Emissions

Operation of the proposed project and operation under the existing scenario would generate GHG emissions through motor vehicle trips; landscape maintenance equipment operation (area source); energy use (natural gas and electricity); solid waste disposal; water supply, treatment, and distribution; and wastewater treatment. CalEEMod was used to calculate the annual GHG emissions based on the operational assumptions described in Section 3.7.3, Methodology (Operational Emissions).

The estimated operational project-generated and existing scenario GHG emissions from area sources, energy usage, motor vehicles, solid waste generation, and water usage and wastewater generation, and the net change in emissions (proposed project minus the existing scenario) are shown in Table 3.7-4.

Table 3.7-4 Estimated Annual Operational GHG Emissions

Emission Source	CO_2	CH_4	N_2O	CO_2e
	Metric Tons per Year			
Project Buildout				
Area	63.14	0.06	0.00	64.67
Energy	13,116.42	0.64	0.25	13,206.84
Mobile	74,722.46	2.86	0.00	74,793.92
Solid waste	136.10	8.04	0.00	337.19
Water supply and wastewater	55.89	1.59	0.04	107.15
			Total proposed project annual emissions	**88,509.77**

Table 3.7-4 Estimated Annual Operational GHG Emissions

Emission Source	CO_2	CH_4	N_2O	CO_2e
	Metric Tons per Year			
			Amortized construction emissions	129.77
			Total operational + amortized construction GHGs	**88,639.54**
			Project service population	**21,883**[3]
			Service person/per capita GHG efficiency	**4.05**
Existing Scenario				
Area	38.48	0.04	0.00	39.45
Energy	12,631.28	0.49	0.19	12,700.43
Mobile	90,871.76	6.09	0.00	91,024.03
Solid waste	340.26	20.11	0.00	842.98
Water supply and wastewater	81.87	1.57	0.04	132.31
			Total existing annual emissions	**104,739.20**
			Project service population	**19,583**[4]
			Service person/per capita GHG efficiency	**5.35**

Notes: GHG = greenhouse gas; CO_2 = carbon dioxide; CH_4 = methane; N_2O = nitrous oxide; CO_2e = carbon dioxide equivalent.
See Appendix B for complete results.
Totals may not sum due to rounding.
The proposed project emissions reflect operational year 2030.
The existing scenario emissions reflect operational year 2018.
Estimates for the proposed project and the existing scenario are based on mobile data provided by Fehr and Peers and the energy (electricity and natural gas) consumption data was provided by CSU, Chico. Water and solid waste consumption data was estimated by CalEEMod.

As shown in Table 3.7-4, the campuses existing operations is estimated to generate 104,739 MT CO_2e per year. Based on a service population of 19,583 people (19,651 students plus 2,232 faculty and staff), the existing scenario would result in GHG emissions of approximately 5.35 MT CO_2e per service population per year. Comparatively, estimated annual proposed project-generated GHG emissions would be approximately 88,510 MT CO_2e per year as a result of project operations only. With amortized construction emissions, the proposed project would result in approximately 88,640 MT CO_2e per year. Based on a proposed project's service population of 21,883 people (17,488 students plus 2,095 faculty and staff), the proposed project would result in GHG emissions of approximately 4.05 MT CO_2e per service population per year. Thus, the proposed project would result in a net reduction of approximately 1.30 MT CO_2e per service population per year, which would not exceed the calculated efficiency significance threshold of 0.8 MT CO_2e per service population per year. Therefore, the proposed project would not generate greenhouse gas emissions, either directly or indirectly, that would have a significant impact on the environment. The impact would be **less than significant.**

Impact GHG-2. The project would not conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases. (Less than Significant)

Consistency with the BCAG's 2016 Regional Transportation Plan

As previously discussed in Section 3.7.2, Regulatory Setting, CSU, Chico is exempt from local regulations such as BCAG's 2016 RTP/SCS. The exemption is based on the doctrine of sovereign immunity. However, description of

[3] 19,651 students + 2,232 faculty and staff = 21,883
[4] 17,488 students + 2,095 faculty and staff = 19,583

the how the proposed project does not conflict with the 2016 RTP/SCS has been provided for informational purposes. BCAG's 2016 RTP/SCS is a regional growth-management strategy that targets per capita GHG reduction from passenger vehicles and light-duty trucks within Butte County. The 2016 RTP/SCS incorporates local land use projections and circulation networks in city and county general plans. Typically, a project would be consistent with the 2016 RTP/SCS if the project does not exceed the underlying growth assumptions within the 2016 RTP/SCS. The proposed Master Plan would support an increase in on-campus student enrollment to 18,600 full-time equivalent students (FTES) by 2030, from a current FTES of 16,437 in the fall 2018. In addition, faculty and staff needed to support student growth would increase at a rate of 1% and 0.5%, respectively. The student population is currently supported by 989 instructional faculty and 1,106 staff in fall 2018. CSU, Chico's population growth associated with the proposed Master Plan would represent less than 1% of the total projected population in Butte County in 2030 (285,534 people). Therefore, the proposed project would not result in significant population growth that would substantially exceed BCAG growth projections for the County. Furthermore, the major goals of the 2016 RTP/SCS are outlined in Table 3.7-5, along with the proposed project's consistency with them.

Table 3.7-5 Project Consistency with the BCAG 2016 RTP/SCS

RTP/SCS Goal	Proposed Project Consistency
A safe and efficient regional road system that accommodates the demand for movement of people and goods	*Does not apply.* The proposed project would not inhibit BCAG from preserving the existing transportation system.
Provide an efficient, effective, coordinated regional transit system that increases mobility for urban and rural populations, including those located in disadvantaged areas of the region.	*Does not apply.* The proposed project would not inhibit BCAG from preserving expanding the regional transit system.
A rail system that provides safe and reliable service for people and goods.	*Does not apply.* The proposed project would not inhibit BCAG from expanding the rail system.
Provide a transportation system that enables safe movement of goods in and through Butte County.	*Does not apply.* The proposed project would not inhibit BCAG from improving highway and arterial capacity throughout the County.
A fully functional and integrated air service and airport system complementary to the countywide transportation system.	*Does not apply.* The proposed project would not inhibit BCAG from managing the air service and airport system.
A regional transportation system for bicyclists and pedestrians.	*Does not apply.* The proposed project would not inhibit BCAG from providing a transportation system for pedestrians and bicyclists.
Promote the use of Transportation Systems Management (ITS) technologies in the planning and programming process.	*Does not apply.* The proposed project would not inhibit BCAG from promoting use of TIS Technologies.
Reduce usage of nonrenewable energy resources for transportation purposes.	*Does not apply.* The proposed project would not inhibit BCAG from promoting reduced usage of renewable energy for transportation purposes.
Achieve air quality standards set by the EPA and the CARB.	*Consistent.* The proposed project would not inhibit BCAG from achieving air quality standards set forth by EPA and CARB as evidence in Section 3.4, Air Quality.
Provide economical, long-term solutions to transportation problems by encouraging community designs which encourage walking, transit, and bicycling.	*Does not apply.* The proposed project would not inhibit BCAG from promoting walking, biking, and other forms of active transportation.

Table 3.7-5 Project Consistency with the BCAG 2016 RTP/SCS

RTP/SCS Goal	Proposed Project Consistency
Develop and support financing strategies that provide for continuous implementation of the RTP projects and strategies.	*Does not apply.* The proposed project would not inhibit BCAG from financing RTP projects and strategies.
Provide a forum for participation and cooperation in transportation planning and facilitate relationships for transportation issues that transcend jurisdictional boundaries.	*Does not apply.* The proposed project would not inhibit BCAG from providing a forum for participating in transportation planning.
The transportation system should provide for convenient travel options for people and goods and maximize its productivity. The system should reduce both the time it takes to travel as well as the total costs of travel.	*Does not apply.* The proposed project would not inhibit BCAG from strengthening the regional transportation network for goods movement.
The public's investment in transportation should be protected by maintaining the transportation system. It is critical to preserve and ensure a safe regional transportation system.	*Does not apply.* The proposed project would not inhibit BCAG from preserving expanding the regional transportation system.
Incorporate SCS into the regional transportation planning process which works towards social equity, a healthy environment and a prosperous economy.	*Does not apply.* The proposed project would not inhibit BCAG from incorporating SCS into the regional transportation planning.

Source: BCAG 2016.

As shown in Table 3.7-5, the proposed project would not conflict with the goals within BCAG's 2016 RTP/SCS.

Consistency with CARB's Scoping Plan

The Scoping Plan (approved by CARB in 2008 and updated in 2014 and 2017) provides a framework for actions to reduce California's GHG emissions and requires CARB and other state agencies to adopt regulations and other initiatives to reduce GHGs. The Scoping Plan is not directly applicable to specific projects, nor is it intended to be used for project-level evaluations.[5] Under the Scoping Plan, however, there are several state regulatory measures aimed at the identification and reduction of GHG emissions. CARB and other state agencies have adopted many of the measures identified in the Scoping Plan. Most of these measures focus on area source emissions (e.g., energy usage, high-GWP GHGs in consumer products) and changes to the vehicle fleet (i.e., hybrid, electric, and more fuel-efficient vehicles) and associated fuels (e.g., Low Carbon Fuel Standard), among others.

The Scoping Plan recommends strategies for implementation at the statewide level to meet the goals of AB 32 and establishes an overall framework for the measures that will be adopted to reduce California's GHG emissions. Table 3.7-6 highlights measures that have been, or will be, developed under the Scoping Plan and presents the proposed Project's consistency with Scoping Plan measures. The proposed project would comply with all regulations adopted in furtherance of the Scoping Plan to the extent required by law and to the extent that they are applicable to the proposed project.

5 The Final Statement of Reasons for the amendments to the CEQA Guidelines reiterates the statement in the Initial Statement of Reasons that "[t]he Scoping Plan may not be appropriate for use in determining the significance of individual projects because it is conceptual at this stage and relies on the future development of regulations to implement the strategies identified in the Scoping Plan" (CNRA 2009).

Table 3.7-6 Proposed Project Consistency with Scoping Plan GHG Emission Reduction Strategies

Scoping Plan Measure	Measure Number	Proposed Project Consistency
Transportation Sector		
Advanced Clean Cars	T-1	*Consistent.* The proposed project's students, employees, and visitors would purchase vehicles in compliance with CARB vehicle standards that are in effect at the time of vehicle purchase.
Low Carbon Fuel Standard	T-2	*Consistent.* This is a statewide measure that cannot be implemented by a project applicant or lead agency. Nonetheless, this standard would be applicable to the fuel used by vehicles that would access the project site (i.e., motor vehicles driven by the proposed project's students, employees, and visitors use compliant fuels).
Regional Transportation-Related GHG Targets	T-3	*Not applicable.* The proposed project is not related to developing GHG emission reduction targets. To meet the goals of SB 375, the 2016 RTP/SCS is applicable to the proposed project. The proposed project would not preclude the implementation of this strategy.
Advanced Clean Transit	N/A	*Not applicable.* The proposed project would not prevent CARB from implementing this measure.
Last-Mile Delivery	N/A	*Not applicable.* The proposed project would not prevent CARB from implementing this measure.
Reduction in VMT	N/A	*Not applicable.* The proposed project would not prevent CARB from implementing this measure.
Vehicle Efficiency Measures 1. Tire Pressure 2. Fuel Efficiency Tire Program 3. Low-Friction Oil 4. Solar-Reflective Automotive Paint and Window Glazing	T-4	*Consistent.* These standards would be applicable to the light-duty vehicles that would access the proposed project site. Motor vehicles driven by the proposed project's students, employees, and visitors would maintain proper tire pressure when their vehicles are serviced. The proposed project's employees and customers would replace tires in compliance with CARB vehicle standards that are in effect at the time of vehicle purchase. Motor vehicles driven by the proposed project's students, employees, and visitors would use low-friction oils when their vehicles are serviced. The proposed project's employees and customers would purchase vehicles in compliance with CARB vehicle standards that are in effect at the time of vehicle purchase. In addition, the proposed project would not prevent CARB from implementing this measure.
Ship Electrification at Ports (Shore Power)	T-5	*Not applicable.* The proposed project would not prevent CARB from implementing this measure.
Goods Movement Efficiency Measures 1. Port Drayage Trucks 2. Transport Refrigeration Units Cold Storage Prohibition 3. Cargo Handling Equipment, Anti-Idling, Hybrid, Electrification 4. Goods Movement Systemwide Efficiency Improvements	T-6	*Not applicable.* The proposed project would not prevent CARB from implementing this measure.

Table 3.7-6 Proposed Project Consistency with Scoping Plan GHG Emission Reduction Strategies

Scoping Plan Measure	Measure Number	Proposed Project Consistency
5. Commercial Harbor Craft Maintenance and Design Efficiency 6. Clean Ships 7. Vessel Speed Reduction		
Heavy-Duty Vehicle GHG Emission Reduction • Tractor-Trailer GHG Regulation • Heavy-Duty Greenhouse Gas Standards for New Vehicle and Engines (Phase I)	T-7	*Consistent.* Heavy-duty vehicles would be required to comply with CARB GHG reduction measures. In addition, the proposed project would not prevent CARB from implementing this measure.
Medium- and Heavy-Duty Vehicle Hybridization Voucher Incentive Proposed Project	T-8	*Consistent.* The proposed project medium- and heavy-duty vehicles (e.g., delivery trucks) could take advantage of the vehicle hybridization action, which would reduce GHG emissions through increased fuel efficiency. In addition, the proposed project would not prevent CARB from implementing this measure.
Medium and Heavy-Duty GHG Phase 2	N/A	*Not applicable.* The proposed project would not prevent CARB from implementing this measure.
High-Speed Rail	T-9	*Not applicable.* The proposed project would not prevent CARB from implementing this measure.
Electricity and Natural Gas Sector		
Energy Efficiency Measures (Electricity)	E-1	*Consistent.* The proposed project would comply with the current Title 24 Building Energy Efficiency Standards. In addition, the proposed project would not prevent CARB from implementing this measure.
Energy Efficiency (Natural Gas)	CR-1	*Consistent.* The proposed project would comply with the current Title 24 Building Energy Efficiency Standards. In addition, the proposed project would not prevent CARB from implementing this measure.
Solar Water Heating (California Solar Initiative Thermal Program)	CR-2	*Consistent.* The proposed project would include solar water heating where feasible.
Combined Heat and Power	E-2	*Not applicable.* The proposed project would not prevent CARB from implementing this measure.
Renewables Portfolio Standard (33% by 2020)	E-3	*Consistent*. The electricity used by the proposed project would benefit from reduced GHG emissions resulting from increased use of renewable energy sources.
Renewables Portfolio Standard (50% by 2050)	N/A	*Consistent*. The electricity used by the proposed project would benefit from reduced GHG emissions resulting from increased use of renewable energy sources.
SB 1 Million Solar Roofs (California Solar Initiative, New Solar Home Partnership, Public Utility Programs) and Earlier Solar Programs	E-4	*Not applicable.* The proposed project would not prevent CARB from implementing this measure.

Table 3.7-6 Proposed Project Consistency with Scoping Plan GHG Emission Reduction Strategies

Scoping Plan Measure	Measure Number	Proposed Project Consistency
Water Sector		
Water Use Efficiency	W-1	*Consistent.* The proposed project would utilize low-impact development techniques to manage and capture stormwater for aquifer storage. In addition, the proposed project would decrease stormwater runoff into Big Chico Creek, and treat runoff on campus as much as possible.
Water Recycling	W-2	*Consistent.* The proposed project would utilize low-impact development techniques to manage and capture stormwater for aquifer storage. In addition, the proposed project would decrease stormwater runoff into Big Chico Creek, and treat runoff on campus as much as possible.
Water System Energy Efficiency	W-3	*Not applicable.* This is applicable for the transmission and treatment of water, but it is not applicable for the proposed project. The proposed project would not prevent CARB from implementing this measure.
Reuse Urban Runoff	W-4	*Consistent.* The proposed project would utilize low-impact development techniques to manage and capture stormwater for aquifer storage. In addition, the proposed project would decrease stormwater runoff into Big Chico Creek, and treat runoff on campus as much as possible.
Renewable Energy Production	W-5	*Not applicable.* Applicable for wastewater treatment systems. In addition, the proposed project would not prevent CARB from implementing this measure.
Green Buildings		
State Green Building Initiative: Leading the Way with State Buildings (Greening New and Existing State Buildings)	GB-1	*Consistent.* The proposed project would be required to be constructed in compliance with state or local green building standards in effect at the time of building construction.
Green Building Standards Code (Greening New Public Schools, Residential and Commercial Buildings)	GB-1	*Consistent*. The proposed project's buildings would meet green building standards that are in effect at the time of design and construction.
Beyond Code: Voluntary Programs at the Local Level (Greening New Public Schools, Residential and Commercial Buildings)	GB-1	*Consistent*. The proposed project's buildings would meet green building standards that are in effect at the time of design and construction.
Greening Existing Buildings (Greening Existing Homes and Commercial Buildings)	GB-1	*Consistent.* This is applicable for existing buildings only. For proposed project building that would be retrofitted, the buildings would meet current applicable building standards at the time of design and construction.
Industry Sector		
Energy Efficiency and Co-Benefits Audits for Large Industrial Sources	I-1	*Not applicable.* The proposed project would not prevent CARB from implementing this measure.
Oil and Gas Extraction GHG Emission Reduction	I-2	*Not applicable.* The proposed project would not prevent CARB from implementing this measure.
Reduce GHG Emissions by 20% in Oil Refinery Sector	N/A	*Not applicable.* The proposed project would not prevent CARB from implementing this measure.

Table 3.7-6 Proposed Project Consistency with Scoping Plan GHG Emission Reduction Strategies

Scoping Plan Measure	Measure Number	Proposed Project Consistency
GHG Emissions Reduction from Natural Gas Transmission and Distribution	I-3	*Not applicable.* The proposed project would not prevent CARB from implementing this measure.
Refinery Flare Recovery Process Improvements	I-4	*Not applicable.* The proposed project would not prevent CARB from implementing this measure.
Work with the Local Air Districts to Evaluate Amendments to Their Existing Leak Detection and Repair Rules for Industrial Facilities to Include Methane Leaks	I-5	*Not applicable.* The proposed project would not prevent CARB from implementing this measure.
Recycling and Waste Management Sector		
Landfill Methane Control Measure	RW-1	*Not applicable.* The proposed project would not prevent CARB from implementing this measure.
Increasing the Efficiency of Landfill Methane Capture	RW-2	*Not applicable.* The proposed project would not prevent CARB from implementing this measure.
Mandatory Commercial Recycling	RW-3	*Consistent.* During both construction and operation of the proposed project, the proposed project would comply with all state regulations related to solid waste generation, storage, and disposal, including the California Integrated Waste Management Act, as amended.
Increase Production and Markets for Compost and Other Organics	RW-3	*Not applicable.* The proposed project would not prevent CARB from implementing this measure.
Anaerobic/Aerobic Digestion	RW-3	*Not applicable.* The proposed project would not prevent CARB from implementing this measure.
Extended Producer Responsibility	RW-3	*Not applicable.* The proposed project would not prevent CARB from implementing this measure.
Environmentally Preferable Purchasing	RW-3	*Not applicable.* The proposed project would not prevent CARB from implementing this measure.
Forests Sector		
Sustainable Forest Target	F-1	*Not applicable.* The proposed project would not prevent CARB from implementing this measure.
High GWP Gases Sector		
Motor Vehicle Air Conditioning Systems: Reduction of Refrigerant Emissions from Non-Professional Servicing	H-1	*Consistent.* The proposed project's employees would be prohibited from performing air conditioning repairs and would be required to use professional servicing.
SF_6 Limits in Non-Utility and Non-Semiconductor Applications	H-2	*Not applicable.* The proposed project would not prevent CARB from implementing this measure.
Reduction of Perfluorocarbons (PFCs) in Semiconductor Manufacturing	H-3	*Not applicable.* The proposed project would not prevent CARB from implementing this measure.
Limit High GWP Use in Consumer Products	H-4	*Consistent.* The proposed project would use consumer products that would comply with the regulations that are in effect at the time of manufacture.
Air Conditioning Refrigerant Leak Test During Vehicle Smog Check	H-5	*Consistent*. Motor vehicles driven by the proposed project's students, employees, and visitors would comply with the leak test requirements during smog checks.

Table 3.7-6 Proposed Project Consistency with Scoping Plan GHG Emission Reduction Strategies

Scoping Plan Measure	Measure Number	Proposed Project Consistency
Stationary Equipment Refrigerant Management Program – Refrigerant Tracking/Reporting/Repair Program	H-6	*Not applicable.* The proposed project would not prevent CARB from implementing this measure.
Stationary Equipment Refrigerant Management Program – Specifications for Commercial and Industrial Refrigeration	H-6	*Not applicable.* The proposed project would not prevent CARB from implementing this measure.
SF_6 Leak Reduction Gas Insulated Switchgear	H-6	*Not applicable.* The proposed project would not prevent CARB from implementing this measure.
40% Reduction in Methane and Hydrofluorocarbon (HFC) Emissions	N/A	*Not applicable.* The proposed project would not prevent CARB from implementing this measure.
50% Reduction in Black Carbon Emissions	N/A	*Not applicable.* The proposed project would not prevent CARB from implementing this measure.
Agriculture Sector		
Methane Capture at Large Dairies	A-1	*Not applicable.* The proposed project would not prevent CARB from implementing this measure.

Notes: GHG = greenhouse gas; CARB = California Air Resources Board; VMT = vehicle miles traveled; SB = Senate Bill; N/A = not applicable; SF_6 = sulfur hexafluoride.

Based on the analysis in Table 3.7-6, the proposed project would be consistent with the applicable strategies and measures in the Scoping Plan.

Consistency with EO S-3-05 and SB 32

- **EO S-3-05.** This EO establishes the following goals: GHG emissions should be reduced to 2000 levels by 2010, to 1990 levels by 2020, and to 80% below 1990 levels by 2050.
- **SB 32.** This bill establishes for a statewide GHG emissions reduction target whereby CARB, in adopting rules and regulations to achieve the maximum technologically feasible and cost-effective GHG emissions reductions, shall ensure that statewide GHG emissions are reduced to at least 40% below 1990 levels by December 31, 2030.

This section evaluates whether the GHG emissions trajectory after proposed project completion would impede the attainment of the 2030 and 2050 GHG reduction goals identified in EOs B-30-15 and S-3-05.

CARB has expressed optimism with regard to both the 2030 and 2050 goals. It states in the First Update to the Climate Change Scoping Plan that “California is on track to meet the near-term 2020 GHG emissions limit and is well positioned to maintain and continue reductions beyond 2020 as required by AB 32” (CARB 2014, p. ES2). With regard to the 2050 target for reducing GHG emissions to 80% below 1990 levels, the First Update to the Climate Change Scoping Plan states the following (CARB 2014, p. 34):

> This level of reduction is achievable in California. In fact, if California realizes the expected benefits of existing policy goals (such as 12,000 megawatts of renewable distributed generation by 2020, net zero energy homes after 2020, existing building retrofits under AB 758, and others) it could reduce emissions by 2030 to levels squarely in line with those needed in the developed world and to stay on track to reduce emissions to 80% below 1990 levels by 2050. Additional measures, including locally driven measures and those necessary to meet federal air quality standards in 2032, could lead to even greater emission reductions.

In other words, CARB believes that the state is on a trajectory to meet the 2030 and 2050 GHG reduction targets set forth in AB 32, EO B-30-15, and EO S-3-05. This is confirmed in the Second Update which states (CARB 2017b, p. 7):

> The Proposed Plan builds upon the successful framework established by the Initial Scoping Plan and First Update, while also identifying new, technologically feasibility and cost-effective strategies to ensure that California meets its GHG reduction targets in a way that promotes and rewards innovation, continues to foster economic growth, and delivers improvements to the environment and public health, including in disadvantaged communities. The Proposed Plan is developed to be consistent with requirements set forth in AB 32, SB 32, and AB 197.

As discussed in the first impact criterion (Impact GHG-1), the proposed project would result in a net reduction of approximately 19,157 MT CO_2e per year. In addition, as demonstrated previously, the proposed project would not conflict with the CSU, Chico CAP, CSU Sustainability Policy, the 2016 RTP/SCS, and CARB's Scoping Plan. As such, the proposed project would not generate GHG emissions that may interfere with the implementation of GHG reduction goals for 2030 and 2050.

Consistency with the CSU, Chico Climate Action Plan

As discussed in Section 3.7.2, CSU, Chico adopted a CAP in 2011. However, because the CAP is not considered an applicable GHG emissions reduction plan under CEQA Section 15183.5 and does not include project-specific requirements, this discussion is provided for informational purposes only. The CAP includes implementation measures that would help CSU, Chico achieve climate neutrality by 2030. The proposed project would comply with the measures through meeting State building codes requirements, including use of energy-efficient HVAC systems, installing and retrofitting existing lighting to LED lighting, retrofitting campus water fixtures to low-flow plumbing equipment, and compliance with waste recycling requirements. Furthermore, the proposed project would continue implementation of the CSU, Chico TDM plan developed in 2009. The TDM plan would include a variety of trip reduction strategies such as eliminating on campus parking for students residing in on-campus housing, growing upon existing alternative transportation programs; establishing an incentives-based commuter program to encourage students, faculty and staff commuters to carpool and take alternative modes of travel to campus; increase bicycle facilities; and priority carpool parking, etc. Furthermore, the proposed project would provide for an increase in on campus housing, constructing an additional 1,800 new beds for students, which would reduce commuting and would emphasize a shift away from cars towards alternative modes of transportation.

Consistency with the CSU Sustainability Policy

In 2014, the CSU Board of Trustees approved the systemwide Sustainability Policy focused on integrating sustainability into all facets on all CSU campuses, including academics, facilities operations, the built environment, and student life. The CSU system developed the following university-wide goals:

- Reduce GHG emissions to 1990 levels by 2020, and to 80% below 1990 levels by 2040
- Increase self-generation of energy from 44 to 80 megawatts by 2020
- Procuring 33% of electricity from renewable sources by 2020
- Reduce per capita waste going to the landfills by 80% by 2020
- Reduce water use by 20% by 2020
- Purchase at least 20% percent of food from sustainable sources (local, organic, free trade)
- Integrate Sustainability across the curriculum

The Sustainability Policy is not a applicable GHG emissions reduction plan under CEQA Section 15183.5. However, as indicated in Section 2.7, Project Description, the Master Plan would incorporate and implement the University's sustainability goals. Strategies that would help reduce campus wide GHG emissions and promote sustainability include the following:

- Capitalize on building location and directional placement (passive strategies) to enhance shading for cooling needs; tree shading.
- Utilize best management practices to assist evapotranspiration and ground infiltration.
- Infiltrate aquifer for storage, utilize native landscaping practices to avoid irrigation demand where possible.
- Create increased reliability in electrical systems in case of outages and decentralize from central plant to create resilience through district systems. Utilize renewable energy production and battery storage onsite to allow temporary or selective campus operations during utility power disruptions.
- Utilize low-impact development techniques to manage and capture stormwater for aquifer storage.
- Offer shading throughout campus areas and provide well ventilated indoor spaces.
- Maintain 2030 neutrality target through tactics such as net zero building development, existing building renovations, facilitating non-vehicular transit, and other methods identified in the updated Climate Action Plan.
- Preserve existing trees and plant new trees in coordination with development.
- Support Big Chico Creek by managing edges to prevent erosions. Runoff can also be treated before entering the creek system through natural landscaping and infiltration.
- Minimize surface parking areas and utilize permeable pavers.
- Decrease stormwater runoff into Big Chico Creek, and treat runoff on campus as much as possible.
- Increased redundancy, decentralization of public services.
- Design considerations for building scale ventilation and filtration systems. Increasing biodiversity through campus with a various ecological and environmental strategies including establishing the campus as a wildlife sanctuary through vegetation choices and creek management.

Accordingly, the proposed project would not conflict with the CSU Sustainability Policy.

Based on the above considerations, the proposed project would not conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs. This impact would be **less than significant.**

3.7.5 Mitigation Measures

No mitigation measures are required.

3.7.6 Cumulative Impacts

As previously discussed in Section 3.7.1, Existing Conditions, GHG emissions inherently contribute to cumulative impacts and thus any additional GHG emissions would thus result in a cumulative impact. As shown in Table 3.7-4, the proposed project would result in a net reduction in GHG emissions. Furthermore, the proposed project would not conflict with conflict with plans, policies, or regulations adopted for the purpose of reducing GHG emissions as discussed in the second impact criterion. Therefore, the proposed project would not result in a cumulatively considerable impact.

3.7.7 Level of Significance After Mitigation

The project-related GHG impacts are less than significant prior to mitigation. No mitigation measures are required.

3.7.8 References

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3.8 Hazards, Hazardous Materials, and Wildfire

This section describes the existing hazardous materials conditions of the Master Plan Area and vicinity, including wildfire, identifies associated regulatory requirements, evaluates potential impacts, and identifies mitigation measures related to implementation of the proposed Master Plan Project (or project). Hazards evaluated include those associated with hazardous materials including potential exposure to hazardous materials used, generated, stored, or transported in or adjacent to the project site; and existing identified or suspected soil and/or groundwater contamination. Public safety hazards addressed include exposure of people or structures to loss, injury of death due to wildfires. No comments were received in response to the Notice of Preparation (NOP).

The information in this section is based on the following resources:

- Environmental Data Resources (EDR) Radius Map Report with GeoCheck, Inquiry Number 5736428.2s, July 31, 2019 (Appendix E).
- EDR Aerial Photo Decade Package, Inquiry Number 5736428.8, August 5, 2019 (Appendix E).
- EDR Historical Topo Map Report, Inquiry Number 5736428.4, July 31, 2019 (Appendix E).
- EDR Certified Sanborn Map Report, Inquiry Number 5736428.3, August 8, 2019 (Appendix E).

3.8.1 Existing Conditions

The existing CSU, Chico campus is located in the City of Chico, California (see Figure 2-1 in chapter 2, Project Description). The 132-acre, main campus is generally bounded by the Union Pacific Railroad right-of-way to the west; by West Sacramento, Legion, and Mansion Avenues to the north; by the Esplanade, Children's Park, Salem, and Normal Streets to the east; and by West 2nd and West 3rd Streets to the south (see Figure 2-2a in chapter 2, Project Description). Outside of the main campus, CSU, Chico also includes a 650-bed apartment complex (University Village, part of University Housing), approximately one and one-half miles to the northwest (see Figure 2-2b in chapter 2, Project Description). The Paul L. Byrne Agricultural Teaching and Research Center (ATRC), also known as the University Farm, is an 800-acre farm approximately five miles south of the main campus (see Figure 2-2c in chapter 2, Project Description).

The term "Master Plan Area", as referred to throughout this document, encompasses the entire main campus (including 25/35 Main Street) along with University Village, the ATRC/University Farm, and the residential neighborhood known as Rio Chico which is surrounded by the main campus.

The project consists of the proposed CSU, Chico Master Plan, including Project Design Features (PDFs) drawn from the Master Plan Guidelines. Figure2-3 provides the existing Master Plan and Figures 2-4 and 2-5 (in chapter 2, Project Description) show the proposed Master Plan in an illustrative version. The Master Plan includes proposed near-term future demolition and construction projects on the main campus, as shown on Figures 2-4 and 2-5, and within the "development area" of the University Farm, as shown on Figure 2-2c. No replacement or renovation projects are identified for the University Village site in the proposed Master Plan.

Regulatory information and historical reports were obtained from EDR, including a regulatory records search (Radius Map Report with GeoCheck (EDR Report)), historical topographic maps, historical aerial photographs, and historical Sanborn fire insurance maps. For this evaluation, the EDR Report was ordered for the main campus, as shown on Figure 2-2a. The University Village and University Farm were evaluated by reviewing County and state databases.

The EDR Report includes a listing of sites on or nearby the Master Plan Area ("target property" is the term used by EDR) that are listed on environmental regulatory databases. A list of these databases searched for this project are provided in the EDR Report, which is included as Appendix E. The GeoCheck portion of the EDR Report provides basic geological and hydrogeological information for the Master Plan Area.

Regional and Local Setting

The Master Plan Area is located in the City of Chico, in the western portion of Butte County. Chico lies in the northern portion of the Sacramento Valley, between the Northern Coast mountain ranges to the west and Sierra Nevada mountain ranges to the east. Based on information obtained from the EDR Report, the Master Plan Area is generally flat, with elevations ranging from 203 feet above mean sea level (amsl) to 178 feet amsl. The Master Plan Area is underlain by Brentwood component clay loams, and Cenozoic era Quaternary rocks. Bedrock is generally encountered at greater than 60 inches below ground surface (bgs).

Big Chico Creek flows across the main campus from northeast to southwest, ultimately discharging to the Sacramento River approximately 5.4 miles to the west. The nearest public water supply well is located approximately 0.25 miles to the east-southeast, at the corner of W 5th Street and Main Street. The main campus is located in an urban area and is an established site. No wildland fire threat areas were identified (CAL FIRE 2008b). The Union Pacific Railroad (UPRR) is located adjacent to the western boundary of the campus.

Historical Site Uses

Dudek environmental engineers reviewed historical aerials photographs, topographic maps, and Sanborn fire insurance maps for the main campus, obtained from EDR for the purposes of understanding historical conditions related to potential hazardous materials storage and use, such as tanks and industrial facilities. Additional aerial photographs were viewed online (NETR 2019). The University Housing and University Farm areas do not have historical Sanborn fire insurance map coverage (Library of Congress 2019). The following historical site information has been summarized from these sources, unless otherwise cited. Additional historical site information is provided in Section 3.4, Cultural Resources.

Historical Topographic Maps and Aerial Photographs

<u>Main Campus</u>

The Northern Branch of State Normal School was opened in 1889 on the CSU, Chico main campus (CSU, Chico, 2019). The school was located on General Bidwell's Ranch, between Ivy Street and Shasta Way, south of Chico Creek. In the 1930s and 1940s, the main campus south of 1st Street appeared to be mainly residential to the east of Ivy Street, and commercial to the west of Ivy Street, near the railroad. Portions of the main campus to the north appeared to be agricultural land. In the late 1940s to 1950s, the agricultural land in the northern portion of the main campus (which was purchased in 1937, see Section 3.4.1, Cultural Resources, Existing Conditions) was converted to sports fields with buildings along the east side. The college campus expanded along 1st Street through the early 1950s, south of Big Chico Creek. In the late 1950s to 1960s, the campus began to expand north of Big Chico Creek and south of 1st Street. Many of the residential structures south of 1st Street were converted to college campus buildings by the late 1960s to early 1970s. The college became CSU, Chico by name in 1972 (CSU, Chico, 2019). By the 1970s, the main campus was primarily occupied by CSU, Chico buildings and operations.

The Southern Pacific Railroad has transected the main campus between Cedar Street and Orange Street since at least 1891. The land surrounding the original main campus was historically commercial and residential uses before being converted to college campus. Potential hazardous material sites are discussed in the Sanborn Map section and Hazardous Material Site section below.

University Village

University Village portion appeared to be undeveloped land from at least 1891 until the 1940s. Beginning in at least 1948, the area was cultivated with orchards, until it was developed for residential uses in the mid-1970s. As it was developed with buildings and pavement over forty years ago, it is unlikely that residual pesticides are present that exceed risk thresholds.

University Farm

The University Farm has been a farm homestead since at least 1912 and has expanded over time. The University Farm was formally established in 1960 by CSU (CSU 2019). A creek has transected the project since at least 1912, and impound ponds were constructed near the property's southern end on or before 1970. This area of the University Farm is used for multiple agricultural uses, including storage of pesticides, herbicides, farm equipment, and various oils, solvents, and lubricants for maintenance (CSU, Chico 2018). Based on the historical, ongoing, and current use and storage of pesticides and herbicides, there is a potential for elevated levels of pesticides and herbicides to be present in the surface soils.

Fire Insurance Maps

Sanborn fire insurance maps were historically maintained for urbanized areas to track chemical use/inventory at businesses. Sanborn maps were reviewed to determine if there were uses of chemicals that may have impacted the environmental condition of the Master Plan Area. These may include areas where industrial operations occurred, or areas where hazardous materials or petroleum products may have been stored. The following areas of interest were noted:

- The block northeast of Nord and 1st Street on the main campus, which is the Facilities Management and Services Yard, has been commercially developed since at least 1902. Uses have included a cannery, Pacific Gas & Electric, and the service yard for CSU, Chico. Phase I and Phase II ESAs were conducted on this property, as discussed in Section 3.8.13.
- The block between Orange Street and Cherry Street, and between 2nd Street and 3rd Street, was Chico Gas and Electric from at least 1884 until around 1940. The maps show gas storage tanks along the northern portion of the site. The tanks were not depicted in the 1970 map. While the northern portion of this block between Orange Street and Cherry Street is not included in the Master Plan Area boundary, the Master Plan Area borders the former Chico Gas and Electric site to the south, west, and north. Based on a review of current aerials, the site now appears to be a substation. The site is an active cleanup site, with groundwater contamination that has migrated onto the Master Plan Area, as discussed below in Section 3.8.1.3, Table 3.8-2, Site #10.
- A railroad spur and stockyard were located in the area of the current Wildcat Recreation Center (WREC), between 1st Street and 2nd Street, and between the railroad and Cherry Street. The spur was located on this area from at least 1884 until between 2006 and 2009 when the current WREC building was constructed. From approximately 1902 until 1909, the stockyard housed oil and gas tanks. Beginning in approximately 1921, the site around the spur housed a dried fruit packing company, which changed to an

almond packing company. The same building existed until the WREC was constructed. The site is now developed as the WREC; future development includes expansion of the WREC and construction of a wellness building.

- A railroad turntable was depicted on the land between Cedar and the railroad, and between 2nd Street and 1st Street, in 1890. Railroad turntables were historically used as maintenance locations for locomotives. In 1902, this feature is no longer shown. The land was undeveloped, then became a Diamond Match Company warehouse in 1921. From 1949 until at least 1970 the site housed a fresh fruit and vegetable warehouse.
- A gasoline service station was depicted at the east corner of Salem Street and 1st Street from 1949 to 1970. The site has since been redeveloped as a public multi-use space. This location is adjacent to the main campus boundary.

Hazardous Material Sites

Government Code Section 65962.5 requires the California Environmental Protection Agency (CalEPA) to develop a Cortese List that is updated at least annually. While the CalEPA no longer maintains a single Cortese List, CalEPA uses the following databases and lists to meet the requirements of Government Code Section 65962.5.

1. List of Hazardous Waste and Substances sites from Department of Toxic Substances Control (DTSC) EnviroStor database.
2. List of Leaking Underground Storage Tank Sites from the State Water Board's GeoTracker database.
3. List of solid waste disposal sites identified by State or Regional Water Board with waste constituents above hazardous waste levels outside the waste management unit.
4. List of "active" CDO and CAO from State Water Board.
5. List of hazardous waste facilities subject to corrective action pursuant to Section 25187.5 of the Health and Safety Code, identified by DTSC.

Dudek environmental engineers obtained a regulatory database search from EDR, dated July 31, 2019. This report provides a summary of regulatory listings that handle, store, or have reported releases of hazardous materials or wastes, including Cortese List databases. Ten sites were identified within the boundaries of the main campus of the Master Plan Area, and are summarized in Table 3.8-1. The seven LUST sites qualify as Cortese List sites. The remaining three sites are not Cortese List sites, but still may contain contamination that can affect the main campus of the Master Plan. Additional information was obtained online from the State Water Board GeoTracker and DTSC EnviroStor databases, and is cited accordingly.

Table 3.8-1. Hazardous Material Sites within Master Plan Area Boundary

Site Number (Figure 3.8-1)	Site Name & Address	Regulatory Database	Details	Potential Impact? (Y/N)
1	CSU, Chico Julia Morgan House (aka Warrens Center) 341 Mansion Park	CA LUST (GeoTracker)	A leaking underground storage tank (LUST) was discovered in 1997, and closed in 1998. Reportedly, heating oil impacted the nearby soils. The closure was received from Butte County Department of Public Health (Butte County DPH 1998a); the letter does not provide contaminant concentrations or details regarding the cleanup.	N

Table 3.8-1. Hazardous Material Sites within Master Plan Area Boundary

Site Number (Figure 3.8-1)	Site Name & Address	Regulatory Database	Details	Potential Impact? (Y/N)
2	CSU, Chico – Diesel Generator Release Mansion Avenue (outside of Holt Hall).	CA CPS-SLIC (GeoTracker)	This site has a documented diesel release from a generator which affected soil and groundwater at the site. The site received a no further action designation from Central Valley Region Water Quality Control Board (CVRWQCB) in 2011 (CVRWQCB 2011). No additional information was available.	N
3	CSU, Chico Boiler Chiller Plant 1st Street N	CA LUST (GeoTracker)	Three diesel USTs were removed from the site between 1991 and 1994. The three tanks all contained diesel, and diesel contamination was identified in soil and groundwater. Following remediation, remaining maximum contamination included 1,100 μg/L diesel in groundwater in the tank pit and 410 mg/kg diesel in soils along the utility easement. The area was identified as low risk for human exposure, and the site received regulatory closure (CVRWQCB 1996).	N
–	California State University Chico 400 W 1st Street	Manifest	Multiple manifests are listed that identify hazardous wastes which were removed from the site for offsite disposal or recycling. This listing is administrative in nature, and does not indicate an uncontrolled or unpermitted release to the environment.	N
4	Taylor Hall CSUC W 2nd Street & Normal Avenue	CA LUST (GeoTracker)	Six USTs were discovered in 2014 that contained a variety of gasoline, waste oil, and hydraulic oil. The tanks were removed and contaminated soils were discovered. Groundwater in the excavation pit was also contaminated, but further groundwater sampling did not identify groundwater contamination above detectable concentrations outside the tank pit. While low-level contamination remains in soils and groundwater in the area, the site received low-threat closure in 2015 (CVRWQCB 2015).	N
5	CSU, Chico Deen House 430 3rd Street W	CA LUST (GeoTracker)	A LUST was discovered and removed, resulting in soil and groundwater contamination. Following limited remediation, soil and groundwater contamination remained at the site. The site received a low-threat closure in 1999 (CVRWQCB 1999).	N
6	CSU Wildcat Activity Center 191 Orange Street	CA LUST (GeoTracker)	A LUST was removed from the site, along with 1,831 tons of contaminated soil. Minimal soil and groundwater contamination remained at the site. The site received closure in 2009 (CVRWQCB 2009).	N

Table 3.8-1. Hazardous Material Sites within Master Plan Area Boundary

Site Number (Figure 3.8-1)	Site Name & Address	Regulatory Database	Details	Potential Impact? (Y/N)
7	Union Pacific Railroad, Chico 940 1st Street W	CA CPS-SLIC (GeoTracker)	Diesel-contaminated soil was discovered during installation of a fiber optic cable. The soil impacts appeared to be limited, and groundwater did not appear to be affected. The site was subsequently closed (CVRWQCB 2008).	N
8	CSU, Chico Plant Operation Yard 1st and Nord Street	LUST (GeoTracker)	One LUST was reported on this site, which affected soil only and was closed in 1997 (CVRWQCB 1997); no additional information is available.	N
9	CSU, Chico Shurmer Gym Warner Street	LUST (GeoTracker)	One LUST was reported on this site, which affected soil only and was closed in 1998 (Butte County DPH 1998b); no additional information is available.	N

Source: EDR 2019, Appendix E

Three sites were identified adjacent to or nearby (Site 12) the Master Plan Area and, based on the location and available information, have the potential to impact the environmental conditions of the Master Plan Area main campus (Sites 10 and 11) and University Farm (Site 12). Site 10 is not defined as a Cortese List site, but has contaminated media that can impact the Master Plan area. Sites 11 and 12 are Cortese List sites, as defined above. These are summarized in Table 3.8-2.

The remaining sites identified in the EDR Report are sites that have received regulatory closure and have no documented remaining contamination, are administrative in nature (such as hazardous material handling permits or water discharge permits) and don't indicate an unpermitted and uncontrolled release to the environment, or are at a great enough distance that they are unlikely to impact the Master Plan Area.

Table 3.8-2. Hazardous Material Sites Adjacent to the Master Plan Area

Site Number (Figure 3.8-1)	Site Name & Address	Regulatory Database	Details	Potential Impact? (Y/N)
10	PG&E, Chico -1 825 W 2nd Street	VCP (EnviroStor; GeoTracker)	This site is a former manufactured gas plant that operated from 1874 to 1928. It is currently an electrical substation. Soils and groundwater on the site are contaminated with polyaromatic hydrocarbons (PAH), benzene, toluene, ethylbenzene, and xylene (BTEX), and total petroleum hydrocarbons. The site is currently under an operations and maintenance (O&M) Agreement with DTSC, which includes a land use covenant and groundwater use restriction. The land use covenant restricts property use, requires surface covers on the former gas plant, and requires ongoing groundwater monitoring. Groundwater contamination from this site extends westward onto the Master Plan Area, specifically in the 3rd and Orange Street Parking Lot (ETIC 2019). There are still active monitoring wells in the parking lot that are part of the required O&M (Butte County 2009). The approximate location of these wells is shown on Figure 3.8-1 as "MWs (Site 10)".	Y

Table 3.8-2. Hazardous Material Sites Adjacent to the Master Plan Area

Site Number (Figure 3.8-1)	Site Name & Address	Regulatory Database	Details	Potential Impact? (Y/N)
11	Chico Groundwater – Central Plume Esplanade 100 block Includes the following sites: Norge Village Cleaners 254 East 1st Street Esplanade Cleaners 164 East 2nd Street Flair Custom Cleaners 660 Mangrove Avenue	DTSC Cleanup	A large tetrachloroethylene (PCE) groundwater plume is present in the Chico area. This plume is believed to have originated on Esplanade Avenue from two separate dry cleaners. DTSC is managing the remediation (potassium permanganate injections) with oversight by CVRWQCB. DTSC manages an active treatment plant, which operates to the northeast of the Master Plan Area (URS 2019). The PCE plume has affected three separate aquifers; the intermediate and deep aquifers are major drinking water aquifers. The most recent groundwater monitoring report (2019) shows the intermediate zone aquifer and deep zone aquifers both have PCE plumes that extend west-northwest from Esplanade and cross the Master Plan Area (URS 2018). The monitoring well network still covers the original plume area; therefore, there are active monitoring wells located on the Master Plan Area (Figure 3.8-1). Groundwater monitoring is completed under Contract 11-T1080 and subsequent amendments[1]. Land use restrictions placed on the former Norge Village Cleaners prohibit disturbance of the monitoring and remediation systems, and restrict groundwater use and specific land uses on the Norge Village Cleaners site (which lies adjacent to the Master Plan Area at 1st Street and Wall Street).	Y

1 Multiple contracts are in place for state funded cleanup of the Central Groundwater Plume under the oversight of DTSC. A full list of contract numbers is provided in Section 3.8.8.1.

Table 3.8-2. Hazardous Material Sites Adjacent to the Master Plan Area

Site Number (Figure 3.8-1)	Site Name & Address	Regulatory Database	Details	Potential Impact? (Y/N)
12	Chico Groundwater – Skyway Subdivision Plume Hagen Lane/Skyway Avenue	DTSC Cleanup	This site consists of a large groundwater plume that extends from the intersection of Highway 99 and Comanche Creek about 2 miles southwest, near the intersection of Hegan Lane and Fimple Road. The plume was discovered during environmental sampling to construct a new housing development. The original source of the contamination is unknown. Contaminants consist of VOCs, specifically TCE, PCE, and pentachlorophenol (PCP) above maximum contaminant levels (MCLs). The groundwater in the area is a primary drinking water source for the nearby residents. Progress on site investigation and remediation is ongoing by DTSC under an Imminent and Substantial Endangerment (I&SE) Determination (DTSC 2004). Impacted residents were supplied with granular activated carbon (GAC) treatment systems to remove VOC contamination from the water so it may be a continued source of drinking water. According to the most recent groundwater monitoring report (Wood 2019), the Master Plan Area is connected to Cal Water municipal water service. The Development Area of the University Farm (Master Plan Area) is located down gradient of the plume origin. According to the most recent annual groundwater monitoring report (Wood 2019), there is one groundwater monitoring well located within the development area of the University Farm, and one other located to the north on the University Farm property, but outside the proposed development area (Figure 3.8-1). Monitoring results from the well in the Master Plan Area indicate multiple VOCs were detected in groundwater beneath the Master Plan Area, including TCE at 14 μg/L. This concentration is above applicable environmental screening levels, as discussed in Section 3.8.2.	Y

Source: EDR 2019, Appendix E

Previous Environmental Investigations

Dudek environmental engineers previously conducted a Phase I Environmental Site Assessment (ESA) and subsurface environmental investigation on the Facilities Management and Services Yard in 2016 and 2017 (Dudek 2016; Dudek 2017), located at 940 West 1st Street, which is part of the Master Plan Area, main campus. The following information was obtained from these reports:

Phase I ESA for Facilities Management and Services Yard Site

- The Facilities Management and Services Yard (service yard) has been a commercially-developed site since at least 1902. Historical records showed the presence of underground storage tanks (USTs), supply pipelines, and releases of petroleum products in the service yard.
    - A former 12,000-gallon crude oil UST and supply line associated with former fruit canning operations (years 1902 until between 1909 and 1915) were identified as a recognized environmental condition (REC).
    - A former aboveground storage tank (AST), identified as a “gas holder,” associated with the former PG&E operations (years 1941 until 1964) was identified as a REC. There was also a nearby manufactured gas plant likely associated with the onsite “gas holder.”
    - Three petroleum release cases which received regulatory closure were identified as Controlled RECs (CRECs). As the cases were closed and precise locations of the impacts were unknown, a site mitigation/contingency plan for identification and management of impacted media was recommended for construction.
- Based on the age of the facilities, asbestos and/or lead were potentially present.

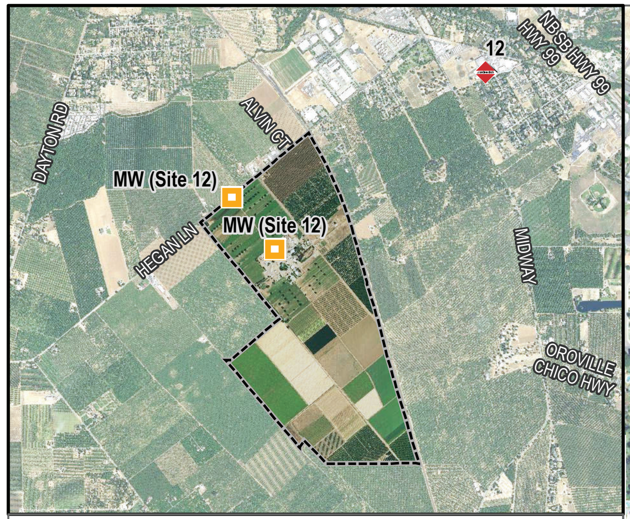
Subsurface Investigation for Facilities Management and Services Yard Site

- The objectives were to determine if there were impacts to the site from the former UST, AST, and/or a nearby manufactured gas plant. Chemicals of potential concern were determined to be total petroleum hydrocarbons (TPH), metals, polyaromatic hydrocarbons (PAHs), volatile organic compounds (VOCs), and methane. Soil, groundwater, and soil vapor samples were collected.
- Ethylbenzene, o-xylene, and m,p-xylene were the only compounds detected in soil vapor samples; all detections were below regulatory screening levels (RSLs).
- PAHs and TPH were detected in soil, but not above their respective RSLs or Regional Water Quality Control Board (RWQCB) screening levels[2], respectively.
- Arsenic was detected in one soil sample above the RSL and DTSC-accepted background concentration. The soil sample was collected at three feet below ground surface. Dudek environmental engineers recommended using X-Ray fluorescence (XRF) to segregate and stockpile arsenic-impacted soils in the area of concern during excavation activities. The stockpiled soils would also require additional waste characterization for disposal.

Schools

There are four schools serving students from pre-kindergarten through 12th grade located within 0.25 miles of the Master Plan Area (CSCD 2019). Inspire School of Arts and Sciences and Chico High School, 901 The Esplanade, are located adjacent to the Master Plan Area to the north. Chico Junior High, 280 Memorial Way, is located 0.13 miles to the east-northeast. Rosedale Elementary, 100 Oak Street, is located 0.10 miles southwest of the Master Plan Area. Citrus Avenue Elementary, 1350 Citrus Avenue, is located 0.24 miles north of the Master Plan Area. The locations of these schools are shown on Figure 3.8-1.

2 The TPH Screening Levels were obtained from the Interim Site Assessment & Cleanup Guidebook, May 1996, California RWQCB-LA and Ventura County (aquifer <20 feet).



University Farm is located approximately 2.2 south southeast of the main campus.

California State University, Chico Main Campus

Rio Chico

Off-campus Properties

University Village Housing

University Farm

Hazards

School

Airport

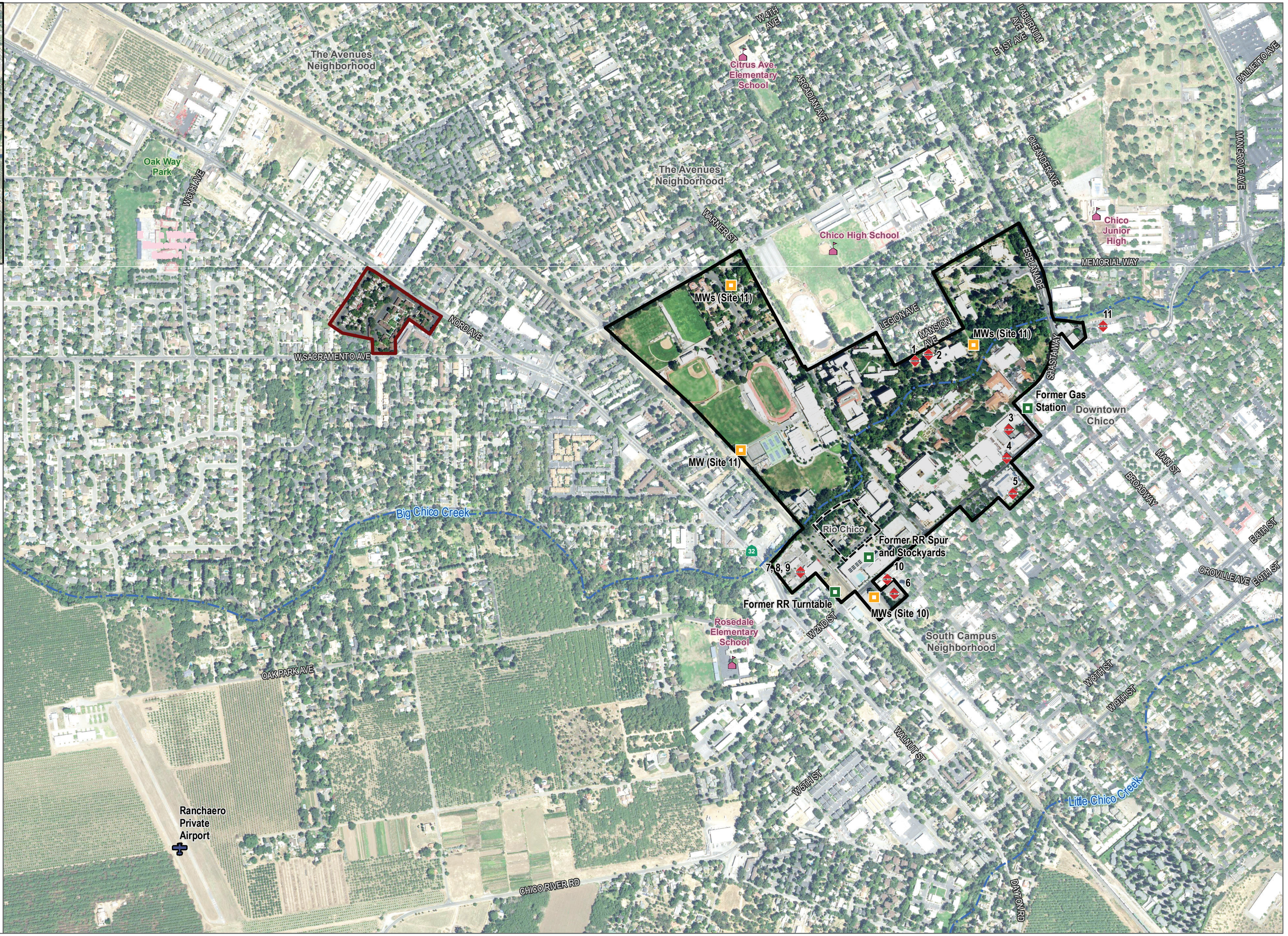
Regulatory Release Cases*

Monitoring Well (MW)**

Historical Features

*Site numbers correspond to Table 3.8-1 and Table 3.8-2 in Section 3.8 of the EIR

**MW locations are approximate



SOURCE: USDA 2016, USGS 2018, County of Butte 2018, CSU Chico 2019

DUDEK

0 450 900 Feet

FIGURE 3.8-1

Project Site Hazards

California State University, Chico Master Plan EIR

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Airports

The nearest public use airport is the Chico Municipal Airport, located approximately 3.7 miles north of the Master Plan Area. The airport influence area does not overlap the Master Plan Area (Butte County 2017).

The nearest private airport is Ranchaero Airport, located approximately 1 mile west-southwest of the Master Plan Area. Ranchaero is a privately owned and operated 23-acre general aviation facility located near the southwestern edge of the City of Chico. The airport is a quasi-public use facility in that permission is required prior to using the airport. The airport serves a combination of recreational, flight training, agricultural, and limited business functions. The airport's single runway currently handles 5,000 aircraft operations per year with 34 based aircraft. Due to the length of the runway, use is limited to single engine airplanes and helicopters (Butte County 2017).

Fire Hazards and Emergency Response

The main campus and University Village are within the boundaries of City of Chico, which is within the Butte County Local Responsibility Area (LRA)[3] for fire hazards (CAL FIRE 2008a). The entire city, with the exception of a small area approximately 8 miles northeast of the main campus, is identified as a Non-Very High Fire Hazard Severity Zone (Non-VHFHSZ). The University Farm is outside of the City limits, but is still within the LRA and is defined as a Non-VHFHSZ. The Master Plan Area falls within the response jurisdiction of the Chico Fire Department for wildfire hazards and emergency response.

The City of Chico and Butte County both have adopted Emergency Response Plans which include prearranged emergency response procedures and mutual aid agreements for emergency assistance within the city and county, which includes the Master Plan Area. Emergency routes for evacuation of Chico are Highway 99 and State Route 32.

3.8.2 Regulatory Setting

A number federal and state plans, policies, and regulations control the storage, use, handling, disposal, and transport of hazardous materials and waste in order to protect public health and the environment. Additional regulations exist to protect workers on the job, and still others serve to formulate emergency response and evacuation procedures. The regulations applicable to the project and the regulatory agencies that provide oversight and enforcement, are discussed in this section.

Federal

U.S. Environmental Protection Agency

Title 40 USC, Chapter 1, Subchapter I, Parts 260-265 – Solid Waste Disposal Act/ Federal Resource Conservation and Recovery Act of 1976

The Solid Waste Disposal Act, as amended and revised by the Resource Conservation and Recovery Act (RCRA), establishes requirements for the management of solid wastes (including hazardous wastes), landfills, USTs, and certain medical wastes. The statute also addresses program administration; implementation and delegation to the states; enforcement provisions and responsibilities; and research, training, and grant funding. Provisions are established for the generation, storage, treatment, and disposal of hazardous waste, including requirements addressing generator record keeping, labeling, shipping paper management, placarding, emergency response information, training, and security plans.

3 Local Responsibility Areas (LRA) are within the jurisdiction of the local fire protection agency (county, city, or region), whereas the State Responsibility Area (SRA) is under the jurisdiction of California Department of Forestry and Fire Protection (CAL FIRE).

Title 40 USC, Chapter 1, Subchapter I, Part 273 – Universal Waste

This regulation governs the collection and management of widely generated waste, including batteries, pesticides, mercury-containing equipment, and bulbs. This regulation streamlines the hazardous waste management standards and ensures that such waste is diverted to the appropriate treatment or recycling facility.

Title 40 USC, Chapter 1, Subchapter D, Part 112 – Oil Pollution Prevention

Oil Pollution Prevention regulations require the preparation of a Spill Prevention, Control, and Countermeasure (SPCC) Plan if oil is stored in excess of 1,320 gallons in aboveground storage (or have a buried capacity of 42,000 gallons). SPCC regulations place restrictions on the management of petroleum materials and, therefore, have some bearing on hazardous materials management.

Title 40 USC, Chapter 1, Subchapter C, Part 61 – National Emission Standards for Hazardous Air Pollutants, Subpart M – National Emission Standard for Asbestos

This regulation established National Emission Standards for Hazardous Air Pollutants (NESHAP) and names asbestos-containing material (ACM) as one of these materials. ACM use, removal, and disposal are regulated by USEPA under this law. In addition, notification of friable ACM removal prior to a proposed demolition project is required by this law.

Title 42 U.S. Code of Federal Regulations, Chapter 116 – Emergency Planning and Community Right-to-Know Act

The Emergency Planning and Community Right-to-Know Act (EPCRA) provides for public access to information about chemical hazards. The EPCRA and its regulations included in Title 40 U.S.C. Parts 350-372 establish four types of reporting obligations for facilities storing or managing specified chemicals: emergency planning, emergency release notification, hazardous chemical storage reporting requirements, and toxic chemical release inventory. USEPA maintains a database, termed the Toxic Release Inventory, which includes information on reportable releases to the environment.

Title 15 USC, Chapter 53, Subchapter I, Section 2601 et seq. – Toxic Substances Control Act of 1976

The Toxic Substances Control Act (TSCA) of 1976 empowers USEPA to require reporting, record-keeping, and testing, as well as to place restrictions on the use and handling of chemical substances and mixtures. This regulation phased out the use of asbestos and ACM in new building materials and also sets requirements for the use, handling, and disposal of ACM as well as for lead-based paint (LBP) waste. As discussed above, USEPA has also established NESHAP, which govern the use, removal, and disposal of ACM as a hazardous air pollutant and mandate the removal of friable ACM before a building is demolished and require notification before demolition. In addition to asbestos, ACM, and LBP requirements, this regulation also banned the manufacturing of polychlorinated biphenyls (PCBs) and sets standards for the use and disposal of existing PCB-containing equipment or materials.

Regional Screening Levels (RSLs)

The federal EPA provides regional screening levels for chemical contaminants to provide comparison values for residential and commercial/industrial exposures to soil, air, and tap water (drinking water). RSLs are available on the EPA's website and provide a screening level calculation tool to assist risk assessors, remediation project managers, and others involved with risk assessment and decision-making. RSLs are also used when a site is initially investigated to determine if potentially significant levels of contamination are present to warrant further investigation. In California, the Department of Toxic Substances Control (DTSC) Human and Ecological Risk Office (HERO) incorporated the EPA RSLs into the HERO human health risk assessment. HERO created Human Health

Risk Assessment (HHRA) Note 3, which incorporates HERO recommendations and DTSC-modified screening levels (DTSC-SLs) based on review of the EPA RSLs. The DTSC-SL should be used in conjunction with the EPA RSLs to evaluate chemical concentrations in environmental media at California sites and facilities.

U.S. Department of Labor, Occupational Safety and Health Administration

Title 29 USC, Part 1926 et seq. – Safety and Health Regulations for Construction

These standards require employee training; personal protective equipment; safety equipment; and written procedures, programs, and plans for ensuring worker safety when working with hazardous materials or in hazardous work environments during construction activities, including renovations and demolition projects and the handling, storage, and use of explosives. These standards also provide rules for the removal and disposal of asbestos, lead, LBP, and other lead materials. Although intended primarily to protect worker health and safety, these requirements also guide general facility safety. This regulation also requires that an engineering survey is prepared prior to demolition.

Title 29 USC, Part 1910 et seq. – Occupational Safety and Health Standards

Under this regulation, facilities that use, store, manufacture, handle, process, or move hazardous materials are required to conduct employee safety training; inventory safety equipment relevant to potential hazards; have knowledge on safety equipment use; prepare an illness prevention program; provide hazardous substance exposure warnings; prepare an emergency response plan, and prepare a fire prevention plan.

U.S. Department of Transportation

Title 49 USC, Part 172, Subchapter C – Shipping Papers

The Department of Transportation established standards for the transport of hazardous materials and hazardous wastes. The standards include requirements for labeling, packaging, and shipping hazardous materials and hazardous wastes, as well as training requirements for personnel completing shipping papers and manifests.

Federal Response Plan

The Federal Response Plan of 1999, as amended in 2003 (FEMA 2003) is a signed agreement among 27 federal departments and agencies, including the American Red Cross, that (1) provides the mechanism for coordinating delivery of federal assistance and resources to augment efforts of state and local governments overwhelmed by a major disaster or emergency; (2) supports implementation of the Robert T. Stafford Disaster Relief and Emergency Act, as well as individual agency statutory authorities; and (3) supplements other federal emergency operations plans developed to address specific hazards. The Federal Response Plan is implemented in anticipation of a significant event likely to result in a need for federal assistance or in response to an actual event requiring federal assistance under a presidential declaration of a major disaster or emergency.

State

California Unified Program for Management of Hazardous Waste and Materials

California Health and Safety Code (HSC), Division 20, Chapter 6.11, Sections 25404- 25404.9 Sections– Unified Hazardous Waste and Hazardous Materials Management Regulatory Program

Under the California Environmental Protection Agency (CalEPA), the Department of Toxic Substances Control (DTSC) and Enforcement and Emergency Response Program (EERP) administer the technical implementation of California's Unified Program, which consolidates the administration, permit, inspection, and enforcement activities of several environmental and emergency management programs at the local level (DTSC 2019). Certified Unified Program Agencies (CUPAs) implement the hazardous waste and materials standards. This program was established under the amendments to the California HSC made by SB 1082 in 1994. The programs that make up the Unified Program are:

- Aboveground Petroleum Storage Act (APSA) Program
- Area Plans for Hazardous Materials Emergencies
- California Accidental Release Prevention (CalARP) Program
- Hazardous Materials Release Response Plans and Inventories (Hazardous Materials Business Plans, or HMBPs)
- Hazardous Material Management Plan (HMMP) and Hazardous Material Inventory Statements (HMIS)
- Hazardous Waste Generator and On-site Hazardous Waste Treatment (Tiered Permitting) Program
- Underground Storage Tank Program

The CUPA for the City of Chico is the Butte County Public Health Department.

Title 19 CCR, Chapter 2, Subchapter 3, Sections 2729-2734/California HSC Division 20, Chapter 6.95, Sections 25500–25520

This regulation requires the preparation of an HMBP by facility operators. The HMBP identifies the hazards, storage locations, and storage quantities for each hazardous chemical stored on-site. The HMBP is submitted to the CUPA for emergency planning purposes. The Master Plan Area is currently subject to these requirements and there is an HMBP in place.

Hazardous Waste Management

Title 22 CCR, Division 4.5 – Environmental Health Standards for the Management of Hazardous Waste

In the State of California, the Department of Toxic Substances Control (DTSC) regulates hazardous wastes. These regulations establish requirements for the management and disposal of hazardous waste in accordance with the provisions of the California Hazardous Waste Control Act and federal RCRA. As with federal requirements, waste generators must determine if their wastes are hazardous according to specified characteristics or lists of wastes. Hazardous waste generators must obtain identification numbers; prepare manifests before transporting waste off-site; and use only permitted treatment, storage, and disposal facilities. Standards also include requirements for record keeping, reporting, packaging, and labeling. Additionally, while not a federal requirement, California requires that hazardous waste be transported by registered hazardous waste transporters.

In addition, Chapter 31 – Waste Minimization, Article 1 – Pollution Prevention and the Hazardous Waste Source Reduction and Management Review of these regulations require that generators of 12,000 kilograms/year of typical, operational hazardous waste evaluate their waste streams every four years and, as applicable, select and implement viable source reduction alternatives. This Act does not apply to non-typical hazardous waste, including ACM and PCBs, among others.

Title 22 California HSC, Division 20, Chapter 6.5 – California Hazardous Waste Control Act of 1972

This legislation created the framework under which hazardous wastes must be managed in California. It provides for the development of a state hazardous waste program (regulated by DTSC) that administers and implements the provisions of the federal RCRA program. It also provides for the designation of California-only hazardous wastes and development of standards that are equal to or, in some cases, more stringent than, federal requirements. The CUPA is responsible for implementing some elements of the law at the local level.

Human Health Risk Assessment Note 3 –DTSC-Modified Screening Levels (DTSC-SLs)

HHRA Note Number 3 presents recommended screening levels (derived from the EPA RSLs using DTSC-modified exposure and toxicity factors) for constituents in soil, tap water, and ambient air. The DTSC-SL should be used in conjunction with the EPA RSLs to evaluate chemical concentrations in environmental media at California sites and facilities.

Aboveground and Underground Petroleum Storage Tanks

Title 22 California HSC, Division 20, Chapter 6.67, Sections 25270 to 25270.13 – Aboveground Petroleum Storage Act

This law applies if a facility is subject to SPCC regulations under Title 40 U.S.C. Part 112, or if the facility has 10,000 gallons or more of petroleum in any or combination of ASTs and connecting pipes. If a facility exceeds these criteria, it must prepare a SPCC plan.

Low-Threat Underground Storage Tank (UST) Case Closure Policy

This policy applies to petroleum UST sites subject to Chapter 6.7 of the Health and Safety Code. This policy establishes both general and media-specific criteria. If both the general and applicable media-specific criteria are satisfied, then the leaking UST case is generally considered to present a low threat to human health, safety and the environment. This policy recognizes, however, that even if all of the specified criteria in the policy are met, there may be unique attributes of the case or site-specific conditions that increase the risk associated with the residual petroleum constituents. In these cases, the regulatory agency overseeing corrective action at the site must identify the conditions that make case closure under the policy inappropriate.

Regional Water Boards and local agencies have been directed to review all cases in the petroleum UST Cleanup Program using the framework provided in this policy. These case reviews shall, at a minimum, include the following for each UST case:

1. Determination of whether or not each UST case meets the criteria in this policy or is otherwise appropriate for closure based on a site-specific analysis.
2. If the case does not satisfy the criteria in this policy or does not present a low-risk based upon a site-specific analysis, impediments to closure shall be identified.
3. Each case review shall be made publicly available on the State Water Board's GeoTracker web site in a format acceptable to the Executive Director.

Environmental Cleanup Levels

Environmental Screening Levels

Environmental Screening Levels (ESLs) provide conservative screening levels for over 100 chemicals found at sites with contaminated soil and groundwater. They are intended to help expedite the identification and evaluation of potential environmental concerns at contaminated sites. The ESLs are prepared by the staff of the San Francisco Bay Regional Water Quality Control Board. While ESLs are not intended to establish policy or regulation, they can be used as a conservative screening level for sites with contamination. Other agencies in California may elect to use the ESLs; in general, the ESLs could be used at any site in the State of California, provided all stakeholders agree (SFBRWQCB 2019). Recent experience indicates that regulatory agencies throughout the State of California may use ESLs as regulatory cleanup levels. The ESLs are not generally used at sites where the contamination is solely related to a leaking underground storage tank (LUST); those sites are instead subject to the Low-Threat Underground Storage Tank Closure Policy.

California Integrated Waste Management Board

Title 14 CCR, Division 7, Chapter 8.2 – Electronic Waste Recovery and Recycling Act of 2003

This regulation sets requirements regarding the use and disposal of hazardous substances in electronics. When discarded, the DTSC considers the following materials manufactured before 2006 to be hazardous waste: cathode ray tube devices, liquid crystal display (LCD) desktop monitors, laptop computers with LCD displays, LCD televisions, plasma televisions, and portable DVD Players with LCD screens.

California Department of Transportation/California Highway Patrol

Title 13 CCR, Division 2, Chapter 6

California regulates the transportation of hazardous waste originating or passing through the state. The California Highway Patrol (CHP) and the California Department of Transportation (Caltrans) have primary responsibility for enforcing federal and state regulations and responding to hazardous materials transportation emergencies. CHP enforces materials and hazardous waste labeling and packing regulations that prevent leakage and spills of material in transit and provides detailed information to cleanup crews in the event of an incident. Vehicle and equipment inspection, shipment preparation, container identification, and shipping documentation are all part of the responsibility of CHP. CHP conducts regular inspections of licensed transporters to ensure regulatory compliance. Caltrans has emergency chemical spill identification teams at locations throughout the state. Hazardous waste must be regularly removed from generating sites by licensed hazardous waste transporters. Transported materials must be accompanied by hazardous waste manifests.

Occupational Safety and Health

Title 8 CCR – Safety Orders

Under the California Occupational Safety and Health Act of 1973, the California Occupational Safety and Health Administration (CalOSHA) is responsible for ensuring safe and healthful working conditions for California workers. CalOSHA assumes primary responsibility for developing and enforcing workplace safety regulations in Title 8 of the CCR. CalOSHA hazardous substances regulations include requirements for safety training, availability of safety equipment, hazardous substance exposure warnings, and emergency action and fire prevention plan preparation.

CalOSHA also enforces hazard communication program regulations, which contain training and information requirements, including procedures for identifying and labeling hazardous substances. The hazard communication program also requires that Material Safety Data Sheets be available to employees and that employee information and training programs be documented.

In Division 1, Chapter 4, Subchapter 4 – Construction Safety Orders of Title 8, construction safety orders are listed and include rules for demolition, excavation, explosives work, working around fumes and vapors, pile driving, vehicle and traffic control, crane operation, scaffolding, fall protection, and fire protection and prevention, among others.

Cal/OSHA Asbestos and Carcinogen Unit enforces asbestos standards in construction, shipyards, and general industry. This includes identification and removal requirements of asbestos in buildings, as well as health and safety requirements of employees performing work under the Asbestos-In-Construction regulations 8 CCR 1529. Only a Cal/OSHA-Certified Asbestos Consultant (CAC) can provide asbestos consulting (as defined by the Business and Professions Code, 7180–7189.7, and triggered by the same size and concentration triggers as for registered contractors). These services include building inspection, abatement project design, contract administration, supervision of site surveillance technicians, sample collection, preparation of asbestos management plans, and clearance air monitoring.

Asbestos and Air Quality

Enforcement of the NESHAP Regulation, HSC Section 39658(b)(1)

The California Air Resources Board (CARB) is responsible for overseeing compliance with the federal Asbestos National Emission Standards for Hazardous Air Pollutants (NESHAPs) in Butte County. The Asbestos NESHAP Program enforces compliance with the federal National Emissions Standards for Hazardous Air Pollutants (NESHAP) regulation for asbestos and investigates all related complaints, as specified by HSC Section 39658(b)(1). Of the 35 air districts in California, 16 of these districts do not have an asbestos program in place. In these "non-delegated" districts, a demolition/renovation notification is required for compliance with the Asbestos NESHAP. (This notification is not equivalent to a permit.) CARB reviews and investigates the notifications. The program also administers two annual statewide asbestos NESHAP task force meetings for air districts and US EPA to facilitate continuity of communication and enforcement, and assists the US EPA in training district staff to enforce the asbestos NESHAP.

Contractors State License Board

The California Department of Consumer Affairs Contractors State License Board manages the licensing of asbestos abatement contractors.

Lead-Based Paint

The California Department of Public Health enforces lead laws and regulations related to the prevention of lead poisoning in children, prevention of lead poisoning in occupational workers, accreditation and training for construction-related activities, lead exposure screening and reporting, disclosures, and limitations on the amount of lead found in products. Accredited lead specialists are required to find and abate lead hazards in a construction project and to perform lead-related construction work in an effective and safe manner. The specific regulations include California Health & Safety Code Sections 17920.10, 17961, 17980, 105185 to 105197, 105250 to 105257, 105275 to 105310, 116875 to 116880, and 124125 to 124165; California Civil Code Sections 1102 to 1102.16, and 1941.1; California Education Code Sections 32240 to 32245; and California Labor Code Sections 6716 to 6717.

California Building Standards Commission

Title 24 of the CCR – California Building Standards Code

The California Building Standards Code is a compilation of three types of building standards from three different sources: building standards that have been adopted by state agencies without change from building standards contained in national model codes; building standards that have been adopted and adapted from the national model code standards to meet California conditions; and building standards, authorized by the California legislature, that constitute extensive additions not covered by the model codes that have been adopted to address particular California concerns.

Among other rules, the Code contains requirements regarding the storage and handling of hazardous materials. The Chief Building Official at the local government level (i.e., City of Chico or Butte County) must inspect and verify compliance with these requirements prior to issuance of an occupancy permit.

California Emergency Services Act

Under the Emergency Services Act (California Government Code, Section 8550 et seq.), the State of California developed an emergency response plan to coordinate emergency services provided by federal, state, and local agencies. Rapid response to incidents involving hazardous materials or hazardous waste is an integral part of the plan, which is administered by the Governor's Office of Emergency Services. The Office of Emergency Services coordinates the responses of other agencies, including the EPA, California Highway Patrol, Regional Water Quality Control Boards, air quality management districts, and county disaster response offices.

State University Administrative Manual

The State University Administrative Manual (SUAM) provides required procedures to be used during planning, design and construction of buildings and other facilities on CSU campuses (CSU 2004). The SUAM indicates that a hazardous materials report will be prepared during the schematic design phase of a project. Based on the results of this report, hazardous materials abatement documents will be prepared to address known or suspected conditions related to existing contamination on a project site or within an existing building that may be subject to demolition or reconstruction. Hazardous materials and abatement reports are then included in construction bid documents so that construction contractors can provide for proper abatement of known or suspected conditions during project construction.

CSU, Chico Department of Environmental Health and Safety

The campus Department of Environmental Health and Safety oversees various health, safety and training programs, including industrial hygiene and hazardous materials. In addition, the Department manages the Emergency Action Plan for the campus and implements various emergency preparedness programs.

Local

Because CSU, Chico is a component of the CSU, which is a state agency, the project is not subject to local government planning or ordinances. Accordingly, because neither local general plans nor any other local land use plans or ordinances are applicable to CSU, Chico, such local plans and ordinances are not summarized here or further analyzed in this section. See Section 3.10, Land Use and Planning for an evaluation of environmental impacts due to conflicts with any land use plan, policy or regulation adopted for the purpose of avoiding or mitigating an environmental effect. However, local agencies may have responsibilities for implementation of state programs, such as the Butte County Health Department and the Chico Fire Department.

3.8.3 Thresholds of Significance

The significance criteria used to evaluate the project impacts related to hazards, hazardous materials and wildfire are based on Appendix G of the CEQA Guidelines. According to Appendix G of the CEQA Guidelines, a significant impact related to hazards and hazardous material would normally occur if the project would:

1. Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials.
2. Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment.
3. Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school.
4. Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as result, would it create a significant hazard to the public or the environment.
5. For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area.
6. Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan.
7. Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires.

3.8.4 Impact Analysis

Methodology

The hazards and hazardous materials impact analysis considers the construction and operation of the Master Plan, including near-term projects, long-term projects, and associated utility improvements. A review of applicable regulatory records was conducted to characterize the existing environmental setting in the study area, as described in Section 3.8.1, and to identify any existing hazardous sites on or near the Master Plan Area that could affect project implementation. A review of the EDR Radius Map Report, Historical Topo Map Report, Aerial Photo Decade Package, and Certified Sanborn Map Report (Appendix E) were also conducted to characterize the existing environmental setting. The impact analysis assumes that project development would be constructed and operated in compliance with the most current policies and regulations related to hazards and hazardous materials, as described in Section 3.8.2, Regulatory Setting.

Impact Analysis

Impact HAZ-1. The project would not create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials. (Less than Significant)

Construction

The project is a campus Master Plan, which includes multiple individual projects, mainly demolition of existing buildings and construction of new buildings. Hazardous materials that may be used during construction and demolition activities include gasoline, diesel fuel, oil, lubricants, grease, welding gases (e.g., acetylene, oxygen, and argon), solvents, and paints. These materials would be used and stored in designated construction staging areas within the boundaries of the Master Plan Area and would be transported, handled, and disposed of in accordance with all applicable federal, state, and local laws and regulations. The use of these materials for their intended purpose would not pose a significant risk to the public or environment. Hazardous wastes accumulated during construction activities may include unused paint and primer, paint thinner, solvents, and vehicle and equipment maintenance-related materials, many of which can be recycled. Empty containers for such materials (e.g., drums and totes) may also be returned to vendors, if possible. The use of these substances is subject to applicable federal, state, and local health and safety laws and regulations that are intended to minimize health risk to the public associated with hazardous materials.

Based on the age of the structures, there is a potential for hazardous building materials (i.e., lead-based paint (LBP), asbestos-containing materials (ACM), and universal wastes) to be present. Renovation or demolition of these structures, as well as transportation and disposal of the building materials could cause a release of these materials to the environment. A hazardous building materials survey would be conducted prior to any building renovation or demolition activities in accordance with federal, state, and local regulations, which include, but are not limited to:

- For asbestos: Cal/OSHA Asbestos and Carcinogen Unit; California Department of Public Health; California Department of Resources, Recycling, and Recovery (CalRecycle); and EPA National Emission Standards for Hazardous Air Pollutants (NESHAP).
- For lead: California Department of Public Health and EPA Lead Renovation, Repair, and Painting Rule.
- For universal wastes: Department of Toxic Substances Control (DTSC) universal waste rules; CalRecycle; and EPA Solid Waste Rules (40 CFR Part 273).

Proper handling, transportation, and disposal of any hazardous materials in accordance with federal, state, and local regulations would avoid or minimize effects during renovation and construction of near-term projects, long-term projects, and related utility infrastructure identified in the proposed Master Plan. The impact would be **less than significant.**

Operation

The operational phase of the project would be consistent with current campus operations, and would not be expected to create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials. Hazardous materials would be limited to use of commercially available cleaning products, landscaping chemicals and fertilizers, and various other commercially available substances. Proposed campus facilities could necessitate the routine transport, use, storage or disposal of hazardous materials associated with scientific research and would be guided by current campus environmental health and safety plans and procedures, overseen by the CSU, Chico Department of Environmental Health and Safety, to ensure safe handling, storage and disposal of such materials and chemicals. Although the project would introduce commercially available potentially hazardous materials to future residents, employees, and visitors of the Master Plan Area, the use of these substances would be subject to applicable federal, state, and local health and safety laws and regulations that are intended to minimize health risk to the public associated with hazardous materials. Therefore, operational impacts of near-term projects, long-term projects, and related utility infrastructure would be **less than significant.**

Impact HAZ-2. The project could create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment. (Potentially Significant)

Construction

As discussed above, renovation and demolition of existing structures has the potential to release ACM, LBP, and other universal waste items into the environment. However, a hazardous building materials survey would be conducted prior to renovation activities in accordance with federal, state, and local regulations, resulting in a less than significant impact.

During demolition and construction activities, grading and site excavation may be required. As discussed in Section 3.8.1.4, there are multiple hazardous material release sites on or near the Master Plan Area, and there is a potential that contaminated soil, groundwater, and soil vapor could be present on the Master Plan Area. There are also areas discussed in Section 3.8.1.2 that have historical uses that could have caused environmental contamination, such as the railroad yard and turntable and prior agricultural activities. These specific sites are shown on Figure 3.8-1, and the proposed new construction projects are shown on Figure 2-4. As discussed in Table 3.8-1, multiple sites received regulatory closure with contamination remaining in place. While these sites may not be a direct threat to human health or the environment in their current state, construction activities that include disturbance of soil, groundwater, or soil vapor at these locations could potentially release hazardous materials into the environment. Additionally, three sites near the Master Plan Area have groundwater impacts that have extended onto the Master Plan Area, as discussed in Table 3.8-2. Construction and disturbance of soil, groundwater, or soil vapor at locations impacted by these sites could potentially create an upset or accident condition by releasing hazardous materials into the environment resulting in a **potentially significant** impact. To avoid upset and accident conditions by disturbance and release of contaminated materials, a hazardous materials contingency plan (HMCP) would be completed and followed in accordance with **MM-HAZ-1.**

As discussed in Section 3.8.1.2, the University Farm has been operated by CSU, Chico since 1960. Ongoing use and storage of pesticides and herbicides has likely occurred since farm operations began. With ongoing agricultural use and storage of pesticides and herbicides, there is a potential for elevated levels of pesticides and herbicides to be present in surface soils resulting in a **potentially significant** impact. To avoid upset and accident conditions by disturbance and release of potentially contaminated soils, a soil sampling plan would be completed and soil sampling implemented prior to any soil excavation, grading, or other construction activities in the University Farm. Should levels of pesticides and/or herbicides be present above regulatory levels that could impact human health or the environment, remediation procedures would need to be determined prior to construction activities in accordance with **MM-HAZ-2.**

As shown in Table 3.8-2, the three offsite hazardous material release sites have ongoing groundwater remediation monitoring as required by DTSC. Some of the active monitoring wells are located within the boundaries of the Master Plan Area; their approximate locations are shown on Figure 3.8-1. Removal, damage, or disturbance of these or any other remaining monitoring wells, which may include disturbance of the well, casing, monitoring area, accessibility, or other activity that could otherwise affect the monitoring program required for that monitoring well, this could create an upset or accident condition, and would be in violation of the existing environmental restrictions and general orders enforced on these sites. This is a **potentially significant** impact. A protection and/or replacement plan would be required in accordance with **MM-HAZ-3** prior to construction activities which could disturb the wells. A separate plan would be required for each site's monitoring wells to be submitted to DTSC. This plan would be submitted to DTSC and other applicable regulatory agencies for approval prior to construction or demolition activities which could disturb the monitoring wells. The plan, and applicable permits and permissions from the regulatory agency(ies), would be followed during construction and demolition activities in accordance with **MM-HAZ-3.**

Operation

Once operational, the project would not be expected to create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment. Hazardous materials would be limited to use of commercially available cleaning products, landscaping chemicals and fertilizers, and various other commercially available substances. Although the project would introduce public uses to the Master Plan Area resulting in an increased use of commercially available potentially hazardous materials, the use, storage and transportation of these substances is subject to applicable federal, state, and local health and safety laws and regulations that are intended to minimize health risk to the public associated with hazardous materials. As such, operational impacts would be **less than significant.**

The monitoring wells associated with the adjacent contaminated sites must continue to be accessible in accordance with the environmental restrictions and general orders enforced for those sites. Operation of the project would be conducted in such a way as to not interfere with the monitoring activities required for these sites, and impacts would be **less than significant.**

Impact HAZ-3. The project would emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school. (Potentially Significant)

Construction

As discussed in Section 3.8.1.4, four pre-kindergarten through 12th grade schools are located within one quarter mile of the Master Plan Area. Hazardous materials that may be used during construction and demolition activities would be used and stored in designated construction staging areas within the boundaries of the Master Plan Area and would be transported, handled, and disposed of in accordance with all applicable federal, state, and local laws and regulations. The use of these materials for their intended purpose would not pose a significant risk to nearby schools. Hazardous wastes accumulated during project construction that cannot be recycled would be transported by a licensed hazardous waste hauler using a Uniform Hazardous Waste Manifest and disposed of at an appropriately permitted facility. The use of these substances is subject to applicable federal, state, and local health and safety laws and regulations that are intended to minimize health risk to the public associated with hazardous materials, and impacts would be **less than significant.**

As discussed above, renovation or demolition of existing structures has the potential to release ACM, LBP, and other universal waste items into the environment. However, a hazardous building materials survey would be conducted prior to any renovation or demolition activities in accordance with federal, state, and local regulations. This survey would be sufficient to avoid emissions of hazardous materials near existing schools, and impacts would therefore be **less than significant.**

Additionally, as discussed above, there are multiple hazardous materials release sites on or near the Master Plan Area, and there is a potential that contaminated soil, groundwater, and soil vapor could be present on the Master Plan Area. Construction and disturbance of soil, groundwater, or soil vapor at these locations could potentially create hazardous emissions near existing schools resulting in a **potentially significant** impact. A hazardous materials contingency plan (HMCP) would be completed and followed in accordance with **MM-HAZ-1.** Thus, any potential hazardous materials encountered on-site during demolition and construction activities would be properly mitigated in accordance with **MM-HAZ-1.**

Operation

Once operational, the project would not be expected to create a significant hazard to nearby schools by emitting or handling hazardous materials. Hazardous materials would be limited to use of commercially available cleaning products, landscaping chemicals and fertilizers, and various other commercially available substances. The use of these substances is subject to applicable federal, state, and local health and safety laws and regulations that are intended to minimize health risk to the public associated with hazardous materials. As such, operational impacts would be **less than significant.**

Impact HAZ-4. The project would be located on a site that is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would create a significant hazard to the public or the environment. (Potentially Significant)

Construction

As discussed in Section 3.8.1.4, Table 3.8-1 identifies documented hazardous material releases on the Master Plan Area, seven of which are Cortese List sites under Government Code 65962.5. While the Cortese List sites have been remediated and received regulatory closure, contamination has been allowed to remain in place at some of the sites in accordance with low-threat regulatory closure procedures. Thus, these sites could still affect construction activities associated with the project. Table 3.8-2 identifies three nearby hazardous material sites, two of which are Cortese List sites that have groundwater contamination that could extend onto the Master Plan Area. These sites are shown on Figure 3.8-1. Construction and demolition activities may encounter contaminated soils, groundwater, and soil vapor within these known areas of contamination, thereby creating a significant hazard to the public or the environment. This is a **potentially significant** impact. As discussed above, to avoid a significant hazard to the public or the environment, a hazardous materials contingency plan (HMCP) would be completed and followed in accordance with **MM-HAZ-1**. Additionally, contaminated materials (soil, groundwater, soil vapor) would be handled, transported, and disposed of in accordance with federal, state, and local regulations, thereby reducing the potential hazards to the public or the environment. Potential hazardous materials encountered on-site during demolition and construction activities would be properly mitigated in accordance with **MM-HAZ-1**.

The three offsite hazardous materials sites have active monitoring wells located on the main campus and University Farm. Their approximate locations are shown on Figure 3.8-1. As discussed above, removal, damage, or disturbance of these or any other remaining wells could create a hazard to the public or the environment, and would be in violation of the existing environmental restrictions and general orders applied to these sites. This is considered a **potentially significant** impact. A protection and/or replacement plan would be required for each site's monitoring wells in accordance with **MM-HAZ-3** prior to construction activities which could disturb the wells. This plan would be submitted to the regulatory agency (DTSC and others, as applicable) for approval prior to construction or demolition activities which could disturb the monitoring wells. The plan, and applicable permits and permissions from the regulatory agency(ies), would be followed during construction and demolition activities in accordance with MM-HAZ-3.

Operation

Project operation includes new construction of public uses in areas with known soil and groundwater contamination. The groundwater contamination, caused by nearby Cortese List sites and sites with low-threat regulatory closure, contains volatile organic compounds (VOCs), which could create a vapor intrusion concern for future residential and public use areas . This is considered a **potentially significant** impact. In accordance with **MM-HAZ-4,** soil vapor conditions would be assessed prior to construction of any proposed buildings to determine if a hazardous condition is present due to known subsurface contamination. Should hazardous conditions be present that could create a significant hazard to the public or the environment, vapor **MM-HAZ-4** would be implemented during construction and operation.

The monitoring wells associated with the adjacent Cortese List sites must continue to be accessible in accordance with the environmental restrictions and general orders. Operation of the project would be conducted in such a way as to not interfere with the monitoring activities required for these sites, and impacts would be **less than significant.**

Impact HAZ-5. The project is not located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, and would not result in a safety hazard or excessive noise for people residing or working in the project area. (No Impact)

The nearest public use airport is the Chico Municipal Airport, located approximately 3.7 miles north of the Master Plan Area. The airport influence area does not overlap any portion of the Master Plan Area. The Ranchero Airport, a private use airport, is located one mile west-southwest of the Master Plan Area. Because it is a private airport it does not include an airport land use plan. The Ranchero Airport services single engine aircraft and helicopters which would not result in a safety hazard or excessive noise. Because the Master Plan Area is not located within 2 miles of a public use airport, nor does it fall within an airport land use plan there would be **no impact.**

Impact HAZ-6. The project would not impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan. (No Impact)

The proposed Master Plan consists of multiple smaller projects on an already operational college campus in an urban area. Project construction and operation is not expected to interfere with adopted emergency response plans or emergency evacuation plans. The two major evacuation routes for Chico are State Route 32 and Highway 99, both of which are located outside the Master Plan Area. The Master Plan Area would continue to operate as a college campus. Therefore, **no impact** would occur.

Impact HAZ-7. The project would not expose people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires. (No Impact)

The Master Plan Area is not located on or near a VHFHSZ, as defined by CAL FIRE (see Section 3.8.1.6). The project is a Master Plan, which consists of developing additional student support space and student housing closer to the campus core. This would include demolishing several outdated and inefficient campus buildings and structures. Multiple existing surface parking lots would also be redeveloped. Because future development on the CSU Chico campus under the proposed Master Plan would occur within a developed environment that does not contain forestland or other wildland fuels and is not near forested areas; therefore, the project would not expose people or new buildings to a significant risk of loss, injury or death involving wildland fire. Thus, **no impact** would occur.

3.8.5 Cumulative Impacts

Development and redevelopment activities have the potential to use hazardous materials or expose workers and the public to pre-existing contamination. However, these cumulative projects would be fully regulated per local, state, and federal requirements, thus reducing potential for public safety risks, cumulative impacts associated with exposure to hazards and hazardous materials would be less than significant. Additionally, through mitigation and compliance with regulatory requirements, the construction or operation of the proposed project itself would reduce the potential to combine with other project impacts to create a significant and cumulatively considerable environmental health or safety risks impact. For these reasons, the proposed project would not result in cumulatively considerable contribution to cumulatively significant impacts related to hazards and hazardous materials.

3.8.6 Mitigation Measures

The following mitigation measures are proposed to address impacts associated with hazards and hazardous materials identified within the Master Plan Area that could be impacted by the proposed Master Plan.

Mitigation measure MM-HAZ-1 is applicable to Impacts HAZ-2, HAZ-3, and HAZ-4:

MM-HAZ-1 **Hazardous Materials Contingency Plan.** Prior to commencement of any building renovation, demolition or other construction activities, a Hazardous Materials Contingency Plan (HMCP) shall be developed that addresses potential impacts to soil, soil vapor, and groundwater from releases on or near the Master Plan Area, as well as the potential for existing hazardous materials onsite (e.g. drums and tanks). The HMCP shall include training procedures for identification of contamination. The HMCP shall describe procedures for assessment, characterization, management, and disposal of hazardous constituents, materials and wastes, and notification and decommissioning procedures for tanks, in accordance with all applicable federal, state, and local regulations. Contaminated soils and/or groundwater shall be managed and disposed of in accordance with federal, state, and local regulations. The HMCP shall include health and safety measures, which may include, but are not limited to, periodic work breathing zone monitoring and monitoring for volatile organic compounds using a handheld organic vapor analyzer in the event impacted soils are encountered during excavation activities. The University and its contractors shall implement the HMCP during project construction activities.

Mitigation measures MM-HAZ-2 and HAZ-3 are applicable to Impacts HAZ-2 and HAZ-4:

MM-HAZ-2 **Soil Sampling.** Prior to construction and development activities on the University Farm Development Area, a soil sampling plan shall be prepared by the University or its contractors and soil samples shall be collected and analyzed for pesticides, herbicides, and metals, which are commonly associated with historical pesticide and herbicide use on agricultural properties. Should contaminants of concern be identified in surface soils above regulatory screening levels which would indicate a potential impact to human health and/or the environment, a remediation plan shall be developed prior to commencement of construction and development activities. Coordination with the overseeing regulatory agency(ies), including DTSC and the RWQCB, may be required if contamination is discovered above regulatory levels.

MM-HAZ-3 **Monitoring Well Decommissioning/Protection.** The monitoring wells on the Master Plan Area associated with the three hazardous materials sites may require removal, protection or replacement if proposed construction would disturb the well, casing, monitoring area, accessibility, or otherwise affect the monitoring program required by the overseeing regulatory agency. Prior to construction activities that may affect a monitoring well, a monitoring well management plan shall be prepared by the University or its contractors following consultation with the well owner. A separate plan shall be prepared for monitoring wells associated with each individual site, as each site is managed separately by the State Department of Toxic Substances Control (DTSC). The plan(s), which may include decommissioning, destruction, protection, and/or replacement procedures, shall be written in accordance with applicable state and local laws, and submitted to

DTSC and other agencies, as applicable, for approval. The approved plan(s) shall be followed and onsite wells shall be removed and/or protection measures emplaced prior to construction in accordance with applicable laws and regulations.

Mitigation measure MM-HAZ-4 is applicable to Impact HAZ-4:

MM-HAZ-4 **Vapor Mitigation.** Prior to construction of residential, educational, or commercial buildings, a soil vapor investigation shall be conducted within the proposed building footprint. This applies to construction in areas with known or suspected contamination, including but not limited to the sites of concern identified in this EIR. Should contamination be identified during construction, this measure will be applied and building plans adjusted, as required. If concentrations of contaminants in soil vapor are above regulatory screening levels within the footprint of a proposed building or enclosed structure, vapor mitigation measures shall be implemented in accordance with the State Department of Toxic Substances Control Vapor Intrusion Mitigation Advisory (DTSC, 2011). The construction contractor shall develop vapor mitigation measures that adequately mitigate potential vapor intrusion in buildings and enclosed structures. Typical vapor mitigation measures shall include installation of a sub-slab geomembrane or vapor barrier installed throughout the entire footprint of the building. Optional blowers can be connected to the vent piping at the roofline for conversion of a passive venting system into an active system, if necessary. Functionality of these features shall be maintained and monitored once the building is operational, to continue protection from vapor intrusion.

3.8.7 Level of Significance After Mitigation

Master Plan construction and demolition activities would be completed in accordance with the HMCP (**MM-HAZ-1**), which would put procedures in place to identify, manage, properly transport, and dispose of hazardous substances and materials identified onsite as a result of environmental contamination. Soils in the University Farm would be screened for elevated levels of pesticides, herbicides, and metals prior to construction activities in accordance with **MM-HAZ-2.** The active monitoring wells located on the Master Plan Area would be protected, decommissioned, demolished, or replaced as required by DTSC and other regulatory agencies in accordance with **MM-HAZ-3.** Implementation of vapor mitigation measures would be required by **MM-HAZ-4** for future residential, educational, and commercial buildings and enclosed structures in accordance with DTSC vapor intrusion protection guidelines (DTSC, 2011). With implementation of these mitigation measures, impacts related to foreseeable upset and accident conditions, emissions and hazardous material handling near a school, and significant hazards from a Government Code Section 65962.5 site would be mitigated to a **less than significant level.**

Potentially significant impacts were not identified for Impacts HAZ-1, HAZ-5, HAZ-6, and HAZ-7; mitigation measures are not required.

3.8.8 References

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3.9 Hydrology and Water Quality

This section describes the existing hydrology and water quality conditions of the proposed Master Plan area and vicinity, identifies associated regulatory requirements, evaluates potential impacts, and identifies mitigation measures related to implementation of the proposed project.

Scoping comments regarding hydrology and water quality were received from the Central Valley Regional Water Quality Control Board (CVRWQCB) in response to the Notice of Preparation (NOP). The CVRWQCB comment letter stated permitting requirements under the General Construction Permit, Section 401 of the Clean Water Act, and the National Pollutant Discharge Elimination System, and set forth Post-Construction Storm Water Requirements. In addition, a comment was submitted regarding concern about standing water in unspecified absorption zones (with respect to mosquito breeding) and the adequacy of storm water facilities.

3.9.1 Existing Conditions

Regional and Local Watershed

The CSU, Chico campus is located in the eastern portion of the Sacramento River Valley, approximately 10 miles east of the Sacramento River, which flows in a south/southeasterly direction through the Sacramento River Valley (City of Chico 2010).

The state has been subdivided into 10 hydrologic regions. The CSU, Chico campus is located in the north-central portion of the Sacramento River Hydrologic Region, which covers approximately 17.4 million acres (27,200 square miles). Geographically, the Sacramento River Hydrologic Region extends south from the Modoc Plateau, near the Oregon border, to the Sacramento-San Joaquin River Delta. The northernmost area, which is primarily a high desert plateau, is characterized by hot, dry summers and cold, snowy winters, with only moderate rainfall. The Sacramento Valley, which forms the core of the region, is bounded to the east by the crest of the Sierra Nevada and the southern Cascades and to the west by the crest of the Coast Range and Klamath Mountains. Overall, annual precipitation in the Sacramento River Hydrologic Region generally increases as one moves from south to north and west to east. The heavy snow and rain that falls in this region contributes to the overall water supply for the entire state (City of Chico 2010).

The Sacramento River Hydrologic Region is the main water supply for much of California's urban and agricultural areas. Annual runoff in the Sacramento River Hydrologic Region averages about 22.4 million acre-feet (AF), which is nearly one-third of the state's total natural runoff. Major water supplies in the region are provided through surface storage reservoirs. Major reservoirs in the region not only provide water supply but are also the source of recreation, power generation, and other environmental and flood control benefits. In addition, the region has a network of creeks and rivers that convey water for use throughout the region and provide nesting and rearing habitat for major fish and wildlife species. Approximately 8 million AF of water go to municipal, industrial, and agricultural uses, while approximately 2.5 million AF are stored as groundwater. Much of the remainder of the runoff goes to dedicated natural flows (City of Chico 2010).

Distinctive drainage features in or near the proposed Master Plan area (or project site) include Big Chico Creek, which traverses the main campus, and Little Chico Creek, which is located approximately 2,000 feet southeast of the main campus (Figure 3.9-1, Topography and Drainage). Other significant streams in the City of Chico include Mud Creek, Butte Creek, Dead Horse Slough, Sycamore Creek, Comanche Creek, and Lindo Channel (City of Chico 2002). The Big Chico Creek and Little Chico Creek Watersheds encompass the CSU, Chico main campus, University Farm, and off-campus University Village housing. The northern portion of the main campus, as well as the University Village housing, are located within the Big Chico Creek Watershed. The remaining southern part of the main campus, as well as the University Farm, are located within the Little Chico Creek Watershed (Figure 3.9-2, Watersheds) (Butte County 2013).

Groundwater

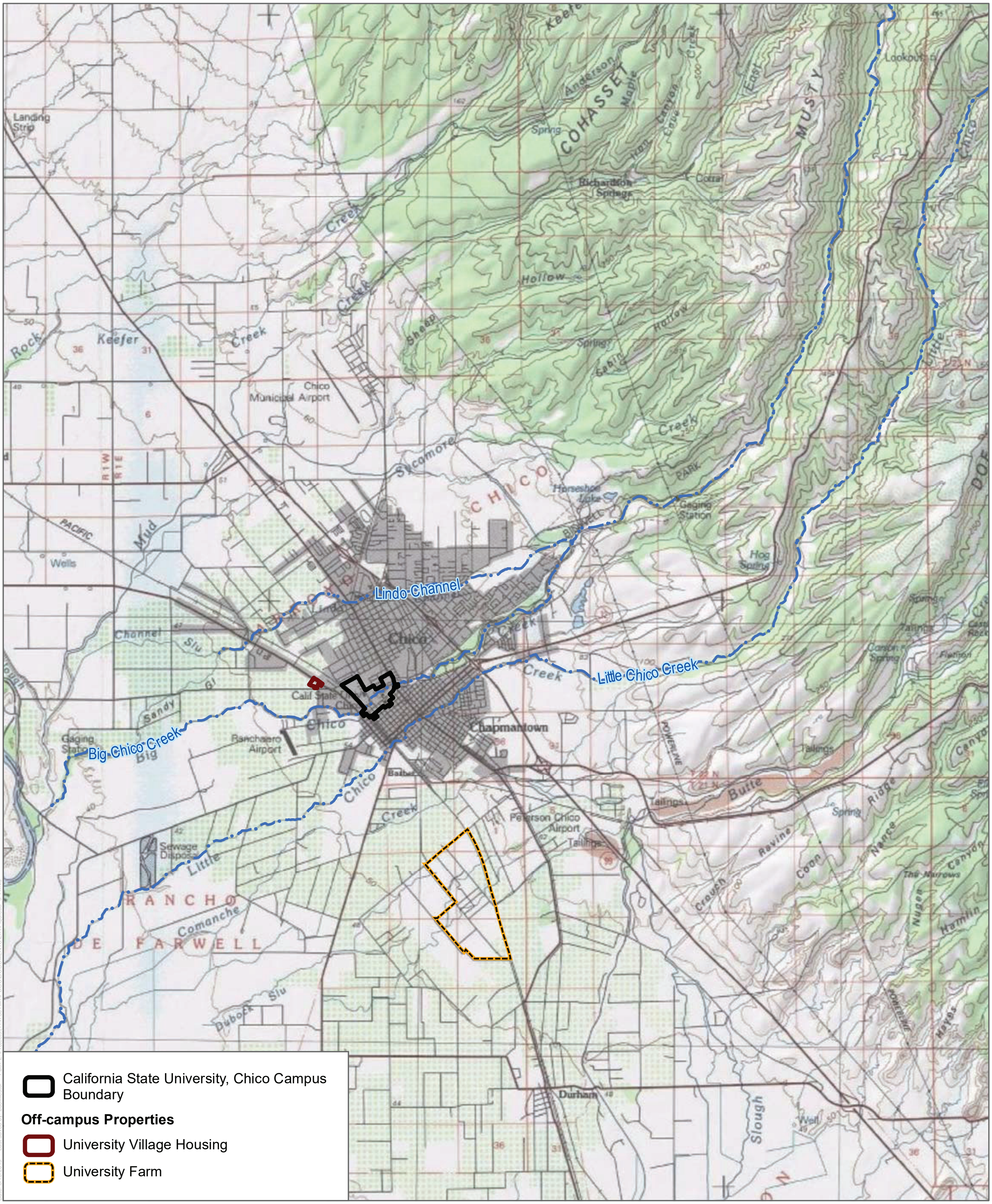
The City of Chico lies above the West Butte and Vina Subbasins of the encompassing Sacramento Valley Groundwater Basin (Figure 3.9-3, Groundwater Basins). Big Chico Creek and Butte Creek serve as subbasin boundaries in the near-surface; however, the West Butte Subbasin is hydrologically contiguous with the Vina Subbasin at depth. The northern portion of the main campus and the University Village housing site are underlain by the Vina Subbasin, whereas the southern region of the main campus and the University Farm are underlain by the West Butte Subbasin. Groundwater flow in both subbasins is southwesterly toward the Sacramento River. Annual precipitation within the subbasins is approximately 18 inches in the valley, increasing to 27 inches towards the foothills. The West Butte aquifer system is comprised of Holocene stream channel/basin deposits; Pleistocene Modesto Formation, Riverbank Formation, and Sutter Buttes alluvium; and Pliocene Tehama and Tuscan Formations. The Vina aquifer system is comprised of Holocene stream channel deposits, Pleistocene Modesto Formation deposits, and Tertiary Tuscan Formation (City of Chico 2010; California DWR 2004a, 2004b).

Groundwater levels have historically dropped in both subbasins during periods of drought, followed by a recovery in groundwater levels in between drought periods. In the Chico area, groundwater levels in the unconfined portion of the aquifer system are about 5 to 7 feet below ground surface during normal precipitation years and up to approximately 16 feet during periods of drought. Annual fluctuation in the confined or semi-confined portion of the aquifer system is approximately 15 to 25 feet below ground surface during normal years and up to approximately 30 feet during periods of drought. However, an overall drop in groundwater levels of about 10 to 15 feet occurred from the 1950s to the early 2000s. Year round groundwater extraction for municipal use in the Chico area causes several small groundwater depressions that tend to alter the natural southwesterly movement of groundwater in the area (California DWR 2004a, 2004b).

Groundwater Supply

The aquifer system underlying Chico supplies the municipal and agricultural water demands of the City. Approximately 60% of the groundwater pumped for the City, and most of the stormwater runoff from impervious development, returns to either the groundwater system as recharge or the surface water system as discharge. Another 16% returns through septic systems. The portion of water that does not return to the aquifer is consumed by landscape plants, lost through evapotranspiration, or discharged as treated wastewater to the Sacramento River. In addition, the groundwater system is mostly sustained by recharge in the foothills located east of Chico, streamflow infiltration from Big Chico and Little Chico Creeks and Lindo Channel, and to a lesser degree by direct infiltration of precipitation (City of Chico 2010).

The Chico-Hamilton City District (District) of the California Water Service Company (Cal Water) is the sole water service agency in the City and is a member of the Butte Basin Water Users Association. Cal Water is a private company that operates the public water system and serves nearly 25,200 water service customers within the District, including CSU, Chico. In 2015, Cal Water pumped 18,227 AF of groundwater for retail consumption.



SOURCE: USGS 2018, NHD 2018

FIGURE 3.9-1

Topography and Drainage

California State University, Chico Master Plan EIR

DUDEK

0 5,000 10,000 Feet

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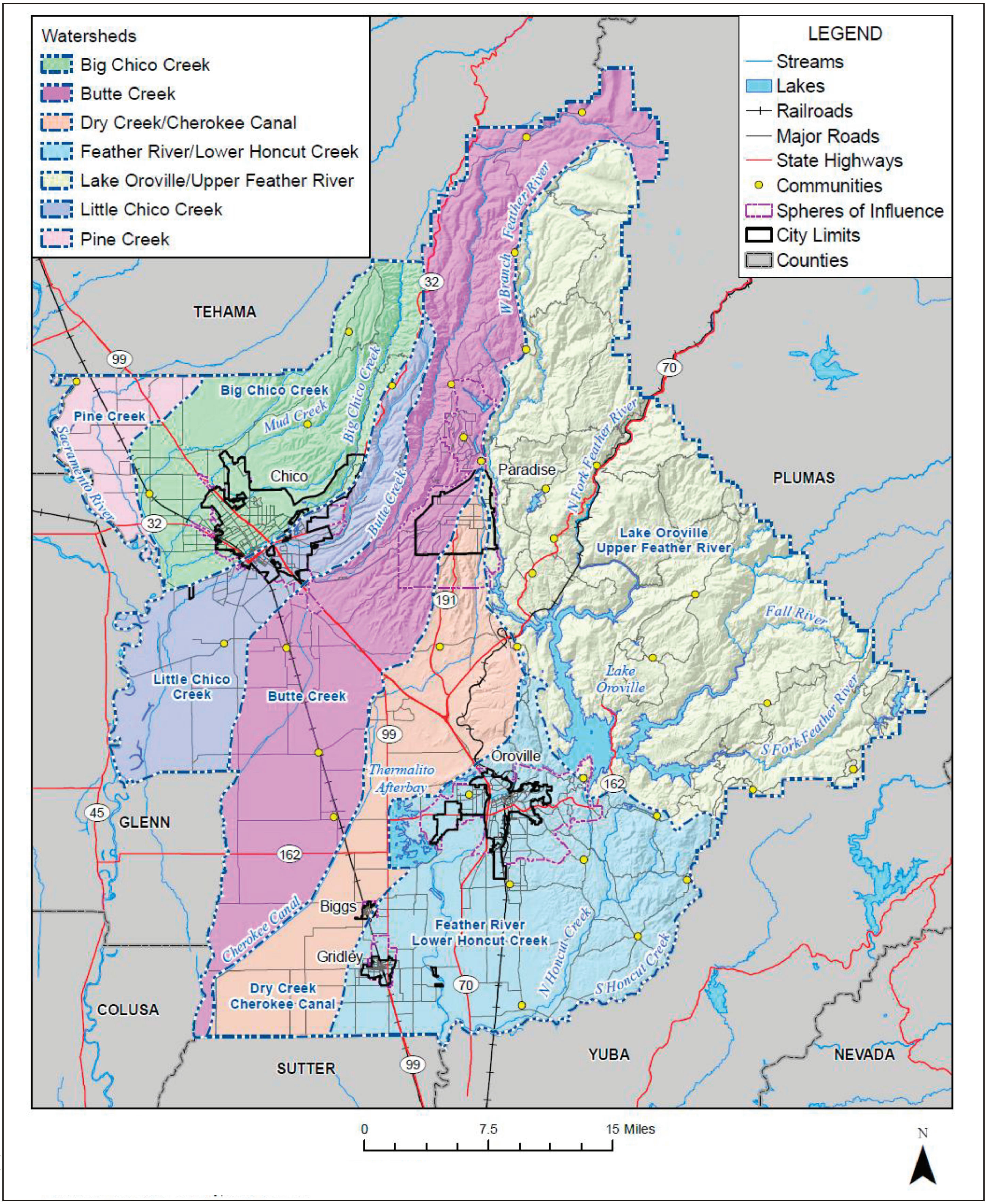

SOURCE: Butte County 2013

FIGURE 3.9-2

Watersheds

California State University, Chico Master Plan EIR

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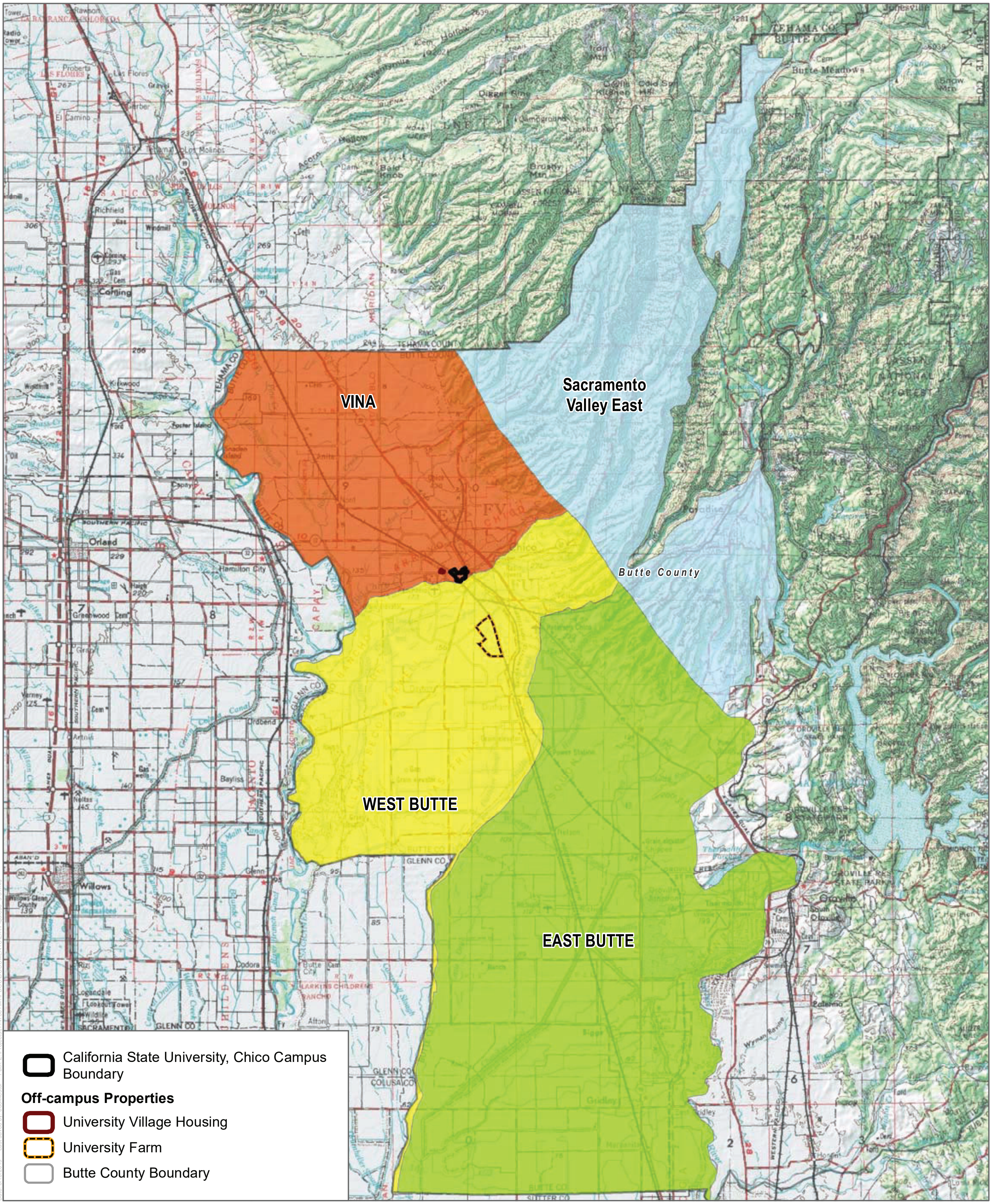

SOURCE: USGS 2018, City of Chico 2010

DUDEK

0 16,250 32,500 Feet

FIGURE 3.9-3

Groundwater Basins

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The District has a total of 65 wells located throughout the service area, including 62 in Chico and 3 in Hamilton City. Groundwater is pumped to 9 surface storage structures during non-peak demand periods, in order to provide peak

day demand. Residents not currently supplied by Cal Water obtain their water through private wells. Agricultural water demand is also met through private wells (City of Chico 2006; Cal Water 2016).

The sole source of water supply for the customers of the District is groundwater extracted from subbasins of the Sacramento Valley Groundwater Basin, including the Vina Subbasin and the West Butte Subbasin. The Sacramento Valley Groundwater Basin is currently unadjudicated and no safe yield has been determined. Water rights in unadjudicated groundwater basins are not as clearly defined as they are in adjudicated basins where groundwater pumping is managed and operated according to court settlements (City of Chico 2010). In addition, in accordance with the Sustainable Groundwater Management Act (SGMA), the California Department of Water Resources (DWR) has not determined the priority of either the Vina Subbasin or the West Butte Subbasin in regard to enacting a sustainable groundwater management plan (DWR 2019). The Butte County Department of Water and Resource Conservation developed a groundwater management plan for the region (Butte County 2005). However, this plan was based on a 2001 water supply analysis, which is generally out of date. The Butte Basin Water Users Association prepared a groundwater model of the basin and began development of a plan to manage the quantity of water stored in the groundwater aquifers. Butte County has taken the lead role in regional management since 2012 and currently maintains the groundwater model. No safe yield has been established for the Sacramento Valley Groundwater Basin (Cal Water 2016).

According to Cal Water's 2015 Urban Water Management Plan (UWMP), the groundwater levels in the District have dropped over 30 feet in the past 30+ years. This drop in water levels can be partly explained by extended drought periods between the years of 1987-1992, 2007, 2009 and 2014-2017. During the most recent drought, in 2014, groundwater level measurements showed that of the 77 wells with assigned alert levels, 45 wells did not meet Basin Management Objectives (BMOs). The BMO is the current groundwater management plan for the County. However, in the periods between droughts, groundwater levels increased. As such, Cal Water expects that a return to normal rainfall patterns will correspond with a recovery in groundwater levels (Cal Water 2016).

The District has sufficient groundwater production capacity to supply all of the current annual average day and maximum day demand. Cal Water expects that under all hydrologic conditions, its groundwater supply would be able to fully meet future demands through 2040. Storage in the groundwater basins provide a buffer against years with decreased precipitation while wetter years will recharge natural supplies. In addition, Butte County has a 27,000 AF per year entitlement to State Water Project water. It is possible that Cal Water could enter into an agreement that would make this water available to the customers in the Chico-Hamilton District. This State Water Project water could be treated and delivered directly to Cal Water customers, or could be used for groundwater replenishment (Cal Water 2016, NorCalWater 2018).

Water Quality

Groundwater Quality

Groundwater beneath the Sacramento Valley Groundwater Basin is considered most vulnerable to the following activities associated with contaminants detected in the water supply: sewer collection systems, septic systems, parks, agricultural drainage, fertilizer and pesticide application, utility, wood preserving/treating, fleet/truck/bus terminals and known contaminant plumes (City of Chico 2010). Concentrations of total dissolved solids (TDS) in the West Butte Subbasin range from 130 milligrams per liter (mg/L) to 676 mg/L, with an average of 293 mg/L.

Concentrations of TDS in the Vina Subbasin range from 48 mg/L to 543 mg/L, averaging 285 mg/L. Groundwater quality impairments in the West Butte Subbasin include localized high concentrations of calcium, conductivity, boron, TDS, and sodium absorption; and groundwater quality impairments in the Vina Subbasin include localized high concentrations of calcium, nitrates, and TDS in the Chico area (California DWR 2004a, 2004b).

In addition, chemicals of concern in the District include arsenic and the volatile organic compounds tetrachloroethylene (PCE) and trichloroethylene (TCE). The quality of the groundwater produced by the District's active wells can vary depending on location. Water produced from several wells has been tested and found to contain concentrations that exceed the U.S. Environmental Protection Agency (EPA) Maximum Contaminant Levels (MCLs) for TCE, PCE, cis-1,2-Dichloroethylene (Cis 12 DCE), and 1,1-dichloroethylene (1,1 DCA). However, in all cases, these wells were either taken out of service or treatment facilities were installed to remove the contaminants. Similarly, 10 wells in the District have detected nitrate greater than 5 parts per million (ppm), which is one-half the MCL of 10 ppm for nitrate concentrations. One other well has been identified as having nitrate concentrations higher than the MCL, and another well has been identified as having nitrate concentrations within 1.3 ppm of the MCL. As a result, these latter two wells are inactive (Cal Water 2016).

None of these chemicals is expected to cause significant problems with the quality of water delivered to the District's customers. Wells testing above the U.S. EPA MCL for any contaminants are either removed from service or are treated with wellhead remediation technologies to ensure compliance with all water quality regulations. Furthermore, any areas that have been found to be contaminated are currently being regulated by either the California Department of Toxic Substances Control or State Water Resources Control Board. The District will avoid these contaminated areas when sighting any future groundwater wells (Cal Water 2016).

Groundwater contamination from 1,2,3-Trichloropropane (TCP) poses a significant threat to District wells. The U.S. EPA Division of Drinking Water has identified TCP as a primary contaminant and is actively working to develop an MCL for this compound. 1,2,3-TCP has been detected in a few District wells at levels likely to exceed the MCL. As a result, the District anticipates needing to install treatment on a number of TCP-contaminated wells. The District is actively planning for the treatment of TCP-contaminated wells and is working to ensure compliance with any new TCP-related water quality regulations. The presence of this compound and other volatile organic chemical contaminants in District wells raises a concern regarding the future availability of other wells not currently impacted. Contaminant migration of these solvents with groundwater movement could force the closure or treatment of additional wells (Cal Water 2016).

Surface Water Quality

Water quality for all surface and ground waters for the Sacramento Valley is regulated under the jurisdiction of the CVRWQCB. Water quality standards for all waters in the region are discussed in the region's Basin Plan, which covers the entire area included in the Sacramento and San Joaquin Rivers drainage basins. The Sacramento River drainage basin covers approximately 27,000 square miles and includes the entire area drained by the Sacramento River, including the project site (City of Chico 2010).

Section 303(d) of the federal Clean Water Act (CWA) requires states to identify the waters of the state that do not meet the CWA national goal of "fishable, swimmable" and to develop total maximum daily loads (TMDLs) for such waters, with oversight of the United States Environmental Protection Agency (USEPA). These waters are commonly referred to as "impaired." A TMDL is a quantifiable assessment of potential water quality issues, contributing sources, and load reductions or control actions needed to restore or protect bodies of water.

According to the City of Chico Storm Drain Tributary Areas (City of Chico 2002), stormwater runoff from the project site is conveyed into Big Chico Creek, Little Chico Creek, and the Lindo Channel (Figure 3.9-4, Stormwater Drainage).

Big Chico Creek is listed on the 303(d) list for mercury; Lindo Channel is listed for the contaminant Diazinon; and Little Chico Creek is listed for mercury. Waters from these creeks and channel flow to the Sacramento River. The portion of the Sacramento River that is fed by Chico's watershed contains the 303(d) contaminants dichloro diphenyl trichlorethane (DDT), dieldrin, mercury, polychlorinated biphenyls (PCBs), and toxicity (SWRCB 2017).

Flood Hazards

Flooding hazards within the Big Chico Creek watershed are attributed to potential high flows from Lindo Channel, Sycamore Creek, Rock Creek, Keefer Slough, and Big Chico Creek (City of Chico 2010). According to the Federal Emergency Management Agency (FEMA) flood maps, Big Chico Creek is considered FEMA Zone AE, a Special Flood Hazard Area. The flood zone is located generally confined to the creek banks and immediately adjacent areas within the main campus (Figure 3.9-5, Flood Zones). The remainder of the campus, the University Village, and University Farm are all located in Zone X, Area of Minimal Flood Hazard (FEMA 2011). In addition, CSU, Chico is not located in a potential dam failure inundation area (City of Chico 2017).

Big Chico Creek

Flood control of Big Chico Creek for the City of Chico is provided by a flood control structure at the Five-Mile Recreation Area, approximately three miles to the northeast of the main campus. The structure was installed by the U.S. Army Corps of Engineers in the mid-1960s and is designed for a maximum allowable flow down Big Chico Creek above the Big Chico Culvert of 14,500 cubic feet per second (cfs). The primary purpose of the structure is to divert potentially damaging peak flows around the central portion of the city. Butte County maintains the flood control structure in conjunction with the California DWR (City of Chico 2010).

During high flow periods, Big Chico Creek exits the narrow foothill canyon at very high velocities, carrying a large bedload, larger particles that are carried along the bottom of a stream, until it encounters the Five-Mile Area stilling basin. At this location, velocity and bedload mobilizing capacity is significantly reduced, allowing for the larger, entrained sediment to quickly fall out of the water column, depositing the large gravel just upstream of the Five-Mile Area Flow Control Structures. During the following high flow period, the previously deposited gravels flow in the direction of least resistance, sometimes bypassing Big Chico Creek proper and flowing down Lindo Channel or Sycamore Bypass (City of Chico 2010).

Stormwater Drainage

As previously discussed, the City of Chico Storm Drain Tributary Areas (City of Chico 2002) indicates that there are three storm drain receiving waters for the project site: Big Chico Creek, Little Chico Creek, and Lindo Channel (Figure 3.9-4, Stormwater Drainage). Big Chico Creek conveys stormwater for a small area (shown as green shading in Figure 3.9-4) of the main campus located north of the creek, as well as areas south of the creek. This portion of Big Chico Creek is regulated/owned by CSU, Chico. Most of the main campus located north of Big Chico Creek, as well as the University Housing site (shown as red shading in figure 3.9-4), drain to the northwest toward the Lindo Channel, which is regulated/owned by the City of Chico. And small areas located on the southeast campus perimeter (shown as tan shading in Figure 3.9-4) drain toward Little Chico Creek, which is similarly regulated/owned by the City of Chico. Stormwater runoff from the University Farm is conveyed via surface drains to the Dubock Slough, which is located to the southwest of the farm.

Dam Inundation

Dams are manmade structures built for a variety of uses including flood protection, power generation, agriculture, water supply, and recreation. Dams are usually engineered to withstand a flood with a computed risk of occurrence. For example, a dam may be designed to contain a flood at a location on a stream that has a certain probability of occurring in any one year. If prolonged periods of rainfall and flooding occur that exceed the design requirements, that structure may be overtopped and fail. Overtopping is the primary cause of earthen dam failure in the United States. Dam failures can also result from any one or a combination of the following causes:

- Earthquake;
- Inadequate spillway capacity resulting in excess overtopping flows;
- Internal erosion caused by embankment or foundation leakage, or piping or rodent activity;
- Improper design;
- Improper maintenance;
- Negligent operation; and/or
- Failure of upstream dams on the same waterway.

However, dams are regulated by the Division of Safety of Dams of the California DWR and are routinely inspected during the life of the dam, which includes monitoring for compliance with seismic stability standards (City of Chico 2010). Thus, dam failure is not considered a reasonably foreseeable event. In addition, according to the Butte County Local Hazard Mitigation Plan, the main campus, University Farm, and University Village housing are not susceptible to inundation by any dam within the region (Butte County 2013).

3.9.2 Regulatory Setting

Federal

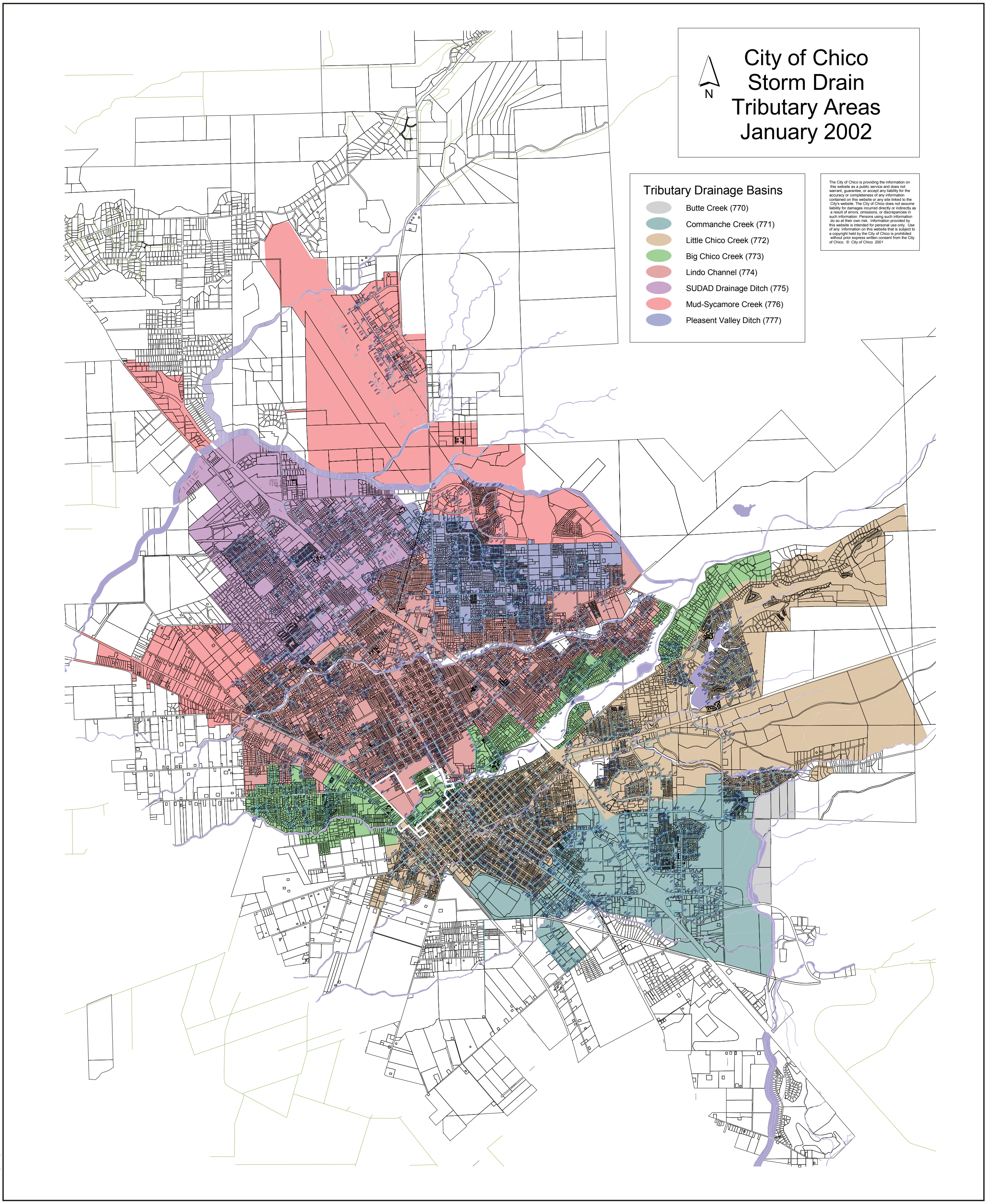
Clean Water Act

Increasing public awareness and concern for controlling water pollution led to enactment of the Federal Water Pollution Control Act Amendments of 1972. As amended in 1977, this law became commonly known as the CWA (33 USC 1251 et seq.). The objective of the CWA is to restore and maintain the chemical, physical, and biological integrity of the Nation's waters. The CWA established basic guidelines for regulating discharges of pollutants into the waters of the United States. The CWA requires that states adopt water quality standards to protect public health, enhance the quality of water resources, and ensure implementation of the CWA.

Section 303 of the CWA (Beneficial Use and Water Quality Objectives)

The CVRWQCB is responsible for the protection of the beneficial uses of waters within the project area in Butte County. The CVRWQCB uses its planning, permitting, and enforcement authority to meet its responsibilities adopted in the Basin Plan to implement plans, policies, and provisions for water quality management.

In accordance with state policy for water quality control, the CVRWQCB employs a range of beneficial use definitions for surface waters, groundwater basins, marshes, and mudflats that serve as the basis for establishing water quality objectives and discharge conditions and prohibitions. The Basin Plan for the Central Valley Region has identified



SOURCE: City of Chico 2002

FIGURE 3.9-4

Stormwater Drainage

DUDEK

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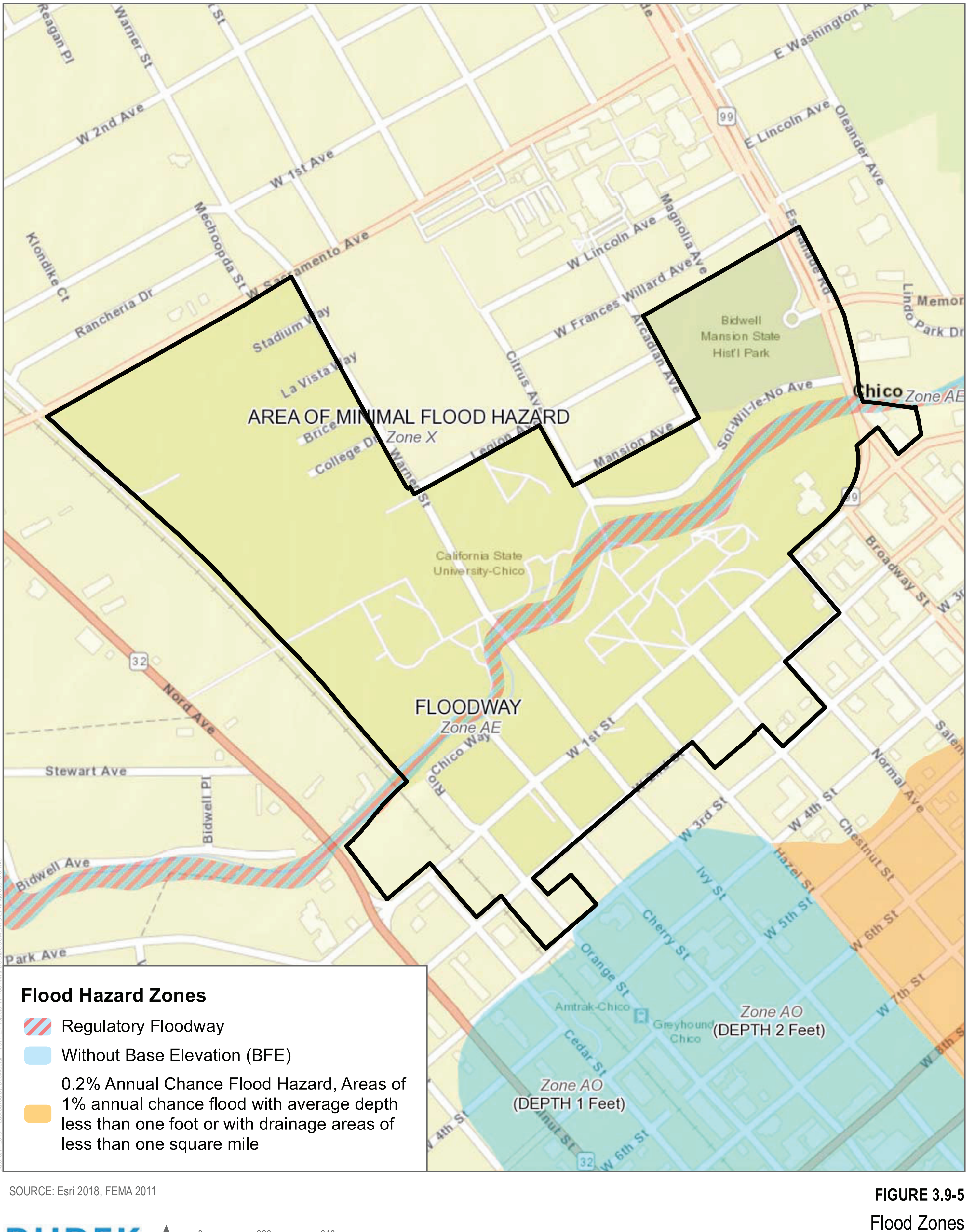

SOURCE: Esri 2018, FEMA 2011

FIGURE 3.9-5

Flood Zones

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existing and potential beneficial uses supported by the key surface water drainages throughout its jurisdiction. Under CWA Section 303(d), the State of California is required to develop a list of impaired water bodies that do not meet water quality standards and objectives. A TMDL defines how much of a specific pollutant/stressor a given water body can tolerate and still meet relevant water quality standards. The CVRWQCB has developed TMDLs for select reaches of water bodies.

Section 401 of the CWA (Water Quality Certification)

Section 401 of the CWA requires that an applicant for any federal permit (e.g., a U.S. Army Corps of Engineers [ACOE] Section 404 permit) obtain certification from the state, requiring that discharge to waters of the United States would comply with provisions of the CWA and with state water quality standards. For example, an applicant for a permit under Section 404 of the CWA must also obtain water quality certification per Section 401 of the CWA. Section 404 of the CWA requires a permit from the ACOE prior to discharging dredged or fill material into waters of the United States, unless such a discharge is exempt from CWA Section 404. For the project area, the CVRWQCB must provide the water quality certification required under Section 401 of the CWA.

Section 402 of the CWA (NPDES)

The CWA was amended in 1972 to provide that the discharge of pollutants to waters of the United States from any point source is unlawful unless the discharge is in compliance with a NPDES permit. The NPDES permit program, as authorized by Section 402 of the CWA, was established to control water pollution by regulating point sources that discharge pollutants into waters of the United States (33 USC 1342). In the state of California, the EPA has authorized the State Water Resources Control Board (SWRCB) permitting authority to implement the NPDES program.

Section 404 of the Clean Water Act

Section 404 of the CWA established a permitting program to regulate the discharge of dredged or filled material into waters of the U.S., which include wetlands adjacent to national waters (33 USC 1344). This permitting program is administered by the ACOE and enforced by the Environmental Protection Agency (EPA).

National Flood Insurance Program

The National Flood Insurance Act of 1968 established the National Flood Insurance Program in order to provide flood insurance within communities that were willing to adopt floodplain management programs to mitigate future flood losses. The Act also required the identification of all floodplain areas within the U.S. and the establishment of flood-risk zones within those areas. FEMA is the primary agency responsible for administering programs and coordinating with communities to establish effective floodplain management standards. FEMA is responsible for preparing Flood Insurance Rate Maps (FIRMs) that delineate the areas of known special flood hazards and their risk applicable to the community. The program encourages the adoption and enforcement by local communities of floodplain management ordinances that reduce flood risks. In support of the program, FEMA identifies flood hazard areas throughout the United States on FEMA flood hazard boundary maps.

Federal Antidegradation Policy

The Federal Antidegradation Policy (40 CFR 131.12) requires states to develop statewide antidegradation policies and identify methods for implementing those policies. Pursuant to the Code of Federal Regulations (CFR), state antidegradation policies and implementation methods shall, at a minimum, protect and maintain: (1) existing in-stream water uses; (2) existing water quality where the quality of the waters exceeds levels necessary to support existing beneficial uses, unless the state finds that allowing lower water quality is necessary to accommodate economic and social development in the area; and (3) water quality in waters considered an outstanding national resource.

Executive Order 11988

Executive Order 11988 (Floodplain Management) is an order given by President Carter in 1977 to avoid the adverse impacts associated with the occupancy and modification of floodplains. The order addresses floodplain issues related to public safety, conservation, and economics. It generally requires federal agencies constructing, permitting, or funding a project in a floodplain to:

- Avoid incompatible floodplain development;
- Be consistent with the standards and criteria of the National Flood Insurance Program; and
- Restore and preserve natural and beneficial floodplain values.

State

Sustainable Groundwater Management Act

On September 16, 2014, Governor Jerry Brown signed into law a three-bill legislative package—Assembly Bill 1739 (Dickinson), Senate Bill (SB) 1168 (Pavley), and SB 1319 (Pavley)—collectively known as SGMA, which requires governments and water agencies of high- and medium-priority basins to halt overdraft and bring groundwater basins into balanced levels of pumping and recharge. Under SGMA, these basins should reach sustainability within 20 years of implementing their sustainability plans. For critically over-drafted basins, sustainability should be achieved by 2040. For the remaining high- and medium-priority basins, 2042 is the deadline. Through SGMA, the California DWR provides ongoing support to local agencies through guidance, financial assistance, and technical assistance. SGMA empowers local agencies to form Groundwater Sustainability Agencies (GSAs) to manage basins sustainably, and requires those GSAs to adopt Groundwater Sustainability Plans (GSPs) for crucial (i.e., medium to high priority) groundwater basins in California. As previously discussed, the California DWR has not determined the priority of either the Vina Subbasin or the West Butte Subbasin (of the Sacramento Valley Groundwater Basin) in regard to enacting a sustainable groundwater management plan (DWR 2019). However, the Butte County Department of Water and Resource Conservation has already developed a groundwater management plan for the region.

California Porter-Cologne Water Quality Control Act

Since 1973, the California SWRCB and its nine RWQCBs have been delegated the responsibility for administering permitted discharge into the waters of California. The CSU, Chico campus lies within the jurisdiction of the CVRWCQB. The Porter-Cologne Water Quality Act (Cal. Water Code § 13000 *et seq*.; Cal. Code Regs. tit. 23, Chapter 3, 15) provides a comprehensive water-quality management system for the protection of California waters. Under the Act, "any person discharging waste, or proposing to discharge waste, within any region that could affect the quality of the waters of the state" must file a report of the discharge with the appropriate RWQCB. Pursuant to the Act, the RWQCB may then prescribe "waste discharge requirements (WDRs)" that add conditions related to control of the discharge. Porter-Cologne defines "waste" broadly, and the term has been applied to a diverse array of materials, including non-point source pollution. When regulating discharges that are included in the Federal CWA, the state essentially treats WDRs and NPDES as a single permitting vehicle. In April 1991, the SWRCB and other state environmental agencies were incorporated into the CalEPA.

The RWQCB regulates urban runoff discharges under the NPDES permit regulations. NPDES permitting requirements cover runoff discharged from point (e.g., industrial outfall discharges) and nonpoint (e.g., stormwater runoff) sources. The RWQCB implements the NPDES program by issuing construction and industrial discharge permits.

Under the NPDES permit regulations, Best Management Practices (BMPs) are required as part of a Storm Water Pollution Prevention Plan (SWPPP). The EPA defines BMPs as "schedules of activities, prohibitions of practices, maintenance procedures, and other management practices to prevent or reduce the pollution of Waters of the United States." BMPs include treatment requirements, operating procedures, and practices to control site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw material storage" (40 CFR 122.2).

Construction General Permit

For stormwater discharges associated with construction activity in the state, the SWRCB has adopted the General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities (Construction General Permit [CGP]) to avoid and minimize water quality impacts attributable to such activities. The CGP applies to all projects in which construction activity disturbs 1 acre or more of soil. Construction activity subject to this permit includes clearing, grading, and disturbances to the ground, such as stockpiling and excavation. The CGP requires the development and implementation of a SWPPP, which would specify water quality BMPs designed to reduce or eliminate pollutants in stormwater discharges and authorized non-stormwater discharges from the construction site. Routine inspection of all BMPs is required under the provisions of the CGP, and the Stormwater Pollution Prevention Plan (SWPPP), which must be prepared and implemented by qualified individuals as defined by the SWRCB.

To receive coverage under the CGP, a project applicant must submit a Notice of Intent and permit registration documents to the SWRCB. Permit registration documents include completing a construction site risk assessment to determine appropriate coverage level; detailed site maps showing disturbance area, drainage area, and BMP types/locations; the SWPPP; and where applicable, post-construction water balance calculations and active treatment systems design documentation.

Dewatering General Permit

The CVRWQCB issued a General Waste Discharge Requirements, Limited Threat Discharges to Surface Water (Order No. R5-2016-0076-01, NPDES No. CAG995002) (effective February 1, 2017). The General Order regulates discharges to surface water including construction dewatering. This General Order covers clean or relatively-free wastewaters that pose little or no threat to water quality, including discharges of less than 0.25 million gallons per day or less than 4 months in duration. Discharges that may contain toxic organic constituents, volatile organic compounds, petroleum fuel constituents, pesticides, inorganic constituents, chlorine, and/or other chemical constituents would require treatment prior to discharge.

Phase II Small MS4 Permit

To enable efficient permitting under both the CWA and the Porter–Cologne Act, the SWRCB and the RWQCBs administer permit programs that group similar types of activities with similar threats to water quality. These "general permit" programs include the Phase II Small MS4 Permit,[1] the CGP, and other general permits for low-threat

1 A Small MS4 is defined as a conveyance or system of conveyances (including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, man-made channels, or storm drains) that serve populations of less than 100,000 persons.

discharges. Both the City and the University are considered Small MS4 permittees and are covered by the SWRCB Phase II MS4 permit (WQ Order No. 2003-0005-DWQ).

The Small MS4 Permit consists of several program elements: Program Management, Public Involvement/Participation, Illicit Discharge Detection and Elimination, Construction Site Storm Water Runoff Control, Pollution Prevention/Good Housekeeping for Permittee Operations, Post Construction Storm Water Management for New Development and Re-development, Water Quality Monitoring Requirements, Program Effectiveness Assessment, and Annual Reporting. Besides requiring implementation of construction site BMPs and performance criteria and design guidelines for development within the Small MS4s service area, the Small MS4 Permit also requires operators to map their outfalls, properly maintain the storm drain system, educate the public on pollution prevention, and monitor and report on the quality of MS4 discharges to receiving waters so that the effectiveness of the program can be evaluated. Collectively, the program elements are designed to ensure discharges from the storm drain system do not contain pollutant loads at levels that violate water quality standards and Basin Plan objectives and policies (such as a TMDL for a CWA Section 303(d) impaired water body). Implementation of the program elements is the responsibility of the Small MS4 operator, in this case, CSU Chico and the City of Chico.

Of particular relevance to the project is that the Small MS4 Permit requires Regulated Projects[2] to implement post-construction measures in the form of site design, source control, stormwater treatment measures, and baseline hydromodification management measures to reduce the discharge of pollutants in storm-water to the maximum extent practicable. Examples include:

- **Source Control Measures:** Source control measures seek to avoid introduction of water quality pollution/degradation in the first instance. Source control strategies include things like covering refuse/trash areas, properly managing outdoor storage of equipment/materials, minimizing use of pesticides and fertilizers in landscaping, using sumps or special area drains to send non-stormwater discharges to the sewer, ensuring regular grounds maintenance, etc.
- **Site Design Measures:** Site design measures require early assessment and evaluation of how site conditions, such as soils, vegetation, and flow paths will influence the placement of buildings and paved surfaces. The evaluation is used to meet the goals of capturing and treating runoff and maximizing opportunities to mimic natural hydrology. Options for site design measures include preserving trees, buffering natural water features, disconnecting impervious surfaces, and using green roofs or porous pavement.
- **Treatment Control Measures:** Treatment control measures retain, treat and/or infiltrate the site runoff produced under normal circumstances, controlling both the quality and quantity of stormwater released to the stormwater conveyance system and natural receiving waters. In most situations, this means implementing structural BMPs (e.g., infiltration, bioretention and/or rainfall harvest and re-use) to address the volume and rate of runoff produced by 85th percentile storm[3] (i.e., design capture volume). The Small MS4 Permit requires regulated projects to prioritize stormwater capture (e.g., infiltration and/or harvest and re-use) unless site conditions (e.g., low-permeability soils) make it infeasible
- **Hydromodification Measures:** Hydromodification measures are required for projects that create or replace 1 or more acres of impervious surfacing so that post-project runoff shall not exceed the estimated pre-project flow rate for the 2-year, 24-hour storm. If the project creates or replaces less than 1 acre of

2 Regulated Projects are defined in Section E.12.c of Water Quality Order 2013-0001-DWQ, and include all projects that create and/or replace 5,000 square feet or more of impervious surface, not including detached single-family home projects that are not part of a larger plan of development, interior remodels, routine maintenance or repair within the existing footprint, or linear underground/overhead projects

3 The 85th percentile storm represents a value of rainfall, in inches, such that 85% of the observed 24-hour rainfall totals within the historical record will be less than that value.

impervious surfaces, and the project demonstrates that post-project flows from the site are less than pre-project flows, then no hydromodification measures from Section E.12.e.(ii)(f) from the Phase II Small MS4 General Permit are required.

- **Operation and Maintenance Requirements:** The Small MS4 Permit requires that maintenance agreements remain in place with each property to ensure permanent treatment control measures developed on site are properly maintained and/or repaired in accordance with the stormwater quality control plan.

The aforementioned site design, treatment control, and hydromodification measures are often collectively referred to as "Low Impact Development" standards (or LID design). The project meets the criteria as a Regulated Project and, thus, is required to comply with the stormwater management requirements of the Small MS4 Permit.

The Small MS4 Permit is administered by the SWRCB, while other general WDRs are administered by the CVRWQCB. Point source discharges or other activities that threaten water quality that are not covered under a general permit must seek individual NPDES permits and/or WDRs, depending on the type, location, and destination of the discharge. For these type of discharges, the initial step in the process is to submit a "Report of Waste Discharge" to the CVRWQCB, which then determines the appropriate permitting pathway.

California Green Building Standards Code

The California Green Building Standards Code (CALGreen Code), Part 11 of the California Building Standards Code (Title 24) is designed to improve public health, safety, and general welfare by utilizing design and construction methods that reduce the negative environmental impact of development and to encourage sustainable construction practices.

The CALGreen Code provides mandatory direction to developers of all new construction and renovations of residential and non-residential structures with regard to all aspects of design and construction, including, but not limited to, site drainage design, stormwater management, and water use efficiency. Required measures are accompanied by a set of voluntary standards designed to encourage developers and cities to aim for a higher standard of development.

California Antidegradation Policy

The California Antidegradation Policy, otherwise known as the *Statement of Policy with Respect to Maintaining High Quality Water in California*, was adopted by the SWRCB (State Board Resolution No. 68-16) in 1968. Unlike the Federal Antidegradation Policy, the California Antidegradation Policy applies to all waters of the state (e.g., isolated wetlands and groundwater), not just surface waters. The policy states that whenever the existing quality of a water body is better than the quality established in individual Basin Plans, such high quality shall be maintained, and discharges to that water body shall not unreasonable affect present or anticipated beneficial use of such water resource.

California Toxics Rule

The U.S. Environmental Protection Agency (USEPA) has established water quality criteria for certain toxic substances via the California Toxics Rule. The California Toxics Rule established acute (i.e., short-term) and chronic (i.e., long-term) standards for bodies of water, such as inland surface waters and enclosed bays and estuaries, that are designated by each RWQCB as having beneficial uses protective of aquatic life or human health.

California Water Code

The California Water Code includes 22 kinds of districts or local agencies with specific statutory provisions to manage surface water. Many of these agencies have statutory authority to exercise some forms of groundwater management. For example, a Water Replenishment District (Cal. Water Code § 60000 *et seq.*) is authorized to establish groundwater replenishment programs and collect fees for that service, while a Water Conservation District (Cal. Water Code § 75500 *et seq.*) can levy groundwater extraction fees. Through special acts of the Legislature, 13 local agencies have been granted greater authority to manage groundwater. Most of these agencies, formed since 1980, have the authority to limit export and control some in-basin extraction upon evidence of overdraft or the threat of an overdraft condition. These agencies can also generally levy fees for groundwater management activities and for water supply replenishment.

Assembly Bill 3030 - Groundwater Management Act

In 1992, AB 3030 was passed which increased the number of local agencies authorized to develop a groundwater management plan and set forth a common framework for management by local agencies throughout the state. These agencies could possess the same authority as a water replenishment district to “fix and collect fees and assessments for groundwater management” (Cal. Water Code § 10754), provided they receive a majority of votes in favor of the proposal in a local election (Cal. Water Code § 10754.3).

Total Maximum Daily Loads

Under CWA Section 303(d) and California’s Porter-Cologne Water Quality Control Act of 1969, the state is required to establish beneficial uses of state waters and to adopt water quality standards to protect those beneficial uses. Section 303(d) establishes the total maximum daily load process to assist in guiding the application of state water quality standards, requiring the states to identify waters whose water quality is impaired (affected by the presence of pollutants or contaminants) and to establish a TMDL or the maximum quantity of a particular contaminant that a waterbody can assimilate without experiencing adverse effects on the beneficial use identified. TMDLs serve as a regulatory mechanism to identify and implement additional controls on both point and non-point source discharges in waterbodies that are impaired from one or more pollutants and are not expected to be restored through normal point source controls. Within California, the RWQCBs generally prepare TMDLs for the impaired waterbodies under their jurisdiction. Implementation of the TMDL is accomplished through amendments to the RWQCB Basin Plans, which are reviewed and if necessary, modified or amended triennially.

Local

As a state entity, CSU, Chico is not subject to local government planning or ordinances, such as the general plans and ordinances for the City of Chico and Butte County. Accordingly, because neither local general plans or any other local land use plans or ordinances are applicable to CSU, Chico, such local plans and ordinances are not summarized here or further analyzed in this section. See Section 3.10, Land Use and Planning for an evaluation of environmental impacts due to conflicts with any land use plan, policy or regulation adopted for the purpose of avoiding or mitigating an environmental effect.

3.9.4 Thresholds of Significance

The significance criteria used to evaluate the project impacts to hydrology and water quality are based on Appendix G of the CEQA Guidelines. According to Appendix G of the CEQA Guidelines, a significant impact related to hydrology and water quality would normally occur if the project would:

1. Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality.
2. Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin.
3. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:
   a. result in substantial erosion or siltation on or off site;
   b. substantially increase the rate or amount of surface runoff in a manner which would result in flooding on or off site;
   c. create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or
   d. impede or redirect flood flows.
4. In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation.
5. Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?

3.9.4 Impact Analysis

Methodology

The hydrology and water quality impact analysis in this section includes a program-level analysis under CEQA of the proposed Master Plan and PDFs. Analysis of impacts to hydrology and water quality are assessed by comparing existing conditions to changes that could occur associated with the implementation of the proposed Master Plan (or project). Both construction and operation of the project are considered in the impact analysis, where relevant. The impact analysis assumes that project development, including near-term developments, would be constructed in compliance with SWPPPs prepared where future development sites exceed one acre. In the event that adverse environmental impacts would occur even with incorporation of applicable regulations and proposed PDFs, impacts would be potentially significant and mitigation measures would be identified to reduce impacts to less than significant, where feasible.

Because this section provides a program-level analysis under CEQA of the proposed Master Plan, the hydrologic conditions and flood hazards are assessed based on publicly available hydrology related documents, including those available from the CVRWQCB, DWR, SWRCB, FEMA, City of Chico, California Water Services, and NorCalWater. As previously discussed, the project is not subject to local government planning or ordinances. Accordingly, consistency with local plans and ordinances are not analyzed in this section.

Impact Analysis

Impact HYD-1. The project would not violate water quality standards or waste discharge requirements or otherwise degrade surface or ground water quality. (Less than Significant)

Construction

Water quality standards and waste discharge requirements are intended to protect the quality of waters of the state. Impacts to water quality through exceedance of water quality standards, waste discharge requirements, or by other means can potentially result from the short-term effects of construction activities (e.g., erosion and sedimentation due to land disturbances, uncontained material and equipment storage areas, improper handling of hazardous materials).

Surface Water

Equipment fueling and maintenance would be required during demolition, construction, renovation, modernization, landscaping, and utility upgrade activities associated with the project. Incidental spills of gasoline, diesel fuel, lubricating oils, grease, paints, and solvents could occur during demolition and construction, potentially resulting in adverse surface water quality impacts offsite if stormwater does not infiltrate on the campus. In addition, demolition and construction would result in removal of existing vegetation, pavement and structures, such that underlying soils would be exposed to wind and water erosion, especially during the rainy season (i.e., November through April). Excess sediment could increase water turbidity and also could transport other pollutants such as nutrients, metals, oils, and greases, if stormwater does not infiltrate on the campus. If not properly handled, demolition activities could result in the release of hazardous substances such as lead-based paint, asbestos, polychlorinated biphenyls (PCBs), mercury, and other hazardous building materials, which could be transported by stormwater runoff.

Demolition, grading, and excavations associated with the project would be completed in accordance with the SWRCB, Division of Water Quality, NPDES General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities, Order No. 2009-0009-DWQ, NPDES No. CAS000002. This General Permit regulates discharges of pollutants in stormwater associated with construction activity (stormwater discharges) to waters of the United States from construction sites that disturb one or more acres of land surface, or that are part of a common plan of development that disturbs more than one acre of land surface. The General Permit requires the development of a site-specific SWPPP and development of BMPs for all phases of construction, under the guidance of a Qualified SWPPP Practitioner. A copy of the applicable SWPPP would be kept at the construction site and be available for review by the CVRWQCB upon request. Implementation of a SWPPP would avoid or minimize erosion and sedimentation and release of hazardous materials from construction sites by including water quality BMPs designed to prevent erosion and prevent sediments and pollutants from becoming mobilized by stormwater runoff. The SWPPP is required to include specific elements such as erosion and stormwater control measures that would be implemented onsite. At a minimum, the SWPPP must include the following:

- A description of construction materials, practices, and equipment storage maintenance;
- A list of pollutants likely to contact stormwater and site specific erosion and sedimentation control practices;
- A list of provisions to eliminate or reduce discharge of materials to stormwater;
- BMPs for fuel and equipment storage;
- Non-stormwater management measures to manage pollutants generated by activities such as paving operations and vehicle and equipment washing and fueling;

- The requirement that the appropriate equipment, materials, and workers be available to respond rapidly to spills and/or emergencies. All corrective maintenance or BMPs must be performed as soon as possible, depending upon worker safety; and
- Onsite post-construction controls.

The proposed project BMPs include various bioretention devices, self-retaining areas, permeable paving systems or porous pavement, surface conveyance channels, as well as infiltration trenches and other infiltration-based facilities. The development and implementation of BMPs such as overflow structures designed to capture and contain any materials that are inadvertently released from the storage containers on the construction site are also required. A Rain Event Action Plan would be required to ensure that active construction sites have adequate erosion and sediment controls in place prior to the onset of a storm event, even if construction is planned only during the dry season. The construction contractor(s) would also be required to develop and implement a monitoring program. The contractor would be required to conduct inspections of the construction site(s) prior to anticipated storm events and after the actual storm events. During extended storm events, the inspections would be conducted after every 24-hour period. The inspections would be conducted to: identify areas contributing to stormwater discharge; evaluate whether measures to reduce pollutant loadings identified in the SWPPP are adequate, were properly installed, and are functioning in accordance with the Construction General Permit; and determine whether additional control practices or corrective measures are needed.

Compliance with existing regulations and implementation of construction-related BMPs to minimize erosion and sedimentation would result in a less than significant impact.

Groundwater

As previously discussed, shallow groundwater is present in the project area. In the Chico area, groundwater levels are about 5 to 7 feet below ground surface during normal precipitation years and up to approximately 16 feet during periods of drought. Construction associated with the proposed project may require dewatering. For example, dewatering of captured stormwater may be needed if water has been standing on site and needs to be removed for construction, vector control, or other reasons. Further, dewatering may be necessary if groundwater is encountered during excavations, or to allow discharges associated with testing of water lines, sprinkler systems, and other facilities. However, dewatering of groundwater is generally not allowed under the Construction General Permit. If groundwater is encountered and displaced, the pumped groundwater cannot be discharged into surface waters unless the owner applies for a separate CVRWQCB General Waste Discharge Requirements, Limited Threat Discharges to Surface Water (Order No. R5-2016-0076-01, NPDES No. CAG995002). The General Order regulates discharges to surface water, including construction dewatering. This General Order covers clean or relatively-free wastewaters that pose little or no threat to water quality, including discharges of less than 0.25 million gallons per day or less than 4 months in duration. Discharges that may contain toxic organic constituents, volatile organic compounds, petroleum fuel constituents, pesticides, inorganic constituents, chlorine, and/or other chemical constituents would require treatment prior to discharge.

Summary

Incorporation of required BMPs for materials and waste storage and handling, and equipment and vehicle maintenance and fueling, would reduce the potential discharge of polluted runoff from construction sites, consistent with the General Construction Permit and California Green Building Standards Code. Compliance with existing regulations would prevent violation of water quality standards and minimize the potential for contributing sources of polluted runoff. In addition, requirements outlined in the General Waste Discharge Requirements, Limited Threat Discharges to Surface Water, would prevent adverse impacts to surface water quality associated with construction dewatering. Therefore, impacts to water quality from demolition and construction activities associated with the proposed project would be **less than significant.**

Operations

Once operational, most areas would either be paved, landscaped, or built upon. Exposed areas of soil would be limited, thus minimizing the potential for erosion and sedimentation. The primary source of pollutants would be incidental leaks and spills of oils, grease, general maintenance products, pesticides, herbicides, and fertilizers. Vehicle parking would result in minor petroleum leaks onto paved surfaces. General maintenance products include paints, solvents, fuel, oils, and lubricants, which if not handled and stored properly, could result in incidental spills to paved and/or unpaved areas. Similarly, storage and use of landscaping chemicals could result in small incidental spills of such products and/or leaching of the chemicals into underlying soils, groundwater, and surface runoff.

Incidental spills of these substances could result in releases to stormwater (e.g., through spills or leaks exposed to stormwater runoff), if not properly handled. However, a water quality/hydrology report would be completed as part of individual project design. As a result, each project completed under the proposed Master Plan would incorporate LID features that, if properly implemented, would greatly improve the quality of stormwater runoff, restore the infiltration of water to the underlying aquifer, eliminate costs associated with conventional drainage systems, and reduce development impacts such as erosion and flooding. These proposed LID features include the use of pervious pavement, maximization of landscape, bioretention areas, flow-through planters, detention and retention basins, living roofs and walls, and urban creeks. The implementation of LID techniques can include benefits such as greatly improving the quality of stormwater runoff, restoring the infiltration of water to the aquifer, eliminating costs associated with conventional drainage systems, and reducing development impacts such as erosion and flooding.

Implementation of Stormwater BMPs and incorporation of LID designs into individual project designs would minimize potential on- and off-site surface water quality impacts and contribute to a reduction in water quality impacts within all new development associated with the CSU Chico Master Plan. Therefore, project operations would not directly or indirectly violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface water quality and the impact would be **less than significant**.

Impact HYD-2. The project would not substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin. (Less than Significant)

Groundwater Supplies

The project would generate additional potable water demand by adding building space to support 18,600 full-time equivalent students (FTES). Based on the Cal Water, Chico-Hamilton City District 2015 UWMP, projects completed under the Master Plan would receive water derived solely from groundwater extracted from the unadjudicated Sacramento Valley Groundwater Basin, including the Vina Subbasin and the West Butte Subbasin. In accordance with SGMA, the California DWR has not determined the priority of either the Vina Subbasin or the West Butte Subbasin in regard to enacting a sustainable groundwater management plan (DWR 2019). No safe yield has been established for the groundwater basin. The 2015 UWMP includes an analysis of water supply reliability projected through 2040 (Table 3.9-1). Based on the analysis, Cal Water would be capable of providing adequate water supply to its service area under normal, single dry-year, and multiple dry-year supply and demand scenarios, through 2040. The groundwater supply amounts shown in Table 3.9-1 equal the projected demand in each year.

Table 3.9-1. Projected Water Supply from Groundwater[1]

Year	2020	2025	2030	2035	2040
Water Supply in Acre-Feet	29,397 AF	32,162 AF	33,981 AF	35,916 AF	37,974 AF

1 Reasonably available volume
Source: Cal Water 2016

Cal Water expects that under all hydrologic conditions, its groundwater supply would be able to fully meet future demands. Storage in the groundwater basins provide a buffer against years with decreased precipitation while wetter years will recharge natural supplies. In addition, Butte County has a 27,000 acre-feet per year entitlement to State Water Project water. It is possible that Cal Water could enter into an agreement that would make this water available to the customers in the Chico-Hamilton District. This State Water Project water could be treated and delivered directly to Cal Water customers or could be used for groundwater replenishment (Cal Water 2016). Therefore, the project would not substantially decrease groundwater supplies and impacts would be **less than significant.** See Section 3.15, Utilities and Service Systems, for additional information pertaining to water supply.

Groundwater Recharge

Less than Significant Impact. In total, the proposed CSU, Chico Master Plan would result in 960,030 gross square feet of new academic and support facilities, including housing, administration, student life, and recreational facilities, which constitutes an approximate 35.3% increase in campus building area in comparison to existing conditions. Most of the new construction associated with the project would be located on developed or already paved sites and, therefore, would not result in a substantial net loss of permeable recharge area or substantial reduction in infiltration of precipitation. In addition, much of the increased square footage is gained by having taller buildings, rather than greatly increasing the footprint of existing development. Regardless, a water quality/hydrology report would be completed as part of individual project design. As a result, each project completed under the proposed Master Plan would implement LID features, such as pervious pavement, maximization of landscape, bioretention areas, flow-through planters, detention and retention basins, and urban creeks, to encourage groundwater infiltration and offset the increase in impermeable surfaces. Therefore, implementation of the project would not interfere substantially with groundwater recharge and impacts would be **less than significant.**

Impact HYD-3. The project would not substantially alter the existing drainage pattern of the Master Plan area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:

a. result in substantial erosion or siltation on or off site;

Project construction would not substantially alter the existing drainage pattern of the site or area. Although internal drainage patterns would be somewhat altered as a result of project development, a water quality/hydrology report would be completed as part of individual project design. As a result, each project completed under the proposed Master Plan would incorporate LID features that allow for natural filtration of stormwater, as close to the original location of rainfall as possible. By keeping treatment localized, the natural hydrological cycle can be more closely mimicked. In addition, LID features incorporated into individual project designs, such as pervious pavement, maximization of landscape, bioretention areas, flow-through planters, detention and retention basins, and urban creeks, in combination with sandy permeable soils and evapotranspiration, would encourage on-site retention and reduce stormwater flows, reducing the potential for erosion and siltation to occur on- or off-site. In addition, CSU, Chico operates a 5-year maintenance permit and is required to maintain the Big Chico Creek edge, which is highly prone to erosion. As such, impacts would be **less than significant.**

b. substantially increase the rate or amount of surface runoff in a manner which would result in flooding on or off site;

The campus currently consists of approximately 60% impervious and 40% pervious surfaces and is split between drainage areas that outfall directly to Big Chico Creek or the City of Chico drain system, at 25 outfall locations. Development of the Master Plan would result in an approximate 25.4% increase in campus building area in comparison to existing conditions. However, most of the new construction associated with the project would be located on developed or already paved sites and therefore would not result in a substantial net loss of permeable recharge area or substantial reduction in infiltration of precipitation. As previously described for (a), onsite soils are sandy and permeable, and individual project designs completed under the proposed Master Plan would incorporate LID features, which would reduce the rate and amount of surface runoff. Similar features have been installed for recent projects, including installation of drought-tolerant landscaping and a cistern at the Student Services Center; subsurface irrigation and swales for filtering rainwater at Yolo Hall; and a sediment filter installed with a swale at Arts and Humanities. Continued installation of such LID features in association with individual projects would prevent substantial increases in the rate or amount of surface runoff in a manner that would result in flooding on- or off-site. As such, impacts would be **less than significant.**

c. create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or

As previously discussed in (a), drainage system would mimic existing conditions and would not substantially increase the rate or amount of surface runoff. In addition, individual projects completed under the Master Plan would incorporate LID features, such as pervious pavement, maximization of landscape, bioretention areas, flow-through planters, detention and retention basins, and urban creeks, to encourage groundwater infiltration and off-set the increase in permeable surfaces, which would reduce stormwater flows. In addition, these LID features would lower the potential for the incidental release of contaminants to the environment such as oil and grease, nutrients, heavy metals, and certain pesticides, including legacy pesticides. As a result, the project would not create or contribute runoff water that would exceed the capacity of existing or planned stormwater drainage systems, or provide substantial additional sources of polluted runoff. Impacts would be **less than significant** and no mitigation is required.

d. impede or redirect flood flows?

Based on FEMA flood maps, Big Chico Creek is considered FEMA Zone AE, a Special Flood Hazard Area. The flood zone is located generally confined to the creek banks and immediately adjacent areas within the main campus (Figure 3.9-5, Flood Zones). The remainder of the campus, the University Village, and University Farm are all located in Zone X, Area of Minimal Flood Hazard (FEMA 2011). None of the proposed building projects associated with the Master Plan are located in a Special Flood Hazard Area, or 100-year flood zone. As a result, proposed construction associated with the proposed Master Plan would not impede or redirect flood flows such that there would be any adverse downstream flooding-related impacts. Flood related impacts would be **less than significant** and no mitigation is required.

Impact HYD-4. The project would not risk release of pollutants due to project inundation in a flood hazard, tsunami, or seiche zone. (Less than Significant).

As previously described, proposed Master Plan development would not occur within a Special Flood Zone Hazard Area, or 100-year flood plain. The project is not located within a dam inundation or tsunami zone, and is not located next to a standing body of water susceptible to a seiche. Furthermore, the proposed project would not be industrial in nature, thus minimizing the potential for release of pollutants due to possible project inundation. As described in Section 3.8, Hazards and Hazardous Materials, any small quantities of hazardous chemicals would be used in compliance with existing regulations and guidelines. The use, storage, and transport of hazardous materials and hazardous wastes would be subject to all applicable federal, state, and local health and safety laws and regulations that are intended to minimize health risk to the public and the environment associated with hazardous materials. As a result, flood-related hazardous materials impacts would be **less than significant,** and no mitigation is required.

Impact HYD-5. The project would not conflict with or obstruct implementation of a water quality control plan or sustainable. groundwater management plan. (Less than Significant)

As previously discussed, the project would comply with applicable water quality regulatory requirements, including the implementation of a SWPPP, stormwater BMPs, and LID design, which would minimize potential off-site surface water quality impacts and contribute to a reduction in water quality impacts within the overall Big Chico Watershed. In addition, with compliance with these regulatory requirements, the project would reduce potential water quality impairment of surface waters such that existing and potential beneficial uses of key surface water drainages throughout the jurisdiction of the CVRWQCB Basin Plan would not be adversely impacted. As a result, the project would not conflict with or obstruct the CVRWQCB Basin Plan.

With respect to groundwater management, SGMA empowers local agencies to form GSAs to manage basins sustainably, and requires those GSAs to adopt Groundwater Sustainability Plans for crucial groundwater basins in California. A GSA has not been established for the West Butte and Vina Subbasins, as the basins priority has not been determined. Further, the project would not substantially deplete groundwater supplies or interfere substantially with groundwater recharge. As a result, the project would not conflict with or obstruct this sustainable groundwater management plan. Impacts are considered **less than significant** and no mitigation is required.

3.9.5 Cumulative Impacts

The environmental setting for cumulative impacts consists of the Big Chico Creek, Little Chico Creek, and the Lindo Channel watershed basins and the West Butte and Vina Subbasins of the encompassing Sacramento Valley Groundwater Basin, as described in Section 3.9.1, Existing Conditions.

Construction and operation of projects within these watersheds may have an individually insignificant but cumulatively considerable effect on water quality and quantity. Projects within the watersheds would have to comply with federal and state regulations for the protection of water quality from direct and cumulative effects of land use development. The City of Chico, which is the primary source of development within these watersheds and is also the setting for most of the cumulative impacts in this EIR, complies with the conditions of the SWRCB Phase II MS4 permit (WQ Order No. 2003-0005-DWQ) through implementation of its Storm Water Management Program. Sections 16.22 through 16.32 of the Municipal Code, Grading Regulations and General Provisions, was enacted by the City for the purpose of regulation grading on all property in Chico to avoid pollution of watercourses with nutrients, sediments, or other earthen materials generated or caused by surface runoff on or across the permit area. The University is also subject to the Phase II MS4 permit. Compliance with the permit and applicable water quality regulations would reduce cumulative water quality impacts, and ensure that any project contributions to the cumulative effects are less than considerable.

The project relies upon groundwater, which is addressed in the Cal Water, Chico-Hamilton City District 2015 UWMP. The plan considers current and future water demand, and existing groundwater conditions, and has determined that the project area can be adequately supplied. The project would not contribute to a considerable cumulative effect to the groundwater basin. This effect is consistent with the City of Chico's General Plan EIR (City of Chico 2010).

3.9.6 Mitigation Measures

No mitigation measures are required.

3.9.7 Level of Significance After Mitigation

All impacts are less than significant prior to any mitigation.

3.9.8 References

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3.10 Land Use and Planning

This section describes the existing CSU, Chico campus setting and land use conditions, identifies associated regulatory requirements, and evaluates potential impacts of Master Plan implementation on campus land uses.

As stated in the Notice of Preparation prepared for this project, local jurisdiction land use plans and regulations, such as the City of Chico General Plan and Zoning Code and the Butte County General Plan, do not apply to CSU, Chico, which is a component of the CSU, a sovereign state agency. Nonetheless, certain policies of those local plans are nonetheless considered in this section to for informational purposes only. No scoping comments regarding land use and planning were received in response to the Notice of Preparation (NOP).

3.10.1 Existing Conditions

Study Area

The study area for purposes of the land use and planning analysis includes the CSU, Chico Master Plan area (the main campus, Rio Chico, University Farm, and University Village) and adjacent non-University land uses.

Existing and Surrounding Land Uses

Main Campus

The 132-acre main campus is located in the City of Chico and is generally bounded by the Union Pacific Railroad (UPRR) on the west; by West Sacramento, Legion, and Mansion Avenues on the north; by the Esplanade, Children's Park, Salem, and Normal Streets on the east; and by West Second and West Third Streets on the south (See Figure 2-2a in Chapter 2.0, Project Description). The campus consists of university facilities, including academic buildings, student housing, supportive uses such as the Student Health Center, athletic and recreational facilities, open space, and parking facilities. The main campus sits between the City's downtown street grid system to the south and the predominantly residential neighborhoods in the northern part of the City, including Mansion Park and The Avenues. Regional access to the main campus is provided by State Route (SR) 99 and SR 32.

The main campus does not include, but surrounds, the privately owned Rio Chico properties, which are bounded by Rio Chico Way, Cherry Street, and West 1st Street in the southwestern corner of the campus. The Rio Chico properties encompass a mix of single-family and small multi-family (duplex and triplex) units.

The main campus includes the area known as College Park, which is located along Warner Street and its intersection with West Sacramento Avenue near the north-central portion of campus. Most of the College Park properties have been purchased and transferred to the University. On those properties the prior residences have been demolished and most of the area is now used for temporary University parking. There are three remaining single-family residential units within College Park that are privately owned.

The main campus is designated as Public Facilities & Services (PFS) in the City's General Plan and zoned as Public/Quasi Public Facilities (PQ) in the City's Zoning Ordinance (City of Chico 2017a, 2017b). The Rio Chico properties are designated and zoned Medium-High Density Residential (MHDR and R3, respectively) (City of Chico 2017a, 2017b). College Park is designated and zoned Low Density Residential (R1 and LDR, respectively) (City of Chico 2017a, 2017b).

The areas immediately southeast of the campus include the historic downtown, which transitions to more residential uses south of the campus (the South Campus neighborhood). The historic downtown area is characterized by a mix restaurants, coffee shops, retail stores, theaters, offices, and hotels. Farther southwest, land uses consist of predominantly residential uses with a small number of scattered institutional uses such as churches and schools, and retail uses, and restaurants.

The historic downtown area is designated by the General Plan as Commercial Mixed Use (CMR) and zoned as Downtown North (DN) in the northern area and Downtown South (DS) in the southern area. Along Wall Street, Flume Street, and Salem Street are areas designated as Office Mixed Use (OMU) and zoned as Office Commercial (OC), which are categories appropriate for financial, business, professional, medical, and public offices, together with supporting commercial uses. Farther west and close to the edge of campus are areas designated by the General Plan as MHDR and zoned R3. Areas along West 4th, 5th, and 6th St are designated and zoned Residential Mixed Use (RMU), with the Landmark (-L) overlay zone which identifies landmarks and historic sites in compliance with the General Plan, and the Fraternity and Sorority (-FS) overlay zone which encourages fraternity and sorority houses to be located in proximity to the main campus (City of Chico 2019).

Areas directly west, north, and east from the main campus are primarily residential. Residential uses west of the UPRR, as well directly north of the existing campus athletic fields along West Sacramento Avenue, are predominantly multi-family homes and apartment complexes. These areas are designated MHDR and zoned as R3. To the east, along West Sacramento Avenue towards the Esplanade, is a single-family residential neighborhood designated in the General Plan as LDR and zoned R1 (City of Chico 2017a, 2017b). Additionally, there is the Ranchaero Airport located 1.0 mile west of the main campus, surrounded by agricultural land designated for Agriculture in the Butte County General Plan Land Use Element (Butte County 2018) and zoned as Agriculture – 40 (40-acre minimum) in the Butte County Zoning Ordinance (Butte County 2015).

University Farm

The University Farm is an 800-acre agricultural center located in unincorporated Butte County, two miles south of the main campus. The University Farm includes fields and tree crops, and a core working farm with an array of plant and animal facilities, including storage buildings and barns, a dairy and meat laboratory, cattle enclosures, and research facilities (CSU, Chico 2005). The University Farm is primarily surrounded by agricultural fields, with an almond distributor to the north and a warehouse distribution facility to the northeast. The UPRR borders University Farm to the east.

The University Farm is designated for Agriculture in the Butte County General Plan Land Use Element (Butte County 2018) and zoned as Agriculture – 40 in the Butte County Zoning Ordinance (Butte County 2015). The University Farm is surrounded by other agricultural fields with the same zoning and general plan designations. The purposes of these designations are the identification and retention of land necessary to sustain viable agricultural operations and to protect agricultural practices, activities, and resources (Butte County 2015). A few scattered parcels in the area are zoned and designated as Agriculture Services, which accommodate commercial and light industrial uses that support agricultural activities.

University Village

University Village is a former apartment complex now owned and operated by the University as off-campus student housing. The complex is located approximately one mile to the northwest from the main campus, between West Sacramento Avenue and Nord Avenue. University Village includes a total of 25 buildings consisting of six-person, three-bedroom clusters and double studios (CSU, Chico 2019). The property is surrounded by a range of multi-family housing types and apartment complexes catering mostly to students. To the south, across West Sacramento Avenue and farther west, is low-density residential development consisting primarily of single-family homes. To the north along Nord Avenue are industrial, office, and commercial uses (City of Chico 2017a, 2017b).

University Village is designated as MHDR in the Chico General Plan and zoned R3. The surrounding multifamily developments are also designated as MHDR and zoned R3. The single-family residences to the west and further south of West Sacramento Avenue are designated LDR and zoned R1. The area north of Nord Avenue contains a mix of uses, with parcels designated and zoned MHDR/R3, Industrial/Office Mixed Use (IOMU), and Commercial Services (CS). At the intersection of Nord Ave and West Sacramento Avenue, there are parcels designated as Commercial Mixed Use (CMU) in the City's General Plan and zoned as Community Commercial (City of Chico 2017a, 2017b).

3.10.2 Regulatory Setting

Federal

There are no federal regulations regarding land use and planning that are applicable to the proposed Master Plan.

State

State CEQA Guidelines

The State CEQA Guidelines, Section 15125(d) (14 CCR 15000 et seq.), state that the environmental setting of an EIR must discuss "any inconsistencies between the proposed project and applicable general plans, specific plans, and regional plans." An inconsistency with a general plan or other policy would not necessarily create an environmental impact. In some cases, a general plan policy lays out the standard by which an environmental impact is judged to be significant or less than significant.

Although CSU, Chico is not subject to local government planning or ordinances, the analysis in this section has been completed for informational purposes.

Local

Concept of Sovereign Immunity

Under the California Constitution, the California State University (CSU) is a "state agency created by the Legislature in the field of public higher education which is charged with the management, administration, and control of the State College System of California" (Cal. Const., art. XX, § 23).

The California State University system, therefore, is the State of California acting in its higher education capacity. In creating the CSU, the California State Legislature expressly granted it a variety of powers, including the "full power and responsibility in the construction and development of any state university campus, and any buildings or other facilities or improvements connected with the California State University." (Cal. Ed. Code § 66606.)

As a result, Government Code sections 53090 and 53091, which require that local agencies comply with zoning and building ordinances, do not apply to the CSU. Accordingly, as a component of the CSU, the CSU, Chico campus is not subject to municipal regulation of uses on property owned or controlled by CSU, Chico in furtherance of the University's education purposes. CSU, Chico may consider, for information purposes only, aspects of local plans and policies for the communities surrounding the Master Plan area, but it is not bound by those plans and policies in its planning efforts.

City of Chico General Plan

The Land Use Element of the City of Chico General Plan (City of Chico 2017a) provides objectives, policies, and actions regarding land use in the City, including the following:

Goal LU-2: Maintain a land use plan that provides a mix and distribution of uses that meet the identified needs of the community.

Policy LU-2.3 (Sustainable Land Use Pattern) – Ensure sustainable land use patterns in both developed areas of the City and new growth areas.

Action LU-2.3.3 (Encourage Mixed-Use Development) – Allow horizontal and vertical mixed uses in the following land use designations:

- Residential Mixed Use
- Neighborhood Commercial
- Commercial Mixed Use
- Regional Commercial
- Office Mixed Use
- Industrial Office Mixed Use

Policy LU-2.4 (Land Use Compatibility) – Promote land use compatibility through use restrictions, development standards, environmental review and special design considerations.

Action LU-2.4.1 (Update Zoning Ordinance) – Maintain zoning districts, use regulations, development standards, and performance requirements in the Municipal Code consistent with the General Plan.

Goal LU-3: Enhance existing neighborhoods and create new neighborhoods with walkable access to recreation, places to gather, jobs, daily shopping needs, and other community services.

Policy LU-3.1 (Complete Neighborhoods) – Direct growth into complete neighborhoods with a land use mix and distribution intended to reduce auto trips and support walking, biking, and transit use.

Policy LU-3.3 (Neighborhood Services) – Recognize existing neighborhoods and support neighborhood-level planning in partnership with residents and property owners to preserve and enhance neighborhood character, identity, and livability.

Action LU-3.3.1 (Neighborhood Planning) – Facilitate and encourage the participation of neighborhood groups and associations in the planning process, and identify neighborhood priorities for future public improvements and capital projects.

Goal LU-4: Promote compatible infill development.

Policy LU-4.2 (Infill Compatibility) – Support infill development, redevelopment, and rehabilitation projects that are compatible with surrounding properties and neighborhoods.

> **Action LU-4.2.1 (Mix of Dwelling Types)** – Allow a mix of dwelling types within all residential land use designations consistent with density requirements and applicable design criteria.
>
> **Action LU-4.2.2 (Pre-Application Meetings)** – For projects proposed on or adjacent to residentially zoned property, which require a discretionary approval by the Planning Commission or City Council, require applicants to have a pre-application neighborhood meeting with interested parties in the respective neighborhood to hear issues and consider input.

Policy LU-4.3 (Emphasis on Neighborhood Compatibility) – For residential infill projects outside of Opportunity Sites and Special Planning Areas, maintaining neighborhood character may take precedence over meeting density goals.

Policy LU-4.4 (Positive Contributions) – Encourage infill development that provides missing neighborhood elements, such as neighborhood retail, enhanced architectural quality, and circulation improvements for pedestrians, bicycles and vehicles, or that otherwise contributes positively to existing neighborhoods.

Butte County General Plan

The Land Use Element of the Butte County General Plan (Butte County 2018) provides objectives, policies, and actions regarding land use, including the following:

Goal LU-1: Continue to uphold and respect the planning principles on which the County's land use map is based.

Policy LU-P1.1 – The County shall protect and conserve land that is used for agricultural purposes, including cropland and grazing land.

Policy LU-P1.3 – The County shall minimize potential conflicts between agricultural and urban uses.

Policy LU-P1.4 – The County shall support agriculture by allowing agricultural services in agricultural areas.

3.10.3 Thresholds of Significance

The significance criteria used to evaluate potential impacts to land use and planning are based on Appendix G of the State CEQA Guidelines. Based on Appendix G, a significant impact related to land use and planning would normally occur if the project would:

1. Physically divide an established community.
2. Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect.

3.10.4 Impact Analysis

Methodology

As previously stated, local land use regulations and policies are evaluated in this section for informational purposes only, as CSU, Chico campus is not subject to municipal regulation of property it owns or controls in furtherance of its education purposes. Existing land uses for the main campus, off-campus properties owned by the university, and within the area surrounding the main campus and off-campus properties were identified based on the existing and proposed University Master Plan, the City's General Plan and Zoning Map and the Butte County General Plan and Zoning Map, the existing and proposed University Master Plan maps, and field reconnaissance. The impact analysis and discussion below are based on a qualitative comparison of existing and proposed uses on the main campus and off-campus center and existing land uses and planned land uses, as defined in the City's General Plan.

Impact Analysis

Impact LU-1. The project would not physically divide an established community. (No Impact)

The physical division of an established community typically refers to the construction of a physical feature (such as a road, railroad tracks, or other type of structure that prohibits access) or removal of a means of access (such as a local road or bridge) that would impair internal access within an existing community, or between a community and adjacent areas. The Master Plan project does not propose any such features and would not remove any means of access in the surrounding area.

The proposed Master Plan would result in the addition of new facilities totaling approximately 925,000 net new developed square feet, renovation of existing buildings, and demolition of obsolete and/or underused facilities on the main campus, Rio Chico, and University Farm in order to create a more effective, efficient, and sustainable campus environment. Changes in land uses on campus, construction of new facilities, relocation of facilities and infrastructure, provisions for increased student housing, implementation of circulation improvements, and an upgrade of the utilities infrastructure systems would all contribute to a more efficient and high-performing campus with regard to campus operations, services, and community connectivity. The campus has a strong vision and intention to improve campus-downtown Chico connectivity and redevelop the Rio Chico properties as well as improve the South Campus gateway from downtown Chico. This vision includes the addition of an east-west bike path through campus on the north side of Big Chico Creek, which will align with the City of Chico bike path and will allow bicyclists to ride and park their bikes into the campus core and closer to their destinations.

While many partnerships currently exist through organizations such as the Downtown Chico Business Association, further opportunities have been identified as part of the Campus Master Plan. With a focus on developing and strengthening local and regional partnerships, the proposed Master Plan recommends the following: creating a partnership to re-envision 25/35 Main Street property and Lost Park into a mixed-use development, creating a new Forensic Anthropology laboratory for research and collaboration with local, state, and federal law enforcement agencies, creating a new mixed-use building that includes retail, parking, and student spaces on 2nd Street, and creating a new arena and outdoor pool facility as a shared-use with the community and a regional draw for large events, among others.

With respect to the main campus, while the majority of proposed Master Plan improvements would take place within existing campus boundaries, the Master Plan does propose to redevelop the privately-owned Rio Chico properties to provide additional student housing totaling approximately 400 beds through a public-private partnership. Rio

Chico is currently dominated by student occupied rental housing, and implementation of the Master Plan would redevelop and densify this area that is encompassed by the existing campus.

At the northern end of the campus, the Master Plan includes the acquisition and demolition of three remaining privately-owned residential properties in the College Park area for proposed athletic fields and an arena. A new arena would act as the anchor of the district and would include a performance venue, locker and training rooms, coach's offices, classroom spaces and support. An outdoor pool would be constructed as a shared-use venue between the University and community. The arena and outdoor pool would be compatible in nature with the surrounding sports fields, gymnasium, and the nearby field of Chico High School. Additionally, the Ivy/Warner Street improvements would increase connectivity between the southern and northern campus areas. The Master Plan does not propose any new linear features such as roadways that would physically divide the Rio Chico properties, College Park, or any other established communities.

With respect to the University Farm, the Master Plan does not propose any development outside the existing university-owned property; all proposed improvements would be implemented within the University Farm itself. For all of the above reasons, proposed Master Plan implementation would have **no impact** related to physical division of any established communities.

Impact LU-2. The project would not cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect. (No Impact)

The main campus is designated as a public/quasi-public use in the City of Chico General Plan, which is consistent with the existing University uses and with implementation of the Master Plan. University Village is designated Medium High Density Residential, which is consistent with the existing use.

No change in land use at University Village is proposed as part of the Master Plan. Improvements proposed for the University Farm are consistent with Butte County's General Plan designation of the land for agricultural use.

The Master Plan proposes new development that would provide 400 additional student housing beds on the privately-owned Rio Chico properties via a public-private partnership. The current allowable density per the City's municipal code for the R3-zoned Rio Chico properties is 14.1 to 22 dwelling units per acre (corresponding to the City's Medium-High Density Residential (MHDR) General Plan land use designation (City of Chico 2017a, b). As the Rio Chico properties total 2.8 acres, the proposed 400 student beds proposed under the Master Plan would result in the equivalent of 50.5 dwelling units per acre (assuming 2.83 beds per dwelling unit, based on the average household occupancy rate cited in Section 4.11, Population and Housing). This would correspond to the General Plan's High Density Residential (HDR) density allowance of between 20 and 70 dwelling units per acre. However, this higher density would be compatible with surrounding University land uses, including the proposed student housing buildings to the north, the WREC to the south, academic buildings to the east, and the FMS yard to the west. As previously described, Rio Chico is currently surrounded by University uses and is essentially an "island" within the campus, and student housing would be consistent with the range of University land uses that exist on the main campus.

Within the College Park area, the Master Plan proposes the redevelopment of the College Park properties with athletic fields, a 4,000-seat arena, and surface parking. The College Park properties not owned by the University are currently designated Low Density Residential (LDR), which, according to the City's General Plan, represents the traditional single-family neighborhood (City of Chico 2017a). Only the three remaining privately-owned properties are subject to this designation. Once acquired by the University, the ownership of these properties by CSU, Chico would supersede the City's land use designation. While the new arena, sporting fields, and parking facilities would not be consistent with the City's LDR land use designation for those three properties, they would be physically compatible with the existing University uses to the west and south, and Chico High School to the east. The soccer practice fields proposed to the north of the arena would provide a buffer between the arena and the rest of the campus to the south and The Avenues residential neighborhood north of West Sacramento Avenue. As discussed above, Master Plan implementation would not divide existing neighborhoods or create "islands" of potentially incompatible land uses.

For the reasons stated above, proposed Master Plan implementation would have **no impact** related to conflicts with land use plans.

3.10.5 Cumulative Impacts

The majority of proposed new development or redevelopment under the Master Plan would take place on University-owned land within the main campus or on off-campus properties (University Farm and University Village). While Master Plan implementation would increase the development density on the main campus and could intensify development on the off-campus properties, development would take place within the boundaries of existing campus-owned property.

The Master Plan also proposes redevelopment of the Rio Chico properties, as well as acquisition of the three remaining privately-owned College Park properties. The development of these properties would not conflict with local land use plans as they will be owned by the University. Local jurisdiction land use plans and regulations, such as the City of Chico General Plan and Zoning Code and the Butte County General Plan, do not apply to CSU, Chico, which is a component of the CSU, a sovereign state agency

3.10.6 Mitigation Measures

No mitigation measures are required.

3.10.7 Level of Significance After Mitigation

Since there would be no impact related to land use, no mitigation measures are required.

3.10.8 References

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State of California, Constitution, Article. XX, § 23; San Francisco at 545.

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3.11 Noise

This section describes the existing noise and vibration conditions in the Master Plan area, identifies associated regulatory requirements, evaluates potential construction-related and operational noise impacts, and identifies mitigation measures intended to reduce noise impacts related to implementation of the CSU, Chico Master Plan (proposed project). This analysis is based in part on modeling data and assumptions provided in the Appendix F, Noise, of this Draft EIR. No scoping comments regarding potential noise impacts were received in response to the Notice of Preparation (NOP).

3.11.1 Existing Conditions

Acoustic Fundamentals

Sound may be described in terms of level or amplitude (measured in decibels (dB)), frequency or pitch (measured in hertz (Hz) or cycles per second), and duration (measured in seconds or minutes). The standard unit of measurement for sound level is the decibel. Because the human ear is not equally sensitive to sound at all frequencies, a special frequency-dependent rating scale is used to relate noise to human sensitivity. The A-weighted decibel scale (dBA) compensates for this by discriminating against low and very high frequencies in a manner approximating the sensitivity of the human ear.

Since sound is measured on a logarithmic scale, a doubling of sound energy results in a 3 dBA increase in the noise level (i.e., for traffic noise, doubling the number of vehicles on a roadway segment would generally increase the noise level by approximately 3 dBA). Changes in a community noise level of less than 3 dBA are not typically noticed by a healthy human ear; changes from 3 to 5 dBA may be noticed by some individuals who are extremely sensitive to changes in noise; a 5-dBA increase is readily noticeable (Caltrans 2013a). The human ear perceives a 10-dBA increase in sound level as a doubling of the sound level (i.e., 65 dBA sounds twice as loud as 55 dBA to a human ear). Table 3.11-1 presents typical noise levels for common outdoor and indoor activities.

Table 3.11-1. Typical Noise Levels Associated With Common Activities

Common Outdoor Activities	Noise Level (dBA)	Common Indoor Activities
	110	Rock Band
Jet Flyover at 1,000 feet		
	100	
Gas Lawn Mower at three feet		
	90	
Diesel Truck at 50 feet, 50 mph		Food Blender at 3 feet
	80	Garbage Disposal at 3 feet
Noisy Urban Area, Daytime		
	70	Vacuum Cleaner at 10 feet
Commercial Area		Normal speech at 3 feet
Heavy Traffic at 300 feet	60	
		Large Business Office
Quiet Urban Daytime	50	Dishwasher (in next room)
Quiet Urban Nighttime	40	Theater, Large Conference Room (background)

Table 3.11-1. Typical Noise Levels Associated With Common Activities

Common Outdoor Activities	Noise Level (dBA)	Common Indoor Activities
Quiet Suburban Nighttime		
	30	Library
Quiet Rural Nighttime		Bedroom at Night, Concert Hall (background)
	20	
		Broadcast/Recording Studio
	10	
Lowest Threshold of Human Hearing (Healthy)	0	Lowest Threshold of Human Hearing (Healthy)

Source: Caltrans 2009.

Several descriptors of noise (noise metrics) help quantify the perception people have of various kinds of environmental noise, including traffic-generated noise. These descriptors include the equivalent noise level over a given period (Leq), the statistical sound level (Ln), the day–night average noise level (Ldn), and the community noise equivalent level (CNEL). Each of these descriptors uses units of dBA.

Leq is a sound energy level averaged over a specified time period (typically no less than 15 minutes for environmental studies). Leq is a single numerical value that represents the amount of variable sound energy received by a receptor during a time interval. For example, a 1-hour Leq measurement would represent the average amount of energy contained in all the noise that occurred in that hour. Leq is an effective noise descriptor because of its ability to assess the total time-varying effects of noise on noise sensitive receptors. Lmax is the greatest sound level measured during a designated time interval or event, while Lmin is the lowest sound level measured.

Unlike the Leq metric, Ldn and CNEL metrics always represent 24-hour periods. Ldn and CNEL also differ from Leq because they apply a time-weighted factors designed to emphasize noise events that occur during the evening and nighttime hours (when sleep disturbance is of more concern). “Time weighted” refers to the fact that Ldn and CNEL penalize noise that occurs during certain sensitive periods. In the case of CNEL, noise occurring during the daytime (7:00 a.m.–7:00 p.m.) receives no penalty. Noise during the evening (7:00 p.m.–10:00 p.m.) is penalized by adding 5 dB to the hourly average noise level for each hour, while nighttime (10:00 p.m.–7:00 a.m.) noise is penalized by adding 10 dB to the hourly average noise level for each hour. Ldn differs from CNEL in that the daytime period is defined as 7:00 a.m.–10:00 p.m., thus eliminating the evening period. Ldn and CNEL are the predominant criteria used to measure roadway noise affecting residential receptors. The Ldn and CNEL metrics generally differ from one another by no more than 0.5 to 1 dBA.

Exterior Noise Distance Attenuation

Noise sources are classified in two forms: (1) point sources, such as stationary equipment or a group of construction vehicles and equipment working within a spatially limited area at a given time; and (2) line sources, such as a roadway with a large number of pass-by sources (motor vehicles). Sound generated by a point source typically diminishes (attenuates) at a rate of 6.0 dBA for each doubling of distance from the source to the receptor at acoustically “hard” sites and at a rate of 7.5 dBA for each doubling of distance from source to receptor at acoustically “soft” sites (Caltrans 2013a). Sound generated by a line source (i.e., a roadway) typically attenuates at a rate of 3 dBA and 4.5 dBA per doubling distance, for hard and soft sites, respectively (Caltrans 2013a).

With respect to examples of this distance-attenuation relationship for exterior noise, a 60-dBA noise level measured at 50 feet from mechanical equipment (i.e., heating and air conditioning unit) surrounded by sidewalk and/or parking would diminish to 54 dBA at 100 feet from the source, and to 48 dBA at 200 feet from the source. This scenario is addressed by the point source attenuation for a hard site (6 dBA with each doubling of the distance). For the scenario where soft-site conditions exist between the point source and receptor, represented by lawn or landscaping or open ground around the mechanical equipment, an attenuation rate of 7.5 dBA per doubling of distance would apply; the air conditioner noise measured as 60 dBA at 50 feet would diminish to 52.5 dBA at 100 feet from the source and to 45 dBA at 200 feet from the source, where soft ground with or without vegetation exists between the sound source and the receptor location.

Sound levels can also be attenuated by the presence of buildings, topography, or constructed barriers, located between the noise source and receiver(s). Where a structure, barrier, or topography blocks the line of site between the noise source and receptor, minimum sound attenuation in the range of 10 to 15 dBA would result (Caltrans 2013a).

Vibration

Vibration is similar to noise in that it is a pressure wave traveling through an elastic medium, such as air; however, vibration relates to the excitation of a structure or surface, such as in buildings or the ground. As is the case with airborne noise, structure and groundborne vibrations can be described according to amplitude and frequency content. The vibratory motion can be depicted in terms of displacement, velocity, or acceleration. Vibration impacts to buildings are generally discussed in terms of peak particle velocity (PPV) that describes particle movement over time (in terms of physical displacement of mass). For purposes of this analysis, PPV will be used to describe all vibration for ease of reading and comparison. Vibration can impact people, structures, and sensitive equipment (Caltrans 2013b). Common sources of vibration within communities include sources within buildings (such as the operation of mechanical equipment, movement of people, or the slamming of doors), construction activities, railroads, and traffic on roads. Groundborne vibration generated by construction projects is usually highest during pile driving, rock blasting, soil compacting, jack hammering, and demolition-related activities. Next to pile driving and soil compacting, grading activity has the greatest potential for vibration impacts if large bulldozers, large trucks, or other heavy equipment are used. A conservative maximum vibration level threshold is 0.2 in/sec PPV for the prevention of structural damage to typical residential buildings (Caltrans 2013b).

Existing Noise Environment

The CSU, Chico main campus is located in the southwestern portion of the City of Chico, California. The main campus is generally bounded by Union Pacific Railroad corridor to the west; West Sacramento Avenue to the north; Esplanade to the east; and West Third Street to the south.

The main campus area is characterized by educational land uses with interspersed residential development and light commercial. The 132-acre main campus is generally bounded by the Union Pacific Railroad (UPRR) on the west; West Sacramento, Legion, and Mansion Avenues on the north; Esplanade, Children's Park, Salem, and Normal Streets on the east; and West Second and West Third Streets on the south (Figure 2-2a). The main campus sits between the city's commercial downtown area to the south and predominantly residential neighborhoods of the north, northwestern and western areas, including Mansion Park and The Avenues. These neighborhoods include low-density residential to the north and medium-high density residential along the northwestern and western borders. Typical low-density residential areas consist of moderately-sized, one- and two-story homes built along uniformly sized streets lined with trees. Medium-high density residential areas consist of low-rise apartment buildings, typically two-stories in height, along with townhouses and larger rentable homes.

The dominant noise source affecting the Master Plan area, including University Village and the University Farm, is transportation noise, which is primarily generated by vehicular traffic on the local roadway network and rail line operations on the nearby railroad corridor. Light industrial facilities and commercial areas to the west of the main campus and to the north of University Village contribute to the ambient noise levels in these areas to a lesser extent. Additionally, the main campus and University Village experience aircraft over-flights, which a review of radar data for the area indicates is largely associated private regional air traffic from Chico Municipal Airport.

The existing ambient noise environment in the plan area was quantified through field surveys, implementation of a noise-monitoring program and through the application of accepted reference data and noise prediction methodologies. Separate discussions of identified major noise sources and their respective effects are provided in the following sections.

Existing Noise-Sensitive Land Uses

Noise-sensitive land uses generally include those uses where exposure to noise would result in adverse effects, as well as uses where quiet is an essential element of the intended purpose. Residential dwellings are of primary concern because of the potential for increased and prolonged exposure of individuals to both interior and exterior noise levels. Existing land uses within the plan area consist of public education facilities, residential, neighborhood commercial and mixed-use.

Noise-sensitive land uses in the vicinity of the main campus are primarily single-family and multi-family residences located northeast of the CSU, Chico campus and south of the campus. Similarly, University Village has a mix of single-family and multi-family residential uses to the west, south, and east. The University Farm is surrounded by agricultural uses, including farmland and some warehouse/distribution uses, which are not considered noise-sensitive Existing land uses in the project vicinity are further outlined within the Project Description (Section 2).

Existing Ambient Noise Survey

An ambient noise survey was conducted from July 10th, 2019 through July 11th, 2019 to document the existing noise environment within the main campus and at nearby representative noise-sensitive receptors. Specific consideration was given to document noise levels in the vicinity of nearby noise-sensitive receptors, and additionally to document existing periodic noise source levels in the plan area. Noise measurements were performed in accordance with American National Standards Institute (ANSI) and American Standards for Testing and Measurement (ASTM) guidelines, at twelve locations in the plan area.

Noise measurements were performed using Larson Davis Laboratories (LDL) Model 831 Type 1 precision integrating sound level meters (SLMs). Field calibrations were performed on the SLMs with acoustic calibrators before and after the measurements. All instrumentation components, including microphones, preamplifiers and field calibrators have laboratory certified calibrations traceable to the National Institute of Standards and Technology (NIST). The equipment used meets all pertinent specifications of the ANSI for Type 1 SLMs (ANSI S1.4-1983 [R2006]). Meteorological conditions during the monitoring periods were stable with temperatures ranging from 64 to 93 degrees Fahrenheit (F), light winds from 0 mph to 7 mph during most of the period with occasional gusts up to 12 mph, and clear skies.

Long-term noise monitoring was performed at two locations in the main campus. The long-term noise monitoring equipment was configured to operate in a continuous manner, cataloging all noise metrics pertinent to identification and evaluation of noise levels (i.e., Leq, Lmax, Ln, etc.) in the plan area. Ambient noise levels recorded at the long-term noise monitoring locations are presented in Table 3.11-2. Short-term noise monitoring was conducted at six locations to provide additional insight into the existing ambient noise environment in the main campus area. Monitoring equipment was configured to catalog pertinent noise metrics as identified above. Ambient noise level data cataloged at the short-term monitoring locations is presented in Table 3.11-3. Ambient-noise survey locations are shown in Figure 3.11-1.

The primary noise source affecting all of the noise monitoring locations was vehicular traffic on the local and regional roadway network. Additional noise sources experienced during the noise-monitoring program included pedestrian activity, general landscaping activities, construction activities along Ivy Street, railroad operations and aircraft overflight. Ambient noise level exposure at the monitoring locations were dependent on the relative distance from nearby roadways and rail corridors to noise measurement locations and shielding provided by nearby existing structures.

During the long-term noise monitoring, average day-night (Ldn) noise levels ranged from approximately 56 to 70 dBA Ldn in the plan area. Short-term monitoring recorded average noise levels (Leq) ranging from approximately 54 to 70 dBA, with background (L90) noise levels ranging from approximately 48 to 62 dBA and maximum noise levels from 60 to 91 dBA Lmax.

Table 3.11-2. Summary of Long-Term Ambient Noise Measurements

Site	Location	Ldn	Average Noise Levels (dBA)							
			Daytime				*Nighttime*			
			Leq	*Lmax*	*L50*	*L90*	*Leq*	*Lmax*	*L50*	*L90*
LT-1	Lassen and Shasta Hall Lawn	53.5	50.5	66.6	45.1	42.5	46.1	63.2	42.4	41.1
LT-2	Orange Street Residential	73.1	66.8	82.3	49.7	45.7	66.6	76.9	47.4	41.8

Notes:
dBA = A-weighted decibels; Ldn = Day Night noise level; Leq = average equivalent noise level; Lmax = maximum noise level; L50 = sound level exceeded 50 percent of the period; L90 = sound level exceeded 90 percent of the period.
Locations of noise monitoring sites are shown on Figure 3.11-1.

Table 3.11-3. Summary of Short-Term Ambient Noise Measurements

Site	Location	Date/Time	Duration (minutes)	Average Noise Levels (dBA)			
				Leq	*Lmax*	*L50*	*L90*
ST-1	West Sacramento Avenue	6/11/19 09:27	15	65.1	84.8	59.5	47.7
ST-2	Aymer J Hamilton Parcel	6/11/19 09:55	15	50.0	64.8	44.2	42.5
ST-3	Mansion Avenue	6/11/19 10:24	15	54.1	69.2	46.7	44.4
ST-4	Esplanade and Memorial	6/11/19 13:25	15	67.5	81.1	63.9	55.4
ST-5	Whitney Hall	6/11/19 11:10	15	61.0	74.9	53.1	49.4
ST-6	West 2nd Street and Hazel	6/11/19 11:40	15	60.4	76.0	56.9	48.6

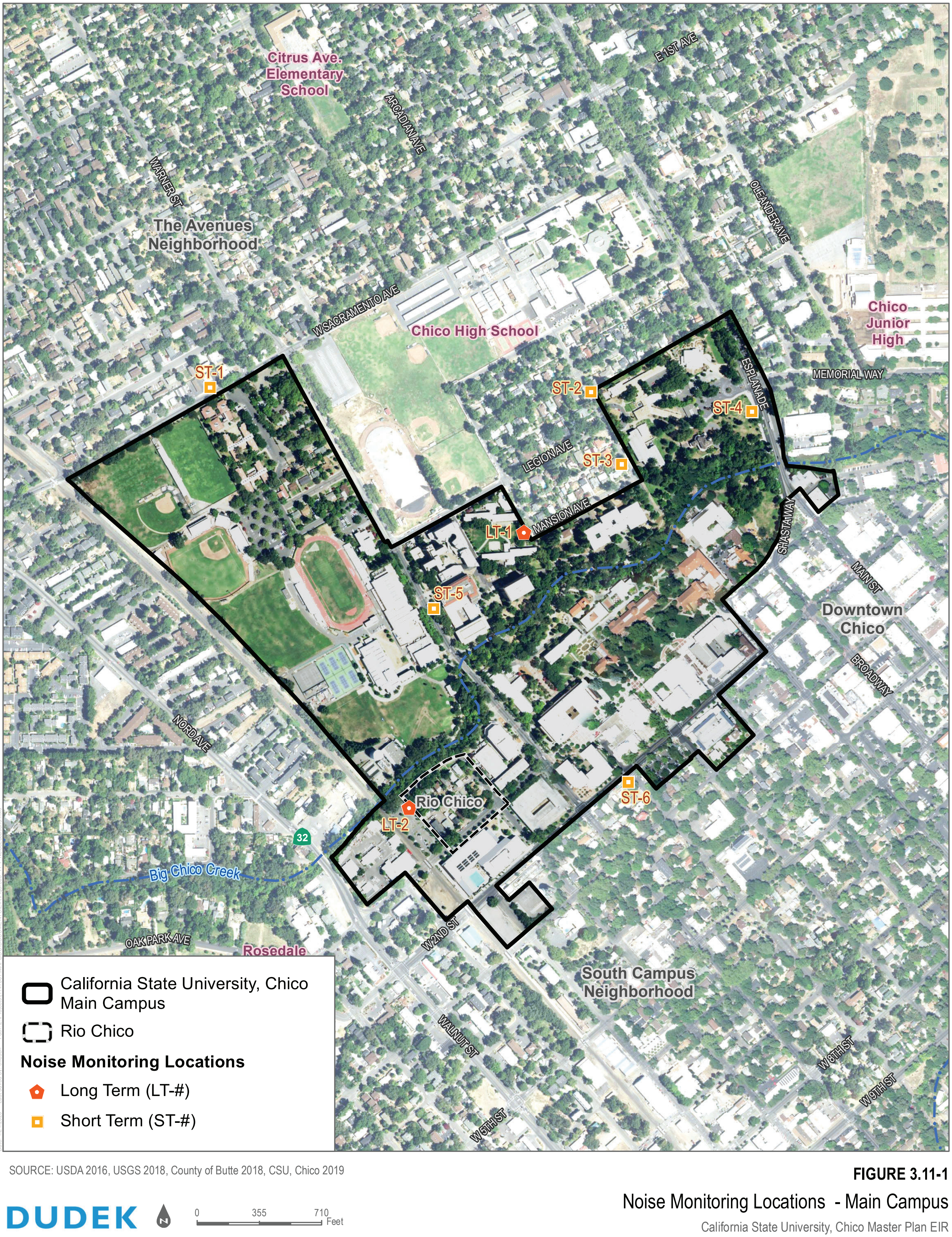
Notes:
dBA = A-weighted decibels; Ldn = Day Night noise level; Leq = average equivalent noise level; Lmax = maximum noise level; L50 = sound level exceeded 50 percent of the period; L90 = sound level exceeded 90 percent of the period.
Locations of noise monitoring sites are shown on Figure 3.11-1.

Existing Traffic Noise

Existing traffic noise levels were modeled for roadway segments in the main campus vicinity based on the Federal Highway Administration (FHWA) Highway Traffic Noise Model (TNM) prediction methodologies (FHWA 1998), and traffic data developed as part of the traffic impact study prepared for the Master Plan (Fehr & Peers 2019). The FHWA TNM incorporates state-of-the-art sound emissions and sound propagation algorithms, based on well-established theory and accepted international standards. The acoustical algorithms contained within the FHWA TNM have been validated with respect to carefully conducted noise measurement programs, and show excellent agreement in most cases for sites with and without noise barriers. The noise modeling accounted for factors as vehicle volume, speed, vehicle type, roadway configuration, distance to the receiver and propagation over different types of ground (acoustically soft and hard ground).

To determine existing Ldn traffic noise levels in the project vicinity, the average daily traffic (ADT) volumes for roadways in the immediate vicinity of the main campus were used as inputs to the noise model. Traffic data was provided in terms of peak-hour turning movements at intersections in the plan area. ADT volumes were calculated by summing all traffic movements for both the AM and PM peak hours, existing on- or turning on to a particular roadway segment during the peak-hour and multiplying the total peak-hour volume by a “k-factor” of 6.

Modeled existing traffic noise levels are summarized in Table 3.11-4, at a representative distance of 100 feet from the centerline of each major roadway in the project vicinity and distances from roadway centerlines to the 60-, 65-, and 70-dBA Ldn traffic noise level contours. The extent to which existing land uses in the main campus area are affected by existing traffic noise depends on their respective proximity to the roadways and their individual sensitivity to noise. As shown in Table 3.11 4, the location of the 60-dBA Ldn traffic noise contour along the local roadway network ranges from within the right-of-way to approximately 150 feet from the centerline of the modeled roadways. The extent to which existing land uses in the main campus area are affected by existing traffic noise depends on their respective proximity to the roadways and their individual sensitivity to noise. Refer to Appendix F of this EIR for complete modeling inputs and results.



SOURCE: USDA 2016, USGS 2018, County of Butte 2018, CSU, Chico 2019

FIGURE 3.11-1

Noise Monitoring Locations - Main Campus

California State University, Chico Master Plan EIR

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Table 3.11-4. Summary of Modeled Existing Traffic Noise Levels

Roadway	Segment		ADT	Ldn at 100 ft.	Distance to Ldn Contour (feet)		
	From	*To*			*70 dBA*	*65 dBA*	*60 dBA*
W 1st Ave	Warner Street	Esplanade	9,178	57.3	14	31	66
W 1st Ave	Esplanade	Oleander Ave	14,616	59.4	20	42	91
W Sacramento Avenue	Nord Avenue	Warner Street	7,842	56.7	13	28	61
W Sacramento Avenue	Warner Street	Esplanade	9,919	57.6	15	32	69
Ivy Street	1st Street	2nd Street	5,763	54.9	10	21	46
Esplanade	1st Avenue	2nd Avenue	20,978	62.6	32	69	149
Broadway	W 2nd Street	W 3rd Street	11,483	60.0	22	46	100
Main Street	3rd Street	4th Street	13,648	60.7	24	52	111
W 2nd Street	W 2nd Street east of Walnut Avenue		3,552	53.1	8	16	35

Notes:
dBA = A-weighted decibels; Ldn = average day--night noise level.
ADT – Average Daily Traffic Volumes. ADT volumes calculated based on peak-hour turning movements provided in the
Not accounting for shielding provided by natural or man-made intervening objects. Actual distance to real-world noise level contours will be dependent upon shielding effects in the environment under consideration.

Existing Railroad Operations

Existing railroad operations in the City of Chico include freight and passenger train operations on the UPRR corridor. The Union Pacific Railroad (UPRR) corridor is located along the western boundary of the main campus and also forms the eastern edge of the University Farm. Noise associated with train pass-bys along the UPRR corridor is audible throughout the main campus area. To quantify railroad noise levels on the main campus, Dudek conducted noise level measurements within the main campus near the railroad corridor. The sound level meter was programmed to collect overall sound levels, log train pass-by events at the site and summarize the pass-by events in the form of sound exposure level (SEL) data. During the 24-hour continuous railroad noise measurement survey, a total of 9 railroad events were logged. The SEL data indicated that the typical train operation resulted in levels of 66 dBA to 110 dBA SEL, at a distance of 135 feet from the effective acoustical centerline of the railroad corridor. Based on the measured SEL train pass-by data at the site, typical noise levels associated railroad operations were predicted. The predicted railroad noise levels are provided in Table 3.11-5 at a standardized reference distance of 100-feet from the railroad centerline, with distances to the 60 dB, 65 dB and 70 dB Ldn noise level contours.

Table 3.11-5. Railroad Noise Levels

Ldn at 100 feet	Distance to Ldn Contour (feet)		
	70 dBA	*65 dBA*	*60 dBA*
73.1	145	312	672

Notes:
dBA = A-weighted decibels Ldn = average day--night noise level.
Not accounting for shielding provided by natural or man-made intervening objects. Actual distance to real-world noise level contours will be dependent upon shielding effects in the environment under consideration.

Existing Aircraft Operations

There are two operational airports in the vicinity of the CSU, Chico Master Plan Area; Chico Municipal Airport and Ranchaero Airport. The main campus is located approximately 1 nautical mile north east of Ranchaero Airport and 3.5 nautical miles southwest of Chico Municipal Airport. The Master Plan Area is not located within the currently adopted 60 or 65 dB CNEL\Ldn noise contours of either airport, per the Airport Land Use Compatibility Plan for the Butte County Airport Land Use Commission. The nearest 60 dB CNEL noise contour would be associated with Ranchaero Airport and is approximately nine-tenths (0.9 miles) of a nautical mile to the south of the main campus boundary. The 60 dBA CNEL noise contour of the Chico Municipal Airport is approximately 3.2 nautical miles north of the main campus.

Existing Vibration

The existing vibration environment, similar to that of the noise environment, is dominated by transportation-related vibration from the railroad corridor and roadways in the proposed Master Plan area. Heavy truck traffic can generate groundborne vibration, which varies considerably depending on vehicle type, weight, and pavement conditions. However, groundborne vibration levels generated from vehicular traffic are not typically perceptible outside of the roadway right-of-way.

3.11.2 Regulatory Setting

Various private and public agencies have established noise guidelines and standards to protect citizens from potential hearing damage and other adverse physiological and sociological effects associated with noise. Applicable standards and guidelines are described below.

Federal

Federal Noise Control Act of 1972

The U.S. Environmental Protection Agency's (EPA's) Office of Noise Abatement and Control was originally established to coordinate federal noise control activities. After its inception, the EPA's Office of Noise Abatement and Control issued the Federal Noise Control Act of 1972, establishing programs and guidelines to identify and address the effects of noise on public health, welfare, and the environment. In 1981, EPA administrators determined that subjective issues such as noise would be better addressed at more local levels of government. Consequently, in 1982 responsibilities for regulating noise control policies were transferred to state and local governments. However, noise control guidelines and regulations contained in the EPA rulings in prior years are still adhered to by designated federal agencies where relevant. There are no Federal noise regulations which are directly applicable to the construction or operation of the project.

Federal Transit Administration – Vibration

The Federal Transit Administration (FTA) has developed standards for use on federally-funded mass-transit projects. While these standards and impact assessment methodologies are not directly applicable to this project, they are routinely used as guidelines for projects in state and local jurisdictions. The FTA measure of the threshold of architectural damage for conventional sensitive structures is 0.2 inches per second peak particle velocity (in/sec PPV) (FTA 2018).

Standards have also been established to address the potential for groundborne vibration to cause structural damage to buildings. These standards were developed by the Committee of Hearing, Bio Acoustics, and Bio Mechanics (CHABA) at the request of EPA (NAS 1977). For fragile structures, CHABA recommends a maximum limit of 0.25 in/sec PPV.

State

The State of California has adopted noise standards in areas of regulation not preempted by the federal government. State standards regulate noise levels of motor vehicles, sound transmission within buildings, occupational noise control, and noise insulation.

California Code of Regulations, Title 24

Title 24, also known as the California Building Standards Code, establishes building standards applicable to all occupancies throughout the state. The code provides acoustical regulations for both exterior-to-interior sound insulation as well as sound and impact isolation between adjacent spaces of various occupied units. Title 24 regulations state that interior noise levels generated by exterior noise sources shall not exceed 45 dBA CNEL/Ldn, with windows closed, in any habitable room for general residential uses. These regulations are applicable to the proposed Master Plan.

Additionally, Part 11 of Title 24, also known as the California Green Building Standards Code or CalGreen, provides guidance on mandatory and voluntary measures for environmental comfort and acoustical control. The CalGreen Code provides the voluntary measure/recommendation that classrooms have a maximum background noise level of 45 dBA Leq.

Governor's Office of Planning and Research

The State of California, Governor's Office of Planning and Research (OPR), published the State of California General Plan Guidelines (OPR 2003), which provides guidance for the acceptability of projects within specific day-night average noise level (Ldn) contours. Table 3.11-6 summarizes acceptable and unacceptable community noise exposure limits for various land use categories. The guidelines also present adjustment factors that may be used to arrive at noise acceptability standards that reflect the noise control goals of the community, the particular community's sensitivity to noise, and the community's assessment of the relative importance of noise pollution.

Generally, residential uses (e.g., single-family homes, mobile homes) are considered to be acceptable in areas where exterior noise levels do not exceed 60 dBA Ldn. Residential uses are normally unacceptable in areas exceeding 70 dBA Ldn and conditionally acceptable within 55 to 70 dBA Ldn. Schools are normally acceptable in areas up to 70 dBA Ldn and normally unacceptable in areas exceeding 70 dBA Ldn. Commercial uses are normally acceptable in areas up to 70 dBA Ldn. Between 67.5 and 77.5 dBA Ldn, commercial uses are conditionally acceptable, depending on the noise insulation features and the noise reduction requirements.

Table 3.11-6. Summary of Land-Use Noise Compatibility Guidelines

Land Use Category	Community Noise Exposure (dBA Ldn)			
	Normally Acceptable[1]	*Conditionally Acceptable*[2]	*Normally Unacceptable*[3]	*Clearly Unacceptable*[4]
Residential—Low-Density Single-Family, Duplex, Mobile Home	<60	55–70	70–75	75+
Residential—Multifamily	<65	60–70	70–75	75+
Transient Lodging—Motel, Hotel	<65	60–70	70–80	80+
Schools, Libraries, Churches, Hospitals, Nursing Homes	<70	60–70	70–80	80+
Auditoriums, Concert Halls, Amphitheaters	—	<70	65+	—
Sports Arena, Outdoor Spectator Sports	—	<75	70+	—
Playgrounds, Neighborhood Parks	<70	—	67.5–75	72.5+
Golf Courses, Riding Stables, Water Recreation, Cemeteries	<75	—	70–80	80+
Office Building, Business Commercial, and Professional	<70	67.5–77.5	75+	—
Industrial, Manufacturing, Utilities, Agriculture	<75	70–80	75+	—

Notes:
dBA = A-weighted decibels; Ldn = day-night average noise level

1 Specified land use is satisfactory, based on the assumption that any buildings involved are of normal conventional construction, without any special noise insulation requirements.

2 New construction or development should be undertaken only after a detailed analysis of the noise reduction requirements is made and needed noise insulation features included in the design. Conventional construction, but with closed windows and fresh air supply systems or air conditioning, will normally suffice.

3 New construction or development should generally be discouraged. If new construction or development does proceed, a detailed analysis of the noise reduction requirements must be made and needed noise insulation features included in the design. Outdoor areas must be shielded.

4 New construction or development should generally not be undertaken.

Source: OPR 2003

California Department of Transportation – Vibration

There are no FHWA or state standards for vibration. However, for the protection of fragile, historic and residential structures, the California Department of Transportation (Caltrans) recommends a threshold of 0.2 in/sec PPV for normal residential buildings and 0.08 in/sec PPV for old or historically significant structures (Caltrans 2004). These standards are more stringent than the federal standard established by the Committee of Hearing, Bioacoustics, and Biomechanics (CHABA), presented above.

Local

Under the California Constitution, the California State University (CSU) is a "state agency created by the Legislature in the field of public higher education which is charged with the management, administration, and control of the State College System of California" (Cal. Const., art. XX, § 23).

The California State University system, therefore, is the State of California acting in its higher education capacity. In creating the CSU, the California State Legislature expressly granted it a variety of powers, including the "full power and responsibility in the construction and development of any state university campus, and any buildings or other facilities or improvements connected with the California State University." (Cal. Ed. Code § 66606.)

Accordingly, as a component of the CSU, the CSU, Chico campus is not subject to municipal regulation of uses on property owned or controlled by CSU, Chico in furtherance of the University's education purposes, such as local noise standards in the General Plans and ordinances for the City of Chico and Butte County. CSU, Chico may consider local noise standards as they relate to the compatibility between proposed project development and off-site land uses. Local noise standards are used as guidelines for what CSU considers acceptable noise levels in noise-sensitive areas.

City of Chico General Plan Noise Element

Applicable noise standards in the City of Chico General Plan are contained within Chapter 13 of the General Plan (Noise Element). The Noise Element contains specific goals, policies and guidelines for use in planning and land compatibility determinations within the City of Chico. The following portions of the Noise Element are used in the subsequent evaluation of the proposed Master Plan.

- **Policy N-1.1.** (New Development and Transportation Noise) - New development of noise-sensitive land uses will not be permitted in areas exposed to existing or planned transportation noise sources that exceed the levels specified in Table N-1, unless the project design includes measures to reduce exterior and interior noise levels to those specified in Table N-1 (Table 3.11-7 of this EIR).
- **Policy N-1.2.** (New Development and Non-Transportation Noise) – New development of noise-sensitive land uses will not be permitted in areas exposed to existing non-transportation noise sources that exceed the levels specified in Table N-2, unless the project design includes measures to reduce exterior noise levels to the unadjusted levels specified in Table N-2 (Table 3.11-8 of this EIR).
- **Policy N-1.3.** (Acoustical Analysis) - Where proposed projects are likely to expose noise-sensitive land uses to noise levels exceeding the City's standards, require an acoustical analysis as part of environmental review so that noise mitigation measures may be identified and included in the project design. The requirements for the content of an acoustical analysis are outlined in Table N-3.
- Policy N-1.5. (Proposed Projects Near Railroads) - Require site-specific noise studies for noise-sensitive projects which may be affected by railroad noise, and incorporate noise attenuation measures into the project design to reduce any impacts to the levels specified in Table N-1 (Table 3.11-7 of this EIR).

Table 3.11-7. (Table N-1 of the General Plan)
Maximum Allowable Noise Levels From Transportation Noise Sources

Land Use Category	Outdoor Activity[1] Areas Ldn/CNEL, dB	Interior Spaces	
		Ldn/CNEL, dB	*Leq, dB*[2]
Residential	65[3]	45	—
Transient Lodging	—	45	—
Hospitals, Nursing Homes	65[3]	45	—
Theaters, Auditoriums, Music Halls	—	—	35
Churches, Meeting Halls	65[3]	—	40
Office Buildings	—	—	45

Table 3.11-7. (Table N-1 of the General Plan) Maximum Allowable Noise Levels From Transportation Noise Sources

Land Use Category	Outdoor Activity[1] Areas Ldn/CNEL, dB	Interior Spaces	
		Ldn/CNEL, dB	*Leq, dB*[2]
Schools, Libraries, Museums	65[3]	—	45
Playgrounds, Neighborhood Parks	70	—	—

Notes:

1 Noise standards are to be applied at outdoor activity areas with the greatest exposure to the noise source. When it is not practical to mitigate exterior noise levels at the patios or balconies of multi-family dwellings, a common area or onsite park may be designated as the outdoor activity area. For noise-sensitive land uses that do not include outdoor activity areas, only the interior noise standard shall apply.

2 As determined for a typical worst-case hour during periods of use.

3 Where it is not possible to reduce noise in outdoor activity areas to 65 dB Ldn/CNEL or less using all feasible noise reduction measures, an exterior noise level of up to 70 dB Ldn/CNEL may be allowed provided that interior noise levels are in compliance with this table.

Source: City of Chico, General Plan Noise Element, 2011

Table 3.11-8. (Table N-2 of the General Plan) Maximum Allowable Exterior Noise Levels From Non-Transportation Sources

Noise Level Descriptor (dBA)	Exterior Noise Level (dBA)	
	Daytime (7 a.m. to 10 p.m.)	*Nighttime (10 p.m. to 7 a.m.)*
Average-Hourly Noise Level (L_{eq})	55	50
Intermittent Noise Level (L_2 or L_{max})	75	65

Notes:

1. Noise levels are for planning purposes and may vary from the standards of the City's Noise Ordinance, which are for enforcement purposes.
2. Noise levels shall be lowered by five dB for simple tone noises, noises consisting primarily of speech or music, or for recurring impulsive noises. Noise level standards do not apply to mixed-use residential units established in conjunction with industrial or commercial uses provided interior noise levels remain below 45 dB Ldn/CNEL.
3. In areas where the existing ambient noise level exceeds the established daytime or nighttime standard, the existing level shall become the respective noise standard and an increase of 3 dBA or more shall be significant. Noise levels shall be reduced 5 dBA if the existing ambient hourly Leq is at least 10 dBA lower than the standards.
4. Noise standards are to be applied at outdoor activity areas with the greatest exposure to the noise source. When it is not practical to mitigate exterior noise levels at patio or balconies of multi-family dwellings, a common area or onsite park may be designated as the outdoor activity area.

Source: City of Chico, General Plan Noise Element, 2011.

City of Chico Municipal Code

The Chico Municipal Code serves to further protect the welfare and the peace and quiet of the community through the establishment of both objective and subjective methods for determining non-compliance with the City of Chico noise regulations. The City of Chico has enumerated these standards and methods of enforcement in Chapter 9.38 of the City Code. Generally, the ordinance prohibits the generation of noise in exceedance of 70 dBA at the property line of residential or commercial property (for residential property, the noise level shall not exceed 60 dBA between 9 p.m. and 7 a.m.).

Municipal Code Section 9.38.060.B addresses construction noise:

1. Notwithstanding any other provision of this chapter, between the hours of ten a.m. and six p.m. on Sundays and holidays, and seven a.m. and nine p.m. on other days, construction, alteration or repair of structures shall be subject to one of the following limits:
   a. No individual device or piece of equipment shall produce a noise level exceeding eighty-three (83) dBA at a distance of twenty-five (25) feet from the source. If the device or equipment is housed within a structure on the property, the measurement shall be made outside the structure at a distance as close as possible to twenty-five (25) feet from the equipment.
   b. The noise level at any point outside of the property plane of the project shall not exceed eighty-six (86) dBA.
2. Notwithstanding any other provision of this chapter, including but not limited to subsection B.1 of this section, for new residential development projects, or construction, alteration or repairs taking place in commercial or industrial zones between June 15 - September 15, of each calendar year, work will be allowed between the hours of 10:00 a.m. and 6:00 p.m. on Sundays and holidays, and 6:00 a.m. and 9:00 p.m. on other days. Construction, alteration or repairs of structures shall be subject to one of the following limits:
   a. No individual device or piece of equipment shall produce a noise level exceeding eighty-three (83) dBA at a distance of twenty-five (25) feet from the source. If the device or equipment is housed within a structure on the property, the measurement shall be made outside the structure at a distance as close as possible to twenty-five (25) feet from the equipment.
   b. The noise level at any point outside of the property plane of the project shall not exceed eighty-six (86) dBA.

3.11.3 Thresholds of Significance

The significance criteria used to evaluate the project impacts related to noise are based on Appendix G of the State CEQA Guidelines. According to Appendix G, a significant impact related to noise would occur if the project would:

1. Result in generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies.
2. Result in generation of excessive groundborne vibration or groundborne noise levels.
3. For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, expose people residing or working in the project area to excessive noise levels.

While the City of Chico General Plan and Municipal Code do not apply to activities on the University campus, these standards are used as threshold criteria since they reflect community standards and State of California guidance regarding noise levels per the Office of Planning and Research. For Item 1, the applicable standard for off-campus sensitive receptors shall be the levels shown in Table 3.11-7 or Table 3.11-8; or if implementation of the Master Plan would result in a significant increase as outlined in **Error! Reference source not found.**. For on-campus sensitive receptors (including classrooms, libraries, and residential buildings), the standard shall be an interior level of 45 dBA, in accordance with Title 24 of the California Building Code.

For construction, the City of Chico Municipal Code establishes a threshold of 83 dBA at a distance of 25 feet from any construction noise source. This standard strikes a balance between recognizing that some short-term increases in noise is to be expected from construction and protecting the public from excessive noise. Therefore, this standard is used as the threshold of significance for construction noise impacts.

For item 2, the FTA and Caltrans vibration threshold of 0.2 in/sec PPV for preventing architectural damage to typical residential buildings will be applied, as there are no historically significant structures identified in the immediate vicinity of the proposed Master Plan projects.

For item 3, the nearest public or public-use airport is Chico Municipal Airport. The main campus is 3.7 miles south of Chico Municipal Airport. University Village is approximately 4 miles south of Chico Municipal Airport. The University Farm is approximately 6.2 miles south of Chico Municipal Airport. All three facilities are outside of the airport influence area (AIA) (Butte County 2017) and are located more than two miles from the airport. Ranchaero Airport is a small private-use airport, with only 34 based aircraft, located approximately 1 mile west of the main campus (AirNav 2019). Therefore, there is no potential to expose people in the project area to excessive airport-related noise, and this item is not considered further.

Degradation of the Ambient Community Noise Environment

In addition to the criteria described above for normally acceptable noise levels, another consideration in defining impact criteria is based on the degradation of the existing ambient noise environment. In community noise assessments, a project is "generally not significant" if no noise-sensitive sites are located within the project vicinity, or if increases in community noise levels associated with implementation of the project would not exceed +3 dBA at noise-sensitive locations in the project vicinity (Caltrans 2013a).

A limitation in using a single value to evaluate an impact related to a noise level increase is the failure to account for the preexisting ambient noise environment to which a person has become accustomed. Studies assessing the percentage of people highly annoyed by changes in ambient noise levels indicate that when ambient noise levels are low, a greater change is needed to cause a response. As ambient noise levels increase, a lesser change in noise levels is required to elicit significant annoyance. The significance criteria listed in **Error! Reference source not found.** are considered to correlate well with human response to changes in ambient noise levels and are used to assess degradation of the ambient community noise environment.

Table 3.11-9. Significant Change in Ambient Noise Levels

Existing Ambient Noise Levels, Ldn/CNEL	Significant Increase
Less than 60 dBA	+ 5 dBA or greater
Between 60 and 65 dBA	+ 3 dBA or greater
Greater than 65 dBA	+ 1.5 dBA or greater

Notes: dBA = A-weighted decibels; CNEL = Community Noise Equivalent Level; Ldn = day-night average noise level.
Source: Adapted from FICON 1992, Caltrans 2013a

3.11.4 Impact Analysis

Methodology

Potential noise impacts associated with the proposed project were calculated and analyzed based on project information; information contained in the traffic analysis prepared for this project; and data obtained during on-site noise monitoring. Observations made during the site survey along with land-use information and aerial photography were used to determine potential locations of sensitive receptors in the project vicinity.

Traffic noise modeling involved the calculation of baseline and cumulative traffic noise levels along roadway segments where the proposed Master Plan project elements would contribute additional vehicle trips, based on traffic data developed as part of the traffic impact analysis prepared for the Master Plan (Fehr & Peers 2019). Traffic noise levels were calculated based on the FHWA traffic noise prediction model algorithms. Traffic noise levels were modeled for no-project and plus-project existing (2019) conditions. Modeling outputs for plus project scenario were evaluated against the no project case to determine the potential for the proposed project to result in an increase of traffic noise levels and cause an exceedance of applicable noise level criteria and impact thresholds.

Construction-related noise effects were assessed with respect to nearby noise-sensitive receptors and their relative exposure (accounting for intervening topography, barriers, distance, etc.), based on application of FHWA Roadway Construction Noise Model (RCNM) and FTA reference noise level data and usage-factors.

Potential effects associated with long-term noise sources were assessed based on project documentation, site reconnaissance data and reference noise level for the various noise sources.

Groundborne vibration impacts were qualitatively assessed based on existing reference documentation (e.g., vibration levels produced by specific construction equipment operations), through the application of Caltrans methodology outlined within the Transportation- and Construction- Induced Vibration Guidance Manual and the relative distance to potentially sensitive receptors from a given vibration source.

Impact Analysis

Impact NOI-1. The project would result in generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of applicable standards. (Potentially Significant)

Construction Noise

Adoption and implementation of the CSU, Chico Master Plan would help guide and facilitate continued and further development of the plan area. Development of the projects incorporated in the Master Plan area would generate noise levels associated with the operation of heavy construction equipment and construction related activities in the vicinity of the plan area. Construction noise levels in the vicinity of the Plan area would fluctuate depending on the particular type, number, and duration of usage for the various pieces of equipment; as well as, the relative exposure and distance between the source and receptors.

The effects of construction noise depend largely on the types of construction activities occurring on any given day, noise levels generated by those activities, distances to noise-sensitive receptors, and the existing ambient noise environment in the vicinity of the receiver. Construction generally occurs in several discrete stages, with each phase varying the equipment mix and the associated noise. These phases alter the characteristics of the noise environment generated on the project site and in the surrounding community for the duration of the construction stage.

The site preparation and grading phase typically generates the highest noise levels because of the heavy equipment used. Specific site preparation equipment can include backhoes, bulldozers, loaders; excavation equipment such as, graders and scrapers; and compaction equipment. Erection of large structural elements and mechanical systems could require the use of a crane for placement and assembly tasks, which may also generate a substantial noise levels. Table 3.11-10 lists the maximum noise levels typically generated by various types of construction equipment.

To assess noise levels associated with the various equipment types and operations, construction equipment can be considered to operate in two modes, mobile and stationary. Mobile equipment sources move around a construction site performing tasks in a recurring manner (e.g., loaders, graders, dozers). Stationary equipment operates in a given location for an extended period of time to perform continuous or periodic operations. Thus, it is necessary to determine the location of stationary sources during specific phases, and the effective acoustical center of operations for mobile equipment during various phases of the construction process. The effective acoustical center is the idealized point from which the energy sum of all construction activity noise near and far would appear to originate. As one increases the distance between equipment and/or between areas with simultaneous construction activity, dispersion and distance attenuation reduce the effects of separate noise sources added together

Operational characteristics of heavy construction equipment are additionally typified by short periods of full-power operation followed by periods of operation at lower power, idling, or powered-off conditions. These characteristics are accounted for within the model, through the application of typical acoustical usage factors (operational percentage) to the reference maximum noise levels presented in Table 3.11-10.

Table 3.11-10. Noise Emission Levels from Construction Equipment

Equipment Type	Acoustical Usage Factors (%)	Maximum Noise Levels, L_{max} (dBA) at 50 feet
Air Compressor	40	80
Asphalt Paver	50	80
Backhoe	40	80
Compactor	20	82
Concrete Pump	20	90
Concrete Saw	30	85
Crane, Mobile	16	85
Dozer	40	85
Forklift	40	85
Front-End Loader	40	80
Generator	50	82
Grader	40	85
Paver	50	85
Pneumatic Tools	50	85
Rock Drill	20	85
Roller	40	85
Scraper	40	85
Trucks	40	84

Table 3.11-10. Noise Emission Levels from Construction Equipment

Equipment Type	Acoustical Usage Factors (%)	Maximum Noise Levels, L_{max} (dBA) at 50 feet
Water Pump	50	84
Welder	40	84

Notes: dBA = A-weighted decibels; Lmax = day-night average noise level.
All equipment fitted with a properly maintained and operational noise control device, per manufacturer specifications.
Source: FHWA RCNM 2008, FTA 2018

Although construction requirements for specific Master Plan components are currently unknown, it can be reasonably anticipated that most project construction would involve the use of typical construction equipment such as backhoes, compressors, bulldozers, excavators, loaders and the like. Overall hourly average noise levels attributable to project construction activities were calculated based on the reference noise levels, usage rates, and operational characteristics discussed above. Construction noise levels were predicted using reference noise emission data and operational parameters contained in the FHWA RCNM and the FTA guidance manual and the default construction fleet assumptions used in the air quality analysis. The resultant construction noise level and the distance to the 83dBA noise level threshold are presented by phase in Table 3.11-11.

Table 3.11-11. Construction Noise Model Results Summary

Construction Phase Noise Levels (dBA L_{eq}) at 50 feet					
Demolition	*Site Preparation*	*Grading*	*Paving*	*Building Construction*	*Architectural Coating*
86.5 dBA	84.7 dBA	85.9 dBA	85.5 dBA	86.5 dBA	76 dBA
Distance to 83 dBA Noise Level Threshold					
75 feet	60.5 feet	70 feet	67 feet	75 feet	22.5 feet

Notes: dBA = A-weighted decibels; L_{eq} = equivalent sound level

As indicated in Table 3.11-11, noise levels for typical construction activities are predicted to generate maximum noise levels ranging from 76 to 86.5 dBA at a distance of 50 feet, depending on construction phase. Noise from localized point sources (e.g., heavy construction equipment, mobile-source construction noise, stationary-source construction noise) typically decrease at a rate of 6 dB to 7.5 dB with each doubling of distance between the noise source and the receptor. Applying the threshold of 83 dBA at a distance of 25 feet from any construction noise source, and conservatively assuming an attenuation rate of 6 dB per doubling of distance, construction operations and related activities would have the potential to generate exterior noise levels exceeding the threshold for all phases of construction, with the exception of the architectural coating phase. This impact would be considered **potentially significant.**

Long-Term/Operational Noise

Traffic Noise

The primary noise-related impact of the Master Plan is anticipated to be an off-site increase in noise associated with increases in vehicular traffic on the regional and local roadway network. Acoustical calculations were performed for existing traffic levels (presented in Section 3.11.1, Existing Conditions), as traffic is often a major contributor to the ambient noise level within the community.

Long-term operation of the project would have the potential to generate an increase in traffic volumes on the local roadway network in the vicinity of the main campus. There would be no project-related increase in traffic volumes related to University Village (where no increase in use is proposed); and minimal increases would be associated with the University Farm Consequently, noise levels from vehicular traffic sources along affected roadway segments near the main campus would have the potential to increase. Traffic noise computations employed the FHWA traffic noise prediction methodologies, as discussed previously. Potential off-site noise impacts resulting from the increase in vehicular traffic on the local roadway network, associated with long-term operations of the proposed project, were evaluated under existing conditions with and without implementation of the proposed Master Plan.

Traffic volumes and the distribution of those volumes were obtained from the Traffic Impact Analysis prepared for the project (Fehr & Peers 2019). Average Daily Traffic (ADT) volumes were provided directly by the traffic consultant for selected roadway segments in the main campus area. Average vehicle speeds on local area roadways were assumed to be consistent with posted speed limits and remain as such with or without implementation of the proposed project. Refer to Appendix F for complete traffic modeling inputs and results.

Modeled traffic noise exposure levels at receivers representing noise-sensitive receptors in the project vicinity are shown in Table 3.11-12 for the existing conditions, with and without implementation of the proposed project. The table also presents the relative traffic noise level increase (net change) resulting from implementation of the proposed project along with an evaluation of relative significance (Impact).

Table 3.11-12. Predicted Existing No Project and Plus Project Traffic Noise Levels

Roadway	Road Segment	Ldn at 100 Feet, dBA			
		Existing No Project	*Existing Plus Project*	*Net Change*	*Impact?*
W 1st Avenue	Warner Street to Esplanade	57.3	57.4	<1	No
W 1st Avenue	Esplanade to Oleander Ave	59.4	59.5	<1	No
W Sacramento Avenue	Nord Avenue to Warner Street	56.7	56.7	<1	No
W Sacramento Avenue	Warner Street to Esplanade	57.6	57.8	<1	No
Ivy Street	1st Street to 2nd Street	54.9	55.4	<1	No
Esplanade	1st Avenue to 2nd Avenue	62.6	62.6	<1	No
Broadway	W 2nd Street to W 3rd Street	60.0	60.0	<1	No
Main Street	3rd Street to 4th Street	60.7	60.8	<1	No

Notes: dBA = A-weighted decibels; Ldn = Day/Night Level
* Traffic noise levels are predicted at a standard distance of 100 feet from the roadway centerline and do not account for shielding from existing noise barriers or intervening structures. Traffic noise levels may vary depending on actual setback distances and localized shielding.
Source: Dudek 2020

As shown in Table 3.11-12, the largest increase in traffic noise exposure levels in the vicinity of the Master Plan area associated with development of the proposed Master Plan would be less than 1 dB, which would be barely perceptible. Implementation of the Master Plan would not result in an increase in traffic noise levels +3 dB Ldn or more in the plan area under the existing condition. As a result, this impact is considered **less than significant.**

On-Site Operations

Development of the proposed Master Plan would have the potential to introduce on-site stationary noise sources associated with the long-term support and operation of CSU, Chico. Stationary on-site noise sources associated with the operation of similar facilities of similar scope to the proposed Master Plan are primarily attributable to mechanical equipment; parking lot activity; and recreational activities. Each of these potentially noise generating operational activities are discussed separately in the following sections. A discussion of combined “worst-case” long-term on-site operational noise is also provided following the individual discussions.

Mechanical Equipment

Mechanical equipment associated with the operation of similar uses generally includes heating, ventilation, and air-conditioning (HVAC) equipment, backup generators, and various fans, pumps, and compressors that often can be significant noise sources. Noise levels generated by the HVAC and mechanical equipment vary significantly depending on unit size, efficiency, location, type of fan, and orientation of openings.

The primary mechanical equipment for the main campus is housed in an ancillary support building referred to as a Central Utility Plant. The Central Plant is located south of Yolo Hall, in the southwest portion of the CSU, Chico campus. Utilities typically incorporated in a Central Plant include hot water/steam for heating, chilled water for cooling, and domestic hot water distribution. The hours of operations for a Central Plant are typically 24 hours per day, 7 days per week to ensure optimum efficiency and infrastructure services for the facility. Expansion of the Central Plant is not included in the Master Plan, and therefore would not result in additional noise sources affecting the noise environment.

Local mechanical equipment is currently utilized for University Housing, food services, University Farm, foundation buildings and the Gateway Science Museum. The type and location of mechanical equipment associated with the various elements of the proposed Master Plan is unknown; however, mechanical equipment is often mounted on rooftops, partially enclosed at grade adjacent to buildings, or located within mechanical equipment rooms. Sound pressure levels generated by mechanical vary considerably depending on size, capacity and equipment design. Packaged rooftop units contain all necessary mechanical equipment such as fans, pumps, condenser, and compressors within a single enclosure and are a common choice. Noise levels generated by packaged HVAC systems can be modeled in relation to the required cooling capacity for the unit, measured in tons of refrigeration (Bolt Beranek and Newman 1981).

Based upon building square-footages, the estimated cooling-capacity, and assuming that the acoustical center for the mechanical equipment would be located near the center of each building’ rooftop, rooftop mechanical noise levels were calculated at the noise-sensitive receptor nearest the building. Calculated noise exposure levels at nearby off-site receptors are presented in Table 3.11-13, with on-site noise exposure levels presented in Table 3.11-14.

The rooftop mechanical systems were assumed to operate throughout daytime and nighttime hours, average noise levels were calculated to range from approximately 36 to 68 dBA Leq at the nearest noise-sensitive receptor locations outside of the Master Plan boundary. This would exceed the daytime and nighttime stationary noise source criteria of 55 dBA Leq and 50 dB Leq, respectively. As a result, on-site mechanical noise impacts would be **potentially significant.**

Table 3.11-13. Predicted Mechanical Equipment Noise Levels at Off-Site Receptors

Building		Square Footage	Cooling Capacity[1]	Distance to Nearest Receptor	Leq at Nearest Receptor	Impact?
ID	*Description*					
4	Arena/Classroom/Support	80,117	96	850	49.2	A

Table 3.11-13. Predicted Mechanical Equipment Noise Levels at Off-Site Receptors

Building		Square Footage	Cooling Capacity[1]	Distance to Nearest Receptor	Leq at Nearest Receptor	Impact?
ID	*Description*					
5	Academic Building	36,000	43	700	36.7	N
6	Butte Hall Addition	10,000	12	475	36.4	N
7	Student Housing	74,233	89	350	49.5	A
8	Student Housing	74,233	89	150	**63.9**	**Y**
9	Academic Building	72,000	86	740	49.9	A
10	Holt Hall Addition	12,000	14	300	48.4	N
11	Academic Building	46,400	56	120	**63.4**	**Y**
12	Academic Building	38400	46	180	**58.9**	**Y**
14	Cultural/Museum Building	11000	13	350	39.6	N
15	Academic Building	75,000	90	180	**62.4**	**Y**
16	Mixed Use Building	70,000	84	90	**68.0**	**Y**
17	Student Housing	74,233	89	575	47.2	N
18	Student Housing	74,233	89	750	44.9	N
19	Student Life/Wellness Building	75,000	90	425	**54.9**	**Y**
20	Academic Building	33,000	40	400	**51.2**	**Y**
21	Support Building	25,200	30	650	45.5	N
22	Student Housing	74,233	89	700	**50.5**	**Y**
23	Student Housing	74,233	89	825	44.1	N
24	Academic Building	112,800	135	850	46.0	N

Notes: dBA = A-weighted decibels; Leq = Energy average hourly Level
1- Cooling capacity in tons, based on an assumed 1.2 ton requirement per 1,000 square feet.
2- Impact – N= No impact, A= Approaching nighttime 50 dBA Leq threshold, Y= Exceeding nighttime 50 dBA Leq threshold.
Source: Dudek 2020

Mechanical noise levels calculated for the nearest noise-sensitive receptors within the main campus are presented below in Table 3.11-14. Mechanical noise levels were calculated to range from approximately 27 dB to 58 dB. Assuming a typical exterior to interior noise level reduction of 15 dB provided by the building façade with windows open, interior noise levels from mechanical equipment is predicted to range from approximately 12 to 43 dB. Therefore, noise exposure from mechanical equipment at on-site noise-sensitive receptors would comply with the State of California Building Code 45 dB interior noise level requirements.

Table 3.11-14. Predicted Mechanical Equipment Noise Levels at On-Site Receptors

Building		Square Footage	Cooling Capacity[1]	Distance to Nearest Receptor	Leq at Nearest Receptor	Impact?
ID	*Description*					
4	Arena/Classroom/Support	80,117	96	665	45.4	N
5	Academic Building	36,000	43	250	49.7	N
6	Butte Hall Addition	10,000	12	150	47.5	N
7	Student Housing	74,233	89	150	57.9	N
8	Student Housing	74,233	89	150	57.9	N
9	Academic Building	72,000	86	480	47.7	N
10	Holt Hall Addition	12,000	14	470	38.5	N
11	Academic Building	46,400	56	970	34.3	N
12	Academic Building	38400	46	850	34.4	N

Table 3.11-14. Predicted Mechanical Equipment Noise Levels at On-Site Receptors

Building		Square Footage	Cooling Capacity[1]	Distance to Nearest Receptor	Leq at Nearest Receptor	Impact?
ID	*Description*					
14	Cultural/Museum Building	11000	13	1000	26.5	N
15	Academic Building	75,000	90	840	38.0	N
16	Mixed Use Building	70,000	84	1000	36.1	N
17	Student Housing	74,233	89	440	48.6	N
18	Student Housing	74,233	89	450	48.4	N
19	Student Life/Wellness Building	75,000	90	580	46.2	N
20	Academic Building	33,000	40	280	48.3	N
21	Support Building	25,200	30	440	42.9	N
22	Student Housing	74,233	89	450	48.4	N
23	Student Housing	74,233	89	500	47.5	N
24	Academic Building	112,800	135	225	56.6	N

Notes: dBA = A-weighted decibels; Leq = Energy average hourly Level
1- Cooling capacity in tons, based on an assumed 1.2 ton requirement per 1,000 square feet.
2- Impact (Assuming 15 dB exterior to interior noise reduction) – N= No impact, A= Approaching 45 dBA Ldn threshold, Y= Exceeding 45 dBA Ldn threshold.
Source: Dudek 2020

<u>*Parking Lot Activities*</u>

The Master Plan incorporates the addition of surface parking at two locations on the main campus and a parking garage. Parking would be located directly adjacent to the proposed arena and academic buildings adjacent to the Aymer J. Hamilton building (being demolished and replaced by new academic buildings and cultural museum). Previously conducted reference noise level measurements of parking lot activities indicate that average sound exposure levels (SEL) associated with a single parking event is 71 dB SEL at distance of 50 feet. Activities making up a single parking event included vehicle arrival, limited idling, occupants exiting the vehicle, door closures, conversations among passengers, occupants entering the vehicle, startup, and departure of the vehicle. Assuming one vehicle arriving and departing each available parking stall, twice per 24-hour period, and distance to the noise-sensitive receptors nearest each parking area, noise levels from parking lot activities have been predicted and are shown in Table 3.11-15.

Table 3.11-15. Predicted Parking Noise Levels

Parking Area		No. of Parking Stalls	Distance to Nearest Receptor (feet)	Ldn at Nearest Receptor (dBA)	Impact?
ID[1]	*Description*				
2	Surface parking north of proposed arena	50	525	30.6	N
3	West campus parking garage	900	825	39.3	N
13	Surface parking at proposed Cultural Museum	150	215	43.2	N
16	Mixed-use facility	300	90	53.7	N
-	Public parking garage at Lost Park	300	175	41.6	N

Notes: dBA = A-weighted decibels; Leq = Energy average hourly Level
1. As identified on the Master Plan New Construction, Figure 2-4 of this EIR).
2. Impact – N= No impact, A= Approaching 65 dBA Ldn transportation source threshold, Y= Exceeding 65 dBA Ldn transportation source threshold.

Source: Dudek 2020

As indicated in the findings presented above in Table 3.11-15, parking lot operations would not exceed the City's noise level standard for residential uses affected by transportation related noise sources. Additionally, parking lot noise levels associated with existing parking areas are not anticipated to result in a substantial permanent increase in ambient noise levels in the project vicinity above levels currently experienced in the Master Plan area. As such this impact is considered **less than significant**.

Sports and Athletic Field Activities

The Master Plan proposes to renovate and expand the existing sports complex and athletic fields. The improvements would include converting these fields to a synthetic turf surface, sized large enough to accommodate a rugby field in the north/south direction, three recreation fields in the east-west direction, and two softball fields in the north and south corners. Lighting and fencing/netting may be added to extend hours of use. Two new athletic fields are proposed to be located between W Sacramento Ave and La Vista Way, the current location of Konkow Hall and Esken Hall. The softball stadium is proposed to receive new bleacher seating with a capacity for 500 spectators. With the exception of the softball stadium seating, the proposed Master Plan does not incorporate the substantial changes to the outdoor seating capacity or spectator areas at the sports complex and athletic fields.

Sound sources associated with the long-term operation of proposed improvements to the sports complex and athletic fields would include sporting activity participants communicating, whistles and calls from game officials, spectators cheering and interacting, and announcements or music playback over amplified speaker systems. The most prominent noise sources being spectators cheering. As such, the softball stadium would be the primary noise source associated with the proposed improvements to the sports complex and athletic fields. Dudek recently performed sporting event noise level monitoring for a college level football tournament, with approximately 1,200 spectators in attendance (Dudek 2019). Sound levels generated by the spectators cheering had and average maximum level of 70 dBA at a distance of 200 feet from the acoustical center of the bleachers. Assuming an attenuation rate of 6 dB per doubling of distance, the average maximum noise levels associated with spectator cheers would be approximately 62.4 dB Lmax.

The City of Chico General Plan non-transportation noise standards for intermittent levels are 75 dBA (Lmax) during daytime hours (7 AM to 10PM) and 65 dBA (Lmax) during nighttime periods (10 PM to 7 PM). However, for noise sources consisting primarily of speech, the thresholds are reduced by 5 dB, to 70 dBA and 60 dBA Lmax, respectively. As a result, the predicted noise levels from athletic field activities would exceed the threshold and would be **potentially significant**.

Overall on-site Operational Noise

Additional intermittent stationary noise, attributable to the long-term implementation of the proposed Master Plan may include landscape maintenance activities, refuse disposal, and people congregating, talking and participating in other activities at outdoor activity areas on the University campus. Such noise generating activities are generally intermittent in nature, and are relatively consistent with other noise levels generated in the area. These sources are expected to be less intensive than other project-related operational contributions such as parking, mechanical, and traffic. Furthermore, due to the intermittent in nature of these sources, additional noise levels generated by these sources are typically masked by the ambient noise environment and other noise sources in the area, making it infeasible to ascertain potential contributions to the noise environment.

Impact NOI-2. The project would not result in generation of excessive groundborne vibration or groundborne noise levels. (Less than Significant)

Construction activities on the project site may result in varying degrees of temporary groundborne vibration or noise, depending on the specific construction equipment used and operations involved. Representative groundborne vibration levels for various types of construction equipment, developed by FTA, are summarized below in the Table 3.11-16. Pile driving and blasting is not currently expected to be utilized in the construction of the elements of the proposed Master Plan. As shown in Table 3.11-16, heavier pieces of construction equipment, such as a bulldozer that may be expected on the project site, have been documented to generate peak particle velocities of approximately 0.089 in./sec. PPV or less at a reference distance of 25 feet (DOT 2006).

Groundborne vibration attenuates rapidly, even over short distances. The attenuation of groundborne vibration as it propagates from source to receptor through intervening soils and rock strata can be estimated with expressions found in FTA and Caltrans guidance. Using standard FTA vibration attenuation formulas, non-pile driving construction activities would exceed the FTA/Caltrans recommended threshold of significance of 0.2 in/sec. PPV at a distance of 15-feet or less. It is unlikely that heavy construction equipment would operate within 15 feet of any sensitive receptor, as buildings associated with the existing sensitive receptors are located approximately 20-feet or more from their respective property lines and construction areas.

It is notable that ground-borne vibrations from construction activities do not often reach the levels that can damage structures or affect activities that are not vibration sensitive, although the vibrations may be felt by nearby persons in close proximity and result in annoyance (FTA 2018). Additionally, the elements of the proposed Master Plan do not include elements that would generate ground-borne vibration associated with the long-term operation of the Master Plan. As such, groundborne vibration and noise impacts associated with implementation of the proposed Master Plan are considered **less than significant.**

Table 3.11-16. Representative Vibration Levels for Construction Equipment

Equipment		PPV at 25 feet (in/sec)[1,3]	Approximate Lv (VdB) at 25 feet[2]
Pile Driver (impact)	Upper range	1.518	112
	Typical	0.644	104
Pile Driver (vibratory/sonic)	Upper range	0.734	105
	Typical	0.170	93
Vibratory Roller		0.210	94
Hoe Ram		0.089	87
Large Bulldozer		0.089	87
Caisson Drilling		0.089	87
Heavy-duty Trucks (Loaded)		0.076	86
Jackhammer		0.035	79
Small Bulldozer		0.003	58

Notes:

1. Where PPV is the peak particle velocity.
2. Where Lv is the RMS velocity expressed in vibration decibels (VdB), assuming a crest factor of 4.
3. Vibration levels can be approximated at other locations and distances using the above reference levels and the following equation: $PPV_{equip} = PPV_{ref} (25/D)^{1.5}$ (in/sec); where “PPV ref” is the given value in the above table, “D” is the distance for the equipment to the new receiver in feet.

Source: DOT 2006

3.11.5 Cumulative Impacts

The primary source of potential cumulative noise effects is mobile noise (traffic). The analysis of Impact NOI-1 includes both direct and cumulative mobile noise sources. The cumulative impact of project-related and other future traffic noise increases is determined to be **less than significant**.

Operational sources, such as building mechanical equipment or event sources, tend to be dominated by the loudest source. Given the distance between proposed Master Plan improvements, operational and construction noise are not anticipated to result in cumulative impacts. Similarly, the Master Plan would not result in significant vibration sources, and individual projects are not anticipated to overlap in either timing or proximity such that cumulative vibration would result in a significant cumulative impact.

3.11.6 Mitigation Measures

MM-NOI-1 The following measures shall be implemented as part of construction activities within the Master Plan area, in order to reduce the effects of noise levels generated from construction operations.

- Construction operations and related activities within the plan area shall be limited to the weekday hours of 7:00 AM to 9:00 PM and the Sunday or holiday hours of 10:00 AM to 6:00 PM. For construction activity taking place between June 15th and September 15th, construction hours shall be limited to the weekday hours of 6:00 AM to 9:00 PM and the Sunday or holiday hours of 10:00 AM to 6:00 PM.
- Construction equipment and vehicles shall be fitted with efficient, well-maintained mufflers that reduce equipment noise emission levels at the project site. Internal combustion powered equipment shall be equipped with properly operating noise suppression devices (e.g., mufflers, silencers, wraps) that meet or exceed manufacture specifications. Mufflers and noise suppressors shall be properly maintained and tuned to ensure proper fit, function and minimization of noise.
- Pumps that are not submerged and above-ground conveyor systems shall be located within acoustically treated enclosures.
- Portable and stationary site support equipment (such as generators, compressors, rock crushers, and cement mixers) shall be located as far as possible from nearby noise-sensitive receptors.
- Impact tools shall have the working area/impact area shrouded or shielded, with intake and exhaust ports on power equipment muffled or suppressed. This may necessitate the use of temporary or portable, application specific noise shields or barriers.
- Construction equipment shall not be idled for extended periods (e.g., 15 minutes or longer) of time in the immediate vicinity of noise-sensitive receptors.
- A disturbance coordinator shall be designated by the general contractor, which will post contact information in a conspicuous location near the entrance of the subject construction sites so that it is clearly visible to nearby receivers most likely to be disturbed. The coordinator shall manage complaints resulting from the construction noise. Reoccurring disturbances shall be evaluated by a qualified acoustical consultant retained by the project proponent to ensure compliance with applicable standards.

MM-NOI-2 Operational noise levels shall be minimized through project-site design, equipment selection, construction of a localized barriers or parapets, as presented below. For on-site academic and residential buildings, the standard is a 45 dBA interior noise level. For off-site residential land uses, the standards for daytime and nighttime stationary noise source are 55 dBA Leq and 50 dB Leq, respectively.

- All localized heating, ventilation, and air conditioning equipment shall be located within mechanical equipment rooms wherever possible.
- Selection of mechanical equipment shall consider radiated outdoor sound pressure levels and select equipment with lower sound generation levels whenever possible.
- Localized noise barriers or rooftop parapets shall be constructed around the HVAC equipment so that line-of-site to the noise source from the property line of the noise-sensitive receptors is blocked.
- As project specific site plans and specifications become available, projects incorporating mechanical equipment that have the potential to generate substantial noise levels shall demonstrate compliance with applicable noise thresholds at the nearest sensitive receptor. Demonstration of compliance may be proven by documenting acceptable manufacturer noise levels or an assessment of the project by a qualified acoustical consultant.

MM-NOI-3 Minimize Athletic Event Spectator Noise Levels through Project-site design and construction of a localized barriers or solid-backed seating areas.

Softball Stadium spectator seating shall be designed to direct the majority of the sound levels generated by spectators to the south, towards the softball play field. This may be accomplished through the construction of localized noise barriers partially surrounding the spectator seating. Barriers would need to be constructed of materials having an STC rating of 29 or greater and block line-of-site from the seating area to the noise-sensitive receptors north of the Plan Area. To minimize event noise levels in the surrounding community, further environmental noise analysis shall be performed by a qualified acoustical consultant when design-level site plans are available.

3.11.7 Level of Significance after Mitigation

As described below, implementation of mitigation measures would reduce Impact NOI-1 to **less than significant.**

Application of the noise control techniques affecting and controlling the construction noise at the source (i.e., heavy equipment, pumps) set forth in Mitigation Measure NOI-1 can obtain reductions of 3 to 6 dBA; noise control techniques implemented along the path of the noise (i.e., temporary noise barriers, enclosures, relocation of equipment) has been shown to reduce construction noise levels between 2 to 7 dBA (Wu & Keller 2007). The overall noise level reduction achieved through implementation of these mitigation measures is expected to range from 5 to 13 dBA. Through the application of the above outlined measures, through effective management of project noise levels and compliance with the City of Chico construction noise level standards, impacts from construction noise levels would be less than significant after mitigation.

Implementation of mitigation measure MM-NOI-2 would reduce the operational noise impacts associated with mechanical equipment to a **less than significant** level.

Implementation of mitigation measure MM-NOI-3 would reduce this impact to a **less than significant** level.

3.11.8 References

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3.12 Population and Housing

This section describes the existing population and housing supply and employment in the City of Chico and the region, and the potential contribution of the proposed Master Plan as the result of planned enrollment growth and related physical improvements during the course of Master Plan buildout. The analysis of potential Master Plan effects on land uses and land use patterns is provided in Section 3.10, Land Use and Planning. Potential growth-inducing impacts of the Master Plan are addressed in Chapter 6, Other CEQA Considerations.

Changes in population and housing demand are considered social and economic effects, not environmental effects. Section 15382 of the CEQA Guidelines states: “An economic or social change by itself shall not be considered a significant effect on the environment.” According to CEQA, these effects should be considered in an EIR only to the extent that they create adverse impacts on the physical environment. This section of the EIR examines the potential for the proposed Master Plan to result in a substantial increase in population and a resultant demand for housing.

One scoping comment was received in response to the Notice of Preparation (NOP) regarding general concerns about campus growth, and one comment was received that noted an increase in non-owner occupancy of housing in the City. Scoping comments are provided in Appendix A, Notice of Preparation and Scoping Comments.

3.12.1 Existing Conditions

Study Area

The study area for the evaluation of population and housing impacts includes the Master Plan area, the City of Chico, and the entire Butte County Association of Governments (BCAG) region. The BCAG region is the basis for growth forecasts and various regional plans that relate to population and housing impacts.

Population and Population Growth

Regional Population

Table 3.12-1 shows the historical, current and projected populations of the cities within BCAG through 2030, the horizon year for the proposed master plan. The 2000 and 2010 data are based on actual counts conducted by the U.S. Census and 2017 data are based on preliminary estimates conducted by the California Department of Finance (DOF). Population projections to 2030 are forecasts developed by BCAG, once in 2014 before the Camp Fire, and again in 2019 after the Camp Fire.

Population within Butte County has continued to grow over time, but southern portions of the county are anticipated to absorb a greater percentage of the regional growth. In the 2014 BCAG forecast, the cities of Biggs, Gridley and Oroville were predicted to double in population, at a minimum between 2000 and 2030. In November 2018, the Camp Fire caused forced relocation of thousands of people throughout Butte County. Most notably, the 2019 population estimate for the Town of Paradise (DOF 2019) is 82.5 percent lower than the Town’s 2020 population forecast (BCAG 2018). Displacement of residents resulted in higher population estimates in some areas than forecasted in the 2014 BCAG report. The 2019 population estimate for the cities of Chico and Oroville (DOF 2019), were 19.8 percent and 16.6 percent higher, respectively, than the cities’ 2020 population forecasts (BCAG 2018).

In September 2019, BCAG released the Provisional Long-Term Regional Growth Forecasts for 2018 through 2040. The growth forecasts were developed with a revised methodology from 2014, considering the latest DOF population projections and estimates, California Employment Development Department (EDD) job estimates, past housing production by the local jurisdictions, and preliminary housing unit loss and population re-distribution estimates resulting from the Camp Fire (BCAG 2019). Most notably, the annual growth rate of Paradise is forecasted at 29.4% between 2019 and 2030, lower than the 2014 BCAG forecast of a 49.43% annual growth rate.

Table 3.12-1. Population Trends in Butte County

Location	2000[a]	2010[b]	2000-2010 Average Annual Growth Rate	2019[c]	2010-2019 Average Annual Growth Rate	Projected 2030 before Camp Fire[d]	2019-2030 Average Annual Growth Rate	Projected 2030 after Camp Fire[e]	2019-2030 Average Annual Growth Rate
Biggs	1,793	1,707	-0.48%	2,066	2.34%	3,195	4.97%	2,354	1.30%
Chico	59,954	86,187	4.38%	112,111	3.34%	110,552	-0.13%	107,712	-0.36%
Gridley	5,382	6,584	2.23%	7,224	1.08%	12,381	6.49%	8,770	0.19%
Oroville	13,004	15,546	1.95%	21,773	4.45%	26,928	2.15%	21,446	-0.01%
Paradise	26,408	26,218	-0.07%	4,590	-9.17%	29,547	49.43%	19,413	29.4%
Unincorporated	96,630	83,758	-1.33%	78,702	-0.67%	102,931	2.80%	88,597	1.10%
County Total	**203,171**	**220,000**	**0.83%**	**226,466**	**0.33%**	**285,534**	**2.37%**	**248,313**	**0.88%**

Sources:
a. U.S. Census Bureau 2000; b. U.S. Census Bureau 2010; c. DOF 2019; d. BCAG 2014; e. BCAG 2019

City of Chico

The City of Chico has experienced the most rapid population growth in the County over the past two decades, from 59,954 people in 2000 to 112,111 people in 2019 (52,157 people, representing approximately 87 percent over the 19-year period, or an average of about 4.58 percent annual increase). In 2018, the City of Chico experienced unexpected additional population growth due to forced relocation of Butte County residents affected by the Camp Fire. Between 2018 and 2019, the population in the City of Chico increased by 25.78 percent (18,508 new residents). As such, the City's 2019 population estimate was 19.77 percent higher than the projected 2020 population and 6.49 percent higher than the projected 2030 population from the 2014 BCAG forecast.

The 2019 BCAG forecast predicts that the City's population will steadily decrease through the year 2030. Compared the 2019 population of 112,111 people, the 2030 population is forecasted to be 107,712. This would be a decrease of 4,399 people, with an average annual growth rate of -0.36% between 2019 and 2030.

Current Campus Population

As stated in the Regulatory Setting, the State of California budget is the primary factor that determines enrollment levels, and in turn, the CSU allocates funding tied to a specific enrollment growth target for each of the 23 campuses. In times of state fiscal crises, enrollment funding for the CSU has decreased and campuses have had to adjust their enrollments downward until additional funding became available in subsequent years. During the 30 years prior to 2020, this has occurred at the CSU four times.

Individual campuses like CSU, Chico establish their long-term enrollment goals through the campus master planning process. Prior to development of a master plan, the CSU Board of Trustees approves a future allowable capacity for campus facilities at all CSU campuses. This process sets a future campus capacity that the campus works toward. However, because of variations in state funding and CSU allocations, the growth rate can vary significantly from year to year. At CSU, Chico, the current adopted 2005 Master Plan, and now the proposed Master Plan, set the future enrollment capacity based on CSU, Chico's academic plan as summarized in the proposed Master Plan.

Each year, CSU, Chico estimates the number of current students that are expected to return the following year, then subtracts that number from the total headcount target to determine the appropriate size of the new entering class. The number of students admitted is based on forecasts as to how many of those students would ultimately enroll. Many factors affect this percentage (e.g., a student may choose to enroll at one of the other schools where they have been accepted) — called the yield — and it varies from year to year and by student major.

Undergraduate students typically require a minimum of 4 years to complete their degree coursework, so a larger entering class means that there would be a large class at CSU, Chico for at least 4 years. Reducing the next new freshman class by too large a margin is not appropriate since it could result in an alternating pattern of large and small entering classes. Such perturbations would make it very difficult to provide courses, hire appropriate faculty and staff, and manage housing demand.

The campus population, for purpose of the analysis in this section consists of students, faculty, and staff,. Table 3.12-2 shows the population totals for each group based on fall 2018 data.

Table 3.12-2. Existing Campus Population (Fall 2018)

Population	Headcount	FTE
Students	17,488 [a]	16,437[b]
Instructional Faculty	989	
Staff	1,106	
TOTAL	**19,583**	**16,4379**

Notes:
1. FTE = full time equivalent

Sources:
[a]. CSU 2019a; b. CSU 2019b.

Enrollment Trends

Overall, the enrollment at CSU, Chico has increased at a rate of 1% since 2010 (CSU, Chico 2020a). Table 3.12-3 shows fall enrollment since the 2010-20100 academic year, expressed as FTE.

Table 3.12-3. Campus Enrollment Fall 2010 to Fall 2018

Term	Fall 2010	Fall 2011	Fall 2012	Fall 2013	Fall 2014	Fall 2015	Fall 2016	Fall 2017	Fall 2018
FTE	15,007	14,984	15,257	15,375	16,251	16,140	16,343	16,648	16,437

Source: CSU, Chico 2020a

Housing

This section describes the regional housing and regional residence patterns of CSU, Chico students, faculty, and staff as well as on-campus housing .

Regional Housing

The information provided is based on 2000 and 2010 U.S. Census data, 2019 DOF estimates, and the BCAG regional growth forecasts from 2014 and 2019. Available housing within Butte County has increased over time, relatively consistent with population growth (see Table 3.12-2).

Table 3.12-4 shows historical, current, and projected housing units in Butte County. In 2018, the Camp Fire demolished approximately 87 percent of the housing in the Town of Paradise. Therefore, 2010-2019 shows negative housing growth in the County, despite relatively steady housing growth in Chico and Oroville.

In the 2019 BCAG provisional forecast, which uses updated methodology and takes into account the results of the Camp Fire, average annual growth rates are lower overall. The average annual housing growth rate in Paradise from 2019 to 2030 is forecasted at 40.2%, which would still fail to replace the number of housing units lost in 2018.

Table 3.12-4. Regional Housing Trends and Projections (Butte County)

Location	2000[a]	2010[b]	2000-2010 Average Annual Growth Rate	2019[c]	2010-2019 Average Annual Growth Rate	Projected 2030 Before Camp Fire[d]	2019-2030 Average Annual Growth Rate	Projected 2030 After Camp Fire[e]	2019-2030 Average Annual Growth Rate
Biggs	613	617	0.07%	695	1.40%	1,163	6.12%	853	2.07%
Chico	24,386	37,050	5.19%	40,378	1.00%	47,711	1.65%	45,314	1.11%
Gridley	1,963	2,406	2.26%	2,526	0.55%	4,560	7.32%	3,177	2.34%
Oroville	5,419	6,194	1.43%	7,337	2.05%	10,798	4.29%	8,528	1.48%
Paradise	12,374	12,981	0.49%	1,720	-9.64%	14,738	68.81%	9,318	40.2%
Unincorporated	40,768	36,587	-1.03%	32,791	-1.15%	45,294	3.47%	38,726	1.64%
County Total	**85,523**	**95,835**	**1.21%**	**85,447**	**-1.20%**	**124,264**	**4.13%**	**105,916**	**2.18%**

Sources:
a. U.S. Census Bureau 2000; b. U.S. Census Bureau 2010; c. DOF 2019; d. BCAG 2014; e. BCAG 2019.

City of Chico

According to the U.S. Department of Housing and Urban Development (HUD), one of the most pervasive issues affecting the City after the 2018 Camp Fire is housing availability. Information from local service providers indicates that from October 2019 to March 2020 there were about 400 households with a family member with a disability in need of housing assistance, some of which affected by the Camp Fire. There is an immediate need for accessible one-bedroom and two-bedroom units in Chico due to the large portion of Public Housing residents who are elderly and/or have a disability (HUD 2020).

In 2000, there were approximately 24,386 housing units in Chico, according to the U.S. Census Bureau. About 12,664 housing units were added in Chico between 2000 and 2010, which represented an annual housing growth rate of about 5.19 percent (see Table 3.12-4). Between 2010 and 2019, the average annual housing growth rate in Chico decreased to 1.0 percent. The DOF estimated that Chico contained 40,378 housing units as of January 1, 2019, with a vacancy rate of 5% and an average occupancy of 2.83 persons per household.

BCAG forecasts there will be a total of 47,711 housing units in Chico in 2030 (BCAG 2014), which would represent an average annual housing growth rate of 1.65 percent between 2019 and 2030.

Campus Housing

Student housing capacity was estimated at 2,260 beds in Spring 2019. All residence halls are located on the main campus; University Village is an off-site apartment complex at 1206 W. Sacramento Ave, approximately 1 mile northwest of the main campus core. Table 3.12-5 shows the planned capacity for on-campus housing in fall 2018 (note that actual capacity of 2,260 beds was slightly higher, due to increased room occupancies). Existing University housing accommodates approximately 13 percent of the total student population.[1] The remaining 87 percent of the student population and all campus faculty/staff reside off-campus. Students are housed on a first-come, first-serve basis with priority given to first-year students (Scion 2019). No on-campus faculty and staff housing currently exists.

Table 3.12-5. On-Campus Housing (Fall 2018)

Hall	Design Capacity (Beds)	Operating Capacity (Beds)	Percentage Occupied
Central Campus Residence Halls			
Lassen Hall	215	217	99.07%
Shasta Hall	215	217	99.53%
Sutter Hall	230	238	99.16%
Whitney Hall	528	580	99.65%
North Campus Residence Halls			
Konkow Hall	84	112	98.10%
Esken Hall	116	118	94.83%
Mechoopda Hall	120	126	91.94%
Apartments			
University Village	464	650	93.54%
Total	**1,972**	**2,235**	**97.01%**

Source: Scion 2019.

In addition to existing campus housing, there is a block of 16 residential parcels located south and east of Rio Chico Way that is bounded by CSU, Chico development on all sides. This area of existing privately-owned rental housing is known as Rio Chico. On the north side of the main campus, CSU, Chico has purchased the majority of the homes in an existing residential area known as College Park for future non-residential development. Three remaining properties in the College Park area are still privately owned and occupied by renters (631 W Sacramento Avenue, 917 Warner Street, and 623 Stadium Way) and would be acquired by CSU, Chico.

Off-Campus Housing

Despite Chico's growing population, the rental market within a 5-mile radius of the campus appears to be keeping pace with demand (Scion 2019). Students at CSU, Chico benefit from a variety of options in the off-campus rental

1 Assuming 2,260 beds and 2018-2019 enrollment headcount of 17,488 students.

market. Ten purpose-built housing developments are present within 1 mile of the CSU, Chico campus, intentionally designed for college student housing (Scion 2019). An inquiry conducted in May 2019 concluded that the average occupancy among purpose-built housing was approximately 96 percent for the 2019-2020 academic year, indicating that availability in the purpose-built market is diminishing compared to past years (Scion 2019). In addition, numerous existing "conventional" apartments and privately owned homes/condos ("shadow market[2]") are present within a 5-mile radius of the campus, typically requiring a 12-month lease (Scion 2019). A recent survey indicated that 59% of students lived within two miles of the campus (CSU, Chico 2020b).

3.12.2 Regulatory Setting

Federal

There are no federal regulations regarding population or housing that are applicable to the proposed Master Plan.

State

California Education Code

The California Education Code contains provisions to ensure that the CSU system can accommodate all eligible California resident students. Section 66202.5 of the Education Code states the following:

> The State of California reaffirms its historic commitment to ensure adequate resources to support enrollment growth, within the systemwide academic and individual campus plans to accommodate eligible California freshmen applicants and eligible California Community College transfer students, as specified in Sections 66202 and 66730.
>
> The University of California and the California State University are expected to plan that adequate spaces are available to accommodate all California resident students who are eligible and likely to apply to attend an appropriate place within the system. The State of California likewise reaffirms its historic commitment to ensure that resources are provided to make this expansion possible, and shall commit resources to ensure that students from enrollment categories designated in subdivision (a) of Section 66202 are accommodated in a place within the system.

Section 66011(a) of the California Education Code provides that all resident applicants to California institutions of public higher education, who are determined to be qualified by law or by admission standards established by the respective governing boards, should be admitted to either (1) a district of the California Community Colleges, in accordance with Section 76000; (2) the California State University; or (3) the University of California.

California Housing Element Law California's Housing Element Law (Government Code Sections 65580through 65589.8) contains the State Housing Element requirements. The law was enacted to ensure that counties and cities recognize their proportionate responsibilities in the attainment of state housing goals, to establish the requirement that all counties and cities adopt Housing Elements as part of their General Plans, to acknowledge that local government should determine how best to contribute to attainment of state housing needs, and to encourage cooperation between local governments to address regional housing needs. Section 65583 states that Housing Elements shall "consist of an identification and analysis of existing and projected housing needs and a statement of goals, policies, [and] quantified objectives … for the preservation, improvement, and development of housing" and "shall identify adequate sites for housing, including rental housing … and shall make adequate

2 The "shadow market" refers to the inventory of privately or investor-owned condos, townhomes, and single-family homes available for rent; usually unfurnished and rented by the unit (Scion 2019).

provision for the existing and projected needs of all economic segments of the community" (California Government Code – Housing Element, 2020).

A Housing Element is required to be updated every eight years. The State Department of Housing and Community Development (HCD) is responsible for reviewing Housing Elements to ensure compliance with State law.

Regional Housing Needs Assessment (Government Code Section 65584)

The State of California requires each local jurisdiction to periodically develop a new Regional Housing Needs Assessment to plan for its share of the state's housing need for people of all income levels. The Regional Housing Need Allocation process is a state mandate designed to address each jurisdiction's "fair share" of the statewide housing need for an eight-year planning period. The Regional Housing Need Allocation process requires the State Department of Housing and Community Development (HCD) to determine the total housing need for each region in the state, and each region's Council of Governments (e.g., BCAG for Butte County) is then responsible for distributing this need to local governments. Each jurisdiction's housing element must include a strategy to meet its share of the region's housing need for four income categories that encompass all levels of housing affordability and must be certified by the HCD (California Department of Housing and Community Development 2020).

In December 2012, BCAG adopted its Regional Housing Needs Plan: January 1. 2014 – June 15, 2022, which identifies the housing needs determination for Butte County for the 2014-2023 planning period. BCAG's regional housing need allocation (RHNA) 2014-2022 is 10,320 housing units in Butte County as a whole, of which Chico's allocation is 3,945 new units. Unincorporated Butte County is responsible for 2,974 new units (BCAG 2013). Each cooperating agency is responsible for demonstrating their ability to meet their fair share of the regional housing need in their respective housing elements. California Relocation Assistance Act (Government Code Section 7260 et seq.)

The California Relocation Assistance Act establishes policies to provide for the fair and equitable treatment of people displaced from their homes or businesses as a direct result of state and/or local government projects or programs. This act requires that comparable replacement housing be made available to displaced persons within a reasonable period of time prior to the displacement. Displaced persons or businesses are assured payment for their acquired property at fair market value. Relocation assistance in the form of advisory assistance and financial benefits would be provided at the local level. This includes aid in finding a new home location, payments to help cover moving costs, and additional payments for certain other costs

CSU 2018-19 Operating Budget Plan

As the population of California remains steady, the number of high school graduates completing admissions requirements for the CSU continues to grow. The Public Policy Institute of California projects a shortage of baccalaureate degrees by 2030—in excess of one million degrees (CSU 2017). In keeping with its state charter and in response to projections of continued increases in demand for higher education enrollment and to meet California's future workforce needs, the CSU Board of Trustees has directed each campus of the CSU to take the necessary steps to accommodate additional systemwide enrollment increases. The Trustees require each CSU campus to prepare a Master Plan depicting existing and anticipated facilities "necessary to accommodate a specified enrollment at an estimated planning horizon, in accordance with approved educational policies and objectives" (California State University 2012a). Master Plans are based on annual full time equivalent students (FTES)[3] college year enrollment targets prepared by each campus in

[3] Student FTES is the number of units a student is taking divided by 15 (the full-time student load and the load that students are expected to carry in order to graduate in four years). The total FTES is the sum of all student FTES.

consultation with the CSU Chancellor's Office (California State University 2012). FTES, rather than student headcount, is used to characterize the campus student population.

Each year, the CSU works with the State of California to identify needed funding in support of planned enrollment growth as part of the annual state budget process. The annual state budget identifies anticipated enrollment growth systemwide for the CSU each year; according to the 2019-2020 California State Budget, the state expects the CSU to accommodate growth in enrollment of 10,000 FTES during that period (DOF 2019a). Once funding has been finalized by the state, the CSU allocates enrollment growth funding for California residents according to an enrollment target for each of the 23 CSU campuses. Campuses are expected to manage their enrollments within a small margin of error around the target, as they receive state/CSU funding only for the targeted number.

California State University Graduation Initiative 2025

Graduation Initiative 2025 is the CSU's initiative to increase graduation rates for all CSU students while eliminating opportunity and achievement gaps. Through this initiative, the CSU strives to ensure that all of its students have the opportunity to graduate in a timely manner according to their personal goals, positively impacting their future and producing the graduates needed for the California and national workforce. The Graduation Initiative 2025 establishes the following goals for 2025: 40 percent freshman 4-year graduation rate, 70 percent freshman 6-year graduation rate, 45 percent transfer 2-year graduation rate, 85 percent transfer 4-year graduation rate, and the elimination of all equity gaps for underrepresented minorities and Pell Grant-eligible students.

Local

CSU, Chico is a component of the CSU, which is a state agency, and is therefore not subject to local government planning or ordinances. CSU, Chico may consider, for informational purposes, aspects of local plans and policies for the communities surrounding the campus when it is appropriate. The proposed project would be subject to state and federal agency planning documents described herein but would not be bound by local or regional planning regulations or documents such as the City's General Plan or municipal code. See Section 3.10, Land Use and Planning for an evaluation of environmental impacts due to conflicts with any land use plan, policy or regulation adopted for the purpose of avoiding or mitigating an environmental effect.

2016 Regional Transportation Plan / Sustainable Communities Strategy

In 2008, Senate Bill 375 (SB 375), also known as the Sustainable Communities and Climate Change Act of 2008, was passed as the mechanism to implement passenger vehicle greenhouse gas reductions outlined in Assembly Bill 32. Under SB 375, BCAG, as the region's Metropolitan Planning Organization (MPO), has been designated by the state to prepare the area's "Sustainable Communities Strategy" (SCS) as a component of the 2016 Regional Transportation Plan (RTP). The RTP/SCS is required to contain a Policy, Action, Financial Element, SCS, and to reference environmental and air quality documents. The RTP/SCS was adopted by the BCAG Board of Directors on December 8, 2016, and was then submitted to Caltrans and the California Transportation Commission. State regulations require the SCS be distributed to the California Air Resources Board for approval, once adopted by the BCAG Board of Directors. The California Air Resources Board accepted the RTP/SCS on May 30, 2017 (CARB 2017).

The Butte County 2016 RTP/SCS covers the 24-year period between 2016 and 2040. The RTP/SCS is required to be updated every four years. The RTP/SCS provides a foundation for transportation decisions by local, regional, and state officials. This foundation is based on a vision of an efficient and environmentally sound multi-modal system.

The RTP/SCS forecasts the addition of approximately 34,098 housing units and 41,337 new jobs in Butte County to serve a projected growth of 97,026 new residents between 2014 and 2040.

Butte County General Plan 2030 Housing Element

The Butte County General Plan 2030 Housing Element guides Butte County's efforts in housing production, rehabilitation, and preservation over an eight year planning period. The document provides a set of policies and actions that are designed to help the County achieve its stated Housing Element goals. The following goals and policies are relevant to the proposed project (Butte County 2014):

Goal H-1: Provide for the County's regional share of new housing for all income groups and future residents as identified in the Housing Needs Assessment.

Policy H-P1.3: Work to transfer portions of the County's Regional Housing Needs Allocations to cities in conjunction with annexations and when cities are more able to provide urban services needed by housing.

Policy H-P1.5: Ensure that local land use policies updated as part of Butte County General Plan 2030, and any corresponding changes in zoning, are consistent with accommodating the County's regional share of housing for all income groups.

Goal H-3: Partner with property owners to preserve and rehabilitate the existing supply of housing.

Policy H-P3.3 Require the abatement or demolition of substandard housing that is not economically feasible to repair.

City of Chico 2014-2022 Housing Element

The Chico 2014-2022 Housing Element was adopted in June 2014 as part of the City of Chico General Plan. The Housing Element sets goals for funding, program coordination, and zoning. The Housing Element must be consistent with the other general plan elements. The Housing Element is updated every five to eight years. The 2014-2022 Housing Element contains several goals, policies and implementation measures that aim to improve the housing supply, the range of housing types, and housing affordability levels, as follows (City of Chico 2014):

Goal H.3: Promote construction of a wide range of housing types.

Policy H.3.1 Ensure a balanced rate of growth between housing production, employment and provision of services.

Policy H.3.2: Enable sufficient housing construction to meet future needs.

Policy H.3.4: Maintain an adequate supply of rental housing to meet the needs of all renters, including university students and employees.

Goal H.4: Encourage the creation of housing for persons with special needs

Policy H.4.7: Continue to work with Chico State University to provide housing for students.

City of Chico Land Use Element

The Land Use Element of the City of Chico General Plan (City of Chico 2017) provides objectives, policies, and actions regarding land use in the City, including the following

Goal LU-4: Promote compatible infill development.

Policy LU-4.2 (Infill Compatibility): Support infill development, redevelopment, and rehabilitation projects that are compatible with surrounding properties and neighborhoods.

3.12.3 Thresholds of Significance

The significance criteria used to evaluate potential impacts related to population growth and housing are based on Appendix G of the State CEQA Guidelines. Based on Appendix G, a significant impact related to population and housing would normally occur if the project would:

1. Induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure).
2. Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere.

3.12.4 Impact Analysis

Methodology

The analysis in this section is based on the proposed Master Plan, 2000 and 2010 U.S. Census data, 2019 State of California Department of Finance (DOF) estimates, the Butte County Association of Governments (BCAG) Regional Growth Forecasts, the housing element for Butte County. and the land use and housing elements for the City of Chico. To evaluate the potential impacts of the proposed Master Plan on the local and regional population and housing availability, the projected campus population was compared to projected regional and local population and housing supplies.

Most CSU, Chico students are enrolled as full-time students, so their demand for facilities and services is evaluated based on the number of individuals, or headcount. Headcount, as opposed to FTES, is consistent with other kinds of population and demographic analyses and represents the most conservative metric and is used for purposes of analysis in this EIR. Fall 2018 headcount data are used as the baseline in the environmental analysis conducted for this EIR.

Impact Analysis

Impact POP-1. The project would not induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure). (Less than Significant)

Direct Growth

The proposed Master Plan would provide for an increase in the student population and would include new student housing on campus. The proposed Master Plan also identifies infrastructure improvements, including the Ivy/Warner streetscape improvements and new pedestrian and bicycle paths. However, the purpose of the Master

Plan is to accommodate anticipated campus growth upon the 2030 horizon, providing the basis for the physical development of the CSU, Chico campus over the next 10 years. This increase in both the student population and student housing is therefore planned. The proposed Master Plan describes the land uses and building space requirements to support 18,600 FTES. As of fall 2018, the campus currently has 16,437 FTES, along with 989 instructional faculty and 1,106 staff. This proposed Master Plan would involve an increase of nearly 2,200 FTES from 2018 conditions, which represents a growth rate of approximately 13 percent over 10 years, or just over 1 percent per year.

The current student housing program includes on-campus, mostly traditional student housing, as well as University Village located 1.5 miles from the campus core. The proposed Master Plan would transform CSU, Chico's student housing to allow more freshmen to live on the main campus. This would be accomplished by demolishing the current north campus residence halls (Esken/Mechoopda/Konkow) and expanding housing around Lassen and Shasta Halls, as well as adding additional beds in the southwestern portion of campus. Two proposed residential buildings would be located north of Big Chico Creek, providing 800 student beds arranged in double-occupancy rooms. Part of this plan also includes the Rio Chico property, which is surrounded by the campus and bounded by West 1st Street to the south, Big Chico Creek to the north, Cherry Street to the east and a surface parking lot to the west. The Master Plan proposes a public-private partnership project at this location with a private entity to provide additional student housing. University Village could then be used for graduate student and/or student family housing. Overall, the proposed Master Plan would result in a net increase of approximately 1,400 student beds.

With an increase of nearly 2,200 FTES and buildout of approximately 1,400 student beds from the proposed Master Plan, there would be 800 remaining FTES, along with 91 faculty and 46 staff, that would need to find off-campus housing. The DOF estimated that Chico contained 40,378 housing units as of January 1, 2019, with a vacancy rate of 5% and an average occupancy of 2.83 persons per household. This would mean a need for approximately 332 housing units over 10 years to accommodate the off-campus growth from the master plan. According to the 2019 BCAG forecast, there would be a total of 45,314 housing units in Chico, representing an increase of 4,936 housing units and an annual growth rate of about 1.11% between 2019 and 2030. The increase in 4,936 housing units would mean available housing for approximately 5,500 additional residents in the City of Chico. As such, housing in the City is anticipated to fully accommodate the additional population from the Master Plan over the 2030 year horizon.

The new Creekside residence buildings, expansion of student housing south of Shasta Hall, and new development (through a public private partnership) of Rio Chico would better allow CSU, Chico to accommodate the anticipated student population. Additionally, the projected housing growth of 4,936 housing units between 2019 and 2030 in the City would be able to accommodate the additional 800 FTES, 91 faculty, and 46 staff members resulting from the proposed Master Plan.

As discussed in Section 3.1.2, Regulatory Setting, under "CSU 2018-19 Operating Budget Plan", the CSU Board of Trustees requires each campus to take the necessary steps to accommodate additional system-wide enrollment increases, which includes the preparation of a Master Plan that accommodates a specified enrollment at an estimated planning horizon. This is prepared based on annual enrollment targets prepared by campuses in consultation with the CSU Chancellor's Office, and following CSU Board of Trustee approval of those Master Plans, campuses are required to manage their enrollments within a small margin of error around those targets. Thus, campus enrollment growth, including that projected for the CSU, Chico campus under the proposed Master Plan, does not constitute unplanned growth.

Indirect Growth

Indirect growth occurs beyond a project site, stimulated by a project's increased investment and spending associated with new direct growth. The discussion below discusses possible indirect growth outside of the Master Plan Area (for example, through extension of roads or other infrastructure) resulting from the proposed project.

The campus plans to acquire and redevelop the off-site properties of College Park and Rio Chico. The College Park properties would be demolished and a new 4,000-seat arena/event center would be developed. The proposed Master Plan envisions a public-private partnership project at Rio Chico that would provide additional student housing. These properties are in proximity to the campus in established urbanized areas and are already served by existing roadway and utility infrastructure, and would not require any extension of roads or other infrastructure that would potentially induce indirect growth. Other project components represent in-fill development and improvements that would not indirectly induce population growth outside of the Master Plan area.

Development under the proposed Master Plan would allow for increased campus population, thereby increasing student and faculty/staff population. With an increase of nearly 2,200 FTES and buildout of approximately 1,400 student beds from the proposed Master Plan, there would be 800 remaining FTES, along with 91 faculty and 46 staff, that would need to find off-campus housing. A project may indirectly induce construction of housing in the surrounding community if existing and planned regional housing supplies are not sufficient to accommodate direct growth in employment associated with the project. As discussed in the Direct Growth section, using DOF estimates there would be a need for approximately 332 housing units over 10 years to accommodate the off-campus growth from the master plan. Based on the 2019 BCAG forecast, there would be an increase in 4,936 housing units, meaning available housing for approximately 5,500 additional residents in the City of Chico between 2019 and 2030. As such, housing in the City is anticipated to fully accommodate the additional population from the Master Plan over the 2030 year horizon. Therefore, the proposed Master Plan would not induce any construction of housing in the surrounding community that would potentially induce indirect population growth.

Thus, the project would not induce substantial unplanned population growth in the area, either directly or indirectly, such that there would be significant environmental effects. Impacts from the proposed Master Plan would be **less than significant.**

Impact POP-2. The project would not displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere. (Less than Significant)

Three residential properties in the College Park area, within the Master Plan area, are still privately owned and occupied by renters. Implementation of the Master Plan, specifically the construction of the proposed arena, would involve the acquisition and demolition of these three properties.

The Master Plan identifies an opportunity area in the Rio Chico neighborhood for additional student housing. The University would not acquire the property, but would enter into a public private partnership whereby a private developer would construct purpose-built student housing that would be leased by the University. It is anticipated that 400 new student beds could be provided at this site. This future development would likely result in the demolition of 11 existing residential structures, located on 9 parcels,

Assuming these 14 residences (three in College Park and 11 in Rio Chico) would all be demolished, using the DOF average occupancy of 2.83 persons per household, redevelopment by a private developer for student housing would displace approximately 40 individuals. However, as discussed in Impact POP-1, the proposed Master Plan would create beds for approximately 1,400 students, and would therefore result in a net increase in student housing.

Based on this analysis, implementation of the proposed Master Plan would not displace significant numbers of existing people or housing such that construction of additional housing would be needed. Impacts would be **less than significant.**

3.12.5 Cumulative Impacts

As discussed previously, the 2018 Camp Fire caused forced relocation of thousands of people throughout Butte County, resulting in higher population estimates in some areas than forecasted in the 2014 BCAG report. This prompted BCAG to release the 2019 Provisional Long-Term Regional Growth Forecasts for 2018 through 2040, taking into account the change in population and housing conditions.

The proposed Master Plan describes the land uses and building space requirements to support 18,600 FTES, an increase of nearly 2,200 FTES from 2018 conditions. This represents a growth rate of approximately 13 percent over 10 years, or just over 1 percent per year.

With most housing units in the City of Paradise destroyed, residents of the city relocated to other areas in Butte County, including the City of Chico. In January 2019, the DOF estimated that Chico contained 40,378 housing units with a vacancy rate of 5% and an average occupancy of 2.83 persons per household. This totals 2,019 available housing units with the ability to accommodate approximately 5,700 residents. According to the 2019 BCAG forecast, an annual population growth rate of about -0.36% or 4,399 fewer people and an additional 4,936 housing units are projected between 2019 and 2030. The increase in housing units would mean available housing for approximately 5,500 additional residents in the City of Chico throughout 2030.

As previously discussed, housing in the City is anticipated to fully accommodate the additional population from the Master Plan over the 2030 year horizon. Therefore, the proposed Master Plan would not induce any construction of housing in the surrounding community that would potentially induce indirect population growth. The project would not induce substantial unplanned population growth in the area, either directly or indirectly, such that there would be significant environmental effects. With the current amount of vacant housing as of January 2019, the anticipated amount of new housing that would be built in the City, and the forecasted population decrease in Chico throughout 2030, the proposed Master Plan would not result in a cumulatively considerable contribution to population and housing impacts. Thus, cumulative impacts would be **less than significant.**

3.12.6 Mitigation Measures

There are no mitigation measures needed.

3.12.7 Level of Significance After Mitigation

Since impacts related to population and housing would be less than significant, no mitigation measures are required.

3.12.8 References

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3.13 Public Services and Recreation

This section of the Draft EIR evaluates potential impacts on existing University and municipal public services: Police Protection, Fire Protection, Schools, Libraries, and Parks and Recreation associated with implementation of the proposed Master Plan (or project). This section describes the existing resources and levels of demand, evaluates the potential for project-related increases in demand, and physical impacts that could occur due to new or expanded facilities.

No scoping comments were received regarding public services and recreation in response to the Notice of Preparation (NOP).

3.13.1 Environmental Setting

Police Protection

The police service for California State University, Chico (CSU, Chico) is provided by the University Police Department (UPD) located in Parking Structure II, Room 101 at the corner of W 2nd St and Chestnut St (CSU, Chico 2019b). UPD is a full-service state police agency operating 24 hours a day, 7 days a week and staffed by state police officers and certified public safety dispatchers. UPD has primary law enforcement jurisdiction on the CSU, Chico campus including the main campus and all properties owned or leased by the University, including University Village and the University Farm. UPD responds to all reports of criminal activities, medical emergencies, and fires. UPD responsibilities also include patrolling and enforcing security measures for on-campus activities. All police officers and public safety dispatchers meet requirements set by the California Commission on Peace Officer Standards and Training (POST). UPD officers are responsible for enforcing state laws and campus regulations on property owned or controlled by CSU, Chico, as well as in areas within a one-mile radius of the campus (City of Chico and CSU, Chico 2016). As of March 2019, UPD was staffed by 32 employees. This includes the Chief of Police, 15 sworn personnel under the Police Commander, and 5 Dispatchers, 2 Community Service Specialists, 3 student assistants, 1 Central Records staff, and 1 Information Center staff under the Police Lieutenant. Other staff include the Chief's Assistant and an additional work-study student assistant (CSU, Chico 2019c).

As part of an existing Joint Public Safety Agreement between UPD and the City of Chico Police Department (CPD), UPD police officers are able to enforce certain chapters of the Chico Municipal Code, such as those related to public health and public peace, with the same authority granted to the CPD. This authority is granted within a one-mile radius of the exterior main campus boundary, with UPD and CPD having shared concurrent jurisdiction. The Joint Public Safety Agreement acknowledges that CPD does not have primary jurisdiction over properties owned, leased, operated, controlled, or administered by the University, including University Village and the University Farm (City of Chico and CSU, Chico 2016).

Fire Protection

The Chico Fire Department (CFD), also known as City of Chico Fire-Rescue, provides fire protection services for CSU, Chico. CFD provides fire suppression, aircraft rescue and firefighting, fire prevention, technical rescue, hazardous materials mitigation, first responder basic life support and advanced life support services. Total staffing of CFD consists of 51 full-time firefighters, 6 volunteer firefighters, 3 division chiefs, 1 fire chief, 1 fire inspector, 1 fire prevention officer, and 2 office staff. CFD previously operated across 6 fire stations, but has closed Fire Station 3 and Fire Station 6 and now utilizes 4 fire stations across the City of Chico as of March 2017 (CFD 2018). Table 3.13-1 lists the existing fire stations in Chico and their distance from the CSU, Chico main campus, University Village, and the University Farm.

Table 3.13-1. Existing Fire Stations

Station	Address/Location	Apparatus	Staffing	Distance from CSU, Chico Main Campus	Distance from University Village	Distance from University Farm
1	842 Salem Street	Truck 1, Truck 1R (Reserve), 1 Air Utility Unit, 1 Rescue Trailer	1 Captain, 1 Engineer, 1 or 2 Firefighters per day	0.7 miles	1.5 miles	2.5 miles
2	182 East 5th Avenue	Engine 1, Engine 2, 1 Reserve Engine, 1 Utility Pickup Truck	1 Captain, 1 Engineer, 4 Firefighters per day	0.8 miles	1.2 miles	3.9 miles
4	2405 Notre Dame Boulevard	E4 Engine, 1 4WD Type III Wildland Engine	1 Captain, 1 Engineer, 1 Firefighter per day	3.0 miles	3.8 miles	2.6 miles
5	1777 Manzanita Avenue	E5 Engine, 1 4WD Type III Wildland Engine, 1 Type II Hazardous Materials Unit	1 Captain, 1 Engineer, 1 Firefighter per day	3.1 miles	3.8 miles	5.1 miles

Sources: Chico Fire Department 2017, Phone and Email Communication with Wesley Metroka (CFD Division Chief-Training), Google Earth. Shasta Hall was used to measure distance from the main campus. Fire Station 3 and Fire Station 6 are no longer in operation as of March 2017.

Additionally, fire services in Chico are supported by the North Division Battalion of the Butte County Fire Department. Battalion 4 includes the City of Chico, the community of Durham, portions of Butte Valley, and the surrounding foothills. Station 41 sits within the Northern area of Chico and includes Engine 41 and CAL FIRE Dozer Transport 2142 (Butte County 2018a). Station 41 is also administratively responsible for Volunteer Company 42, located centrally in North Chico. Station 44 is located in South Chico and includes Engine 44 and Rescue 44 (Butte County 2018b).

Both the main campus and University Village Housing are served primarily by Fire Station 1 and Fire Station 2. The University Farm is within Butte County jurisdiction, and is primarily served by the Butte County Fire Department's Station 44 and Chico Fire Station 1, if needed.

In 2017, a Community Risk Assessment and Standards of Response Coverage Study (SOC Report) was prepared by Fitch & Associates to evaluate CFD's operations, deployment, and staffing. The SOC Report included an analysis of CFD's performance and outlined recommendations to provide adequate fire protection services to serve the City of Chico. In 2015, CFD responded to 10,738 requests for service Citywide, of which emergency medical service (EMS) related calls totaled 6,824 (63.6%) and fire related calls totaled 1,959 (18.2%). Fitch & Associates conducted an analysis of CFD's response performance utilizing two distinct measures: (1) the number of requests for services defined as either "dispatches" or "calls" (dispatches and calls represent the number of times a distinct incident was created involving CFD units, or calls in CFD's jurisdiction), (2) the number of "responses" representing the number of times an individual unit responded to a call. Fitch & Associates identified dispatch time, turnout time, travel time, and total response time of CFD in response to calls. Turnout time is the element of time measured between the time the fire department is alerted of the emergency and when the fire apparatus is en route to the call. Travel time represents the time between when the fire apparatus is dispatched to the incident and arrival on-scene. The total response time is the cumulative time between when the request for service was answered and the arrival of fire apparatus on-scene. The CFD Risk Assessment and Standards of Cover notes that performances vary across call types due to a variety of reasons. For example, turnout for fire-related calls may be longer because crews must dress in personal protective equipment before leaving the station, whereas EMS responders do not. Additionally, the SOC Report was completed in January 2017, two months before the closure of Fire Station 3 and Fire Station 6 in early March 2017. These closures were not anticipated in the SOC Report, and thus the analyses included in the Report are based on five and six-station configurations (Fire Station 3 was not included in all analyses because it was located at the Chico Municipal Airport and specifically designed to handle airport and aircraft-related emergencies).

Table 3.13-2 shows the average turnout and travel time by category. CFD evaluates response performance at the 90th percentile against established baselines and benchmarks, which are the minimum standards achieved and the standards hoped to achieve, respectively. The SOC report recommended using a baseline response time of 8 minutes and 30 seconds and a benchmark response time of 6 minutes and 30 seconds.

Table 3.13-2. Average Turnout and Travel Time of First Arriving Units (in minutes)

Program	Dispatch Time	Turnout Time	Travel Time	Response Time
EMS	0.7	1.0	3.3	5.0
Fire	0.9	1.2	3.7	5.8
Rescue	1.0	0.9	4.2	6.1
Hazmat	1.1	1.2	3.7	5.9
Total	0.7	1.1	3.4	5.2

Source: Chico Fire Department 2017.

Table 3.13-3 shows the 90th percentile turnout and travel time of first arriving units by category.

Table 3.13-3. 90th Percentile Turnout and Travel Time of First Arriving Units (in minutes)

Program	Dispatch Time	Turnout Time	Travel Time	Response Time
EMS	1.3	1.9	5.1	7.2
Fire	1.7	2.2	6.0	8.4
Rescue	1.5	1.5	8.4	11.1
Hazmat	2.8	2.0	5.4	7.8
Total	1.4	2.0	5.3	7.3

Source: Chico Fire Department 2017.

Schools

The project area is served by the Chico Unified School District (CUSD), which serves students from preschool to 12th grade. CUSD encompasses 26 schools and includes unique programs such as community day school, independent study program, special services, and an online academy (CUSD 2018a). Schools within CUSD include 12 elementary schools, 3 middle schools, and 2 high schools. CUSD also includes additional schools providing special services, independent study, and online learning, among other services. The 2017-2018 enrollment and projected 2025 enrollment of these schools is shown in Table 3.13-4. The City's 2030 General Plan (updated in 2017) estimated that CUSD enrollment was approximately 13,000 students. In addition to the existing schools, CUSD owns two undeveloped school sites within the city. As of the CUSD 2016 Facilities Master Plan Update, district-wide elementary enrollment was not yet at capacity, but was expected to reach capacity in 2025 with existing school conditions. Implementation of the CUSD 2016 Facilities Master Plan Update is currently underway and involves expansion and improvements to existing school sites. With full implementation of the Facilities Master Plan Update, it is expected that CUSD schools would be able to accommodate projected 2025 enrollment rates.

Table 3.13-4. CUSD School Enrollment and Capacity

School	Location	Enrollment (2017-2018)	Projected 2025 Enrollment	Existing Capacity	2016 Master Plan Update Capacity
Elementary Schools					
Chapman Elementary	1071 East 16th Street	292	317	450	450
Citrus Avenue Elementary	1350 Citrus Avenue	295	280	372	320
Emma Wilson Elementary	1530 West Eighth Avenue	621	580	588	588
Hooker Oak Elementary School	1238 Arbutus Avenue	330	333	312	336
Little Chico Creek Elementary	2090 Amanda Way	469	436	540	636
Marigold Elementary	2446 Marigold Avenue	486	515	444	596
McManus (John A.) Elementary	988 East Avenue	427	485	618	544
Neal Dow Elementary	1420 Neal Dow Avenue	332	352	312	494
Parkview Elementary	1770 East Eighth Street	358	385	342	342
Rosedale Elementary	100 Oak Street	539	553	480	570
Shasta Elementary	169 Leora Court	653	664	506	726
Sierra View Elementary	1598 Hooker Oak Avenue	580	618	486	522
Total (Elementary School)		**5,382**	**5,518**	**5,450**	**6,124**
Middle Schools					
Bidwell Junior High	2376 North Avenue	968	-	1,029	1,029
Chico Junior High	208 Memorial Way	835	-	1,029	1,086
Marsh (Harry M.) Junior High	2253 Humboldt Road	912	-	780	924
Total (Middle School)		**2,715**	-	**2,838**	**3,039**
High Schools					
Chico High School	901 Esplanade	1,811	-	2,623	2,557
Pleasant Valley High School	1475 East Avenue	1,966	-	2,379	2,379
Total (High School)		**3,777**	-	**5,002**	**4,936**

Table 3.13-4. CUSD School Enrollment and Capacity

School	Location	Enrollment (2017-2018)	Projected 2025 Enrollment	Existing Capacity	2016 Master Plan Update Capacity
Other Schools					
Alternative Education (Includes Fair View High School, Academy for Change, Center for Alternative Learning, and Oakdale School for Independent Study)	290 East Avenue	297	-	448	472
Blue Oak Charter	450 West East Avenue	375	-	-	-
Chico Country Day	102 W 11th Street	557	-	-	-
Forest Ranch Charter School	15815 Cedar Creek Road	131	-	-	-
Inspire School of Arts and Sciences	335 West Sacramento Avenue	454	-	-	-
Loma Vista (Special Services)	1560 Manzanita Avenue	30		99	204
Nord Country School	102 W 11th Street	181	-	-	-
Oak Bridge Academy*	1950 East 20th Street	-	-	-	-
Sherwood Montessori	1010 Cleveland Avenue	161	-	-	-
Wildflower Open Classroom	2414 Cohasset Road, Suite 3	166	-	-	-
Total (Other School)**		**2,352**	-	-	-
Total (Elementary, Middle, High, and Other School)		**14,226**	-	-	-

Source: Chico Unified School District 2018, Education Data Partnership 2018 (Census Day Enrollment Data collected by the California Department of Education (CDE) through the California Longitudinal Pupil Achievement Data System (CALPADS)), Chico Unified School District 2016 Facilities Master Plan Update

* Oak Bridge Academy is an online school. Enrollment and capacity data not available.

** Based on available data.

Libraries

The main campus is served by Meriam Library, which provides access to physical and digital materials, and provides space and tools for both individual and collaborative learning (CSU, Chico 2017).

Off-campus, the Chico Branch of the Butte County Library is located at 1108 Sherman Avenue, approximately 1.1 miles from the main campus, 1.8 miles from University Village, and 3.7 miles from the University Farm. The Chico Branch Library is part of the Butte County Library System, which includes 5 other library branches located across Butte County (Butte County 2013).

Parks and Recreation

Campus Facilities

Athletic Facilities

Existing athletic facilities on the CSU, Chico campus includes the Wildcat Recreation Center, a 109,000-square-foot recreational facility including 3 basketball courts and 1 multi-purpose court, dedicated weight and cardio areas, a 1/8-mile indoor running track, 4 group exercise rooms for fitness and wellness classes, a pool and hot tub, and a 3-story climbing wall and bouldering area (Associated Students of CSU, Chico 2016). The CSU, Chico campus also includes the 70,673-square-foot Acker Gymnasium, which is home to the basketball and volleyball teams and includes a lobby, concessions area, and capacity for 2,143 spectators. The University Stadium is a lighted outdoor stadium containing bleacher seating and an all-weather track for the track and field teams (Chico State Athletics 2008). The campus also includes a 4,100-seat baseball facility (Nettleton Stadium), a soccer stadium, an additional gym (Shurmer Gymnasium), tennis courts, and PE fields.

Parks and Gardens

The arboretum encompasses the 132-acre main campus and contains over 200 species of plants, including many varieties of trees that continue to be planted on campus grounds today. The arboretum includes a variety of tours and self-guided walking paths, including a path that follows along Big Chico Creek. Big Chico Creek runs year-round through the University's main campus, and 7 foot bridges (6 belonging to the University) span the creek for pedestrian use. Located on the north side of Big Chico Creek is the Mary Lemcke Camellia Garden, dedicated to Mary Lemcke who was a charter member of the Chico State Advisory Board and the University Foundation. The CSU, Chico campus also includes the George Petersen Rose Garden, which was planted in 1957 using donations of numerous varieties and colors by horticulturalist George F. Petersen (CSU, Chico 2012).

Other Parks and Recreation

The CSU, Chico campus contains the Bidwell Bowl Amphitheater, built in 1938 and used for various gatherings and concerts in its early history. The Bidwell Bowl Amphitheater seats up to 300 people and is located next to Big Chico Creek and the Physical Science Building. While located on Campus, the Amphitheater is managed and programmed by the City and is available to reserve for outdoor presentations, meetings, and other events (City of Chico 2010). Other recreational facilities include the Roth Planetarium, which projects stellar images onto its 5-meter dome, the Laxson Auditorium, Harlen Adams Theatre, Ruth Rowland-Taylor Recital Hall, Paul and Yasuko Zingg Recital Hall, and the Larry Wismer Theatre (CSU, Chico 2012, 2019d).

Local and Regional Parks and Recreation

Ecological Reserves

The Big Chico Creek Ecological Reserve (BCCER) is owned by the CSU, Chico Research Foundation and contains 3,950 acres of canyon and ridge habitats. It is located in Forest Ranch, an unincorporated community in Butte County, and is located approximately 11 miles from the main campus. The BCCER has walk-in public access for hiking, flower and wildlife observation, and a lottery-based deer and turkey hunting program. BCCER habitat includes 4.5 miles of Big Chico Creek (CSU, Chico 2018).

The Butte Creek Ecological Preserve contains 93 acres of habitat along Butte Creek, with more than a mile of creek frontage serving as critical salmon habitat and spawning grounds. Special-status species in the preserve include Chinook salmon, Western Pond Turtle, and Yellow-legged frog. The preserve was previously open for public access, but is closed indefinitely due to extensive damage from the November 2018 Camp fire (CSU, Chico 2019a).

Local and Regional Parks

The City of Chico and the Chico Area Recreation and Parks District (CARD) work together to manage, plan for, and develop parks and community use facilities within the City. The City's 2030 General Plan states that growth within the city and its surrounding areas has increased the use of existing parks, and has increased demand for additional facilities. In 2018, CARD updated their Park and Recreation Master Plan (PRMP) to re-assess recommendations provided in the 2008 PRMP. The plan contains a detailed inventory of parklands within Chico, assesses the condition of parks and recreation facilities, and determines community needs and potential opportunities for development projects. The City of Chico contains several types of parklands and open space, such as neighborhood parks, community parks, greenways, and special purpose parks. The updated PRMP defines the different parklands and open space areas as follows (CARD 2019):

Neighborhood Parks

Neighborhood-scale parks are intended to serve residents in the neighborhoods within walking distance (0.5 mile) of the park. These parks are generally designed as a common area for neighbors to gather, socialize, and engage in recreational activities. They are generally small in size with 5-10 acres of usable area. As of the 2019 PRMP, the existing level of service was 0.36 acres of neighborhood parkland per 1,000 residents, with a goal of 1.5 acres per 1,000 residents.

Community Parks

Community Parks are larger multi-purpose parks that serve the entire community, ideally ranging from 25 to 50 or more acres in size. These parks are generally designed to provide a variety of recreational opportunities for all ages, including community-wide and programmed activities (e.g. performances, sports games). Community parks can also provide indoor facilities to meet a wider range of recreation and interests. These parks should be designed to meet the active community, while also providing a sanctuary for those individuals who enjoy more leisure-oriented activities. As of the 2019 PRMP, the existing level of service was 1.47 acres of community parkland per 1,000 residents, with a goal of 2.5 acres per 1,000 residents.

Natural Areas, Corridors, and Greenways

This category includes lands that place emphasis on protection of natural values, generally under the management of the City of Chico. These properties are not developed and do not have any formalized passive recreation areas, although most are open to the public. In 2018, the level of service for greenways satisfied the goal of 2.5 greenways per 1,000 residents, as established through the City of Chico General Plan (consistent with the PRMP).

Table 3.13-5 lists the existing parks and recreational areas in the City.

Table 3.13-5. Local and Regional Parks and Recreational Areas in the City of Chico

Site Name	Acres
Neighborhood Parks	
Baroni Park	7.30
Hancock Park	3.80

Table 3.13-5. Local and Regional Parks and Recreational Areas in the City of Chico

Site Name	Acres
Nob Hill Park / Hussa Ranch Park	2.90
Oak Way Park	7.90
Peterson Park	4.10
Rotary Park (Mini)	0.30
Caper Acres	3.50
Humboldt Road Site	3.00
Ceres Avenue	5.00
Depot Park	2.00
Children's Park	3.7
Alamo / Henshaw	5.5
Emerson Park	1.44
Community Parks	
Community Park	40
Hooker Oak Park	35
Wildwood Park	30.3
Humboldt Skate Park	3.8
DeGarmo Park	36
1 Mile Recreation Area	23
Natural Areas, Corridors, and Greenways	
First Avenue and Verbena Site	16.4
Lindo Channel	150
North Chico Bike Path	10
Little Chico Creek	22.5
Mudd/Sycamore Creek	6.0
Comanche	22.06
Tiechert Pond	38.76

Source: CARD 2019.

Other Community and Recreational Centers

The City also includes special purpose parks, which refer to parks and facilities that serve a singular or focused community need. Examples include environmental education centers, historical parks, or lands occupied by major structures such as swimming pools, community centers, and gymnasiums. These parks vary greatly in nature and do not have typical characteristics or an identified level of service goal.

In addition to parks, the City includes a number of community centers that are utilized for classes and programs such as summer camp, art classes, and more. These facilities include the CARD Community Center, Lakeside Pavilion, the Pleasant Valley Recreation Pool and Recreation Center, the Dorothy F. Johnson Center, and the Chico Creek Nature Center. CARD and CUSD also have a working relationship, utilizing each other's facilities for after-school programs, sports programs, physical education classes, and meetings/events.

3.13.2 Regulatory Setting

Federal

There are no federal regulations related to public services and recreation that apply to the proposed project.

State

California Occupational Safety and Health Administration

In accordance with California Code of Regulations Title 8 Sections 1270 "Fire Prevention" and 6773 "Fire Protection and Fire Equipment" the California Occupational Safety and Health Administration (Cal/OSHA) has established minimum standards for fire suppression and emergency medical services. The standards include, but are not limited to, guidelines on the handling of highly combustible materials, fire hose sizing requirements, restrictions on the use of compressed air, access roads, and the testing, maintenance and use of all firefighting and emergency medical equipment.

Emergency Response/Evacuation Plans

The state of California passed legislation authorizing the Office of Emergency Services (OES) to prepare a Standard Emergency Management System (SEMS) program, which sets forth measures by which a jurisdiction should handle emergency disasters. Non-compliance with SEMS could result in the state withholding disaster relief from the non-complying jurisdiction in the event of an emergency disaster.

California Building, Fire, and Health and Safety Codes

The Integrated California State University Administrative Manual (ICSUAM) provides required procedures to be used during planning, design and construction of buildings and other facilities on CSU campuses. CSU, Chico is required to comply with current California Building, Fire and Health and Safety Code regulations intended to reduce risk of damage to property and persons for all new development, based on procedures in the ICSUAM. Applicable regulations address building standards including roofing and roof access, fire flow (water) infrastructure, design of hydrant systems, fire protection systems (sprinklers and alarms), fire extinguishers, and structure egress. New development must also comply with access requirements (primary and secondary), provide adequate fire lanes, and maintain defensible space. The State Fire Marshal is responsible for reviewing plans to ensure compliance with applicable California Fire Code standards.

California Fire Code

California Code of Regulations, Title 24, Part 9, incorporates adoption of the 2015 International Fire Code of the International Code Council with necessary California amendments. The California Fire Code establishes minimum requirements consistent with nationally recognized good practices to safeguard the public health, safety, and general welfare from the hazards of fire, explosion, or dangerous conditions in new and existing buildings, structures, and premises, and to provide safety and assistance to fire fighters and emergency responders during emergency operations. The California Fire Code applies to construction, alteration, movement, enlargement, replacement, repair, equipment, use and occupancy, location, maintenance, removal, and demolition of every building or structure within the State of California (Cal. Code Regs. tit. 24 Part 9).

Leroy F. Greene School Facilities Act

According to California Government Code, a qualified agency, such as a local school district, may impose fees on new residential[1] and commercial construction to compensate for the impact that a project will have on existing school facilities or services. The California Legislature passed Senate Bill (SB) 50 in 1998 to insert new language into Government Code sections 65995.5-65985.7, which authorized school districts to impose fees on new residential and commercial construction in excess of mitigation fees authorized by Government Code Section 66000. School districts must meet a list of specific criteria, including the completion and annual update of a School Facility Needs Analysis, in order to impose additional fees under the Government Code. Under the terms of this statute, payment of statutory fees is considered to mitigate in full for the purposes of CEQA any impacts to school facilities associated with a qualifying project. The fees are assessed based upon the proposed square footage of the new or expanded residential or commercial development. These statutory fees do not apply to CSU, Chico because it is component of the CSU system, a state entity, and not a residential or commercial project, development on CSU campuses is not subject to these fees.

California Government Code Section 66477 (The Quimby Act)

California Government Code Section 66477, commonly known as the Quimby Act, was intended to help local communities generate the resources necessary to provide park and recreational facilities. The Quimby Act preserves open space and parkland in urbanizing areas of the state by authorizing local governments to establish ordinances that require private developers of new subdivisions to dedicate land for parks, pay an in-lieu fee, or a combination of the two. Originally, the Quimby Act was designed to ensure “adequate” open space acreage in jurisdictions adopting Quimby Act standards (i.e., 3 to 5 acres per 1,000 residents). The Act requires that standards for recreational facilities be adopted in the local general plan recreation element if a parkland dedication/fee ordinance is to be enacted. The City of Chico has established through its General Plan (consistent with the PRMP) a standard of 1.5 acres of neighborhood parkland and 2.5 acres of community parkland, for a total of 4.0 acres of parkland per 1,000 residents. Additionally, there is a standard for 2.5 acres of greenways per 1,000 residents. The Quimby Act does not apply to CSU, Chico because it is not a local government entity. The Quimby standards are used as a guidepost but are not a requirement under the impact analysis.

Local

Because CSU, Chico is a component of CSU System, which is a state agency, the project is not subject to local government planning or ordinances. However, CSU, Chico may consider, for coordination purposes, aspects of local plans and policies for the communities surrounding the Master Plan Area when it is appropriate and feasible, but it is not bound by those plans and policies in its planning efforts. Accordingly, because neither local general plans or any other local land use plans or ordinances are applicable to CSU, Chico, such local plans and ordinances are not summarized here or further analyzed in this section. See Section 3.10, Land Use and Planning for an evaluation of environmental impacts due to conflicts with any land use plan, policy or regulation adopted for the purpose of avoiding or mitigating an environmental effect.

[1] Residential units” and “residences” as used in the related Government Code sections means the development of single-family detached housing units, single-family attached housing units, manufactured homes and mobile homes, as defined in subdivision (f) of Section 17625 of the Education Code, condominiums, and multifamily housing units, including apartments, residential hotels, as defined in paragraph (1) of subdivision (b) of Section 50519 of the Health and Safety Code, and stock cooperatives, as defined in Section 4190 of the Civil Code.

3.13.3 Thresholds of Significance

The significance criteria used to evaluate the project impacts to public services are based on Appendix G of the CEQA Guidelines. According to Appendix G of the CEQA Guidelines, a significant impact related to public services would normally occur if the project would:

1. Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:
   a. Fire protection.
   b. Police protection.
   c. Schools.
   d. Parks
   e. Other public facilities.
2. Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated.
3. Include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment.

3.13.4 Impact Analysis

Methodology

Evaluation of potential public service impacts was based on a review of documents identifying current level of service standards for the local jurisdictions, including the 2017 update to the Chico General Plan, the Chico Area Recreational District 2019 Parks and Recreation Master Plan, Butte County, Chico Fire Department, and Chico Unified School District (as general reference points). Impacts on public services that would result from the project were identified by comparing existing service capacity and facilities against future demand associated with project implementation.

Impact Analysis

Impact PUB-1. Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, or the need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for any of the public services:

a) Fire protection (Less than Significant)

Growth of the CSU, Chico population associated with new development included under the proposed Master Plan would result in an incremental increase in demand for fire protection services, which would be within the jurisdiction of CFD. As of fall 2018, the campus has 16,437 full-time equivalent students (FTES) and under the proposed Master Plan this would increase to 18,600 FTES. University Village would not experience growth, and the increase in students and staff at the University Farm would be minor. The increase of approximately 2,100 FTES over the next 10 years would contribute to a minimal increase in demand for fire protection services on the main campus, including emergency medical response.

All new buildings proposed under the Master Plan would be designed to meet minimum fire and emergency safety requirements identified in the California Building Code and California Fire Code and would include appropriate fire safety measures and equipment, including but not limited to, use of fire retardant building materials, inclusion of emergency water infrastructure (fire hydrants and sprinkler systems), installation of smoke detectors and fire extinguishers, emergency response notification systems and provision of adequate emergency access ways for emergency vehicles.

Master Plan implementation on the main campus would be adequately serviced by existing Fire Stations 1 and 2 (both of which are located within one mile of the main campus). University Village would also continue to be served by Fire Stations 1 and 2. The University Farm is within Butte County jurisdiction, and is primarily served by the Butte County Fire Department's Station 44 located 1.65 miles northeast and Chico Fire Station 1, if needed. Therefore, Master Plan implementation is not anticipated to result in a substantial increase in demand for City or County fire protection services such that the construction of new or physically altered facilities would be warranted, which could result in environmental impacts. Impacts would be **less than significant.**

b) Police protection (Less than Significant)

As discussed in the Existing Conditions section above, the primary police protection responsibility would continue to be assumed by the UPD, which has primary jurisdiction over properties owned, leased, operated, controlled, or administered by the University. This includes the main campus, University Farm, and University Village Housing. UPD also patrols a one-mile radius around the exterior main campus boundary, sharing jurisdiction with CPD. The proposed Master Plan evaluated in this EIR was developed to achieve project objectives of supporting an increase in the on-campus student enrollment to 18,600 full-time equivalent students, and to increase on-campus housing opportunities near the campus core, among others. Accordingly, enrollment growth and the increase in developed square footage that would occur as a result of proposed Master Plan implementation would primarily impact UPD rather than CPD. The UPD is located in the relatively new Second Street station, completed in 2012. Therefore, Master Plan implementation is not anticipated to result in a substantial increase in demand for City police protection services such that the construction of new or physically altered facilities would be warranted, which could result in environmental impacts. Impacts would be **less than significant.**

c) Schools (Less than Significant)

The proposed Master Plan would result in additional on-campus housing (1,400 new beds), allowing more freshmen and other undergraduate students to live on campus. The new beds would be for undergraduate students of the University, rather than faculty and staff. No new faculty or staff housing is proposed under the Master Plan; therefore, it is not expected that there would be a significant increase in TK[2]-through 12th grade students as a direct result of the project. CSU, Chico staff have estimated that staff and faculty population would increase by 91 and 46, respectively, by 2030. Table 3.13-6 describes Student Generation Rates used in CUSD's 2018 School Fee Justification Study and Table 3.13-7 shows TK through 12th grade

2 TK: Transitional Kindergarten. TK is for 4-year-olds who turn 5 years old between September 2 and December 2 (SB 1381).

student generation that would result indirectly from the increase in faculty and staff, conservatively assuming that all new employees would move into single-family detached units in the City of Chico.

Table 3.13-6. Student Generation Rates

School Level	Single-Family Detached Units	Single-Family Attached Units	MF Units
Elementary School (TK*-5)	0.148	0.069	0.036
Junior High School (6-8)	0.070	0.079	0.021
High School (9-12)	0.104	0.050	0.023
Total	**0.322**	**0.198**	**0.080**

Source: Chico Unified School District 2018b.

Table 3.13-7. Projected Additional TK-12 Students

Number of New Faculty and Staff	Student Generation Rate	Total Student Generation
Faculty: 91	0.322	30
Staff: 46	0.322	15
Total		**45**

Source: Dudek 2019.

* Student generation is conservatively estimated using the assumption that each faculty/staff member will move into a single-family detached home.

As shown in Table 3.13-7, the conservative estimate for additional TK 12th grade students resulting from the project is 45 students. Given the increase in capacity from the 2016 Facilities Master Plan Update, which would accommodate an extra 674 elementary school students and an additional 201 middle school students, as well as the existing extra capacity for 1,104 high school students, the increase of 45 students from the project would be minimal. As such, adequate capacity within existing schools is available to serve the potential needs of the proposed Master Plan, and no construction of additional facilities or expansion of existing facilities is anticipated to be necessary as a result of the proposed Master Plan. Thus, impacts related to the need for new or physically altered school facilities would be **less than significant.**

d) Parks (Less than Significant)

The CSU, Chico campus has many existing recreational facilities, as described in Section 3.13.1 above, as well as planned recreational facilities with implementation of the proposed Master Plan. The proposed near-term projects include athletic field improvements and a WREC expansion. Athletic Fields 6 and 7, located west of the existing University Stadium would be converted to a synthetic turf surface. The synthetic turf would be sized large enough to accommodate a rugby field in the north/south direction, three recreation fields in the east-west direction, and two softball fields in the north and south corners. West of Athletic Fields 6 and 7, a new hammer throw venue would be constructed. Field 10B, a natural turf field west of the Soccer Stadium, would be renovated, including new turf and underdrainage. The golf practice area would be moved from its current location south of Shurmer Gym to the existing hammer throw location at the west end of this field. The proposed Master Plan would also include an expansion of the WREC, connecting a Health and Wellness Center for a total building size of approximately 120,000 square feet. The Health and Wellness Center would house facilities for mental and physical health services that are currently provided at the Student Health Center. The expansion would also provide space for training sessions and additional multi-use courts. There would also be replacement and expansion of athletic fields in the northernmost part of the main campus for academic and recreation sport uses in addition to athletics. This would include a 4,000-seat arena/event center for basketball and other events (e.g., convocations, academic conferences, public lectures, and concerts). The event center would incorporate some of the athletics and academic functions currently housed in the existing gymnasiums along Warner Street. The athletics program also includes a new outdoor pool, softball stadium, and a parking structure. There are no additional parks or recreational facilities proposed at University Farm or University Village.

Although the Quimby Act does not apply to the proposed Master Plan, it is used as a reference point to ensure an appropriate level of recreation facilities are provided. The City of Chico has established through its General Plan (consistent with the PRMP) a standard of 1.5 acres of neighborhood parkland and 2.5 acres of community parkland, for a total of 4.0 acres of parkland per 1,000 residents. Additionally, there is a standard of 2.5 acres of greenways per 1,000 residents.. However, as of the 2017 update of the Chico General Plan, the City did not meet the established parkland standards and estimated a need of an additional 8 to 16 parks to accommodate the anticipated service area population by 2030. The 2019 CARD PRMP includes recommendations to meet existing and future parks/recreation needs, and the City's General Plan includes Action PPFS-1.1.1 which describes the leadership role of CARD in the "operation, maintenance, and programming" of City parks (City of Chico 2017). Additionally, CARD is currently working on an update to the PRMP which would include new goals and recommendations to address the City's recreational needs (CARD 2019).

The proposed Master Plan would result in an estimated net increase of 91 faculty members and 46 staff. It would also support an increase of the on-campus student enrollment to 18,600 FTES (an increase of approximately 2,200 FTES from fall 2018 enrollment) over the next 10 years. The proposed Master Plan would include 1,400 new student housing beds. This would conservatively result in 800 students, 91 faculty, and 46 staff (937 individuals total) living off-campus and utilizing City parks. With an increase in 937 individuals over the 10-year horizon, as well as implementation of CARD's recommendations in the 2019 PRMP, it is not expected that new City parks and recreational facilities would need to be constructed to accommodate the population increase from the proposed Master Plan. The increase in population associated with implementation of the proposed Master Plan in and of itself would not create a significant impact on City parks such that there would be a need for new or expanded parks. Thus, impacts would be **less than significant.**

e) Other public facilities (Less than Significant)

The increase in population resulting from the proposed Master Plan, including students, faculty and staff, and their family members, would not be expected to generate substantial demand for off-campus public facilities such as libraries and community centers. As part of the proposed Master Plan, Meriam Library would undergo a series of upgrades such as lighting and HVAC replacement, upgraded restrooms, and interior finishes improvements. The campus also includes the Student Services Center, which provides resources such as the Chico Student Success Center, which supports first generation, low income, and historically under-represented students (CSU, Chico 2016). The net increase in total population resulting from buildout of the project (2,278, includes 18,600 FTES and 137 faculty and staff) would comprise 1.6% of Chico's projected 2030 population (139,713) (City of Chico 2017), which would not result in substantial increased use of public facilities requiring the need for new or expanded facilities. While faculty and staff living off-campus would likely use City facilities, the expected population increase over a 10 year period would not create a significant burden on City facilities. As such, the impact associated with provision of other new or physically altered public facilities would be **less than significant.**

Impact PUB-2. Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated. (Less Than Significant)

As discussed in Impact PUB-1 above, the proposed Master Plan would result in an estimated net increase of 91 faculty members and 46 staff. It would also support an increase of the on-campus student enrollment to 18,600 FTES (an increase of approximately 2,200 FTES from fall 2018 enrollment) over the next 10 years. The proposed Master Plan would include 1,400 new student housing beds. This would conservatively result in 800 students, 91 faculty, and 46 staff (937 individuals total) living off-campus and utilizing City parks. With an increase in 937 individuals over the 10-year horizon, as well as implementation of CARD's recommendations in the 2019 PRMP, it is not expected that increase in population associated with implementation of the proposed Master Plan would not create a significant impact on City parks such that there would be substantial deterioration. Thus, impacts would be **less than significant.**

Impact PUB-3. Require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment. (Less Than Significant)

The proposed Master Plan would include the construction and expansion of recreational facilities, included as both near-term and long-term development projects, to serve future demand generated by increased enrollment growth.

<u>Near-Term Development Projects</u>

The proposed near-term projects of the Master Plan include athletic field improvements and the WREC expansion. Athletic Fields 6 and 7, located west of the existing University Stadium, would be converted to a synthetic turf surface sized large enough to accommodate a rugby field in the north/south direction, three recreation fields in the east-west direction, and two softball fields in the north and south corners. A new hammer throw venue would be constructed west of Athletic Fields 6 and 7. Athletic Field 10B, a natural turf field west of the Soccer Stadium, would be renovated to include new turf and underdrainage. The golf practice area would be moved from its current location south of Shurmer Gym to the existing hammer throw location at the west end of this field. The proposed Master Plan would also include an expansion of the WREC, providing additional space for training sessions and additional multi-use courts.

<u>Long-Term Development Projects</u>

Long-term recreational development projects of the proposed Master Plan involve replacement and expansion of athletic fields in the northernmost part of the main campus, including a 4,000-seat arena/event center for basketball and other events (e.g., convocations, academic conferences, public lectures, and concerts). The event center would incorporate some of the athletics and academic functions currently housed in the existing gymnasiums. The athletics program also includes a new outdoor pool, softball stadium, and a parking structure. There are no additional parks or recreational facilities proposed at University Farm or University Village.

Overall, the Master Plan proposes active recreational and athletic facilities as well as passive open space and pedestrian facilities intended to meet the demand of future enrollment growth. Growth from the proposed Master Plan would not require the construction or expansion of off-site recreational facilities elsewhere in the City, as the Master Plan itself includes recreational facilities projects to meet new demands. Impacts would be **less than significant.**

3.13.5 Cumulative Impacts

Police Protection

The cumulative setting for law enforcement services includes the service area boundaries of UPD and CPD. As previously mentioned, the proposed Master Plan would result in 937 individuals living off-campus over the 10-year horizon. Conservatively assuming that all 937 individuals would live outside of the one-mile radius from the main campus boundary, these off-campus residents would reside in a service area solely enforced and patrolled by CPD. The increase in 937 individuals within CPD's service area through the year 2030 is not expected to create a cumulatively considerable contribution to impacts associated with the provision of new or physically altered fire protection facilities. Additionally, as these 937 individuals would all be affiliated with CSU, Chico, either as a student, faculty, or staff member, it is assumed that much of the time of these individuals would be spent on-campus or within one-mile of the exterior main campus boundary, within UPD's jurisdiction. This would further reduce the potential cumulative impact for police protection services. As such, it is assumed that the proposed Master Plan would result in a **less than significant** impact associated with the provision of new or expanded police protection facilities.

Fire Protection

In 2017, a Community Risk Assessment and Standards of Response Coverage Study (SOC Report) was prepared by Fitch & Associates to evaluate CFD's operations, deployment, and staffing. The SOC Report included an analysis of CFD's performance and outlined recommendations to provide adequate fire protection services to serve the City of Chico. Total response times represent the cumulative time between when the request for service was answered and the arrival of fire apparatus on-scene. CFD evaluates response performance at the 90th percentile against established baselines and benchmarks, which are the minimum standards achieved and the standards hoped to achieve, respectively. CFD historically used a baseline response time of 7 minutes and 30 seconds when reporting performance to the Sacramento Local Agency Formation Commission (LAFCO) (CFD 2018). However, the SOC report recommended using a baseline response time of 8 minutes and 30 seconds and a benchmark response time of 6 minutes and 30 seconds.

Since completion of the SOC Report (in February 2017), CFD analyzed response times in 2017 and 2018. From 2017 to 2018 (between January and May), CFD's 90th percentile response time increased by 51 seconds. Table 3.13-8 compares response times between the two years:

Table 3.13-8. 90th Percentile Response Time from All Incidents: 2017 vs. 2018

Time and Baseline/Benchmark	Dispatch Time	Turnout Time	Response Time and % Time Reached Baseline/Benchmarks
January – May 2017			
90th Percentile Time	1:36:00	2:19:00	7:29:00
SOC Benchmark (6 min 30 sec)			77.7%
Historical Baseline (7 min 30 sec)			90.0%
SOC Baseline (8 min 30 sec)			90.9%
January – May 2018			
90th Percentile Time	1:50:00	2:18:00	8:20:00
SOC Benchmark (6 min 30 sec)			68.7%
Historical Baseline (7 min 30 sec)			80.0%
SOC Baseline (8 min 30 sec)			90.0%

Table 3.13-8. 90th Percentile Response Time from All Incidents: 2017 vs. 2018

Time and Baseline/Benchmark	Dispatch Time	Turnout Time	Response Time and % Time Reached Baseline/Benchmarks
90th Percentile Difference (2017 vs. 2018: January-May)			*+00:51*

Source: Chico Fire Department 2018.

As shown in Table 3.13-8, CFD reached its SOC benchmark response time 77.7% of the time in 2017 and 68.7% of the time in 2018. CFD has indicated that fire station closures were a primary cause of the decrease in response times. Additionally, in the first half of 2018, Station 1 experienced a nearly 5% increase in the number of overlapping calls. Overlapping incidents contribute to increased response times, as units from other parts of the City or from CalFire are called on to respond.

The cumulative setting for fire protection services includes the service area boundary of CFD. To meet the demands of future growth in the City, as well as the current population increase from displaced Paradise residents due to the Camp Fire, CFD would need to increase and/or redistribute current resources to meet response time goals and performance objectives set by the 2017 SOC Report. It is unknown what the long-term effect of the Camp Fire will be on service population in the City of Chico. Conservatively, it is assumed it will result in some permanent increase in population beyond previous estimates. The proposed increase in CSU, Chico students and staff would also contribute to the service population. The City is planning on opening a new fire station near Eaton Road and SR 99 to serve the northeast area of the City. While this station would not directly serve the campus, it would assist in overall response times in the City. Given that the campus is served by existing fire stations, the effect of campus growth on CFD facilities is not cumulatively considerable. This impact would be **less than significant.**

Schools

The cumulative setting for this section consists of the service area boundary of CUSD. As previously discussed, the conservative estimate for the increase in number of TK through 12th grade students from the proposed Master Plan would be 45 additional students. The small increase of TK through 12th grade students from the project itself would not cause a need for new or physically altered school facilities, due to the extra capacity from buildout of CUSD's 2016 Facilities Master Plan Update. Currently in progress, the 2016 Facilities Master Plan Update involves expansion and improvements to existing school sites. With incorporation of the Facilities Master Plan Update, it was expected that CUSD would have capacity to accommodate the projected 2025 population. However, the 2016 Facilities Master Plan Update did not consider the increase in student population resulting from displacement of TK through 12th grade students from Paradise due to the 2018 Camp Fire. After the Camp Fire, CUSD had a net gain of around 240 students for the spring semester (Tuchinsky 2018). In August 2019, CUSD expected to see an additional increase of around 200 students for the fall semester (Olenyn 2019). These TK through 12th grade student enrollment increases were not reflected in the CUSD's estimates when developing the 2016 Facilities Master Plan Update. Per the Leroy F. Greene School Facilities Act, a qualified agency, such as a local school district, may impose fees on new residential and commercial construction to compensate for the impact that a project will have on existing school facilities or services. Under the terms of this statute, payment of statutory fees is considered to mitigate in full for the purposes of CEQA any impacts to school facilities associated with a qualifying project. While these statutory fees do not apply to CSU, new construction resulting from the recent Camp Fire-related population increase would be subject to such statutory fees and would mitigate potential impacts to school facilities. With consideration of the above, the proposed Master Plan would not create a cumulatively considerable impact regarding this criterion. The cumulative impact would be a **less than significant** related to the provision of new or expanded school facilities.

Parks and Other Public Facilities

New population associated with the project is expected to be adequately served by existing and proposed expansions to recreational amenities and open space fields on the campus. New off-campus population associated with the project itself would not result in the need for new or physically altered City parks and recreational facilities. With an increase in 937 individuals over the 10-year horizon, and with consideration of the new and expanded recreational facilities to be built as part of the proposed Master Plan, the project's contribution to impacts associated with the provision of new or expanded parks or other public facilities would not be cumulatively considerable. As such, the project's contribution to impacts associated with the provision of new or physically altered parks or other facilities would be **less than significant.**

As previously discussed, the proposed Master Plan would conservatively result in 937 individuals total living off-campus and utilizing City parks. With an increase in 937 individuals over the 10-year horizon, it is not expected that increase in population associated with implementation of the proposed Master Plan would create a cumulatively considerable impact on City parks such that there would be substantial deterioration. Thus, the project's contribution to impacts related to the deterioration of parks would also be **less than significant.**

3.13.6 Mitigation Measures

No mitigation measures are required.

3.13.7 Level of Significance After Mitigation

Since there would be no impact related to public services and recreation, no mitigation measures are required.

3.13.8 References

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3.14 Transportation

This section describes the existing transportation system in the project site and vicinity, identifies applicable regulatory requirements, evaluates potential transportation impacts, and identifies mitigation measures related to implementation of the proposed project.

Scoping comments related to transportation were received in response to the NOP. The California Department of Transportation (Caltrans) District 3 and Chico Unified School District requested certain intersections to be studied. The School District also requested additional study of transit usage between campus and student housing. A local resident also provided scoping comments expressing general concern with increasing campus-related traffic. The NOP and scoping comments are provided in Appendix G of this Draft EIR.

3.14.1 Existing Conditions

The CSU, Chico main campus is located within the City of Chico, immediately north of downtown (Figure 2.2a). The majority of the campus's residential, academic, and research functions are concentrated on the 132-acre main campus. The main campus is generally bounded by the Union Pacific Railroad (UPRR) right-of-way on the west; by West Sacramento, Legion, and Mansion Avenues on the north; the Esplanade, Children's Park, and Salem and Normal Streets on the east; and by West Second and West Third Streets on the south. University Village (Figure 2.2b) is a CSU, Chico residential area west of the central campus and is located south of Nord Avenue and north of West Sacramento Avenue. The Paul L. Byrne Memorial University Farm (Figure 2.2c) is located in Butte County south of Hegan Lane. Because no change in the number of students (including resident students) or faculty and staff are planned at these sites, they are not discussed further in this chapter.

Roadway System

Regional access to the CSU, Chico campus is provided by State Route (SR) 99 and SR 32.

Local vehicular access to and from the CSU, Chico main campus is primarily provided by Warner Street/Ivy Street, West First Street, West Second Street, and Esplanade. Because the main campus is located within the Chico street grid, many access points to the campus are available. Vehicle circulation within the campus is primarily provided by Warner Avenue, Ivy Avenue, and So-Wil-Len-No Avenue.

Sidewalks are present on nearly all streets within typical walking distance (approximately one-half mile) of the campus. Bicycle facilities are described below.

Descriptions of the regional and local roadways serving the CSU, Chico campus are provided below. Supporting information is provided in Appendix G.

Regional Roadways

SR 32 is an east-west state highway that runs adjacent to the west side of the campus along Nord Avenue and Walnut Street, continuing south of campus along the Eighth Street – Ninth Street couplet through which it connects to SR 99. SR 32 runs from I-5 in Orland to SR 36 in eastern Tehama County. Nord Avenue and Walnut Street are described in further detail below. Eighth Street (westbound) and Ninth Street (eastbound) are both two-lane, one-way arterial streets. Average annual daily traffic (AADT) south of West Sacramento Avenue was 21,500 vehicles in 2017 (Caltrans, 2019).

SR 99 is a north-south freeway located approximately one mile east of the campus that runs through Chico east of downtown. SR 99 runs from SR 36 in Tehama County just east of Red Bluff through the Central Valley to I-5 in Kern County just north of Grapevine. SR 99 generally has two general purpose lanes in each direction through Chico. The speed limit on SR 99 is 65 miles per hour. In addition to the Eighth Street – Ninth Street interchange, the First Avenue interchange also provides access to the campus. AADT between SR 32 and East First Avenue was 88,000 vehicles in 2017 (Caltrans, 2019).

Local Roadways

Esplanade – Main Street – Broadway. Esplanade, Broadway, and Main Street are arterial streets that together provide access to the eastern side of the CSU, Chico campus. Esplanade begins at SR 99 north of Chico as a two-lane road. South of Eaton Road, Esplanade is a four-lane street, and between East Eleventh Avenue and Memorial Way, Esplanade has a landscaped median as well as one-lane, one-way access roads on each side. On-street parking is prohibited on Esplanade except along the access roads. Esplanade splits into a couplet south of First Street. Main Street and Broadway form a north-south one-way couplet that traverses the downtown area and connects to the Eighth Street – Ninth Street couplet (SR 32). Main Street and Broadway are each three lanes. The street is characterized by closely spaced signalized intersections and on-street parking is permitted in many locations. South of Ninth Street, the couplet merges to form Park Avenue. A Class II bike lane is present on Broadway between West First Street and West Second Street.

Park Avenue – Skyway Road. South of Ninth Street, Main Street merges with Oroville Avenue, a short two-lane, one-way connector from Broadway Street to become Park Avenue, a north-south four-lane arterial. Park Avenue curves east and becomes Skyway Road as it enters the SR 99 interchange. Skyway Road continues east to the Town of Paradise. The Chico-Durham Class I bike path parallels Park Avenue between 20th Street and Midway.

Nord Avenue – Walnut Street. Nord Avenue and Walnut Street are north-south arterial streets that serve the area west of the CSU, Chico campus. Walnut Street connects to the Eighth Street – Ninth Street couplet (SR 32). Nord Avenue and Walnut Street are two-lane facilities except from just north of West First Street to West Ninth Street, where they are four lanes. Nord Avenue continues as SR 32 north of the city limit, and Walnut Street continues as Dayton Road south of the city limit. Class II bike lanes are present from just south of West Eighth Avenue to West First Street.

West Sacramento Avenue is an east-west arterial street providing access to the north end of the CSU, Chico campus and to Chico High School. West Sacramento Avenue extends from River Road in Butte County to an intersection with Esplanade. West Sacramento Avenue is a two-lane facility with on street parking permitted. Class II bike lanes are present from Hampshire Drive to Warner Street.

Second Street. West Second Street begins as a local street at Oak Street and becomes an east-west arterial from Walnut Street across the south end of the CSU, Chico campus to the Main Street – Broadway couplet. East of Main Street, it continues as East Second Street to a roundabout connecting East First Street, Flume Street, and Camellia Way. Between Oak Street and Walnut Street, Second Street is two lanes. From Walnut Street to Broadway Street, Second Street is a four-lane facility. East of Broadway Street, Second Street is a two-lane facility and is one-way eastbound. Second Street has Class II bike lanes from Walnut Street to the roundabout.

Warner Street – Ivy Street is a north-south arterial street that traverses the center of the CSU, Chico campus. Warner Street extends north of Little Chico Creek to Smith Brothers Court–Capshaw Court, and Ivy Street extends south of the creek to Orland Court. Ivy Street connects to the Eighth Street – Ninth Street couplet (SR 32). The street is a two-lane facility. The street has Class II bike lanes from Fourth Street to Second Street and Third Street to Ninth Street.

Stadium Way, La Vista Way, and Brice Avenue are east-west local streets parallel to and south of West Sacramento Avenue. These streets extend west of Warner Street and dead-end at the campus. These streets provide access to the College Park properties, described in Chapter 3.

Midway is a north-south arterial street that extends south from Park Street, where Park Street turn east, from Chico to the community of Durham. Midway is a two-lane road. The Chico-Durham Class I bike path runs parallel along the east side of Midway.

This report discusses and characterizes vehicle transportation, bicycle travel, walking, and public transit in the vicinity of the main campus, University Village, and University Farm.

Bicycle Facilities

Bicycle facilities serving the CSU, Chico Campus are identified in Figure 3.14-1. Types of bicycle facilities in the on the campus, in the City, and in the County, include:

- Class I Bikeway/Path: Shared use path with exclusive right of way for bikes and pedestrians, away from the roadway and with cross flows by vehicle traffic minimized.
- Class II Bikeway/Bike Lane: Bike lanes established along streets, defined by pavement striping and signage to delineate a portion of the roadway for bicycle travel.
- Class III Bikeway/Bike Route or Bike Boulevard: Shared facilities (for bikes and vehicles) on low-volume, low-speed streets. Bike Routes are signed recommended routes that provide network continuity. Bike boulevards intentionally prioritize bicycle travel for people of all ages and abilities on streets without large trucks or transit, using signage, shared-lane road markings (sharrows) and traffic calming techniques as required.

Important bicycle facilities serving the campus include:

- Bike path adjacent to the Union Pacific Railroad connecting to Rio Chico Way
- Bike path connecting Nord Avenue to the railroad bike path and Warner Street
- Bike path from Sol-Wil-Len-No-Avenue to West First Street
- Bike lanes on Warner Street – Ivy Street, Nord Avenue, West Sacramento Avenue, First Street, Second Street, and Salem Street
- Bike routes on Chestnut Street, Arcadian Avenue, and Memorial Way

The CSU, Chico Police Department Code of Regulations (May 23, 2014) limits riding, including bicycles, tricycles, unicycles, scooters (motorized and non-motorized), skateboards, roller skates/blades and any other non-motorized form of transportation other than walking, as follows:

- Prohibited in the campus core, defined as all areas contained within the following perimeter:
  - Second Street northward to Legion Avenue
  - North of Big Chico Creek – Warner Street eastward to Citrus Avenue and Sowilleno Avenue
  - South of Big Chico Creek – Warner Street eastward to Salem Street
  - West of Warner Street to railroad tracks
- Prohibited in the following areas
  - All pedestrian bridges spanning the Big Chico Creek

  - The Meriam Library breezeway
  - All buildings on the California State University, Chico campus
  - All sidewalks and walking paths designated for pedestrians only
- Permitted in the following areas:
  - On the paved portion of West First Street between Salem Street and Normal Avenue
  - On the paved portion of Normal Avenue to West First Street
  - On the paved portion of Chestnut Street to West First Street
  - On the paved portion of Hazel Street to West First Street

The code also states that bicycles shall be registered with the State of California.

During the Spring 2019 semester, the campus surveyed bicycle parking infrastructure and bicycle parking utilization. Surveys were conducted during key occupancy times, Tuesdays and Thursdays between 11 a.m. and 3 p.m. 4,466 bicycle parking spaces were counted across campus; of these, 2,083, or 47 percent, were front wheel racks, considered to be difficult to properly lock a bike to. Overall occupancy was 974 bicycles, or 22 percent, and the maximum occupancy observed at an individual location was 70 percent.

Pedestrian Facilities

The main campus is highly walkable due to a compact development pattern which enables students and employees to walk short distances between residential, academic, and recreational destinations on campus as well as nearby shopping, entertainment, and residential destinations in downtown Chico and adjacent neighborhoods. Flat terrain and a mild year-round climate allow for a comfortable pedestrian environment throughout the academic year. Pedestrians also have exclusive use of walkways within the campus core as defined in the previous section.

Most roadways in the within typical walking distance (approximately one-half mile) of the campus include sidewalks. The bike paths described in the previous section are also used by pedestrians and provide important connections to the main campus. In addition to the campus core, high volumes of pedestrians are observed along Warner Street – Ivy Street and Second Street, which provides access to the Chico Transit Center and parking garages.

Gaps in pedestrian facilities (missing sidewalks) on and adjacent to campus were observed as listed below and shown in Figure 3.14-2. Parked vehicles along these streets frequently force pedestrians to walk in vehicle traffic or to use other facilities.

- South side of West First Street between Cedar Street and the Union Pacific Railroad crossing
- Both sides of Cedar Street between West First Street and West Second Street
- North side of West Second Street between Walnut Street and the Union Pacific Railroad crossing

Additional gaps on streets near campus were observed at the following locations:

- Stewart Avenue between Nord Avenue and Bidwell Avenue
- Oak Park Avenue west of Oak Street

Transit Service and Facilities

Bus transit service to the CSU, Chico campus is provided by Butte Regional Transit. Greyhound and Amtrak also serve Chico.

B-Line

Transit service to the CSU, Chico campus is provided by Butte Regional Transit, also known as B-Line, operated by the Butte County Association of Governments. B-Line provides local service within Chico, Oroville, and Paradise and connections between communities in Butte County. Service is free for students throughout the academic school year and for faculty and staff throughout the entire year. CSU, Chico provides funds for B-Line based on their usage. The Chico Transit Center is adjacent to the campus on West Second Street between Normal Street and Salem Street and provides connections to many routes. Other stops and routes serve the campus as shown in Figure 3.14-3.

Key routes serving the campus are shown in Table 3.14-1. Routes 8 and 9 operate as student shuttles, and only operate when spring and fall semester classes are in session. When classes are not in session, Route 9c, with limited service and stops, serves these routes. Other routes are also accessible via the Chico Transit Center.

Table 3.14-1. Summary of B-Line Routes Serving the CSU, Chico Campus

Number	Route	Headway (minutes)	Monday – Friday Service Span	Saturday Service Span
3 Northbound	Nord/East	60	6:50 a.m. – 8:30 p.m.	8:50 a.m. – 6:30 p.m.
3 Southbound	Nord/East	60	6:20 a.m. – 9:00 p.m.	9:20 a.m. – 7:00 p.m.
8	Nord	30	7:30 a.m. – 9:30 p.m.[1]	
9	Oak/Warner/Cedar	30	7:30 a.m. – 9:30 p.m.[1]	
9c	Cedar Loop	[2]	7:50 a.m. – 8:30 p.m.[2]	8:30 a.m. – 6:30 p.m.
15 Northbound	Esplanade/Lassen	30[3]/60	6:50 a.m. – 9:30 p.m.	7:50 a.m. – 6:30 p.m.
15 Southbound	Lassen/Esplanade	30[3]/60	6:15 a.m. – 9:00 p.m.	8:15 a.m. – 6:00 p.m.
16 Northbound	Esplanade/SR 99	60	7:30 a.m. – 7:00 p.m.	8:30 a.m. – 6:00 p.m.
16 Southbound	Esplanade/SR 99	60	7:00 a.m. – 6:30 p.m.	8:00 a.m. – 5:30 p.m.

Notes:
1 No service after 4 p.m. on Friday. Service only when spring and fall semester classes are in session.
2 Two morning, two afternoon, and three (weekday) or one (Saturday) evening stops when class is not in session. Evening stops year-round on Friday.
3 30-minute headway Monday-Friday peak hours only, 6:00 a.m. – 9:00 a.m. and 3:30 p.m. – 6:00 p.m.
Sources:
a Butte Regional Transit Schedules and System Maps 2015.

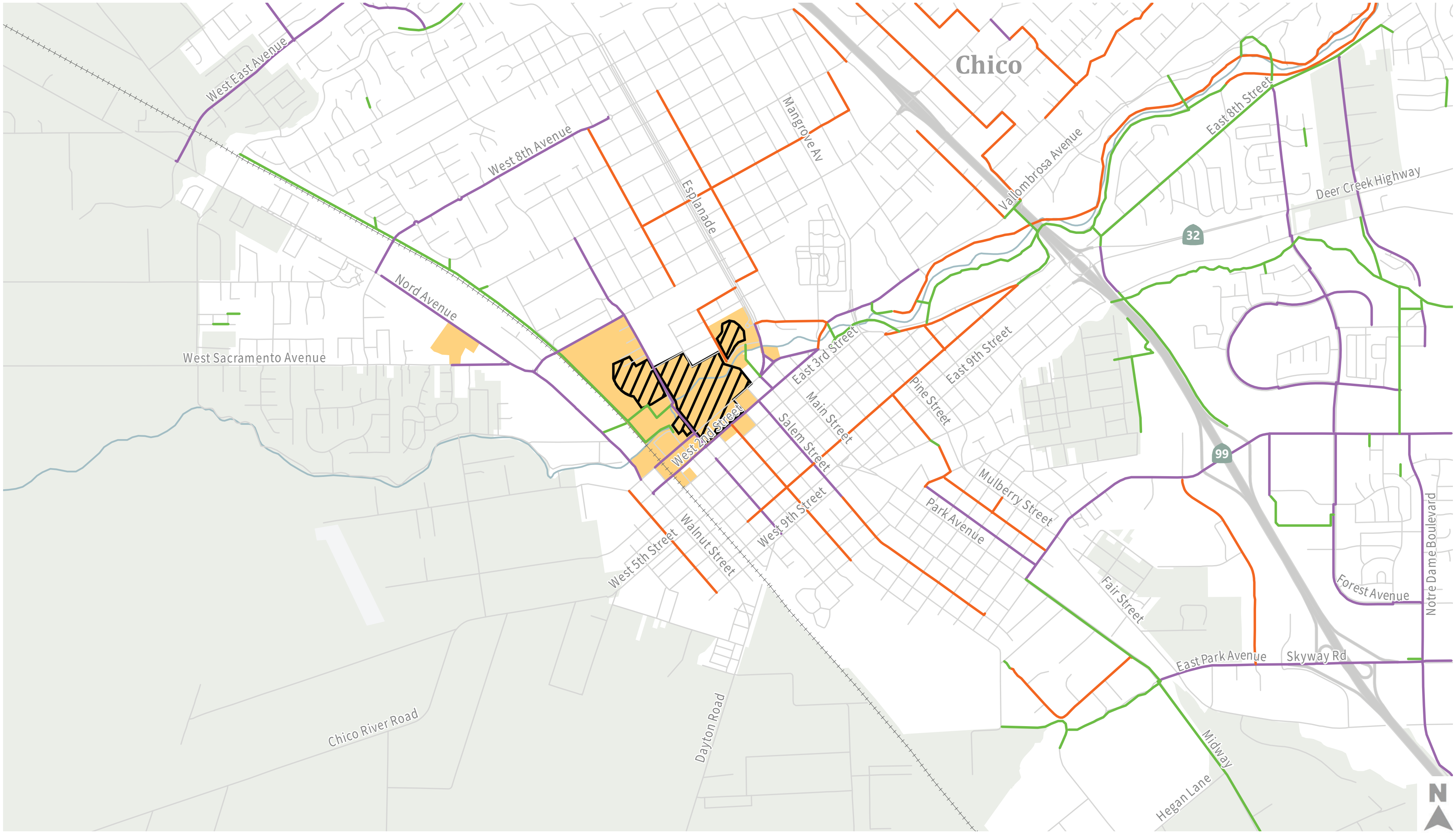
The 2015 Butte County Transit and Non-Motorized Plan reported performance for each route as shown in Table 3.14-2. Boarding data, which counts the number of people getting on the bus, provides an indication of the level of use of each route, with Routes 8 and 9, the student shuttles, seeing the highest use. Vehicle capacities and load factors were not reported.

Table 3.14-2. Performance of B-Line Routes Serving the CSU, Chico Campus

Number	Route	Weekday Boardings	Boardings Per Hour	Boardings Per Trip
3	Nord/East	433	36.4	13.1
8	Nord	605	63.7	25.2
9	Oak/Warner/Cedar	499	46.9	20.0
15 Northbound	Esplanade/Lassen	446	27.2	9.5
15 Southbound	Lassen/Esplanade	878	27.2	12.2
16	Esplanade/SR 99	273	26.3	11.4

Sources:
[a] Butte County Transit and Non-Motorized Plan 2015.

CSU, Chico (pers. com. Jenna L. Wright, March 8, 2019) reported B-Line rides and riders by persons associated with the university for fiscal year 2017-2018 as shown in Table 3.14-3. Nearly 90% of CSU, Chico transit riders and over 93% of rides are undergraduate and graduate students.



Existing Bicycle Facilities

- Class I Bike Path
- Class II Bike Lane
- Class III Bike Route
- No Riding Zone
- CSU Campus

Source: City of Chico, 2019; Fehr & Peers, 2019.

Figure 3.14-1

Bicycle Facilities

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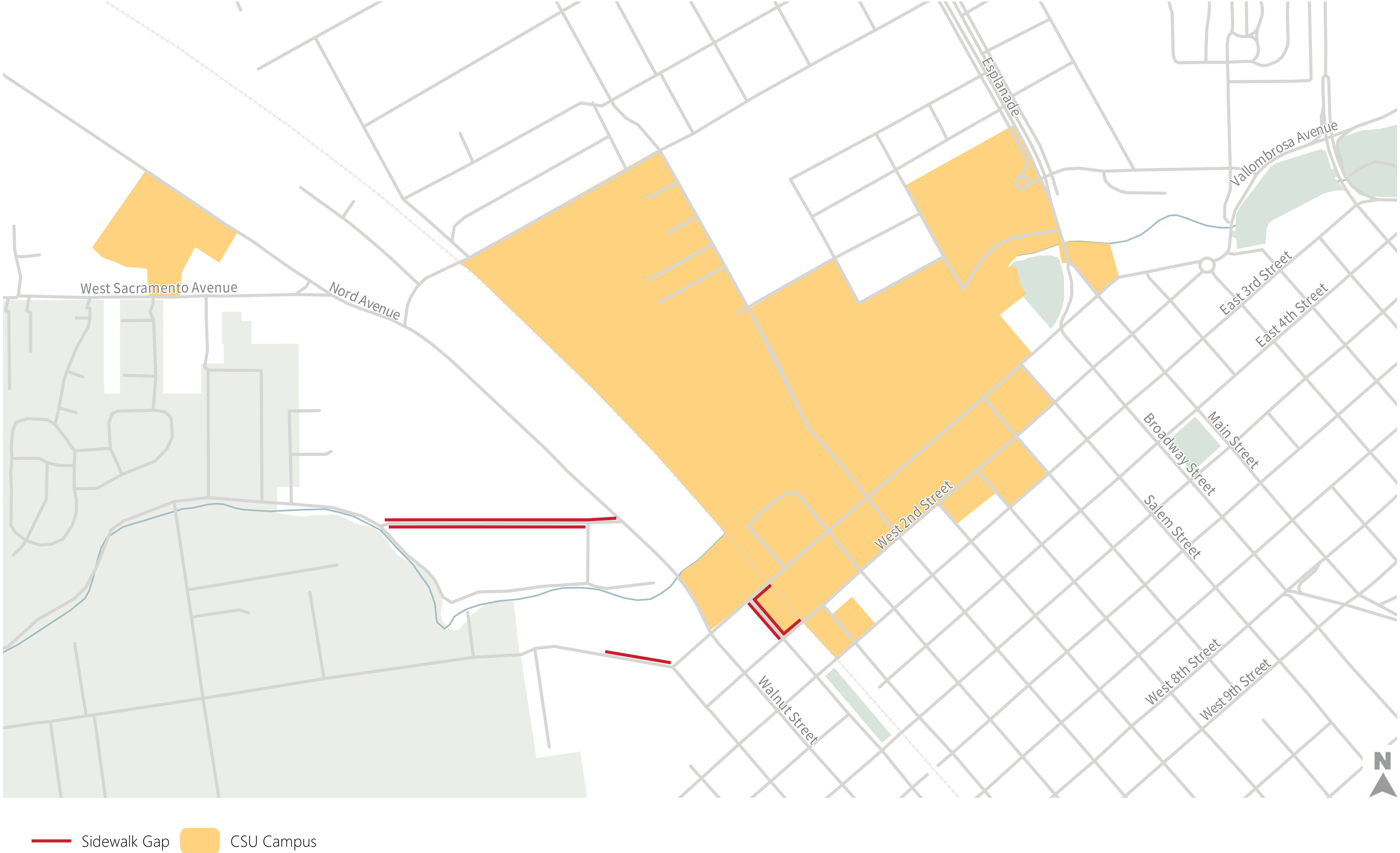

Figure 3.14-2

Sidewalk Gaps

Source: Fehr & Peers, 2019.

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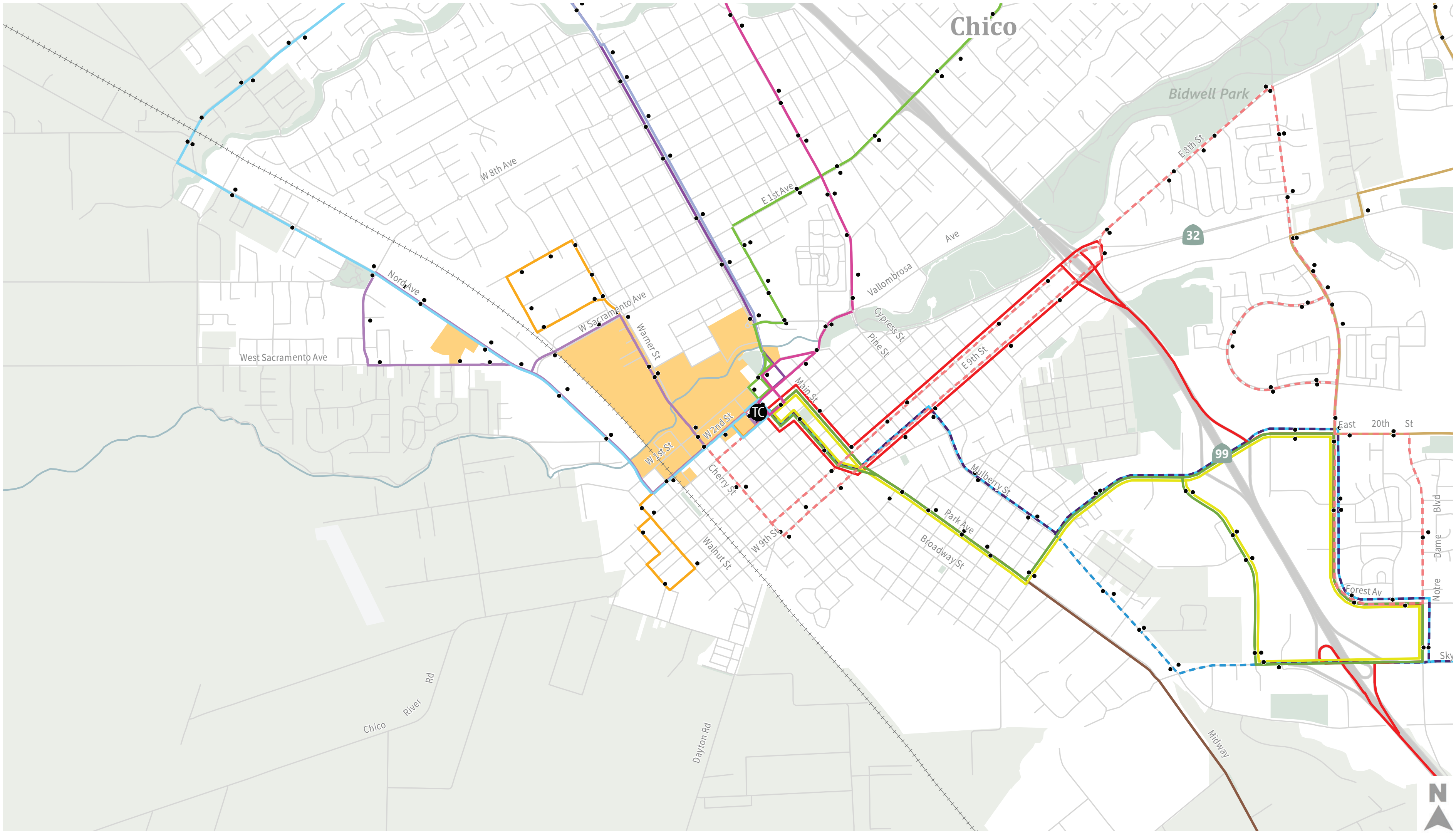

TC Transit Center
• Transit Stop
Route 2
Route 3
Route 4
Route 5
Route 7
Route 8
Route 9
Route 14
Route 15
Route 16
Route 17
Route 20
Route 32
Route 40/41
Route 41
CSU Campus

Figure 3.14-3

Source: BCAG, 2019; Fehr & Peers, 2019.

B-Line Transit Stops and Routes Serving CSU Chico

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Table 3.14-3. Fiscal Year 2017-2018 CSU, Chico Usage of B-Line Transit Service

Category	Rides	Share of Rides	Riders	Share of Riders
Undergraduate	244,166	88.6%	5,230	85.7%
Graduate	12,823	4.7%	256	4.2%
Staff	6,809	2.5%	143	2.3%
American Language and Culture Institute	4,369	1.6%	131	2.1%
Faculty	2,976	1.1%	81	1.3%
Visiting Scholar	2,922	1.1%	154	2.5%
Upward Bound	1,257	0.5%	99	1.6%
Other/Unknown	2,408	0.9%	66	1.1%
Total	**275,475**	**100.0%**	**6,103**	**100.0%**

Sources:
[a] CSU, Chico, Jenna L. Wright, Facilities Management and Services, email dated March 8, 2019.

The CSU, Chico Spring 2019 Transportation Survey (CSU, Chico 2019) included comments from students regarding transit. Some of the most frequent comments regarded poor alignment of B-Line schedules with class schedules. The survey also indicated lack of knowledge of fare-free access by many students and employees.

Greyhound

Greyhound provides regional and national bus service from its bus station at West Fifth Street and Orange Street. Service is provided four times daily.

Amtrak

Amtrak has limited daily rail service in Butte County from Seattle to Los Angeles, stopping in Chico once in each direction in the early morning hours. The Amtrak Thruway bus also has daily connections to the Stockton Amtrak station and the Sacramento Valley Amtrak station. The Chico Amtrak station is located at West Fifth Street and Orange Street. There is no checked baggage service and tickets cannot be purchased at the Chico station.

Parking

Parking is available at the CSU, Chico campus at a combination of surface lots, parking structures, and on-street parking spaces as shown in Figure 3.14-4 and summarized in Table 3.14-4 (excluding a few small lots of less than eight vehicles). Approximately 2,500 spaces are available on the main campus, with approximately 1,140 available to general permit holders (including visitors who purchase permits), 540 to resident students, 440 to faculty and staff, 30 exclusively to visitors, and 20 to electric vehicles. Remaining spaces are reserved for ADA users, service vehicles, and other special uses.

Current parking supply and peak utilization as measured on April 30, 2019 between 8 a.m. and 7 p.m. is shown in Table 3.14-4 and Figure 3.14-4. Peak parking utilization for general spaces was 99% at 10 a.m. and 11 a.m. and was over 90% from 9 a.m. to 3 p.m. Faculty and staff parking utilization peaked at 77% at 2 p.m.

Table 3.14-4. CSU, Chico Existing Weekday Parking Supply and Utilization

Type	Supply	Peak Vehicles	Peak Utilization	Peak Hour[1]
General	1,138	1,127	99%	10:00 AM
Faculty/Staff/Reserved	437	335	77%	2:00 PM
Student Residents	440	357	81%	9:00 AM
Visitor	28	18	64%	8:00 AM
EV	24	14	58%	9:00 AM
Other[2]	439	238	54%	1:00 PM
Total	**2,506**	**2,011**	**80%**	**1:00 PM**

Note:
1 Data collected from 8 a.m. to 7 p.m.
2 Other includes ADA, service vehicles, motorcycles, and other special designations.
Sources:
a CSU, Chico 2019.
b Fehr & Peers 2019.

The Spring 2019 Campus Transportation Survey results indicated that 42 percent of commuters use a semester permit, and an additional 8 percent use daily or hourly permits. Eight percent use metered parking, and 32 percent use free parking in nearby neighborhoods.

Student respondents to the Spring 2019 Campus Transportation Survey frequently noted that, even if they had a permit, it was often difficult to find vacant spaces.

3.14.2 Relevant Plans, Policies, and Ordinances

Federal

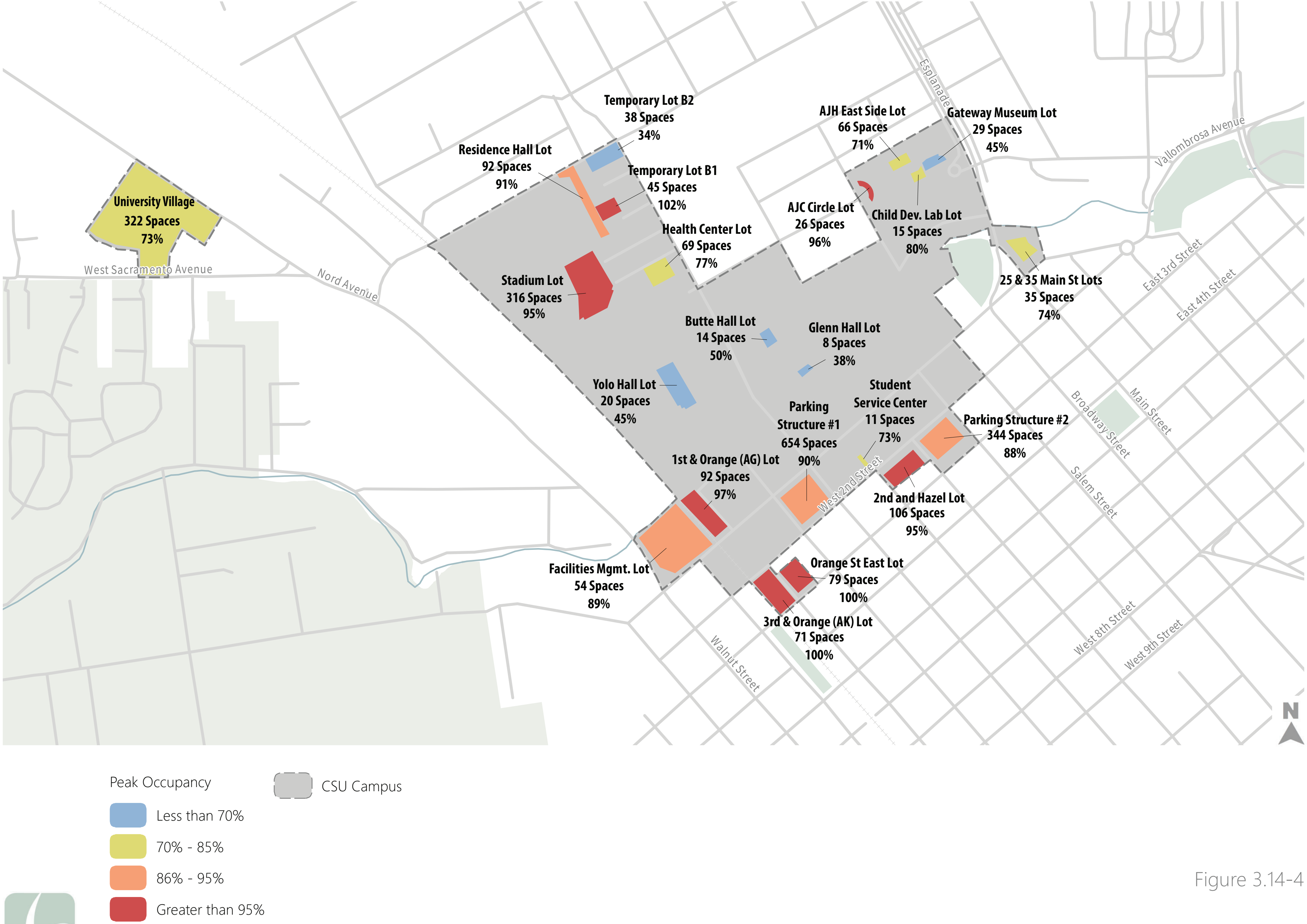
There are no federal plans, policies, regulations, or laws related to transportation that would affect the project. However, federal regulations relating to the Americans With Disabilities Act, Title VI, and Environmental Justice relate to transit service.

State

Senate Bill 743

Senate Bill (SB) 743, passed in 2013, requires the California Governor's Office of Planning and Research (OPR) to develop new guidelines that address traffic metrics under CEQA. As stated in the legislation, upon adoption of the new guidelines, "automobile delay, as described solely by level of service or similar measures of vehicular capacity or traffic congestion shall not be considered a significant impact on the environment pursuant to this division, except in locations specifically identified in the guidelines, if any."

The changes to the CEQA Guidelines identify automobile VMT as the preferred CEQA transportation metric and, upon their certification on December 28, 2018, eliminated use of auto delay and LOS statewide for CEQA transportation analysis. The new guidelines and The Governor's Office of Planning and Research (OPR) Technical Advisory on Evaluating Transportation Impacts in CEQA (OPR 2018) include specifications for VMT methodology and recommendations for significance thresholds and mitigation.



Source: Fehr & Peers, 2019.

Figure 3.14-4

Parking Supply and Peak Occupancy

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California State University has established standards and thresholds in the *California State University Transportation Impacts Study Manual* (TISM) (March 2019). Although use of delay and LOS were eliminated in 2018 as described above, the new SB 743 CEQA Guidelines allow lead agencies until July 1, 2020 before use of VMT is mandatory. The City of Chico and Butte County have not established standards or thresholds on VMT. Additional potential significance findings for specific environmental effects that relate to VMT are found in Sections 3.2, Air Quality, 3.5, Energy, and 3.7, Greenhouse Gas Emissions, of this Draft EIR.

California Department of Transportation

The California Department of Transportation (Caltrans) is responsible for planning, designing, constructing, operating, and maintaining the State Highway System (SHS). Federal highway standards are implemented in California by Caltrans. Any improvements or modifications to the SHS would need to be approved by Caltrans.

Caltrans' Vehicle Miles Traveled-Focused Transportation Impact Study Guide (Caltrans, 2020) provides guidance on the evaluation of traffic impacts to State highway facilities. This study guide was released in response to SB 743. The document states, "VMT analysis replaces level of service, the prior widely applied metric used for CEQA transportation analysis" (page 8). The document also states, "A lead agency has discretion to choose the most appropriate methodology to evaluate a project's VMT (Public Resources Code 15064.3 (b)(4)). Caltrans will review an agency's VMT calculator or VMT calculation for consistency with technical considerations in OPR's Technical Advisory" (page 9).

California Air Resources Board

The California Air Resources Board (ARB) has specific guidance for VMT thresholds in the ARB 2017 Scoping Plan-Identified VMT Reductions and Relationship to State Climate Goals (January 2019). ARB recommends project specific VMT reduction thresholds of 16.8 percent reduction from baseline for light-duty vehicle VMT (i.e., passenger cars and light trucks).

California State University

The California State University TISM provides guidance for addressing transportation-related impacts under CEQA. The manual includes guidance for analyzing transportation impacts (including VMT), applicable significance thresholds, and recommended mitigation measures. The manual recommends the following thresholds of significance:

- Plan Conflict: The project would conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadways, bicycle and pedestrian facilities.
- VMT Impacts
  - Project Level: For projects that do not meet any of the VMT screening criteria described within the CSU TISM, which includes projects that generate no or few trips and are not anticipated to increase VMT per capita, analysis is required to determine whether the project would result in VMT per service population (campus residents, employees, and students) in excess of 15 percent below the existing regional, sub-regional, or citywide VMT per service population. VMT trip purposes are defined as Home-Based Work (Production & Attraction) + Home-Based Other (Production & Attraction) + Non-Home-Based (Production & Attraction).
  - Cumulative: The CSU TISM also requires evaluation of whether the project would result in an increase or decrease in the regional, sub-regional, or citywide VMT per capita, to determine whether the project would result significant cumulative impacts. Accordingly, the CU TISM recommends the evaluation of the VMT per service population under the "with project" condition to determine whether VMT would be in excess of the Citywide, regional, or sub-regional VMT / Service Population identified under the RTP/SCS condition.

- Hazard Impact: The project would substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment).
- Emergency Access Impact: The project would result in inadequate emergency access.

The California State University Sustainability Policy (May 2014) contains the following policy related to transportation:

- The CSU will encourage and promote the use of alternative transportation and/or alternative fuels to reduce GHG emissions related to university associated transportation, including commuter and business travel.

The *CSU, Chico Climate Action Plan* (May 23, 2011) included the following transportation sector reduction strategy:

- Reduce Single-Occupancy Vehicle Traffic to Campus

The *CSU, Chico Police Department Code of Regulations* (May 23, 2014) includes provisions that promote the safe and orderly movement of traffic on the CSU, Chico campus. The code supplements the provisions identified in the California Vehicle Code. Rules and standards included in the code pertain to vehicle, bicycle, and other wheeled device operations and parking. Riding, including bicycles, tricycles, unicycles, scooters (motorized and non-motorized), skateboards, roller skates/blades and any other non-motorized form of transportation other than walking, is restricted as discussed in the Existing Conditions section.

The *CSU, Chico Transportation Demand Management (TDM) Plan* (May 14, 2009) has the overarching goal to promote walking, biking, transit and other forms of alternative transportation as convenient, safe, and practical means for campus trips. The TDM Plan recommends a combination of infrastructure improvements and supporting programs to increase the likelihood of shifting transportation mode split away from single-occupant vehicle trips to campus, thereby reducing the demand for campus parking. In Spring 2019, CSU, Chico reviewed progress toward implementation of the measures included in the plan. Of the 15 recommended measures, three were in effect, five were partially in effect, six were not in effect, and status of one was unknown, as shown in Table 3.14-5.

Table 3.14-5. Spring 2019 TDM Status

Measure	Spring 2019 Status
Preferential car-free housing	Not in effect
Remote long-term parking for campus housing	Not in effect
Flexible work schedule / telecommute policy	Partially in effect
Ridesharing and preferential carpool parking	In effect
Adjust class schedules	In effect
Pedestrian and bicycle circulation improvements	Partially in effect
Bicycle parking enhancements	Unknown
Bicycle support services	Partially in effect
Campus transportation coordinator	Partially in effect
Transportation options marketing	Not in effect
Guaranteed ride home	Not in effect
Transit enhancements	Not in effect
Carsharing	In effect
Geographic parking permit sales restrictions	Partially in effect
Trip reduction membership program	Not in effect

Sources:
[a] CSU, Chico, Jenna L. Wright, Facilities Management and Services, email dated March 8, 2019.

Local

Because CSU, Chico is a component of the CSU, which is a state agency, the campus and proposed Master Plan are not subject to local government planning or ordinances. Accordingly, because neither local general plans nor any other local land use plans or ordinances are applicable to CSU, Chico, such local plans and ordinances are included below for informational purposes only.

Butte County Association of Governments

The Butte County Association of Governments (BCAG) is the metropolitan planning organization (MPO) governing the County of Butte; the cities of Biggs, Chico, Gridley, and Oroville; and the Town of Paradise. BCAG is responsible for the preparation of, and updates to, the regional transportation plan/sustainable communities strategy (RTP/SCS) and the associated Regional Transportation Improvement Program (RTIP).

The *2016 Regional Transportation Plan/Sustainable Communities Strategy* (BCAG, 2018) is the current RTP/SCS. As such, it provides the basis for air quality conformity findings related to the national Clean Air Act and determinations of whether the region is complying with greenhouse gas (GHG) reduction targets for automobiles and light trucks established under California's Senate Bill 375 (SB 375). Major projects that are inconsistent with the plan could jeopardize the plan's effectiveness for air pollution and GHG reduction. Consequently, consistency with the RTP/SCS is a potential basis for determining adverse impacts related to these environmental topics.

The RTP/SCS includes the following goals and policies related to transportation and circulation analysis of the master plan.

- Goal 2.1. Meet all transit needs that are "reasonable to meet."
  - Policy 2.1.2. Provide adequate fixed route transit system to serve the general public, including those populations who rely most on transit.
- Goal 13.1. Assist in efforts which enhance mobility for the region. The system should provide for convenient travel options for people and goods and maximize its productivity. The system should reduce both the time it takes to travel as well as the total costs of travel.
  - Policy 13.1.4. Increase the use of transit, ridesharing, walking and biking in major corridors and communities.
- Goal 14.2. Work towards a transportation system that leads to environmental sustainability and fosters efficient development patterns that optimizes travel, housing, and employment choices and encourages future growth away from rural areas and closer to existing and planned development.
  - Policy 14.2.2. Work towards reducing greenhouse gas emissions from vehicles and continue to improve air quality in the region.

City of Chico

The *Chico 2030 General Plan* (City of Chico, 2011) Circulation Element contains the following goals and policies related to transportation and circulation analysis of the master plan.

- Goal CIRC-1: Provide a comprehensive multimodal circulation system that serves the build-out of the Land Use Diagram and provides for the safe and effective movement of people and goods.
  - Policy CIRC-1.1 (Transportation Improvements) – Safely and efficiently accommodate traffic generated by development and redevelopment associated with build-out of the General Plan Land Use Diagram.

  - Policy CIRC-1.2 (Project-level Circulation Improvements) – Require new development to finance and construct internal and adjacent roadway circulation improvements as necessary to mitigate project impacts, including roadway, transit, pedestrian, and bicycle facilities.
  - Policy CIRC-1.5 (Vehicle Miles Travelled Analysis) – Consistent with State law, implement Vehicle Miles Travelled (VMT) assessments as part of the environmental review process under CEQA.
- Goal CIRC-2: Enhance and maintain mobility with a complete streets network for all modes of travel.
  - Policy CIRC-2.1 (Complete Streets) – Develop an integrated, multimodal circulation system that accommodates transit, bicycles, pedestrians, and vehicles; provides opportunities to reduce air pollution and greenhouse gas emissions; and reinforces the role of the street as a public space that unites the City.
- Goal CIRC-3: Expand and maintain a comprehensive, safe, and integrated bicycle system throughout the City that encourages bicycling.
  - Policy CIRC-3.2 (CSU Chico Bicycle Access) – Continue to encourage CSU Chico to reintroduce opportunities for safe bicycle access into, around and through the main campus area.
  - Policy CIRC-3.3 (New Development and Bikeway Connections) – Ensure that new residential and non-residential development projects provide connections to the nearest bikeways.
  - Policy CIRC-3.4 (Bicycle Safety) – Improve safety conditions, efficiency, and comfort for bicyclists through traffic engineering, maintenance and law enforcement.
- Goal CIRC-4: Design a safe, convenient, and integrated pedestrian system that promotes walking.
  - Policy CIRC-4.1 (Pedestrian Master Planning) – Continue to integrate and highlight pedestrian access and dual use bicycle and pedestrian pathways in the Bicycle Master Plan. Policy CIRC-4.2 (Continuous Network) – Provide a pedestrian network in existing and new neighborhoods that facilitates convenient and continuous pedestrian travel free from major impediments and obstacles.
- Goal CIRC-5: Support a comprehensive and integrated transit system as an essential component of a multimodal circulation system.
  - Policy CIRC-5.3 (Transit Connectivity in Projects) – Ensure that new development supports public transit.
- Goal CIRC-8: Provide parking that supports the Citywide goals for economic development, livable neighborhoods, sustainability, and public safety.
  - Policy CIRC-8.1 (Appropriate Parking) – Ensure that parking is provided in appropriate locations and amounts.
  - Policy CIRC-8.2 (Parking Improvements) – Ensure that new parking facilities and renovations are designed to be safe, efficient, and pedestrian-friendly.
- Goal CIRC-9: Reduce the use of single-occupant motor vehicles.
  - Policy CIRC-9.3 (Emphasize Trip Reduction) – Emphasize automotive trip reduction in the design, review, and approval of public and private development.

While these goals and polices establish expectations for transportation system performance, they are not all relevant for environmental impact analysis. For example, with the implementation of SB 743, Policy CIRC-1.4 (Level of Service Standards) is no longer applicable for environmental analysis.

The Chico Bicycle Plan 2019 Update (City of Chico, 2019) has the following Overall Goal: Continue to make Chico a more bike-friendly community through engineering, education, enforcement, encouragement, equity and evaluation. The plan includes the following goals and policies related to transportation and circulation analysis of the master plan.

- Goal 1: Design and implement a complete bikeway network that connects people with the places they want to go to, and supports bicyclists of all ages, ethnicities, incomes and abilities.
  - Policy 6. Continue to encourage California State University, Chico to reintroduce opportunities for safe bicycle access into and through the main campus area.
- Goal 3: Provide sufficient secure bicycle parking facilities where they are needed and address ongoing bike theft concerns.
  - Policy 1. Continue to require provision of secure, well-lit, bicycle parking at all existing and future multiple-family residential, commercial, industrial, and office/institutional uses. Enforce existing ordinances requiring bicycle parking facilities.

The *City of Chico 2020 Climate Action Plan* (City of Chico, 2012) contains the following objective related to transportation and circulation analysis of the master plan.

- Transportation Objective 1: Reduce Vehicle Miles Traveled

3.14.3 Thresholds of Significance

The significance criteria used to evaluate the project impacts to transportation are based on the California State University TISM. Specific criteria to be used for identifying potential transportation impacts include the following.

1. Plan Conflict – The project would conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities.
2. VMT Impacts – The project would result in a VMT-related impact as described in detail below.
3. Hazard Impact – The project would substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment).
4. Emergency Access impact – The project would result in inadequate emergency access.

For plan conflicts, the programs, plans, ordinances, and policies reviewed are provided in the Relevant Plans, Policies, and Ordinances section. For VMT impacts, the TISM recommends detailed thresholds for project and cumulative conditions as shown in Table 3.14-6.

Table 3.14-6. CSU TISM VMT Significance Thresholds

Impact Categories	Students CSU Significance Thresholds
Project Level Impacts	• Mixed-Use: VMT / Service Population exceeds threshold of 15% below existing regional, sub-regional, or citywide VMT / Service Population
Cumulative Impacts	• Mixed-Use: VMT / Service Population under the “with project” condition exceeds the Citywide, regional, or sub-regional VMT / Service Population identified under the RTP/SCS condition

Source:
[a] CSU 2019.

The BCAG model cites only students as the input for the university land use. Faculty and staff trips are included as part of student-generated VMT. Therefore, the model cannot produce VMT estimates by land use types as specified in the TISM thresholds. Further, VMT estimates derived from the student population change only does not allow a comparison to sub-regional, citywide, or regional VMT generation rates that are based on "service population" metrics consisting of households and square footage of non-residential land uses. Therefore, VMT changes caused by the project were considered significant impacts if:

- Project Level: The project generates VMT per university student that exceeds 15 percent below the base year rate for the Master Plan area.
- Cumulative: The project generates VMT per university student that exceeds 15 percent below the base year rate for the Master Plan area or the project causes total VMT for the BCAG region to exceed the 2040 forecast from the BCAG RTP/SCS.

3.14.4 Impact Analysis

Methodology

The transportation impact analysis methodology includes a combination of quantitative and qualitative evaluations of the roadway, bicycle, pedestrian, and transit components of the transportation system.

The planning horizon of the Master Plan is the year 2030.

The following scenarios were analyzed:

- 2019 Baseline No Project
- 2019 Baseline Plus 2019 Master Plan
- 2030 Cumulative No Project
- 2030 Cumulative Plus 2019 Master Plan

Table 3.14-7 below contains the land use inputs associated with each analysis scenario.

Table 3.14-7. 2019 Master Plan Students, Employees, and Housing Growth Forecasts

Scenario	Students	Employees	Students in University Housing	Students per Employee	Share of Students Living in University Housing
2019 Baseline No Project	16,437	2,095	2,260	7.8	14%
2019 Baseline Plus 2019 Master Plan	18,600	2,288	3,750	8.1	20%
2030 Cumulative No Project	16,437	2,095	2,260	7.8	14%
2030 Cumulative Plus 2019 Master Plan	18,600	2,288	3,750	8.1	20%

Sources:
[a] CSU, Chico 2019.
[b] Fehr & Peers 2019.

Vehicle Miles Traveled

The Butte County Association of Governments (BCAG) travel demand forecasting model (referred to as the BCAG model in the remainder of this chapter) was used to estimate vehicle miles traveled (VMT), vehicle trips, and mean trip length for CSU, Chico, the City of Chico, and Butte County. This model was used to analyze the 2016 BCAG RTP/SCS; it has a base year of 2014 and a forecast year of 2040. These metrics are used to measure performance of the existing transportation network and to evaluate potential transportation impacts. Since the BCAG model only includes Butte County, modifications were made so that model estimates of trip lengths and VMT could better represent distance traveled outside the County. This extra trip distance was estimated using 2012 California Household Travel Survey data (CHTS). The CHTS questions are designed to capture trip origins and destinations without regard for political boundaries. As such, they account for travel both inside and outside of Butte County. The 2019 Master Plan does not propose any substantive changes to the campus internal roadways and access, so no changes were made to the baseline and cumulative model networks.

VMT results are shown in Table 3.14-8. The ratio of total VMT to number of students was calculated to be 34.7. This result was compared to the University of California, Davis, which estimated this ratio to be 26.4 in 2016 as reported in the 2018 Long Range Development Plan Draft EIR (UC Davis, 2018). A higher result for CSU, Chico was expected given the greater share of students living on campus at UC Davis (29 percent) compared to CSU, Chico (14 percent). However, according to 2017 Census American Community Survey (ACS) data, Davis has a significant housing supply constraint with a rental vacancy rate of only 1.9 percent compared to Chico's 7.59 percent. Housing supply in Chico may allow more students to reside in the local community, which would lower vehicle trip lengths. Additional reasonableness checks of the model's trip length estimates were conducted and are contained in Appendix G. These checks revealed that the 2014 base year model likely overestimates current VMT generated from CSU, Chico, with other 2018 and 2019 data sources revealing vehicle trip lengths ranging from 4.4 to 13.3 miles. In addition, the model does not have separate inputs for students, faculty, staff, and visitors, and thus travel characteristics are not differentiated for each. Hence, the model is not fully sensitive to master plan changes that affect these population groups over time.

Table 3.14-8. BCAG Travel Demand Model 2014 VMT Estimates

Area	Total Weekday VMT	Weekday Vehicle Trips	Mean Vehicle Trip Length (miles)
CSU, Chico	569,700	27,700	20.6
City of Chico	3,326,300	386,400	8.6
BCAG region	6,347,400	684,000	9.3

Sources:
[a] BCAG Travel Demand Model 2019.
[B] Fehr & Peers 2019.

Bicycle Facilities

The potential impact to bicycle facilities was evaluated based on whether the proposed project would physically disrupt an existing facility or interfere with the implementation of a planned facility. In addition, the proposed project was evaluated to determine if it would create potential conflicts with applicable policies, plans, or programs (as defined in the regulatory setting above) supporting bicycle use such that the conflict could reduce bicycle trips or increase conflicts between bicyclists or other modes.

Pedestrian Facilities

The potential impact to pedestrian facilities was evaluated based on whether the proposed project would physically disrupt an existing facility or interfere with the implementation of a planned facility. In addition, the proposed project was evaluated to determine if it would create potential conflicts with applicable policies, plans, or programs supporting pedestrian travel such that the conflict could reduce walk trips or increase conflicts with other modes.

Transit Service and Facilities

The potential impact to transit service or facilities was evaluated based on whether the proposed project would physically disrupt an existing facility/service or interfere with the implementation of a planned facility/service. In addition, the proposed project was evaluated to determine if it would create potential conflicts with applicable policies, plans, or programs (as defined in the regulatory setting above) supporting transit such that the conflict could reduce transit trips or increase conflicts with other modes.

Parking

An assessment of parking demand and supply is provided for informational purposes. Impacts on parking are not considered an environmental impact under CEQA. The relationship between parking demand and supply affects the experience of driving and parking on campus. However, environmental impacts tend to be associated with the construction of new parking facilities that disrupt the natural environment and any increases in driving that occur because parking becomes more convenient or if it becomes so scarce that drivers spend additional driving time to find an available space.

Parking demand was projected based on information contained in the CSU, Chico Spring 2019 Transportation Survey, current parking supply utilization, and changes to parking supply associated with the 2019 Master Plan.

Hazards

Hazard impacts were analyzed based on whether the project would physically or operationally change the existing transportation network. Changes could be physical, representing new access, or to demand, reflecting new trips to and from campus. Analysis was focused on whether the changes would create conditions that are no longer compatible with the physical network such that the volume, mix, or speed of traffic was not anticipated as part of the original transportation network design.

Impacts Analysis

Impact TRA-1 The proposed Master Plan would not conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities. (Less than Significant)

A review of the project description did not identify any disruption to existing bicycle facilities. The Master Plan includes the addition of an east-west bike path through campus on the north side of Big Chico Creek. This path will align with the City of Chico bike path and will allow bicyclists to ride and park their bikes into the campus core and closer to their destinations. This path could modify existing bicycle demand and new bicycle trips will be generated by campus growth commensurate with the number of new students and employees.

The Spring 2019 Campus Transportation Survey results were used to estimate mode share for commute trips to campus. Table 3.14-9 provides these results. The survey did not collect data for students residing on campus; therefore, the results in this table were developed with the presumption that all students residing on campus walk.

This presumption was considered reasonable due to the close proximity of student housing and academic buildings plus the prohibition on riding bikes, skateboards, and scooters through the campus core. Actual mode share will vary; the presumption above may overstate the pedestrian mode share and underestimate bike and skateboard mode share.

Table 3.14-9. Spring 2019 CSU, Chico Commute Trip Mode Share

Mode	Student (residing off campus)	Student (residing on campus)[1]	Faculty	Staff	Total
Drive (Alone)	39.0%	0.0%	54.6%	74.8%	38.6%
Carpool	6.3%	0.0%	6.8%	7.3%	5.9%
Dropped Off	4.8%	0.0%	4.0%	3.6%	4.3%
Public transit	8.7%	0.0%	1.4%	1.7%	7.1%
Walk	28.5%	100.0%	5.9%	2.9%	31.9%
Bike	10.8%	0.0%	26.0%	8.6%	10.5%
Skateboard	1.5%	0.0%	0.0%	0.1%	1.2%
Motorcycle/Scooter	0.4%	0.0%	1.4%	1.1%	0.4%

Notes:

1 100% walk presumed. The presumption above may overstate the pedestrian mode share and underestimate bike and skateboard mode share.

Sources:

a CSU, Chico 2019.

b Fehr & Peers 2019.

According to the Transportation Survey, 10.8 percent of commute trips by students residing off campus and 26 percent of commute trips by faculty and 8.6 percent of commute trips by staff are by bicycle. Similar mode shares would apply to the 673 new students living off campus and 125 new faculty, and 68 new staff, resulting in approximately 260 daily commute bike trips. These trips would increase the utilization of existing bicycle facilities but would not be sufficient to disrupt these facilities.

A review of the project description did not identify any disruption to existing pedestrian facilities. New pedestrian trips will be generated by campus growth commensurate with student, employee, and on-campus housing growth. Overall, the student and employee total would increase by approximately 2,400 persons, while the number of on-campus residents would increase by approximately 1,500 persons. Due to the highly walkable nature of the CSU, Chico campus, every additional student, faculty, and staff added to the campus population would generate a variety of on-campus pedestrian trips throughout a typical school day (e.g., walking trips to class, meals, social activities, etc.).

The proposed increase in on-campus housing would enable a greater percentage of students to walk to class or work compared to existing conditions. Moreover, increases in transit and vehicle commute trips would generate additional pedestrian trips between campus destinations and on-campus parking and transit facilities, as all transit and vehicle trips begin and end with a pedestrian trip. Altogether, new student and employee growth would generate up to approximately 1,700 new pedestrian commuters (including students living on campus) during a typical school day among students and employees.

Areas of greatest expected increased pedestrian activity are shown in Figure 3.14-5. Anticipated increases in pedestrian activity would primarily occur within the current areas of pedestrian activity, given that most development is replacement or infill. New construction of mixed use, student life/wellness, and academic buildings south of Second Street and west of the railroad would increase activities in these areas. These areas have good sidewalk access on the street network, except for the three gaps noted in the Existing Conditions discussion:

- South side of West First Street between Cedar Street and the Union Pacific Railroad crossing
- Both sides of Cedar Street between West First Street and West Second Street
- North side of West Second Street between Walnut Street and the Union Pacific Railroad crossing

The pedestrian path on the north side of Big Chico Creek will have safety, visibility, and aesthetic improvements. The 2019 Master Plan does not propose any changes to the existing on-campus pedestrian network.

A review of the project description did not identify any disruption to existing transit facilities. New transit trips will be generated by campus growth commensurate with growth in students and employees.

The increased numbers of students residing off campus and employees would increase transit demand for commuters utilizing B-Line service. Overall, the 2019 Master Plan would generate an estimated additional 140 daily transit trips.

Additional transit ridership demand would increase boarding and alighting activity at existing bus stops and transit terminals located on campus and at the Chico Transit Center.

The 2019 Master Plan does not propose any changes to the existing on-campus transit service or facilities.

With increased on-campus housing, projected student and employee growth associated with the 2019 Master Plan would increase commute parking demand by about 410 vehicles. If students who live on campus (excluding University Village) were provided parking at the same rate, 109 new residential spaces would be needed.

The supply of parking spaces would also change. CSU, Chico estimates that approximately 310 parking spaces will be constructed in the 2019 Master Plan, as summarized below.

- 1,090 surface spaces removed due to infill and new construction
- 200 surface spaces added
- 1,200 new spaces added in two structures

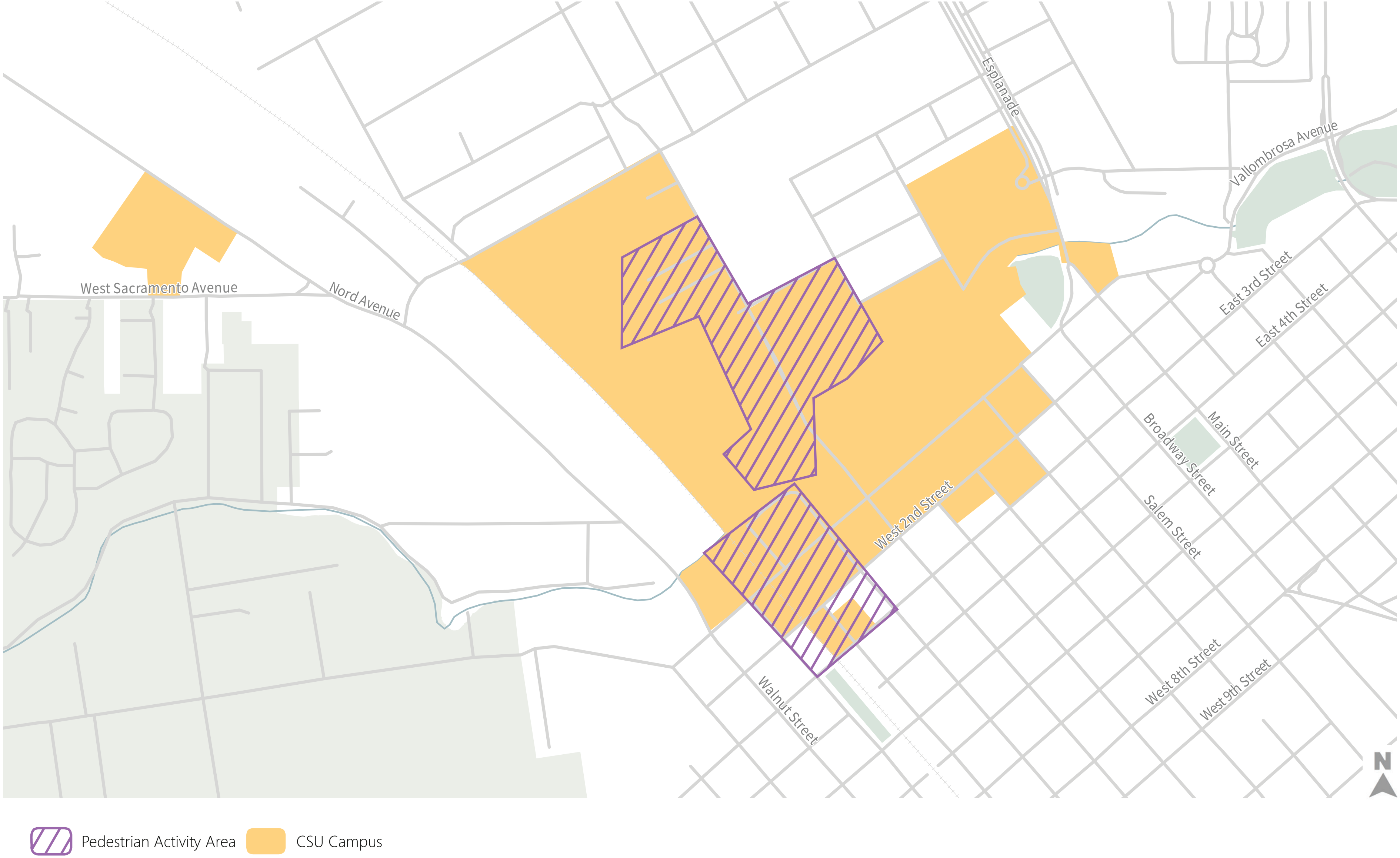

Figure 3.14-5

Source: Fehr & Peers, 2019.

Areas of Greatest Expected Pedestrian Activity Increase

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This increase in parking supply is less than expected parking demand. Due to the latent demand of vehicles currently parking off campus, the additional spaces would likely be filled beyond the increased demand discussed above. Because parking supply is increasing more slowly than expected demand, parking does not create incentives to increase driving, which supports VMT reduction. The proposed Master Plan would not conflict with applicable transportation plans. As described above, proposed campus growth is slightly lower, and housing slightly higher, than the growth forecasts used in the regional transportation plan. While local plans do not apply to CSU, the proposed Master Plan would not conflict with roadway, transit, or bicycle/pedestrian plans. Proposed improvements to Warner/Ivy would be coordinated with the City and would be supportive of both CSU, Chico and City of Chico objectives of improving bicycle and pedestrian circulation while maintaining adequate vehicular circulation (including City General Plan Policy CIRC-2.1). The proposed Master Plan would include bicycle/pedestrian improvements that would create better circulation and connectivity with the City of Chico system. The project is transit-supportive, as the University works with the transit provider to maximize student usage and provides supplementary transit service. Impacts related to plan conflict would be **less than significant.**

Impact TRA-2 Implementation of the 2019 Master Plan would not reduce VMT per student by 15 percent compared to the forecasted baseline and cumulative year VMT for the Master Plan area. (Potentially Significant)

VMT forecasts from the model are summarized in Table 3.14-10.

Table 3.14-10. Total Daily VMT and VMT Generated per Student – Weekday Conditions

Measure	2019 Baseline	2019 Baseline Plus 2019 Master Plan	Change from Baseline No Project	2030 Cumulative Plus 2019 Master Plan	Change from Baseline No Project
VMT	569,700	633,700	11.2%	606,300	6.4%
VMT Generated per Student	34.7	34.1	-1.7%	32.6	-5.9%

Sources:
[a] BCAG Travel Demand Model 2016.
[b] Fehr & Peers 2019.

As shown in Table 3.14-10, using the BCAG model, VMT per student is forecasted to decrease compared to countywide BCAG model baseline and cumulative conditions with implementation of the 2019 Master Plan, but the decrease would be less than 15 percent. Additionally, compared to the BCAG RTP/SCS 2040 model, the Master Plan projects fewer students (23,504 and 18,600 students, respectively). If students are limited to the enrollment cap in the Master Plan, the Master Plan would result in a lower level of VMT than projected in the RTP/SCS.

The model is also not sensitive to the increase in student housing associated with the project, The increase in students living on campus from 14 to 20 percent would also reduce VMT and VMT per student. Evidence to support this conclusion is the difference in student commute mode splits described above. Therefore, the model, which is not sensitive to changes in mode split, will likely overstate the level of VMT caused by the project.

While the Master Plan proposes an enrollment increase of 2,163 students, 1,400 of those students would be accommodated in on-campus housing. These students would contribute fewer VMT per student than the other 763 students who would live off-campus. For faculty, staff, and visitors, VMT generation rates would likely remain similar to those under baseline conditions with the exception of some increased level of bicycling that may be associated with the new bike path through the campus core. Reducing the VMT generation rates for these other population groups would require new vehicle trip reduction features such as new commute programs, on-campus faculty and staff housing, or other VMT reduction programs that are not part of the proposed project.

The ARB *2018 Progress Report: California's Sustainable Communities and Climate Protection Act* (November 2018) reported that VMT reduction expected through SB 375 is not occurring and that VMT per capita is increasing. The report stated that more needs to be done to meet greenhouse gas reduction targets. Subsequently, as noted in the Relevant Plans, Policies, and Ordinances section, the ARB *2017 Scoping Plan - Identified VMT Reductions and Relationship to State Climate Goals* (January 2019) recommended project specific VMT reduction thresholds of 16.8 percent reduction from baseline for light-duty vehicle VMT (i.e., passenger cars and light trucks). These reports provide evidence that more aggressive action is required to reduce VMT.

As discussed above, the BCAG model forecasts that VMT per student would decrease under baseline and cumulative conditions with implementation of the 2019 Master Plan, by 1.7% and 5.9% respectively. The actual VMT reductions may be greater due to the model limitations noted above. The BCAG RTP/SCS model is less sensitive to increases in on-campus housing, bicycling improvements, and mode shift away from driving due to greater numbers of students residing on campus, which would have a beneficial effect on VMT. Nevertheless, the estimated decrease in VMT would be less than 15 percent. Therefore, this impact is considered **potentially significant.**

Impact TRA-3 The project would not increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment). (Less than Significant)

The development included in the 2019 Master Plan is infill development consistent with the existing land use context. As such, it will generate a mix of traffic that is similar to existing conditions. With more students and employees, the volume of traffic across modes will increase and this may result in slower travel speeds for some modes. These changes did not cause conditions that warranted modification of the existing network as part of the 2019 Master Plan other than the addition of a new bike path. This path will be designed and constructed to applicable design standards to avoid creating a geometric hazard. Improvements are anticipated on Warner/Ivy Street to improve compatibility of transportation modes (automobile, bicycle, and pedestrian). The impact would be **less than significant.**

Impact TRA-4 The project would not result in inadequate emergency access. (Less than Significant)

The development described in the proposed Master Plan would not interfere with existing emergency access. No existing rights of way or emergency access routes would be closed. This impact would be **less than significant.**

3.14.5 Cumulative Impacts

Cumulative impacts are incorporated into the analysis of Impact TRA-2. As discussed therein, the cumulative VMT impact of the project n would be **significant and unavoidable.**

3.14.6 Mitigation Measures

MM-TRA-1 Implement TDM strategies to reduce the number of project vehicle trips or reduce trip lengths to achieve VMT per student reduction of 15 percent below baseline conditions

Table 3.14-10 indicates that implementation of the 2019 Master Plan would reduce VMT per student by 1.7 percent under 2019 Baseline Plus 2019 Master Plan conditions and 5.9 percent under 2030 Cumulative Plus 2019 Master Plan conditions. Mitigation should be developed and implemented to achieve a 15 percent reduction under both conditions. Using the CSU TDM Manual (CSU 2012) as a guide, CSU, Chico shall develop and implement a TDM plan to reduce daily trips and VMT generated by campus faculty, employees, and students to achieve a 15 percent VMT per student reduction under both conditions (note that this calculation represents total VMT generated by all trip generation sources on campus and is expressed as an efficiency metric that is divided by the number of students). TDM measures best suited for college towns generally include measures intended to reduce driving on campus such as subsidized transit passes, improved transit and shuttles, parking management, encouraging bicycle and pedestrian travel, and locating student housing on-campus. TDM policies that could reduce vehicle trip generation and VMT include, but are not limited to, the following:

- Eliminate on-campus parking for students residing in new campus housing (long term)
- Phase out existing on-campus parking for students residing in campus housing or residing within walking distance of campus (short term)
- Provide remote long-term parking for students in campus housing or residing within walking distance, as an alternative to on-campus parking to allow students to have vehicles without incentivizing commute driving (long term)
- Price parking to provide incentives for increasing travel in modes other than single-occupancy vehicles (short term)
- Work with the City of Chico to implement parking restrictions to limit commuter parking in nearby neighborhoods (short term)
- Work with B-Line to develop and fund improvements to better align transit routes serving CSU, Chico with class schedules and increase route frequency (short term)
- Provide additional bicycle connections through the campus core, in addition to the planned bike path, especially in the north-south direction (short term)
- Work with the City to implement planned bicycle facilities on streets adjacent to the campus, consistent with the Chico Bicycle Plan (long term)
- Provide more options for remote learning to reduce the need for students to travel to campus (long term)
- Increase benefits and incentives for carpooling, including preferred parking and reduce permit prices (short term)
- Replace front-wheel bike racks with racks that provide more secure locking and increased ease of use (short term)
- Market programs to educate students and employees about alternatives to driving (short term)
- Develop policies and incentives for use of electric bicycles and scooters as an alternative to driving (short term)

Short-term actions are feasible for implementation in five years or less. Long-term actions may be implemented after five years.

The TDM plan shall be updated to include a schedule for adoption of policies and a plan for funding improvements. The plans shall also include an ongoing monitoring program to track effectiveness. Monitoring shall occur once every two years to determine the effectiveness of the implemented actions..

3.14.7 Significance After Mitigation

Mitigation measure MM-TRA-1 would reduce VMT generated by the project.. While these measures would reduce Impact TRA-2, it cannot be demonstrated that they would reduce VMT by 15% compared to baseline and cumulative conditions. For this reason, Impact TRA-2 would remain **significant and unavoidable.**

3.14.8 References

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3.15 Utilities and Service Systems

This section of the Draft EIR evaluates potential impacts of Master Plan implementation on existing municipal utilities and service systems, including water, wastewater, solid waste, electrical, and natural gas services associated with implementation of the proposed Master Plan Project (or project). This section describes the existing resources and levels of demand and evaluates the potential for project-related increases in demand, considering proposed project design features that could reduce or eliminate demand and associated impacts. Refer to Section 3.5, Energy, for discussion of energy efficiency features and practices of the project. Refer to Section 3.9, Hydrology and Water Quality, for discussion of stormwater management, groundwater, and water quality.

No scoping comments were received regarding utilities and service systems in response to the Notice of Preparation (NOP).

3.15.1 Existing Conditions

Water

Water Supply

CSU, Chico receives potable water from the California Water Service Company (Cal Water), which derives its resources from the Sacramento Valley Groundwater Basin. Cal Water's Chico-Hamilton City District (District) was formed in 1926 and operates 62 groundwater wells in the City of Chico (City) and three (3) in Hamilton City, delivering to residential, commercial, industrial, and governmental customers. This District serves the City (including the University), and Hamilton City as well as its surrounding areas in unincorporated Butte County (City of Chico 2010). As of the 2015 Urban Water Management Plan (UWMP), Cal Water did not purchase imported water to serve demand in the District. Additionally, Cal Water has stated that the District does not impound or divert surface water as a means for supply (CWS 2016).

The groundwater used by the District is entirely extracted from aquifers of the Sacramento River Valley underlying the District. The subbasins of the Sacramento Valley Groundwater Basin include the Vina Subbasin, West Butte Subbasin, East Butte Subbasin, North Yuba Subbasin, South Yuba Subbasin, Colusa Subbasin, and Corning Subbasin. The City and the University are located within the Vina and West Butte subbasins. The Vina Subbasin is bounded on the south by Big Chico Creek, while the West Butte Subbasin is located south of the creek (USGS 2011). All of the water provided by CalWater to the District is potable water.

The volume of groundwater pumped in the City in 2015 was 17,864 acre-feet (AF). Water use in 2015 was strongly affected by the Drought Emergency Regulation adopted by the State Resources Water Control Board (SWRCB) in May 2015. This emergency regulation required urban retail water suppliers to reduce potable water use between June 2015 and February 2016. Accordingly, the volume of groundwater pumped in the City in 2015 was 9,142 AF less than the 2013 total of 27,006 AF. As discussed in the Hydrology and Water Quality Section (see Section 3.9), the 2015 UWMP states that groundwater levels in the District have dropped over 30 feet in the past 30+ years. This is partially explained by extended drought periods. However, groundwater levels have historically increased in the periods between droughts. It is expected that with normal rainfall patterns, groundwater levels would recover to normal levels. As such, the District expects that under all hydrologic conditions, its groundwater supply would be able to meet future demands through 2040.

Water Use and Allocation

In 2015, the total water demand for the District was 18,227 AF (CWS 2016). As discussed above, the Drought Emergency Regulation reduced water demand and use. Per this regulation, the District was required to reduce potable water use by 32% over this period. The District exceeded this goal and reduced water use by 39.2% compared to the same period in 2013. The total volume of water supplied in 2015 for Chico alone was 17,864 AF. In the 2015 UWMP, it was projected that total water demand would be 29,397 AF by 2020 and 33,981 AF by 2030, a total increase of 4,584 AF throughout those 10 years.

CSU, Chico owns and operates a raw water system (non-potable) for cooling towers and irrigation, including one well and pump station located on the north side of Big Chico Creek. Any irrigation needs not met by the raw water system are fulfilled by Cal Water. During the 2018 fiscal year, Cal Water provided about 10 million gallons for irrigation use. There is rarely a need to use municipal water supplied by Cal Water for the cooling towers (CSU, Chico 2019a).

During fiscal year 2018, the total water demand at the University was approximately 58 million gallons for building and irrigation needs (CSU, Chico 2019a). Specifically, water used for irrigation totaled approximately 10 million gallons, while water for domestic use totaled approximately 48 million gallons. Due to indoor water efficiency improvements and decreased irrigation demand, the campus has reduced potable water use by 20% over recent years through indoor water efficiency improvements and decreasing irrigation demand. Native landscaping projects, such as two landscape improvement projects recently completed at the Gateway Science museum in fall 2018, promote water efficiency and also make the landscape more attractive to beneficial insects and pollinators by incorporating drip irrigation and drought-tolerant California native plants. Additionally, campus Facilities Management and Services (FMS) has been working to update irrigation controls to a centrally-controlled system, and to install new lawns that include sub surface irrigation systems which are nearly 100% efficient in eliminating overspray and runoff (CSU, Chico 2019b). These actions are aligned with CSU's policy on decreasing water usage by 20% by 2020.

Water Treatment and Conveyance

The Cal Water delivery system is composed of over 355 miles of pipeline, nine surface storage structures, six booster pumps, and 55 groundwater wells. These surface storage structures enable the groundwater wells to pump to storage during non-peak demand periods. There are no water treatment plants in the Chico portion of the District; water is treated via well head treatment with chlorine injections (City of Chico 2010). Raw (non-potable) water used for cooling towers and irrigation is served by University-operated wells, including a well and pump station located on the north side of Big Chico Creek.

Stormwater

Big Chico Creek is a central artery through the campus and serves as a central focal point. The creek and the surrounding watershed support important habitat for anadromous fall and spring-run Chinook salmon and steelhead trout. This includes spawning habitat for those and other riparian species. Currently, the campus is made of about 60% impervious surfaces and 40% pervious surfaces. The entire campus lies within the 200-year flood plain, with lower-lying portions of the campus at a particularly higher risk of flooding. The campus is split between drainage areas with either drain outfall flowing directly into the creek or into the City's storm drain system. Big Chico Creek conveys stormwater directly for a small area of the main campus (see Figure 3.9-4, Stormwater Drainage). This portion of Big Chico Creek is regulated/owned by CSU, Chico. Most of the main campus located north of Big Chico Creek, as well as the University Housing site, drain into the City's system, northwest toward the Lindo Channel.

Small areas located on the southeast campus perimeter drain into the City's system to Little Chico Creek. Stormwater runoff from the University Farm is conveyed via surface drains to the Dubock Slough, which is located to the southwest of the farm.

Several projects at the campus have incorporated stormwater treatment measures to reduce runoff and improve water quality. This includes the installation of sub surface irrigation systems, as mentioned previously, and bioswales for rainwater filtration. Bioswales and sediment filters can be found near the Student Services Center, Yolo Hall, Environmental Health and Safety, and Arts and Humanities (CSU, Chico 2019b).

Chilled Water and Steam

The majority of the cooling and heating needs of the campus are met by a central heating and cooling plant located on the west side of the campus, which currently occupies approximately 1,600,000 square feet of building space. Completed in 1972 and upgraded in 2017, the Boiler Chiller Plant provides chilled water and steam to most buildings on campus via an underground distribution piping network. The central plant includes electrical chillers and chilled water Thermal Energy Storage systems that assist the campus in generating and storing chilled water during the off-peak periods. The stored thermal energy is discharged during peak periods to cool the facilities, thus helping the campus offset peak demand and reducing operating costs. The steam system currently comprises two (2) steam boilers that supply steam through an underground distribution system to provide heating to a majority of the buildings on campus. When outside air is between the temperatures of 68 to 78 degrees in fall and spring, neither the boilers or chillers operate and a building fan system works to circulate outside air. The Boiler Chiller Plant and Thermal Energy Storage System support the entire main campus with the exception of Aymer J. Hamilton, Student Health Center, Shurmer Gymnasium, Bell Memorial Union and Bookstore, Holt Hall, Performing Arts Center, Butte Hall Computer Center, Meriam Library, FMS Administration Office, Wildcat Recreation Center, Gateway Science Museum, 35 Main, 25 Main, and all existing residence halls. These buildings have local cooling and heating systems (CSU, Chico 2019c). Similarly, the University Farm and University Village do not use chilled water and steam for heating and cooling needs.

The central heating and cooling plant has undergone several renovations, most recently in 2017. During this renovation, the existing boilers were replaced with two new boilers to provide an output of 26,778,000 British thermal units/hr. In total, the current configuration allows a steam capacity of 54,000 pounds (lb)-steam/hr. This is above the maximum heating demand of the campus, which is approximately 30,000 lb-steam/hr. Additionally, a cooling tower and an additional Thermal Energy Storage tank were added, resulting in an instantaneous cooling capacity of 6,100 tons and a storage capacity of 40,000 ton-hours of chilled water. This is above the maximum campus cooling demand of approximately 3,300 tons or 20,000 ton-hours, based on a 6-hour peak period.

Wastewater

Wastewater Collection and Treatment

Wastewater treatment for the campus is provided by the City of Chico Water Pollution Control Plant (WPCP). Both the main campus and University Village are connected to City sewer lines. The WPCP has a 12 million gallon per day (MGD) capacity with future expandability to 15 MGD capacity. As of the 2006 Butte Local Agency Formation Commission (LAFCO) Municipal Services Review (MSR), the average daily dry weather flow was 7.2 MGD (Butte LAFCO 2006). As of the October 2018 MSR, the average daily dry weather flow was 7.5 MGD (Butte LAFCO 2018). The plant operates under strict waste discharge requirements permitted by the California Water Resources Control Board. The discharge location for the treated wastewater, or effluent, is the Sacramento River. The WPCP operates a 1.1-megawatt solar photovoltaic facility which provides renewable electric power and reduces the WPCP's use of utility power by approximately 35%. This solar facility is one of the largest in the nation to be installed at a wastewater treatment plant. An on-site 335-kilowatt (kW) co-generator uses methane produced by the plant and processes it as a fuel source to produce electricity, supplementing both the renewable and utility power sources. The treatment plant produces nutrient-rich biosolids[1] by processing the domestic wastewater received from households in the service area. Each year, 3,700 tons of biosolids are produced and placed back into the environment through land use applications (City of Chico 2018). The Chico Industrial Pretreatment Program (CIPP) is also located at the WPCP. The CIPP controls wastewater discharges from businesses and industries that could interfere with the WPCP's operations or potentially harm the environment if discharged into the receiving waters of the Sacramento River.

The University Farm is not connected to the City sewer system, and instead disposes of wastewater through on-site septic/leach field systems (CSU, Chico 2005). No changes are planned to the existing infrastructure at the University Farm as part of the proposed Master Plan.

Electrical

Electricity usage in California varies substantially by the types of uses in a building, types of construction materials used in a building, and the efficiency of all electricity-consuming devices within a building. Due to the state's energy efficiency building standards and efficiency and conservation programs, California's electricity use per capita has remained stable for more than 30 years, while the national average has steadily increased (CEC 2015).

The main campus is currently served by a single 115 kilovolt (kV) transmission service originating from a switchyard located on the southwest side of the campus. The main campus derives its power from Pacific Gas and Electric's (PG&E's) 115kV system, which provides redundancy through two circuits provided from two PG&E switching stations. The PG&E service is metered at 12kV using two transformers located on the southwest side of campus. The campus is currently in the process of replacing the existing 12kV switchgear with a new switchgear as part of an electrical infrastructure upgrade project funded by the Chancellor's office. The 12kV switchgear will be housed in a new switchgear building adjacent to the existing Thermal Energy Storage tanks. University Village and the University Farm are also served by PG&E and is connected by existing City distribution lines.

The campus also contains solar photovoltaic systems located on the roofs of Acker Gymnasium, Yolo Hall, Parking Structure #2, and the Arts and Humanities Building. The solar photovoltaic systems total approximately 475 kW, supplementing a portion of the total campus energy demand. Specifically, a total of 325 Direct Current (DC) kW is installed on Acker Gymnasium and Yolo Hall, as well as 78 DC kW and 60 Alternating Current (AC) kW installed on Parking Structure #2, and 12 DC kW on Arts and Humanities. CSU, Chico generated 478,511 kWh of electricity in 2018-19 through the use of these photovoltaic panels (Jason Whiteley, pers. comm. 2020). More photovoltaic arrays are planned for installation on the University Farm, Bell Memorial Union, the new Science Building, the Wildcat Recreation Center, and additional arrays on Parking Structure #2 for an addition of 1,450 kW. According to the Utilities and Infrastructure Technical Appendix for the proposed Master Plan, estimated output of these new photovoltaic arrays alone would be able to support approximately 1,027,000 additional kWh of electricity throughout the year. This would supply about 3.6% of the University's energy needs, as total annual energy consumption from the University is approximately 28,582,609 kWh (CSU, Chico 2019c).

1 Biosolids are organic materials resulting from the treatment of domestic sewage. When treated and processed in a treatment facility, these residuals can be recycled and applied as fertilizer to stimulate plant growth. The term is often used interchangeably with "sewage sludge" (EPA 2019).

A review of the electrical system revealed that although the system is adequately sized to meet the demand of the existing facilities, the existing electrical distribution system is aging and does not have the resiliency to meet the demands of the future facilities planned as part of the proposed Master Plan. It was determined that part of the distribution system would not provide reliable means of service to campus buildings and therefore needs to be updated (CSU, Chico 2019c).

Natural Gas

Natural gas is supplied to the main campus, University Village, and the University Farm by PG&E. Most of the main campus is served by the main campus gas distribution system. Some buildings are connected directly to PG&E's gas service, including the University Farm buildings. University Village is connected to existing City distribution lines. Natural gas is piped to serve hot water boilers and domestic water heaters to provide space heating and domestic hot water needs. Natural gas is also used for dedicated boilers at various campus buildings for generating steam and industrial hot water. In fiscal year 2018-2019, the University's total annual natural gas consumption was approximately 1,147,933 therms (CSU, Chico 2019f).

There are three (3) utility-owned natural gas meters that serve the majority of the buildings on the main campus. Several buildings on campus are not connected to the campus gas distribution system and are instead connected directly to PG&E's gas service. These buildings have separate, individual utility-owned meters. Most of the central campus gas distribution was installed in the 1960s, while the north campus gas distribution was installed in the early 1970s at the same time the Boiler Chiller Plant was built. Portions were also added in 2000 to connect Yolo Hall to the gas distribution system. The system comprises of direct-buried steel pipe, with some portions retrofitted with medium-density polyethylene (MDPE). Portions of the system without the MDPE retrofitting are reportedly experiencing leakage, and are at the end of their useful life. This includes sections of the pipe adjacent to and serving the Continuing Ed, Physical Science Building, Glenn Hall, Ayres Hall, and Arts and Humanities Building. Newer buildings on campus have earthquake valves installed, while older buildings do not. In order to meet current building codes, these older buildings would require installation of earthquake valves as well (CSU, Chico 2019c).

Accordingly, an analysis of the existing natural gas distribution system revealed that the existing system would need to be upgraded to support the planned facilities as part of the proposed Master Plan. Further analysis of the existing natural gas distribution system would need to be conducted to ensure adequate pressure is achieved at each of the proposed buildings. However, the University ultimately plans to phase out natural gas in order to reach its adopted goals of climate neutrality (CSU, Chico 2019c).

Telecommunications

AT&T is the Local Exchange Carrier (LEC) for the campus, providing 10 Gigabit service. In 2001, construction was completed for a campus-wide telecommunications infrastructure upgrade, which provided new underground conduit, copper, and fiber cable systems. These systems were connected to the main distribution frame location at Butte Hall. Additionally, new and upgraded telecommunications rooms were constructed to house cable terminations and electronic equipment for networks. Cables for voice and data outlets were replaced, and old cables were removed. The campus is moving towards implementing voice over internet protocol (VOIP)[2] in all buildings. The CSU Chancellor's office has also directed an upgrade of campus network equipment (CSU, Chico 2019c).

[2] VOIP is a technology that allows voice calls to be made using internet connection rather than through an analog phone line (FCC 2016).

Solid Waste

Solid Waste and Recycling

CSU, Chico uses a variety of methods to recycle solid waste. The Associated Students provide recycling services for the campus through the Associated Students Recycling Program (AS Recycling), which was student-founded in 1996 (Associated Students of CSU, Chico 2016a). In 2013, the AS Recycling program collected over 700,000 pounds of recyclable materials, an increase of 100,000 pounds compared to 2011 recycling totals. The campus Diversion Excursion program also reduces waste during University Housing move-out, collecting reusable items and redistributing them throughout the community during the last week of spring semester (CSU, Chico 2019d). In 2014, Diversion Excursion diverted more than 17 tons of unwanted furniture, household goods, and recyclable items from 1,600 University Housing residents. As of 2013, the AS diversion rate was approximately 85% (CSU, Chico 2014). The current estimated total campus waste diversion rate is approximately 30%, which is lower than CSU's goal of 80% diversion by 2020 (Cheri Chastain, pers. comm. 2019). However, CSU, Chico regularly exceeds the minimum 50% construction waste diversion rate set by state law (CSU, Chico 2014). In 2011, 85% of the construction waste generated by demolition of the University parking lot on Second Street was diverted from landfills. Additionally, a large-scale trash compactor was installed in June 2013, reducing trash-hauling trips and truck traffic on campus (CSU, Chico 2014).

Solid waste and recycling collection services are provided by Recology, which is contracted by CSU, Chico to collect and transfer waste. Waste is transferred mainly to the Neal Road Landfill at 1023 Neal Road, 1 mile east of Highway 99 in Chico (CalRecycle 2018, City of Chico 2017b). In 2018, the total amount of waste sent to the landfill from the campus was 1,539.80 tons (Durbin Sayers, pers. comm 2019). As of July 1, 2009[3], the Neal Road Landfill had a remaining capacity of 20,847,970 cubic yards, and a maximum permitted throughput of 1,500 tons per day (CalRecycle 2009). However, due to the 2018 Camp Fire, Butte County Public Works submitted an Emergency Waiver of Standards to facilitate increased maximum tonnage from 1,500 tons per day to 15,000 tons per day, as well as increased permitted traffic volume, transfer and processing capacity, and facility operating hours to expedite disposal of fire debris. The latest emergency waiver extension was granted on July 16, 2019 for a period of 120 days, ending on November 13, 2019 (Butte County 2019). There have since been no additional emergency waiver extension requests since the latest extension ended in November (CalRecycle 2019).

Organic Waste

AS Recycling and AS Dining Services work with Recology to recover all pre-consumer food waste from University Housing and the Marketplace Café located in the Bell Memorial Union building. Recology collects organic waste from the campus and transfers the waste to North State Rendering, a local anaerobic digester located at 15 Shippee Road in Oroville, California (Cheri Chastain, pers. comm 2019; CalRecycle 2017). According to CalRecycle, the City of Chico Compost Facility has a maximum permitted capacity of 28,915 cubic yards per year and a maximum permitted throughput of 5,000 cubic yards per day (CalRecycle 2017). In 2013, AS Recycling and AS Dining Services composted 422,000 pounds of material from kitchen and dining facilities on campus. Additionally, the AS Sustainability program operates a compost garden which accepts coffee and tea bags, fruits and vegetables, and grains/cereals (Associated Students of CSU, Chico 2016b).

[3] The most recent year with available data.

Universal and Electronic Waste

Universal waste (u-waste) refers to a category of common hazardous items including fluorescent bulbs, batteries, or instruments that contain mercury. All u-waste is banned from regular landfill disposal and must be recycled or disposed of in accordance with all state and federal regulations (CalRecycle 2018). The campus collects and disposes of u-waste through the campus Department of Environmental Health & Safety (EH&S). EH&S is available for special arrangements if large amounts of hazardous wastes are generated and must be disposed of (CSU, Chico 2019e).

Electronic waste (e-waste) refers to consumer and business electronic equipment, such as televisions, phones, or computers, which are near or at the end of useful life (CalRecycle 2019). Certain components of these e-waste items contain hazardous materials, such as cathode ray tubes (CRTs) from television and computer screens which contain lead, cadmium, and fluorescent powders. The campus collects e-waste and sends the items to Computers for Classrooms, a non-profit organization that helps provide schools, non-profits, and low-income families with surplus and refurbished electronic equipment (CFC 2010). Working electronic items are offered as a donation for immediate reuse, while non-working electronics are considered e-waste and sent to Computers for Classrooms for refurbishment. If items cannot be reused or refurbished, they are shipped to Tycoon Materials, Inc. to be recycled (CSU, Chico 2019f).

3.15.2 Regulatory Setting

Federal

Clean Water Act

The Clean Water Act provides mechanisms to reduce direct pollutant discharges into waterways and manage polluted runoff. Primary drinking water standards are established in Section 304 of the CWA. States are required to ensure that the public's potable water meets these standards.

Section 303 of the Clean Water Act requires states to identify surface waters that have been impaired. Under Section 303(d), states, territories, and authorized tribes are required to develop a list of water quality segments that do not meet water quality standards, even after point sources of pollution have installed the minimum required levels of pollution control technology (33 U.S.C. 1251 et seq.). Section 402 of the Clean Water Act established the National Pollutant Discharge Elimination System (NPDES) to regulate the discharge of pollutants from point sources.

Resource Conservation and Recovery Act

The Resource Conservation and Recovery Act (Code Fed. Regs., Title 40, Section 268, Subpart D), contains regulations for municipal solid waste landfills and requires states to implement their own permitting programs that include federal landfill criteria. The federal regulations address the location, operation, design, and closure of landfills, as well as groundwater monitoring requirements.

Safe Drinking Water Act

EPA regulates contaminants of concern to domestic water supply, as required by the Safe Drinking Water Act (Public Law 93-523). Contaminants are regulated by EPA through the establishment of primary and secondary maximum contaminant levels (MCLs). EPA has delegated responsibility for California's drinking water program to the State Water Resources Control Board (SWRCB) Division of Drinking Water. SWRCB Division of Drinking Water is responsible for program implementation and for adoption of standards and regulations that are at least as stringent as those developed by EPA.

State

Water Supply Assessments

In 2001, Senate Bill (SB) 610 amended California law regarding review of water availability for large projects (Section 10910 et seq. of the Water Code; Section 21151.9 of the Public Resources Code [CEQA]; see also Section 15155 of the State CEQA Guidelines). Pursuant to SB 610, preparation of a “water supply assessment” (WSA) is required to be prepared by a city or county for projects subject to CEQA that meet specified criteria regarding project size: projects of 500 or more residential units, 500,000 square feet or more of retail commercial space, 250,000 square feet or more of office commercial space, 500 or more hotel rooms, specified industrial uses, or a project that would result in a water demand equal to or greater than the amount needed to serve a 500-unit residential project. These assessments, prepared by “public water systems” responsible for service, address whether there are adequate existing or projected water supplies available to serve proposed projects over a 20-year period, in addition to existing demand and other anticipated development in the service area.

Senate Bill 610 and associated California Water Code requirements related to water supply assessments apply to cities and counties, and not to state agencies including the CSU.

Water Conservation Act of 2009

Requirements regarding per capita water use targets are defined in the Water Conservation Act of 2009 that was signed into law in November 2009 as part of a comprehensive water legislation package. Known as SB X7-7, the legislation sets a goal of achieving a 20-percent reduction in urban per capita water use statewide by 2020. SB X7-7 requires that retail water suppliers define in their 2010 urban water management plans the gallons-per-capita-per day targets for 2020, with an interim 2015 target.

Sustainable Groundwater Management Act

In 2014, California enacted the “Sustainable Groundwater Management Act” to bring the state’s groundwater basins into a more sustainable regime of pumping and recharge. The legislation provides for the sustainable management of groundwater through the formation of local groundwater sustainability agencies (GSAs) and the development and implementation of groundwater sustainability plans (GSPs), and requires GSAs and GSPs for all groundwater basins identified by the DWR as high or medium priority. Additionally, the legislation establishes criteria for the sustainable management of groundwater and authorizes DWR to establish best management practices for groundwater (DWR 2016).

California Recycled Water Policy

On February 3, 2009, the SWRCB adopted a statewide recycled water policy, with the ultimate goal to increase the use of recycled water from municipal wastewater sources. Included in the statewide policy is the mandate to increase the use of recycled water in California by 200,000 AFY by 2020, and an additional 300,000 AFY by 2030 (SWRCB 2013). The plan also states that the SWRCB expects to develop other policies to encourage stormwater, surface, and groundwater use to promote water conservation. The SWRCB adopted an amendment to the Recycled Water Policy on January 22, 2013, which establishes monitoring requirements for constituents of emerging concern in recycled municipal wastewater.

California Integrated Waste Management Act and Related Regulations

AB 939 established the California Integrated Waste Management Act of 1989 (Public Resources Code Section 40050 et seq.), which requires all California cities and counties to reduce the volume of solid waste deposited in landfills by 50% by 2000, and to continue to remain at 50% or more diversion for each subsequent year. The Act requires each California city and county to prepare, adopt, and submit to CalRecycle a Source Reduction and Recycling Element (SRRE) that demonstrates how the jurisdiction will meet the Act's mandated diversion rate. AB 939 also established the goal for all California counties to provide at least 15 years of on-going landfill capacity, as well as the authority and responsibilities of the California Integrated Waste Management Board (CIWMB), which administers the Act. In January 2010, the California Department of Resources Recycling and Recovery (CalRecycle) replaced the CIWMB.

In 1999, AB 75 required each state agency and large state facility to develop and adopt Integrated Waste Management Plans, implement programs to reduce waste disposal, and have their waste diversion performance annually reviewed by CalRecycle (Public Resources Code Sections 40148, 40196.3, 41821.2, and Chapter 18.5 [Section 42920 et seq.]). AB 75 also requires all state agencies and large state facilities to divert at least 25 percent of their solid waste from landfills by January 1, 2002, and at least 50% on and after January 1, 2004. The CSU is defined as a "state agency" in Public Resources Code Section 40196.3 and the campuses of the CSU are defined as "large state facilities" in Public Resources Code 40148; therefore, this requirement applies to the project.

AB 341, adopted in October 2011, also amended the California Integrated Waste Management Act and established a statewide policy goal to divert 75% of solid waste from landfills by 2020. AB 341 focused on mandatory commercial recycling, and requires California commercial enterprises and public entities that generate 4 or more cubic yards per week of waste, as well as multi-family housing complexes with 5 or more units, to arrange for recycling services. As a public entity, CSU is required to adhere to the requirements described.

Mandatory commercial recycling was one of the measures adopted in the AB 32 Scoping Plan by the California Air Resources Board (CARB), pursuant to the California Global Warming Solutions Act (Chapter 488, Statutes of 2006, codified at California Health & Safety Code Section 38500 et seq.). (AB 32 is further described below.) The mandatory commercial recycling measure is focused on increasing waste diversion from commercial uses to reduce greenhouse gas emissions (greenhouse gas resulting from decomposition of organic waste in landfills has been identified as a significant source of emissions contributing to global climate change). The measure establishes an objective of reducing greenhouse gas emissions by 5 million metric tons of carbon dioxide equivalent. To meet this objective, the commercial sector will be required to recycle an additional 2 to 3 million tons of materials annually by 2020. This regulation reflects the statutory provisions of AB 341 and provides additional procedural clarifications.

Mandatory Commercial Organics Recycling

AB 1826, the Mandatory Commercial Organics Recycling Act (Public Resources Code Section 42649.8), adopted in 2014, requires businesses, including public entities, to recycle their organic waste on and after April 1, 2016, depending on the amount of waste they generate on a weekly basis. Additionally, AB 1826 requires that, after January 1, 2016, all local jurisdictions implement an organic waste recycling program to divert organic waste generated by businesses, including multi-family residential dwellings with five or more units. Organic waste includes food waste, green waste, landscape and pruning waste, nonhazardous wood waste, and food-soiled paper waste that is mixed in with food waste. This law phases in the mandatory recycling of commercial organics over time. As a public entity, CSU is required to adhere to the requirements described.

Assembly Bill 2812

As of January 1, 2017, pursuant to AB 2812 (Public Resources Code Sections 42924.5 and 42926), each state agency, including CSU, is required to provide adequate receptacles, signage, education, and staffing, and arrange for recycling services consistent with existing recycling requirements for each office building of the state agency or large state facility. The bill also requires, at least annually, a review of the adequacy and condition of the receptacles for recyclable material and associated signage, education, and staffing.

Warren-Alquist Act

The California Legislature passed the Warren–Alquist Act in 1974. The Warren–Alquist Act was created by the CEC. The legislation also incorporated the following three key provisions designed to address the demand side of the energy equation:

- It directed the CEC to formulate and adopt the nation's first energy conservation standards for both buildings constructed and appliances sold in California.
- The Act removed the responsibility of electricity demand forecasting from the utilities, which had a financial interest in high demand projections, and transferred it to a more impartial CEC.

The CEC was directed to embark on an ambitious research and development program, with a particular focus on fostering what were characterized as non-conventional energy sources.

CSU Sustainability Policy

The CSU energy policy, in place since 1978, has been revised over time to incorporate updated energy conservation, on-site and renewable power generation goals, and to elaborate on sustainable building design practices that support these efforts.

The CSU Board of Trustee's longstanding policies in energy efficiency and utility management have reduced utility costs and provided campuses with greater control of energy intensive systems. In 2004, the Board adopted sustainable building and design practices to promote efficient buildings with a reduced environmental impact, while serving the campus.

Policies applicable to the 2035 Master Plan are listed below.

Energy Conservation and Utility Management

1. All CSU buildings and facilities, regardless of the source of funding for their operation, will be operated in the most energy efficient manner without endangering public health and safety and without diminishing the quality of education and the academic program.
2. All CSU campuses will continue to identify energy efficiency improvement measures to the greatest extent possible, undertake steps to seek funding for their implementation and, upon securing available funds, expeditiously implement the measures.
3. The CSU will cooperate with federal, state, and local governments and other appropriate organizations in accomplishing energy conservation and utilities management objectives throughout the state; and inform students, faculty, staff and the general public of the need for and methods of energy conservation and utilities management.

4. The CSU will monitor monthly energy and utility usage on all campuses and the Chancellor's Office, and will prepare a systemwide annual report on energy utilization and greenhouse gas emissions. The Chancellor's Office will maintain a systemwide energy database in which monthly campus data will be compiled to produce systemwide energy reporting. Campuses will provide the Chancellor's Office the necessary energy and utility data, such as electricity and natural gas consumption; water and sewer usage; fuel consumed by fleet vehicles, boats, and ships; waste disposal for the systemwide database in a timely manner.
5. Each CSU campus is encouraged to develop and maintain a campus-wide integrated strategic energy resource plan, which will include tactical recommendations in the areas of new construction, deferred maintenance, facility renewal, energy projects, water conservation, solid waste management, and an energy management plan. This plan will guide the overall energy program at each campus.

Water Conservation

1. All CSU campuses will pursue water resource conservation to reduce water consumption by 10 percent by 2016, and 20 percent by 2020 including such steps to develop sustainable landscaping, install controls to optimize irrigation water use, reduce water usage in restrooms and showers, and promote use of reclaimed/recycled water. In the event of a declaration of drought, the CSU will cooperate with the state, city, and county governments to the greatest extent possible to reduce water consumption.

Waste Management

1. Campuses shall seek to reduce the solid waste disposal rate by 50 percent (PRC §42921) by 2016, by 80 percent by 2020, and move to zero waste.
2. The CSU will encourage the reduction of hazardous waste to the extent possible while supporting the academic program.

Sustainable Procurement

1. Campuses will promote use of suppliers and/or vendors that reduce waste, re-purpose recycled material, or support other environmentally friendly practices in the provision of goods or services to the CSU under contract. This may include additional evaluation points in solicitation evaluations for suppliers integrating sustainable practices.
2. To move to zero waste, campus practices should: (1) encourage use of products that minimize the volume of trash sent to landfill or incinerators; (2) participate in the CalRecycle Buy-Recycled program or equivalent; and (3) increase recycled content purchases in all Buy Recycled program product categories.
3. Campuses shall continue to report on all recycled content product categories, consistent with PCC [Public Contract Code] § 12153–12217 and shall implement improved tracking and reporting procedures for their recycled content purchases.

Local

Because CSU, Chico is a component of the CSU System, which is a state entity, the project is not subject to local government planning or ordinances. Accordingly, because neither local general plans or any other local land use plans or ordinances are applicable to CSU, Chico, such local plans and ordinances are not summarized here or further analyzed in this section. See Section 3.10, Land Use and Planning, of this Draft EIR for an evaluation of environmental impacts due to conflicts with any land use plan, policy or regulation adopted for the purpose of avoiding or mitigating an environmental effect.

3.15.3 Thresholds of Significance

The significance criteria used to evaluate the project impacts to utilities and service systems are based on Appendix G of the CEQA Guidelines. According to Appendix G of the CEQA Guidelines, a significant impact related to utilities and service systems would normally occur if the project would:

1. Require or result in the relocation or construction of new or expanded water, wastewater treatment, or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects.
2. Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry, and multiple dry years.
3. Result in a determination by the wastewater treatment provider, which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments.
4. Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals.
5. Comply with federal, state, and local management and reduction statutes and regulations related to solid waste.

3.15.4 Impact Analysis

Methodology

The information in this section is based on the proposed Master Plan and Utilities and Infrastructure Technical Appendix, Cal Water's 2015 Chico-Hamilton District UWMP, and information from CSU, Chico, the City of Chico, and Butte County.

Water, Wastewater, and Stormwater

The analysis of water and wastewater is derived from the Utilities and Infrastructure Technical Appendix for the proposed Master Plan, the 2015 CalWater UWMP, personal communication with the City of Chico Public Works, and information provided by CSU, Chico, including Excel spreadsheets for water usage and personal communication with University staff. Water demand factors were derived from existing campus water usage for residential uses (per resident student) and non-residential uses (per FTES). The demand factor was multiplied by the number of proposed new students residents and FTES. Project wastewater demand is assumed to be equal to the increase in domestic water usage.

Solid Waste

This analysis evaluates the potential for increased waste generation under the proposed Master Plan, based on the average generation of municipal solid waste per person in the U.S, 4.51 pounds per day. This number includes most items, both organic and inorganic, that consumers threw away after use such as drink bottles, food, furniture, and wood (EPA 2017). In addition, campus policies and procedures related to recycling and composting were evaluated for consistency with attainment of solid waste reduction goals, and other statutes and regulations associated with solid waste.

Electricity, Natural Gas, and Telecommunications Facilities

The analysis pertaining to the construction and relocation of electrical, natural gas, and telecommunications facilities is based on the Utilities and Infrastructure Technical Appendix for the proposed Master Plan, information provided by CSU, Chico staff including Excel spreadsheets for electricity and natural gas usage, and discussions with CSU, Chico staff regarding the current level of on-campus facilities, potential demands associated with the proposed Master Plan, and potential improvements to campus facilities.

Impact Analysis

Impact UTL-1. The project would not require or result in the relocation or construction of new or expanded water, wastewater treatment, or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects. (Less than Significant)

Water

During fiscal year 2018, the campus used approximately 58 million gallons (178 AF) of water for building and irrigation needs. Specifically, water used for irrigation totaled approximately 10 million gallons (31 AF), while water for domestic use totaled approximately 48 million gallons (147 AF). The University notes that the demand for potable water has been reduced by 20% over recent years from indoor and outdoor water efficiency improvements, including incorporation of sub-surface and drip irrigation and drought-tolerant landscaping. Cal Water's 2015 UWMP did not indicate any water supply concerns and anticipated that groundwater supply would be able to meet future demands, including future demand associated with CSU, Chico (pers com. Michael Hurley, CalWater. July 7 2020). The Master Plan includes a number of water-saving project components, including athletic field improvements that would convert natural fields to a synthetic turf surface reducing water required for irrigation, and infrastructure upgrades to Butte Hall to improve building efficiency, including water usage efficiency. Water metering would be installed for buildings and irrigation zones for better monitoring of campus water usage.

Nonetheless, the proposed Master Plan is expected to increase potable water usage compared to existing demand by 27%. While the demand for irrigation water (non-potable) is not expected to increase, based on the 66% increase in residential beds and the 13% increase in FTEs, domestic water use is estimated to increase by 15.8 million gallons (49 AF) per year. As mentioned in the setting above, the 2015 UWMP estimated an increase of 4,584 AF from 2020 to 2030 in the entire District. The increase of 49 AF from the proposed Master Plan would only encompass about 1.0% of the estimated District-wide water increase. Cal Water has indicated that groundwater supplies are expected to meet District demands through the year 2040.

The proposed project would not require any additional off-site infrastructure to meet project water demand. The project itself includes improvements to address water supply and demand, such as conversion of natural fields to a synthetic turf, infrastructure upgrades to improve water usage efficiency, and installation of water metering for buildings and irrigation zones. There would be no infrastructure work at University Village or the University Farm, as neither would increase project water demand. Additionally, there are no water treatment plants in the Chico portion of the District; water is treated via well head treatment with chlorine injections (City of Chico 2010). As such, the project is not expected to require or result in the relocation or construction or new or expanded water facilities. Impacts would be **less than significant.**

Wastewater

As discussed previously, the main campus and University Village are connected to City sewer lines, and wastewater is sent to the WPCP for treatment. The University Farm is not connected to City sewer lines, and instead disposes of wastewater through on-site septic/leach field systems. No changes are planned to the existing infrastructure at University Village or the University Farm as part of the proposed Master Plan.

The WPCP has a 12 MGD capacity with future expandability to 15 MGD. As of 2018, the average flow was 6.0 MGD, and in 2019, was 6.9 MGD (Carr, pers. comm.) The proposed Master Plan would increase wastewater flows in the campus and the City due to increased student, faculty and staff population. The increase in domestic water use is estimated to be 15.8 million gallons per year. In terms of wastewater flow, that would be an average daily increase of 0.4 MGD by 2030. The buildout of the proposed Master Plan would not result in wastewater flows reaching current, or future, available capacity of the WPCP.

As the proposed Master Plan would not result in capacity issues at the WPCP, there would be no need for new or expanded wastewater facilities. Impacts regarding new or expanded wastewater treatment facilities would be **less than significant.**

Stormwater

As described in Chapter 3.9, Hydrology and Water Quality, CSU, Chico is covered by the Phase II Small MS4 Permit, which requires projects creating and/or replacing 5,000 square feet or more of impervious surface to implement post-construction measures that address stormwater runoff in the form of site design, treatment control, and hydromodification measures. Examples include evaluation of site soils, vegetation, and flow path; implementing structural BMPs such as bioretention areas; and hydromodification standards which require the project to demonstrate that post-project runoff shall not exceed pre-project flow rate.

The proposed Master Plan would add new developed square footage and paved areas on campus, including the University Farm, leading to a net increase of impervious surface and stormwater runoff. The near-term projects of the proposed Master Plan also include the conversion of Athletic Fields 6 and 7 soccer fields to synthetic turf. Fields 6 and 7 encompass 140,000 square feet, and conversion of the existing grass to synthetic turf would result in an increase of impervious surfaces and stormwater runoff. However, as described in Section 3.9, Hydrology and Water Quality, the project would adhere to best management practices (BMPs) established by the RWQCB. Under the NPDES permit regulations, BMPs are required as part of a stormwater pollution prevention program (SWPPP). BMPs include treatment requirements, operating procedures, and practices to control site runoff from impervious surfaces. Phase II Small MS4 Permit requirements would ensure that the project implements appropriate structural improvements and hydromodification standards to address runoff. Additionally, the project includes a variety of utility infrastructure improvements, including implementation of low impact development or LID strategies to reduce stormwater runoff and improve water quality.

With adherence to relevant BMPs to address stormwater site runoff, as well as implementation of LID strategies and other required measures, the project would not require the construction of new storm water drainage facilities or expansion of existing facilities on the main campus or the University Farm. No changes are proposed for University Village as part of the proposed Master Plan and site conditions would remain the same. Thus, impacts would be **less than significant.**

Electric Power

As discussed in Section 3.15.1, Existing Conditions, the existing electrical distribution system on campus is old and would not be capable to meet the future demands from facilities planned as part of the proposed Master Plan in its existing state. Therefore, improvements to the electrical distribution system are included in the proposed Master Plan (CSU, Chico 2019c). However, as discussed in Chapter 3.5, the proposed Master Plan would not increase electricity usage such that new or expanded off-site electric power facilities would be needed, due to improved infrastructure and campus building energy efficiency improvements. Currently, the campus is in the process of replacing the existing 12kV switchgear with a new switchgear as part of an ongoing infrastructure upgrade project. Additionally, as part of the proposed Master Plan, more photovoltaic arrays are planned for installation on the University Farm, Bell Memorial Union, Siskiyou Hall II, and the Wildcat Recreation Center. These new photovoltaic arrays would add approximately 1,450 kW to the campus power supply. These new photovoltaic arrays alone would support more than 1.027 million additional kWh of electricity throughout the year, or approximately 3.6% of the University's current energy consumption (CSU, Chico 2019c). Additionally, energy metering would be added to monitor facilities energy usage.

The proposed Master Plan would include energy efficiency and infrastructure improvements that would address new project demands. As such, new or expanded off-site electric power facilities would not be needed as a result of the project. Impacts would be **less than significant.**

Natural Gas

Natural gas is used to serve hot water boilers and domestic water heaters to provide space heating and domestic hot water needs on the main campus and University Farm. Natural gas is also used for dedicated boilers at various campus buildings for generating steam and industrial hot water. University Village is also provided natural gas by PG&E but is not connected to the main distribution system located on campus. No changes are proposed for University Village that would increase natural gas usage.

An analysis of the existing campus natural gas distribution system revealed that improvements to PG&Es infrastructure would be needed to support buildout of the proposed Master Plan. Currently, some sections of the main campus system are experiencing leakage and/or are at the end of their useful life. There have been reported leaks near at distribution piping adjacent to Taylor Hall, as well as near Ayres Hall and Big Chico Creek. Further, older buildings on campus do not have earthquake valves installed and do not meet current building codes. However, the University ultimately plans to phase out natural gas in support of adopted climate neutrality goals.

While improvements are needed, natural gas usage would not increase such that PG&E would need to build new or expanded facilities to accommodate the proposed Master Plan. As such, impacts would be **less than significant** related to new or expanded natural gas facilities.

Telecommunications

In 2001, construction was completed for a campus-wide telecommunications infrastructure upgrade, which provided new underground conduit, copper, and fiber cable systems from each campus building to the main distribution frame location at Butte Hall. The main campus and University Farm are both served by the same system. A review of the updated conduit system revealed that there would be sufficient capacity to meet the cable requirements for the proposed Master Plan buildings, as well as growth for the next twenty-five years (CSU, Chico 2019c). However, there are older conduits which are in need of repair or contain abandoned/unused cabling. There are no changes to University Village as a part of the proposed Master Plan which would affect telecommunications.

Any improvements needed to the telecommunications system would be completed as part of the proposed Master Plan within the campus and would not result in the need for new or expanded off-site telecommunications facilities. Additionally, the campus is moving toward implementing VOIP in all buildings which would allow calls to be made through the internet rather than traditional telecommunications connections. As such, impacts from the proposed Master Plan would be **less than significant** related to new or expanded telecommunications facilities.

Impact UTL-2. The project would have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry, and multiple dry years. (Less than Significant)

The project would generate additional potable water demand by adding building space to support 18,600 full-time equivalent students (FTES). Based on the Cal Water, Chico-Hamilton City District 2015 Urban Water Management Plan (UWMP), projects completed under the Master Plan would receive water derived solely from groundwater extracted from the unadjudicated Sacramento Valley Groundwater Basin, including the Vina Subbasin and the West Butte Subbasin. In accordance with the Sustainable Groundwater Management Act, the California Department of Water Resources has not determined the priority of either the Vina Subbasin or the West Butte Subbasin in regard to enacting a sustainable groundwater management plan (DWR 2019). No safe yield has been established for the groundwater basin. The 2015 UWMP includes an analysis of water supply reliability projected through 2040 (Table 3.15-1). Based on the analysis, Cal Water would be capable of providing adequate water supply to its service area under normal, single dry-year, and multiple dry-year supply and demand scenarios, through 2040. The groundwater supply amounts shown in Table 3.15-1 equal the projected demand in each year.

Table 3.15-1. Projected Water Supply from Groundwater[1]

Year	2020	2025	2030	2035	2040
Water Supply in Acre-Feet	29,397 AF	32,162 AF	33,981 AF	35,916 AF	37,974 AF

Cal Water expects that under all hydrologic conditions, its groundwater supply would be able to fully meet future demands through 2040. Storage in the groundwater basins provide a buffer against years with decreased precipitation while wetter years will recharge natural supplies. In addition, Butte County has a 27,000 AF per year entitlement to State Water Project water. It is possible that Cal Water could enter into an agreement that would make this water available to the customers in the Chico-Hamilton District. This State Water Project water could be treated and delivered directly to Cal Water customers or could be used for groundwater replenishment (Cal Water 2016, NorCalWater 2018).The District 2015 UWMP includes a Water Supply Shortage Contingency Plan, aimed to address the stages of response to water shortages, which occur over a period of time (such as a drought), as well as catastrophic supply interruptions that occur suddenly. The primary objective of the Water Shortage Contingency Plan is to ensure that the District has in place the necessary resources and management responses needed to protect health and human safety, minimize economic disruption, and preserve environmental and community assets during water supply shortages and interruptions.

Based on information provided by CSU, Chico, the existing water use for the 2018-2019 fiscal year was 64,174 hundred cubic feet (CCF) for domestic water and 13,083 CCF for irrigation, or a combined 77,257 CCF. One CCF is equivalent to 748 gallons of water; therefore, water use for the 2018-2019 fiscal year was 57,788,000 gallons for domestic and irrigation water combined. An acre-foot of water is equal to 435.6 CCF, resulting in annual water use of 177.3 AFY.

The projected annual water demand associated with CSU, Chico Master Plan has been generated based on the projected increase in: 1) residential uses (i.e., dormitories), based on a 66% increase in new beds, and 2) non-residential uses (i.e., academic and supportive), based on a 13% increase in FTES. To be conservative in demand estimates, the projected demand does not account for increased water efficiencies in new building construction. In addition, irrigation water demand is not expected to increase, as described in more detail below. Therefore, the projected irrigation water demand is assumed to be the same as under existing conditions.

Implementation of the Master Plan is anticipated to consume approximately 73,603,948 gallons per year, or approximately 225.9 AFY of water. Based on this supply and demand, the increase in water demand associated with project implementation would be approximately 48.6 AFY, or a 27% increase in water demand (Table 3.15-2).

Table 3.15-2. Water Supply and Demand

Water Use 2018-2019 Fiscal Year		New Annual Water Use			Total Master Plan Annual Water Demand		
		Residential[2]	*Non-Residential*[3]	*Irrigation*	*Residential*[1]	*Non-Residential*[2]	*Irrigation*
Hundred Cubic Feet (CCF)[1]	77,257	18,321	2,822	0	56,265	29,053	13,083
Gallons per Year	57,789,000	13,704,108	2,110,856	0	42,086,220	21,731,644	9,786,084
Acre-Feet per Year (AFY)	177.3	42.1	6.5	0	129.2	66.7	30.0

1 Existing demand consists of 37.943 CCF of residential demand (main campus and University Village); non-residential demand of 26,231 CCF (main campus and University Farm), and irrigation use of 13,083 (main campus and University Village).
2 Project would increase residential water demand by 66%
3 Project would increase non-residential demand by 13%

The University has noted that the demand for potable water has been reduced by 20% over recent years from indoor and outdoor water efficiency improvements, including incorporation of subsurface and drip irrigation and drought-tolerant landscaping. Additionally, the project includes athletic field improvements that would convert natural fields to a synthetic turf surface reducing water required for irrigation. Butte Hall would undergo infrastructure upgrades to improve building efficiency, including water usage efficiency. Water metering would be installed for buildings and irrigation zones for better monitoring of campus water usage. In addition, based on the proposed Master Plan, CSU, Chico is exploring the idea of installing a new well on campus, which would decrease the reliance on Cal Water. Currently, CSU, Chico owns and operates a raw water system for irrigation and a well and pump station located on the north side of Big Chico Creek, near Butte Hall. This water system would continue to supplement water supplies from Cal Water.

Chemicals of concern, including volatile organic compounds, TCE, and PCE, have been detected in the Sacramento Valley Groundwater Basin. However, none of these chemicals is expected to cause significant problems with the quality of water delivered to the District's customers. Wells testing above the U.S. EPA MCL for any contaminants are either removed from service or are treated with wellhead remediation technologies to ensure compliance with all water quality regulations. Furthermore, any areas that have been found to be contaminated are currently being regulated by either the California Department of Toxic Substances Control or State Water Resources Control Board. The District will avoid these contaminated areas when sighting any future groundwater wells (Cal Water 2016).

As discussed above, implementation of the proposed Master Plan would increase water usage from 177.3 AFY to 225.9 AFY. According to the Cal Water 2015 UWMP, the water demand in 2030 is projected to be 33,981 AF. Accordingly. the CSU, Chico campus' water demand at Master Plan buildout would represent approximately 0.6 % of Cal Water's total projected water demand, which is a nominal percentage (Cal Water 2016). Therefore, impacts to water supplies would be **less than significant.**

Impact UTL-3. The project would result in a determination by the wastewater treatment provider, which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments. (Less than Significant)

As discussed previously, the WPCP's existing capacity is 12 MGD with future expandability to 15 MGD. As of 2019, average daily dry weather wastewater flows were 6.9 MGD. The proposed Master Plan is not expected to increase wastewater flows such that the capacity of the WPCP is exceeded. As discussed in Impact UTL-1, the proposed Master Plan would result in an additional 0.4 MGD at full buildout. The projects' increase in demand for wastewater treatment would not exceed the capacity of the WPCP and would not necessitate expansion of the WPCP. As such, impacts would be **less than significant.**

Impact UTL-4. The project would not generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of federal, state, and local management and reduction statutes or solid waste reduction goals. (Less than Significant)

Construction

Project construction would generate significantly higher amounts of solid waste than project operation due to renovation and demolition of buildings and associated construction activities. The exact amount of solid waste that would be generated from construction/demolition activities is not known. However, through recycling and reuse of construction/demolition materials, the campus diverts the vast majority of its construction/demolition waste from the landfill. For example, 85% of the construction waste generated from demolition of the University parking lot on Second Street in 2011 was diverted from local landfills (CSU, Chico 2014). Therefore, it is expected a majority of the solid waste generated during construction activities would be recycled and would not generate solid waste in excess of existing landfill capacity.

Operation

The proposed project would increase student and employee population by approximately 2,200 FTES, 91 faculty, and 46 staff. In 2017, the total generation of municipal solid waste per person in the U.S. was approximately 4.51 pounds per day. This number includes most items, both organic and inorganic, that consumers threw away after use such as drink bottles, food, furniture, and wood (EPA 2017). Conservatively assuming that the increase in 2,200 FTES, 91 faculty, and 46 staff would generate 4.51 pounds of waste per day, the proposed project would generate a total of 10,540 pounds of municipal solid waste over the 10-year horizon. Given the Neal Road Landfill's maximum permitted throughput of 1,500 tons per day, maximum permitted capacity of 25,271,900 cubic yards, and remaining capacity of 20,847,970 cubic yards as of 2009 (CalRecycle 2009), the net increase in solid waste generation from project operation would not exceed the capacity of local infrastructure. Additionally, a percentage of the solid waste generated would be diverted from the landfill through recycling, reuse, and composting. Furthermore, per-capita waste generation rates would most likely decline over time in accordance with the campus's increasing solid waste diversion goals. For example, in 2013 AS Dining Services composted 422,000 pounds of organic waste compared to the 2011 amount of approximately 210,000 pounds. This can be attributed to the implementation of a successful composting program in AS Dining Services. It is likely that future campus waste diversion efforts would further reduce solid waste going to landfills. Currently, all pre-consumer food waste from University Housing and the Marketplace Café is being recovered and composted at North State Rendering, and campus staff are currently working with the Center for Regenerative Agriculture to expand composting efforts at the University Farm (CSU, Chico 2018e). CSU also has sustainability policies related to sustainable procurement, including encouraging the use of products that minimize trash sent to landfills or incinerators, and promoting the use of suppliers and vendors that reduce waste, re-purpose recycled material, or support other environmentally friendly practices in the provision of goods and services.

It is anticipated that Master Plan implementation would not generate solid waste in excess of applicable State standards or in excess of the capacity of local infrastructure, nor would it otherwise impair the attainment of solid waste reduction goals. Master Plan implementation would comply with applicable federal and state statutes and regulations related to solid waste management and reduction . As such, impacts would be **less than significant.**

3.16.5 Cumulative Impacts

The geographic context for the analysis of cumulative impacts associated with utilities and service systems consists of the City of Chico as well as parts of unincorporated Butte County near the University Farm.

Water and Wastewater

During fiscal year 2018, the campus used approximately 58 million gallons (178 AF) of water for building and irrigation needs. Specifically, water used for irrigation totaled approximately 10 million gallons (31 AF), while water for domestic use totaled approximately 48 million gallons (147 AF). The University notes that the demand for potable water has been reduced by 20% over recent years from indoor and outdoor water efficiency improvements, including incorporation of sub-surface and drip irrigation and drought-tolerant landscaping. Cal Water's 2015 UWMP did not indicate any water supply concerns and anticipated that groundwater supply would be able to meet future demands within their District (which includes the campus) throughout 2040. With the increase in water demand of 15.8 million gallons (49 AF), which only encompasses about 1.0% of the estimated District-wide water demand increase from 2020 through 2030, the proposed Master Plan does not include any components or activities that would contribute to cumulative water impacts. Similarly, wastewater capacity in the City is currently 12 MGD with future expandability to 15 MGD, and the average daily dry weather flow was 6.9 MGD as of 2019. The project would result in a less than significant contribution of 0.4MGD to average daily dry weather flows and thus, cumulative impacts regarding wastewater would be **less than significant.**

Stormwater

Similar to the proposed project, cumulative projects in the region would be required to implement BMPs to control pollutants and site runoff. Examples include evaluation of site soils and flow path; implementing structural BMPs such as bioretention areas; and hydromodification standards requiring projects to demonstrate that post-project runoff would not exceed pre-project flow rate. As previously discussed, the proposed project would adhere to relevant LID strategies, BMPs, and other required measures to address stormwater site runoff, and would thus not require the construction of new storm water drainage facilities or the expansion of existing facilities. The proposed project would not substantially affect stormwater drainage and would therefore result in a **less than significant** cumulative impact.

Energy

Refer to the discussion of cumulative energy impacts in Section 3.5, Energy. The proposed project would not result in wasteful, inefficient, or unnecessary use of energy, in large part due to the short-term and temporary nature of the construction period. Additionally, the operational activity of the proposed project would be minimized through energy reduction strategies pursuant to Title 24. For all other projects in the City are required to comply with Title 24, the long-term energy consumption of those projects would also be reduced. Therefore, cumulative impacts to energy use would be **less than significant.**

Solid Waste

As a result of the 2018 Camp Fire, Butte County Public Works submitted an Emergency Waiver of Standards for the Neal Road Landfill to facilitate increased maximum tonnage from 1,500 tons per day to 15,000 tons per day, as well as increased traffic volume, transfer and processing capacity, and facility operating hours to expedite disposal of fire debris from the 2018 Camp Fire. The latest emergency waiver extension was granted on July 16, 2019 for a period of 120 days, ending on November 13, 2019 (Butte County 2019). While Butte County Public Works has not submitted any new applications for an emergency waiver extension, it is unknown whether more waiver extensions would be needed. However, given the maximum permitted capacity of 25,271,900 cubic yards and remaining capacity of 20,847,970 cubic yards as of 2009 (CalRecycle 2009), it is not expected that new or expanded landfills would be needed to accommodate regional solid waste disposal needs.

The proposed project would generate additional solid waste during construction and operation. However, the increase in 2,200 FTES, 91 faculty, and 46 staff would result in a total generation of 10,540 pounds of municipal solid waste through the year 2030. Additionally, the campus diverts the vast majority of construction and demolition waste, and has a successful waste diversion program through AS Recycling with a diversion rate of 85%. While current campus-wide waste diversion is at approximately 30%, it is expected that per-capita waste generation will decline over time in accordance with increasing solid waste diversion goals and new waste diversion programs. For example, campus staff are currently working with the Center for Regenerative Agriculture to expand composting efforts at the University Farm. As such, the proposed project would not result in a cumulatively considerable contribution to solid waste and landfill impacts. Thus, cumulative impacts would be **less than significant.**

3.15.6 Mitigation Measures

No mitigation measures are required.

3.15.7 Level of Significance After Mitigation

No mitigation measures are required. All impacts would be less than significant without mitigation.

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4 Alternatives

4.1 Introduction

The purpose of the alternatives evaluation in an Environmental Impact Report (EIR), as stated in Section 15126.6(c) of the California Environmental Quality Act (CEQA) Guidelines, is to ensure that "[t]he range of potential alternatives to the proposed project shall include those that could feasibly accomplish most of the basic objectives of the project and could avoid or substantially lessen one or more of the significant effects" identified under the proposed project. Pursuant to CEQA Guidelines, Section 15126.6, an analysis of alternatives to the project is presented in this Draft EIR to provide the public and decision makers with a range of possible alternatives to consider. The CEQA Guidelines state that an EIR shall describe a reasonable range of alternatives that would avoid or substantially lessen any significant effects of the project, but need not consider every conceivable alternative. The CEQA Guidelines further state that "the discussion of alternatives shall focus on alternatives to the project or its location which are capable of avoiding or substantially lessening any significant effects of the project, even if these alternatives would impede to some degree the attainment of the project objectives, or would be more costly" (CEQA Guidelines, Section 15126.6(b)). Therefore, an EIR must describe a range of reasonable alternatives to the proposed project (or to its location) that could feasibly attain most of the basic objectives of the project.

Alternatives in an EIR must be potentially feasible (CEQA Guidelines, Section 15126.6(a)). The feasibility of an alternative may be determined based on a variety of factors, including, but not limited to, site suitability, economic viability, availability of infrastructure, general plan consistency, other plans or regulatory limitations, jurisdictional boundaries, and site accessibility and control (CEQA Guidelines, Section 15126.6(f)(1)). Agency decision makers ultimately decide what is "actually feasible." (California Native Plant Society v. City of Santa Cruz (2009) 177 Cal. App. 4th 957, 981 (CNPS).) The concept of "feasibility" also encompasses the question of whether a particular alternative or mitigation measure promotes the underlying goals and objectives of a project. (Sierra Club v. County of Napa (2004) 121 Cal.App.4th 1490, 1506-1509; CNPS, supra, 177 Cal. App. 4th at p. 1001; In re Bay-Delta Programmatic Environmental Impact Report Coordinated Proceedings (2008) 43 Cal.4th 1143, 1165, 1166.) Moreover, "'feasibility' under CEQA encompasses 'desirability' to the extent that desirability is based on a reasonable balancing of the relevant economic, environmental, social, legal, and technological factors." (City of Del Mar v. City of San Diego (1982) 133 Cal.App.3d 410, 417.)

An EIR need not evaluate the environmental effects of alternatives in the same level of detail as the proposed project, but must include enough information to allow meaningful evaluation, analysis, and comparison with the proposed project. The alternatives discussion is intended to focus on alternatives to the project or its location that are capable of avoiding or substantially lessening any significant effects of the project, even if these alternatives would impede to some degree the attainment of the project objectives.

This chapter identifies the proposed project objectives, describes the project alternatives, and evaluates the comparative effects of the alternatives relative to the proposed project. As required under Section 15126.6(e) of the CEQA Guidelines, the environmentally superior alternative is identified and included at the end of this chapter.

4.2 Project Objectives

In determining what alternatives should be considered in the Draft EIR, the objectives of the project were considered, since attainment of a majority of the objectives is one of the bases for whether an alternative is considered feasible (see discussion above). Cal Poly identified the following project objectives, as previously described (see Chapter 2, "Project Description"): CSU, Chico identified the following project objectives for the proposed Master Plan (see Chapter 2, Project Description, of this Draft EIR):

1. Transform the campus core into a strong, activated "HUB" focused on instructional space, student housing, and student support programs.
2. Consolidate student housing and residential life within three distinct neighborhoods in close proximity to the "HUB" or campus core.
3. Increase opportunities for first-year freshmen to live on campus.
4. Enhance the visibility and accessibility of the campus's current decentralized arts and culture district through the enhancement of existing performing arts spaces and consolidation of museum programs at a new campus gateway on Esplanade.
5. Provide new and renovated facilities and open space to reflect today's students' need for additional informal space for collaborative learning.
6. Improve and expand services and facilities for counseling, health and wellness, to include physical and mental health.
7. Improve and expand facilities and support in the west campus for experiential (hands-on) learning and recreational opportunities and campus athletics.
8. Maximize existing academic space to improve the academic and research environment by updating and improving facilities for today's learners and educators. This includes flexible learning environments that can adapt to different styles of learning and pedagogy.
9. Provide a campus and regional amenity by constructing an indoor venue for athletics and special events.
10. Preserve important farmland on the University Farm while enhancing its ability to support the university's academic mission as well as the region's existing and future agricultural industries, through the modernization of aging buildings and facilities, development of new classroom, laboratory, and support space for agricultural programs, infrastructure upgrades, creation of a new Farm Store, provision of on-site student housing, and improved road and parking facilities.
11. Improve pedestrian and bicycle access on campus through extending the bicycle path to have a more contiguous east-west corridor that also enhances pedestrian safety.
12. Relocate and consolidate existing parking facilities on the campus perimeter to free up limited campus space for academic, student support, and residential uses.
13. Improve the safety and character of the Ivy/Warner corridor through development of an enlivened on-campus Rio Chico residential neighborhood, comprising new student residence halls, expanded Wildcat Recreation Center (WREC), improved south campus gateway, and improved pedestrian connections between off-campus Ivy/Warner Street and the campus core.
14. Implement carbon reduction strategies with the goal of achieving carbon neutrality by 2030 through tactics such as onsite renewable energy, electrification of utilities, and improved alternative transportation infrastructure.
15. Increase the resiliency of campus utility systems by creating utility redundancy and decentralization of the central plant combined with onsite renewable energy.
16. Improve landscape and stormwater function and aesthetics.

4.3 Summary of Significant Environmental Impacts

As discussed in Chapter 3, the proposed project would result in several potentially significant environmental impacts. These impacts include biological resources, cultural resources, paleontological resources, hazardous materials, noise, and transportation. Proposed mitigation measures would reduce these impacts to less than significant, with the exception of transportation which would be a significant and unavoidable impact.

4.4 Alternatives Considered but Dismissed

As described above, State CEQA Guidelines Section 15126.6(c) requires that the range of potential alternatives for the project include those that could feasibly accomplish most of the basic objectives of the project and could avoid or substantially lessen one or more of the significant effects. Alternatives that fail to meet the fundamental project purpose need not be addressed in detail in an EIR.

In determining what alternatives should be considered in the EIR, it is important to acknowledge the objectives of the project, the project's significant effects, and unique project considerations. These factors are crucial to the development of alternatives that meet the criteria specified in Section 15126.6(a). Although, as noted above, EIRs must contain a discussion of "potentially feasible" alternatives, the ultimate determination as to whether an alternative is feasible or infeasible is made by lead agency decision-maker(s). (See Pub. Resources Code, § 21081(a)(3).) At the time of action on the project, the decision-maker(s) may consider evidence beyond that found in this EIR in addressing such determinations. The decision-maker(s), for example, may conclude that a particular alternative is infeasible (i.e., undesirable) from a policy standpoint, and may reject an alternative on that basis provided that the decision-maker(s) adopts a finding, supported by substantial evidence, to that effect, and provided that such a finding reflects a reasonable balancing of the relevant economic, environmental, social, and other considerations supported by substantial evidence.

The EIR should also identify any alternatives that were considered by the lead agency but were rejected during the planning or scoping process and briefly explain the reasons underlying the lead agency's determination. The following alternatives were considered by Cal Poly but are not evaluated further in this Draft EIR.

4.4.1 Off-Site Alternative

Alternative sites were not considered during the master planning process for a number of reasons. CSU, Chico is an established campus that is part of the fabric of downtown Chico. The critical mass of students and faculty in one location is an important part of the educational experience. Moving some of the educational programs and faculty to a new off-campus center or new satellite campus would not support the educational mission and would interfere with several project objectives, including: increase on-campus housing opportunities near the campus core; dedicate the campus core to the student experience; and maximize existing academic space.

Additionally, as CSU, Chico does not own any other land that would be suitable for such a new off-campus center or new satellite campus, such an alternative is not considered feasible.

4.4.2 Limited Enrollment Alternative

One of the primary objectives of the proposed is to accommodate an increase in the on-campus enrollment to 18,600 FTES, and a corresponding increase in University faculty and staff to support student growth at a rate of 1% and 0.5%, respectively. This is an increase of 2,800 FTES over the existing planning number of 15,800 FTES, and an increase of 2,163 FTES over the existing enrollment of 16,437 FTES (Fall 2018). The proposed FTES limit is based on a 1% annual growth rate and would account for growth through 2030. Limiting enrollment could account for a lower growth rate. For example, a 0.5% annual growth rate over 10 years would yield 17,278 FTES. However, this alternative was dismissed from further consideration it would not allow CSU, Chico to meet its state-mandated educational obligations or achieve the underlying purpose or the most basic of objectives of the Master Plan.

4.4.3 Reduced Intensity Alternative

The proposed Master Plan would result in a net increase of 1,461 student beds, 310 parking spaces, and 923,932 square feet of building space on the main campus. A reduced intensity alternative would provide for 1,461 net new student beds, but would only replace, and not expand, academic and support space. This would reduce the building space increase to approximately 493,000.

By reducing the amount of new building space by approximately 50%, this alternative would reduce, but not avoid the significant impacts related to the proposed project. This would also fail to meet many of the project objectives, including objectives 1, 2, 4, 5, 6, and 7. Therefore, this alternative was dismissed from further consideration.

4.4.2 Reduced Student Housing

A large portion (over 50%) of the net increase in building construction would be for student housing. This alternative would not construct new student housing, but would rely on the off-campus housing market to accommodate increased demand in student housing. By reducing the amount of new building space by approximately 50%, this alternative would reduce, but not avoid the significant impacts related to the proposed project. This alternative would eliminate the development of Rio Chico for additional future student housing.

The alternative would not meet project objectives 1, 2, and 3. This alternative would also likely create increased pressure to densify the residential neighborhoods in the vicinity of the main campus, which would likely have additional environmental effects. As this alternative would not avoid one or more significant impacts and would not meet several key project objectives, it was dismissed from further consideration.

4.5 Project Alternatives

This section presents an evaluation of three alternatives to the proposed Master Plan, including:

1. No Project Alternative
2. Expanded Housing Alternative
3. Modified Footprint Alternative

For each alternative, a brief description is presented, followed by a discussion of the basis for selection of the alternative, the degree to which the alternative would meet project objectives, and the ways in which the alternative would avoid or reduce significant impacts of the project, or cause other new or increased impacts.

Table 4-1 compares the alternatives to the project in terms of their ability to reduce or avoid potentially significant impacts.

4.5.1 No Project Alternative

Description

As required by the CEQA Guidelines, an EIR's alternatives analysis must include consideration of the No Project Alternative. The "No Project" analysis discusses the existing conditions as well as what would reasonably be expected to occur in the foreseeable future if the Project was not approved (Cal. Code Regs. tit. 14, § 15126.6 (e)(2) and (3)(A)).

The current master plan, Master Plan 2005, is the existing long-range plan for the campus and would continue to be in effect if the proposed Master Plan is not approved. Master Plan 2005 planned for the physical development of the main campus and the University Farm to accommodate 15,800 FTES. The campus currently has 16,437 FTES (Fall 2018) and is currently developed with approximately 2,187,026 gross square feet (GSF) in non-residential buildings. Student housing consists of 2,260 beds in multiple buildings, totaling 536,356 GSF.

Under the No Project Alternative, the proposed enrollment ceiling increase to 18,600 FTE students would not be adopted, and the proposed program of new development and infrastructure improvements intended to accommodate that enrollment increase would not be implemented. While Master Plan 2005 planned for fewer FTES than are currently enrolled at CSU, Chico, there are still several projects identified in Master Plan 2005 that have not yet been realized but which could be constructed under the No Project Objective. These include:

- Butte Hall renovation
- Modoc II and Child Care Center on the Aymer J. Hamilton site
- New residence halls and parking structure on the College Park site
- Rio Chico PE and Aquatics Center on the Rio Chico site

Under the No Project Alternative, the University would not be able to undertake other capital improvements without additional approvals, apart from routine maintenance and minor improvements such as utility upgrades. In accordance with CSU administrative policy, subject to additional approvals including CEQA compliance, the University may also request consideration by the Board of Trustees of one Major Master Plan Revision each calendar year, which may comprise multiple projects (CSU 1995).

Impact Analysis

Because a certain, albeit limited, amount of new construction would be permitted under the existing 2005 Master Plan, and subject to additional approvals, as part of a Major Master Plan Revision, the No Project Alternative would result in the same significant but mitigable impacts as the proposed Master Plan project. These include, as summarized in Table 4-1, below, with the proposed Master Plan project, impacts to biological resources, cultural resources, paleontological resources, hazards, and noise. Moreover, construction of the Rio Chico PE and Aquatic Center, which are already approved under the 2005 Master Plan, would have a significant and unavoidable impact on historical resources, which would not occur under the proposed Master Plan; impacts on historical resources would therefore be greater than those under the proposed Master Plan.

The No Project Alternative would also result in significant and unavoidable transportation impacts related to VMT, and because less student housing would be constructed, impacts would be greater than those of the proposed Master Plan.

All other impacts under the No Project Alternative would be less than significant and, due to the reduced magnitude of construction and/or reduced enrollment, would be less than those of the proposed Master Plan project, including aesthetics, energy, geology, hydrology and water quality, land use and planning, population and housing, public services and recreation, and utilities and service systems. The reduction in proposed student housing, and fewer energy-efficient buildings being replaced, may result in more greenhouse gas emissions than the proposed project. However, it is not apparent that this impact would be significant.

Relationship to Project Objectives

The No Project Alternative would not accommodate additional enrollment. By constructing additional academic and residential facilities, it would achieve only two of the project objectives (objectives 3 and 8). By not focusing development on the campus core, reinforcing learning neighborhoods, and reinvesting in infrastructure and sustainability, the No Project Alternative would fail to achieve the remaining 12 project objectives.

4.5.2 Expanded Housing Growth Alternative

Description

The proposed Master Plan provides for construction of 1,800 new student beds. Accounting for the demolition of 339 beds, on-campus housing would increase from 2,260 to 3,721. Increasing on-campus housing (or off-campus housing within a walkable distance) generally has a favorable effect on transportation, energy, air quality, and greenhouse gas emissions by reducing the vehicle miles travelled (VMT) per student. This alternative is designed to reduce the significant VMT impact associated with the proposed project. While VMT is reduced under the proposed Master Plan, the reduction falls well short of the 15% goal identified in the CSU's revised transportation guidelines. Due to limitations in the regional transportation model, it is not possible to calculate the direct effect that each additional student housed on campus would have on VMT. However, it is well understood to be a positive relationship, and that increased housing growth would reduce VMT associated with the University.

The proposed Master Plan would potentially allow for the housing of most first-year students on campus. This alternative would approximately double the proposed increase in student beds, to a build-out of 4,450 student beds. This would allow the University to house all first-year and over one-third of second year students. In order to accomplish this a major increase in residential density would be required, resulting in taller, denser residence halls. Residential space in the north campus would be greatly increased. In addition to the proposed residence hall at the Butte Hall site, some expansion of Shasta and/or Lassen Hall would also be necessary. The proposed Creekside Housing project and Rio Chico (public-private partnership) project would also be increased in density. Creekside would be taller, and or add an additional building, which would reduce the outdoor athletic space. The proposed Rio Chico development would be denser, which would result in either an increase in height, or a footprint expansion that could adversely affect the potential historical houses on the north side of the block.

Impact Analysis

The alternative would have a beneficial effect on VMT, by increasing the amount of on-campus housing. It is unknown if the reduction in VMT would reduce this impact to a less-than-significant level. This alternative would have a potentially greater impact on visual resources (potentially creating a new significant impact related to building height) as compared to the proposed project. Utilities demands would be greater, but with construction of more water and energy efficient buildings, it is not likely that this would result in new significant utilities impacts. All other impacts, including potentially significant impacts related to biological resources, cultural resources, paleontological resources, hazards, and noise, would be similar to the proposed project. As shown in Table 4-1, below, all other potentially significant impacts related to the proposed project would be the same under this alternative.

Relationship to Project Objectives

The alternative would meet most of the project objectives. Objective 7 may only be partially achieved, as the west campus area would be more densely developed with housing at the expense of athletic facilities. The remaining 15 objectives would be achieved.

4.5.3 Modified Footprint Alternative

Description

This alternative would provide for approximately the same amount of new developed square footage for both student housing and other academic and support uses, but would revise the distribution of land uses across the campus. Master Plan 2005 identified the College Park area east of Konkow, Mechoopda, and Esken Hall as student residential development, with an associated parking structure. The Modified Footprint alternative would site residential uses in this area and not demolish the existing Konkow, Mechoopda, and Esken residence halls. Additionally, this alternative would not construct additional housing at the Creekside site or Rio Chico. Redevelopment of the current Butte Hall site with student housing would still be implemented, as proposed under the Master Plan project, to meet student housing goals.

The proposed Arena would be moved to the Rio Chico neighborhood, closer to downtown Chico and farther away from the residential neighborhoods north of West Sacramento Avenue. Rio Chico is selected as the only area large enough to house the Arena and has adequate surface street access (via Walnut Street/Nord Avenue and Ivy/Warner Street) and a nearby University parking structure.

Academic and support uses would be developed similar to the proposed project.

Impact Analysis

The overall amount of development under this alternative would be the same as the proposed project. Therefore, impacts related to the overall level of development would remain the same, as shown in Table 4-1. Potentially significant (but mitigatable) impacts would be similar to the proposed project, including biological resources, paleontological resources, and hazards, The significant and unavoidable impact related to transportation would not be avoided or substantially reduced. Off-site noise impacts associated with athletic fields (Impact NOI-1) would be reduced, but not avoided, by buffering the fields with on-campus residential buildings and a new parking structure.

However, construction of the arena at the Rio Chico site would likely result in the demolition of structures that are potentially historic resources, resulting in a significant and unavoidable impact to cultural resources.

Relationship to Project Objectives

The Modified Footprint Alternative would meet most of the project objectives. By maintaining a large portion of student housing on the northern edge of the campus, this alternative would not achieve objectives 1 and 2. The remaining 14 objectives would be achieved.

4.6 Comparison of Alternatives

Table 4-1 shows the potentially significant environmental effects of the proposed project, prior to implementation of mitigation measures, compared to the potential effects of the project alternatives. If a project alternative would have new or substantially greater impacts than the proposed project, this is also noted in the table.

Project impacts related to air quality, energy, greenhouse gas emissions, land use and planning, population and housing, public services and recreation, and utilities would be less than significant. The project alternatives would not increase these impacts to a potentially significant level, and they are therefore not presented in the table.

Table 4-1. Comparison of Alternatives

Impact	Proposed Project	No Project Alternative	Expanded Housing Growth Alternative	Modified Footprint Alternative
Aesthetics				
AES-3. In non-urbanized areas, the project would not substantially degrade the existing visual character or quality of public views of the site and its surroundings and in urbanized areas, would not conflict with the applicable zoning and other regulations governing scenic quality.	LTS	LTS	PS+	LTS
Biological Resources				
BIO-1. The project would have a substantial adverse effect, either directly or through habitat modifications, on a species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service.	PS	PS	PS	PS
BIO-2. The project would have a substantial adverse effect on riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service.	PS	PS	PS	PS

Table 4-1. Comparison of Alternatives

Impact	Proposed Project	No Project Alternative	Expanded Housing Growth Alternative	Modified Footprint Alternative
BIO-3. The project would have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means.	PS	PS	PS	PS
BIO-4. The project would interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites.	PS	PS	PS	PS
Cultural Resources				
CUL-1. The project may cause a substantial adverse change in the significance of a historical resource pursuant to §15064.5.	PS	SU+	PS	SU+
CUL-2. The project may cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5.	PS	PS	PS	PS
CUL-3. The project may disturb any human remains, including those interred outside of dedicated cemeteries.	PS	PS	PS	PS
Geology, Soils and Paleontology				
GEO-6. The project could directly or indirectly destroy a unique paleontological resource or site or unique geologic feature.	PS	PS	PS	PS
Hazards, Hazardous Materials and Wildfire				
HAZ-2. The project could create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment.	PS	PS	PS	PS
HAZ-4. The project would be located on a site that is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would create a significant hazard to the public or the environment.	PS	PS	PS	PS
Noise				
NOI-1. The project would result in generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of applicable standards.	PS	PS	PS	PS-

Table 4-1. Comparison of Alternatives

Impact	Proposed Project	No Project Alternative	Expanded Housing Growth Alternative	Modified Footprint Alternative
Transportation				
TRA-2. Implementation of the 2019 Master Plan would not reduce VMT per student by 15 percent compared to the forecasted baseline conditions and cumulative year VMT for the Master Plan area.	PS	PS	PS-	PS

Notes: LTS Less than Significant; PS Potentially Significant (prior to mitigation); SU Significant and Unavoidable; + Increased Impact; - Decreased Impact

4.7 Environmentally Superior Alternative

CEQA Guidelines require that an EIR identify the environmental superior alternative (Section 15126.6 (e)(2)). If the environmentally superior alternative is the "No Project" Alternative, the EIR must identify an environmentally superior alternative from among the other alternatives.

The "No Project Alternative" would not avoid or reduce any of the significant impacts associated with the proposed project, and would increase cultural resources impacts, as the prior Master Plan includes the demolition of buildings in Rio Chico that are potentially significant historic resources.

The Modified Footprint Alternative would reduce the off-site noise impacts associated with athletic fields by buffering the fields with on-campus residential buildings and a new parking structure. However, construction of the arena at the Rio Chico site would likely result in the demolition of structures that are potentially historic resources.

The Expanded Housing Alternative would reduce transportation impacts related to VMT, although it is unknown if the reductions would result in the impact being reduced to less than significant. However, increase of housing on campus would require densification of residential buildings, resulting in increased height and bulk. The visual impact of these structures would be increased, resulting in a potentially significant impact. It is possible this impact could be mitigated by additional design controls and landscaping. By reducing a significant and unavoidable impact, this alternative would be the environmentally superior alternative.

4.8 References

California State University. 1995. State University Administrative Manual, Section II – Physical Master Plan and Off-Campus Centers, Section 9013: Approval Procedure for Major Master Plan Revision. Accessed August 10, 2020. http://www.calstate.edu/cpdc/suam/SUAM9007-9014.pdf

5 Other CEQA Considerations

This chapter discusses the significant environmental effects that cannot be avoided if the proposed project is implemented, significant irreversible environmental changes that would result from implementation of the proposed project, and growth-inducing impacts of the proposed project.

5.1 Significant and Unavoidable Environmental Impacts

The CEQA Guidelines, Cal. Code Regs. tit. 14, § 15126.2(b), require that an EIR describe any significant impacts that cannot be avoided, even with the implementation of feasible mitigation measures. The environmental effects of the proposed project, including significant and unavoidable impacts, are discussed in the technical sections contained in Chapter 3 of this Draft EIR. Per Chapter 3, the following significant and unavoidable impact would occur:

Impact TRA-2 **Implementation of the 2019 Master Plan would decrease VMT per student by less than 15 percent compared to the forecasted baseline and cumulative year VMT for the Master Plan area.** Despite the implementation of Mitigation Measure TRA-1, this impact would not be reduced to a less-than-significant level.

5.2 Significant Irreversible Environmental Impacts

The CEQA Guidelines, Cal. Code Regs. tit. 14, § 15126.2 (c), require a discussion of any significant irreversible environmental change that would be caused by the proposed project. Generally, a project would result in significant irreversible changes if:

- The project would involve a large commitment of nonrenewable resources; The primary and secondary impacts would generally commit future generations to similar uses;
- The project would involve uses in which irreversible damage could result from any potential environmental accidents associated with the project; or
- The proposed consumption of resources is not justified (e.g., the project involves the wasteful use of energy).

Implementation of the proposed project would result in the consumption of natural resources for the construction of campus facilities. Operation of the project would require continued use of resources. Resources that would be permanently and continually consumed by project implementation include water, electricity, natural gas, and fossil fuels. Wood products, asphalt, and concrete would be used in construction along with gas and diesel fuel. Commitment to CSU and CSU, Chico sustainability practices, including the ultimate objective of a “net zero” campus for energy usage, would reduce the consumption of natural resources. Future campus buildings are expected to achieve a LEED Silver rating or better. Increased production of renewable energy on University property is proposed. As noted in Section 3.8, the project does not have the potential to cause irreversible environmental damage due to accidents. As noted in Section 3.5, the project would not result in unnecessary or wasteful use of energy.

5.3 Growth-Inducing Impacts

As required by Cal. Code Regs. tit. 14, § 15126.2(d) of the CEQA Guidelines, an EIR must discuss ways in which a proposed project could foster economic or population growth or the construction of additional housing, either directly or indirectly, in the surrounding environment. Also, the EIR must discuss the characteristics of the project that could encourage and facilitate other activities that could significantly affect the environment, either individually or cumulatively. Growth can be induced in a number of ways, such as through the elimination of obstacles to growth, the stimulation of economic activity within the region, or the establishment of policies or other precedents that directly or indirectly encourage additional growth. Under CEQA, this growth is not to be considered necessarily detrimental, beneficial, or of significant consequence. Induced growth would be considered a significant impact if it can be demonstrated that the potential growth, directly or indirectly, significantly affects the environment.

In general, a project could foster spatial, economic, or population growth in a geographic area if the project removes an impediment to growth (e.g., the establishment of an essential public service, the provision of new access to an area, or a change in zoning or General Plan amendment approval), or economic expansion or growth occurs in an area in response to the project (e.g., changes in revenue base, employment expansion). These circumstances are further described below.

Elimination of Obstacles to Growth

The elimination of either physical or regulatory obstacles to growth is considered to be a growth-inducing effect, though not necessarily a significant one. A physical obstacle to growth typically involves the lack of public service infrastructure. The extension of public service infrastructure, including roadways, water mains, and sewer lines, into areas that are not currently provided with these services would be expected to support new development. Similarly, the elimination or change to a regulatory obstacle, including existing growth and development policies, could result in new growth.

The proposed project includes upgrades to existing campus infrastructure. This is to improve efficiency and reliability within the campus, as well as serving proposed construction. However, the campus infrastructure is limited to the campus itself. It does not serve non-University land and would not accommodate off-site development. Any proposed improvements are sized to the buildout of the Master Plan and do not include excess capacity which could be used by non-University development. The proposed Master Plan includes improvements to Ivy/Warner Street, in coordination with the City of Chico. These improvements are designed to improve walkability and pedestrian safety (“complete streets”), rather than accommodating additional vehicular traffic.

Economic Effects

The proposed Master Plan would provide for an increase in the student population and would include new student housing on campus. The proposed Master Plan describes the land uses and building space requirements to support 18,600 full-time equivalent students (FTES). As of fall 2018, the campus currently has 16,437 FTES, along with 989 instructional faculty and 1,106 staff. With an increase of nearly 2,200 FTES and buildout of approximately 1,400 student beds from the proposed Master Plan, there would be 800 remaining FTES, along with 91 faculty and 46 staff, that would need to find off-campus housing. As discussed in Section 3.12, the housing market in Chico can accommodate the required off-campus housing. Thus, the project would not induce substantial unplanned population growth in the area.

The project would generate increased employment, both direct and indirect. Direct employment includes additional faculty and staff, as well as construction jobs. Indirect employment includes those additional jobs that are generated through the expenditure patterns of direct employment associated with the project. Indirect jobs tend to be in relatively close proximity to the places of employment and residence.

Moreover, as stated in Section3.12, Population and Housing, of this Draft EIR, in keeping with its state charter and in response to projections of increased enrollment demand and to meet California's future workforce needs, the CSU Board of Trustees directs each CSU campus to take the necessary steps to accommodate additional systemwide enrollment increases. The Trustees require each CSU campus to prepare a Master Plan depicting existing and anticipated facilities "necessary to accommodate a specified enrollment at an estimated planning horizon, in accordance with approved educational policies and objectives" (California State University 2012a). Master Plans are based on annual FTES college year enrollment targets prepared by each campus in consultation with the CSU Chancellor's Office (California State University 2012).

Each year, the CSU works with the State of California to identify needed funding in support of planned enrollment growth as part of the annual state budget process. The annual state budget identifies anticipated enrollment growth systemwide for the CSU each year; according to the 2019-2020 California State Budget, the state expects the CSU to accommodate growth in enrollment of 10,000 FTES during that period (DOF 2019a). Once funding has been finalized by the state, the CSU allocates enrollment growth funding for California residents according to an enrollment target for each of the 23 CSU campuses. Campuses are expected to manage enrollment around that target, as they receive proportionate state/CSU funding.

The planned rate of enrollment growth at CSU, Chico is 1% per year, with faculty and staff increasing proportionately. This would have a positive effect on the economy, but is relatively slow, stable growth. It is not anticipated that this would induce significant growth within the City of Chico.

5.4 Effects Found Not to Be Significant

An EIR shall briefly describe potential environmental effects that were determined not to be significant and therefor were not discussed in detail in the EIR (Cal. Code Regs. tit. 14, § 15128). Potential impacts related to Agricultural and Forestry Resources and Mineral Resources were identified as less than significant. No comments were received regarding these resource issues during the EIR scoping period.

Agricultural Resources

The main campus and University Village do not contain farmland. The University Farm includes farmland. However, the proposed development area of the University Farm is a defined area of previously disturbed land. The proposed Master Plan development would occur within this footprint that does not contain farmland. In addition, an exterior biofence would be constructed around the perimeter of the University Farm. Farming does not currently occur on the edge of the property; therefore, improved fencing would not reduce the amount of farmland. The Master Plan area does not contain forestland or timberland.

Mineral Resources

The central campus and University Village do not contain locally or state-wide important minerals (City of Chico 2010). Butte County has not been mapped by the State Geologist, therefore it is undermined if important mineral resources exist on the University Farm site (Butte County 2010). However, the proposed Master Plan would not result in land use changes at the University Farm that would result in the loss of availability of a locally or state-wide important mineral resource.

5.5 References

Butte County. 2010. Butte County General Plan Draft Environmental Impact Report. April 2010.

City of Chico. 2010. Chico 2030 General Plan Update Environmental Impact Report. SCH No. 2008122038. September 2010.