Chapter 3
Environmental Impact Analysis

3.1 Introduction & Overview

A draft EIR must identify and focus on the possible significant environmental impacts of a proposed project [CEQA Guidelines, Section 15126 (a) and Public Resources Code Section 21000 (a)]. The emphasis of the EIR should be placed on the potential impacts that are most significant and most likely to occur.

Impact analysis must focus on the "physical" adverse effects of a proposed project. Potential impacts are expected to be evaluated from the standpoint of short-term and long-term effects as well as direct and indirect effects. Cumulative impacts must also be evaluated.

3.1.1 Potential Environmental Impact Analysis Assumptions

This environmental analysis has been conducted in accordance with the following assumptions:

Short-Term/Long-Term Effects:
As a project, a Master Plan has a unique status relative to the CEQA process. By its nature, the Plan's impacts are long-term and lasting. The Plan guides future campus development which results in long-term (and mostly) irreversible changes in the physical environment. There are typically no short-term effects or temporary effects of Master Plan Update adoption and implementation.

Direct/Indirect Effects:
As with short-term/long-term effects, adoption and implementation of a master plan typically does not have any direct physical impacts on the environment. Impacts occur indirectly as a result of actions taken in accordance with the Plan's policies.

Significant Physical Effects:
Section 15360 of the CEQA Guidelines define "Environment" as the physical conditions that exist within the area that will be affected by a proposed project including, but not limited to, land, air, water, minerals, flora, fauna, ambient noise, and objects of historical or aesthetic significance. The section further defines the area involved as the area in which significant effects would occur either directly or indirectly as a result of the project. The "environment" includes both natural and man-made conditions.

Section 15382 defines "significant effect on the environment" as a substantial, or potential substantial, adverse change in any of the physical conditions within the area affected by the project. An economic or social change by itself shall not be considered a significant effect on the environment. Economic or social change, however, may be considered in determining whether the physical change is significant.

The operative terms of the law are "significant" "adverse" and "physical" changes resulting from the project. These terms shape the manner that environmental issues are evaluated in this Program EIR

Environmental impacts are identified as follows:

- **Significant Impact:** Impacts that exceed the defined standards of significance.
- **Significant and Unavoidable Impact:** Impacts that, after implementation of all feasible mitigation measures, continue to exceed the defined standards of significance.
- **Less-Than-Significant Impact:** Impacts that are adverse but that do not exceed the defined standards of significance.

3.1.2 Thresholds of Environmental Significance

A. The Principal of a Threshold Standard

Thresholds of significance are principally used to determine whether a project may have a significant environmental effect. Thresholds are an analytical tool for judging significance.

The "threshold of significance" for a given environmental effect is simply that level at which the Lead Agency finds the effects of the project to be significant. "Threshold of significance" can be defined as:

> "A quantitative or qualitative standard, or set of criteria, pursuant to which the significance of a given environmental effect may be determined."

Ideally, a threshold of significance provides a clear differentiation of whether or not the project may result in a significant environmental effect.

According to CEQA, a threshold may be based on standards such as the following:

- A health-based standard such as air pollutant emission standards, water pollutant discharge standards, or noise levels.
- Service capacity standards such as traffic level of service, water supply capacity, or waste treatment plant capacity.
- Ecological tolerance standards such as physical carrying capacity, impacts on declared threatened or endangered species, loss of prime farmland, or wetland encroachment.
- Cultural resource standards such as impacts on historic structures or archaeological resources.
- Other standards relating to environmental quality issues, such as those listed in the *Guidelines'* Initial Study Checklist or Appendix G of the *Guidelines*.

B. Standard

In accordance with Section 15064 (h) (3) of the CEQA Guidelines, a "standard" means a standard of general application that is all of the following:

- a quantitative, qualitative or performance requirement found in a statute, ordinance, resolution, rule, regulation, order, or other standard of general application;
- adopted for the purpose of environmental protection;
- adopted by a public agency through a public review process to implement, interpret, or make specific the law enforced or administered by the public agency;
- one that governs the same environmental effect which the change in the environment is impacting; and,

- one that governs within the jurisdiction where the project is located.

Section 15064 establishes procedures for determining the application of various "standards" for determining "significance" within the meaning of CEQA. Section 15064.7 promotes the use of standards and thresholds that have been adopted to protect the environment as the means for determining the significance of project impacts. Where an applicable standard or threshold exists, an environmental change which complies with that standard or threshold would not be considered significant.

"Standard" has been carefully defined to ensure that any such benchmark for determining significance has been adopted for the purpose of environmental protection, governs the same environmental effect that the project is causing, and governs within the area of the project. Further, only those standards which have been adopted by a public agency after a public review process are applicable.

The following sections establish thresholds of significance that are used for evaluating the potential environmental impacts of this project. Where applicable, various standards have been established, based on existing law or regulation or as determined by the Lead Agency as applicable for the purposes of evaluating the impacts of this project.

3.1.3 Effects Determined Not To Be Significant

Section 15128 of the CEQA Guidelines requires that an EIR contain "*a statement briefly indicating the reasons that various possible significant effects of a project were determined not to be significant and therefore not discussed in detail in the EIR*." The following possible significant effects were determined not to be significant:

- **Agricultural Resources impacts** of Campus growth and development is insignificant by normal operation of the Campus's construction review and management process. On the basis of the discussion in the following section, the impact is determined to be less than significant.
- **Cultural Resource impacts** of Campus growth and development is insignificant by normal operation of the Campus's construction review and management process. On the basis of the discussion in the following section, the impact is determined to be less than significant.
- **Geology and Soils impacts** are regulated by normal University construction review and management practices. On the basis of the discussion in the following section, the impact is determined to be less than significant.
- **Hazards and Hazardous Materials impacts** of Campus growth and development is insignificant by normal operation of Campus operations and management guidelines and the requirements of State, Federal and local regulations regarding hazards and hazardous materials. On the basis of the discussion in the following section, the impact is determined to be less than significant.
- **Hydrology and Water Quality impacts** are not expected to result from the implementation of the Physical Master Plan. On the basis of the discussion in the following section, the impact is determined to be less than significant.
- **Land Use and Planning impacts** are not significant as a result of implementation of the City of Turlock General Plan, adopted and implemented in accordance with State law and the General Plan Guidelines and regulation and standards of the CSU System Master Plan process. On the basis of the discussion in the following section, the impact is determined to be less than significant.
- **Mineral Resources impacts** are not significant due to fact that there are no mineral resources known to exist within the area. On the basis of the project analysis, there is no identified impact.

- **Population and Housing impacts** are not significant as a result of implementation of the CSU Stanislaus Physical Master Plan. On the basis of the discussion in the following section, the impact is determined to be less than significant.
- **Public Services impacts** are not significant as a result of implementation of the CSU Stanislaus Physical Plan Update. On the basis of the discussion in the following section, the impact is determined to be less than significant.
- **Recreation impacts** are not significant as a result of implementation of the CSU Stanislaus Physical Plan Update. On the basis of the discussion in the following section, the impact is determined to be less than significant.
- **Utilities and Service Systems impacts** are not significant as a result of implementation of the CSU Stanislaus Physical Plan Update. On the basis of the discussion in the following section, the impact is determined to be less than significant.

3.1.4 Potential Environmental Impacts

Each section of this Chapter is organized around the analysis of a specific area of environmental concern. An explanation of each impact and an analysis of its significance follows each impact statement.

Section 3.2
Aesthetics

Aesthetics Discussion: This environmental issue focuses on the impacts of a project with respect to scenic vistas and the overall appearance of the project in the community context. Issues of light and glare, community view-sheds, architectural compatibility with existing development or a specific site or setting are all part of the issue of "Aesthetics" as addressed within the framework of CEQA.

3.2 1 Environmental Setting

The ±228-acre CSU Stanislaus campus blends modern multi-story facilities with large trees, lawns and ponds to create a unique "campus" setting. Shaded by large trees and graced by ponds, trickling streams and waterfalls, the picturesque campus offers moments of peace and relaxation to busy students, faculty, and staff. The surrounding community also actively participates in the learning-centered activities sponsored by the campus.

Visuals Character:

The area around the project site is relatively flat. The campus has evolved in a manner that provides a unique character and quality that enhances the academic mission of the University. The careful integration of large trees, open areas, buildings, ponds and walkways of the Campus has become well known throughout the State University system. Additional aesthetic consideration will be evaluated with respect to placement of campus lighting.

Scenic Areas and View Corridors:

The project site does not obstruct an important "vista". There are no designated "scenic highways" within the project area. The CSU Stanislaus Campus, itself, is an important visual asset from surrounding City streets.

Light and Glare:

Security lighting is provided on campus in walkways, parking lots, around buildings, and at other key locations. Athletic field lighting is minimal, and located on the north-east and along the eastern edge of the campus, and designed to limit direct spillover into surrounding commercial and residential neighborhoods. Energy efficient bulbs and other measures are used to the extent feasible to reduce energy use, glare, and illumination of the night sky. All campus lighting is shielded and directed down to provide necessary illumination levels and minimize light trespass.

At present, the campus landscaping, trees and building placement do not generate light and glare to the same degree as the surrounding commercial and residential neighborhoods. This is largely the result of the placement of buildings towards the interior of the Campus site. Parking areas around the periphery of the site, while well lit, have low emission lights that are focused towards the ground and are partially obscured by on-campus landscaping.

Existing Facilities

The campus originally contained two buildings: the Classroom Building, renamed Dorothy and Bill Bizzini Hall; and the library building, named after founding President Dr. J. Burton Vasche. A few years later, the art, theatre, music, and science buildings were added. The Health Center, dedicated in 1981, provides basic medical services, health maintenance, and health education.

The University Union building houses, the Associated Students, Inc. office, the Carol Burke lounge, game room and the Warrior, Stanislaus, and Lakeside conference rooms. The Dining Hall complex offers a 553-seat cafeteria, a smaller dining room, Mom's Coffee Bar, and Pop's Convenience Store.

The Residence Life Village student housing complex opened in 1993 and includes apartment-style accommodations with laundry facilities, a computer lab, recreation room, courtyard with barbecue areas, and a pool. Phase III, completed in 2004, nearly doubled the capacity and added a unit for the Faculty in Residence, a dining facility, a second pool, and more sports courts

Physical education facilities include a field-house, a 2,300-seat gymnasium, soccer field, baseball and softball diamonds, tennis courts, track, student fitness center and swimming pool. Demergasso-Bava Hall, built in 1998, houses classrooms, lecture halls, laboratories and faculty offices, several academic departments, The Signal (the student newspaper), the campus radio and television stations, and the Distance Learning Center.

The Mary Stuart Rogers Educational Services Gateway Building, completed in 2002, provides one-stop student services, including enrollment, advising, counseling, and career development, and several administrative offices.

The John Stuart Rogers Faulty Development Center, which opened in 2003, offers faculty members a gathering place to form research partnerships, promote service learning, integrate academic technology into pedagogical practices, and work on projects in multimedia laboratories.

The Bernell and Flora Snider Music Recital Hall, dedicated in 2003, provides the ideal acoustical showcase for student, faculty, and guest talent. The Nora and Hashem Naraghi Hall of Science, completed in 2007, offers state-of-the-discipline classrooms and laboratories, plus a new observatory and vivarium.

3.2.2 Environmental Impacts

Potential adverse physical impacts to Aesthetics, as a result of implementation of the CSU Stanislaus Physical Master Plan Update are limited to the impacts resulting from the construction of new multi-story buildings near the periphery of the Campus site and the installation of new lighting facilities on the northeast corner of the Campus for sports facilities.

A. Thresholds of Significance

Appendix "G" of the CEQA Guidelines addresses potential impacts on Aesthetics as follows:

Would the Project:

- Have a substantial adverse effect on a scenic vista?
- Substantial damage to scenic resources including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?
- Substantially degrade the existing visual character or quality of the site and its surroundings?
- Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?

DEFINITION OF ISSUE

Aesthetic Resource: An aesthetic resource is any element, or group of elements, that embodies a sense of beauty. A city's aesthetic resources include its natural setting, the architectural quality of its buildings, the vitality of its landscaping, the spatial relationships they create, and the views afforded by each. The degree to which these resources are present in a community is clearly subject to personal and cultural interpretation. However, it is possible to qualify certain resources as having aesthetic characteristics, and establish general guidelines for assessing the aesthetic impacts of new development.

DEFINITION OF AESTHETIC TERMS

Scenic Vista: A scenic vista is the view of an area that is visually or aesthetically pleasing. One example is the area encompassing a lake or a park-land water amenity and the view-shed extending from the lake to the highest visible point surrounding the lake. Aesthetic components of a Scenic Vista include; 1) scenic quality, 2) sensitivity level, and 3) view access.

Scenic Resource: An element of a scenic area that contributes to the area's scenic value and includes landform, vegetation, water, adjacent scenery, and may include a cultural modification to the natural environment.

Visual Character and Quality: The visual aesthetic character or quality of a streetscape, building, group of buildings or other man-made or natural feature that create an overall impression of an area within an urban context. As examples, a scenic vista along the boundary of a community or a pleasing streetscape with trees, well kept residences and yards are scenic resources that create a pleasing impression of an area. In general, concepts of visual character and quality can be organized around four basic elements; 1) site utilization, 2) buildings and structures, 3) landscaping and, 4) signage.

ASSESSMENT OF SCENIC RESOURCES

DEFINITION OF ISSUE

A scenic vista is typically a rural area containing natural visual elements that can be seen from a distance. A scenic vista can be impacted in two ways. A development project can have visual impacts by either directly diminishing the scenic quality of the vista or by blocking the view corridors or "Vista" of the scenic resource. Important factors in determining if a proposed project will block views include its height, mass, and location relative to surrounding land uses and travel corridors.

DEFINITION SCENIC RESOURCE TERMS

Scenic Resource Area: An area that, due to land form, rock outcroppings or other natural features, vegetation, presence of water or some other natural element, creates a view that is aesthetically pleasing to the viewer and is normally viewed from a distance of one mile or more.

Scenic Resource Management Standard: A standard or set of policies that address the physical attributes, visibility and uniqueness of a scenic resource and adopted by the University or other appropriate scenic resource management agency for the purpose of regulating physical changes that may be allowed within an area designated as a Scenic Resource Area.

Visual Access Standard: A standard or set of policies adopted by the University or other appropriate scenic resource management agency for the express purpose of assuring proper access to a Scenic Resource and preserving a view corridor.

THRESHOLD CRITERIA

When a project:

A) Results in visual intrusion by means of construction or development within a designated scenic resource area, designated in accordance with applicable Federal State or local policies, that violates the locally adopted scenic resource management standards of the designated scenic resource area or,
B) Results in obstruction of a public view of a designated scenic resource area in a manner that violates the locally adopted visual access standards for the scenic resource area,

the project will have a significant adverse impact on Scenic Resources.

ASSESSMENT OF VISUAL CHARACTER

DEFINITION OF ISSUE

In an urbanized area, it is important that buildings and other visual landmarks are properly fitted into the built environment, and designs are mindful of their aesthetic impacts on the natural environment. Factors used in determining the suitability of new structures in a given location include scale (height and mass), pattern (separation from other buildings), and architectural design. The University's desire to reduce disruptive impacts and encourage compatible design is based on the principle that similar elements existing together create an easily recognizable and identifiable place.

DEFINITION VISUAL RESOURCE TERMS

Designated Architectural Resource Area: An area that has been determined to contain aesthetic elements such as buildings, streetscapes, trees and other vegetation, water elements, etc., that should be preserved, protected and/or enhanced and therefore is subject to local design review regulations and standards.

Visual Character or Quality Resource Standard: A standard or set of policies adopted by the University for the purpose of regulating physical changes that may be allowed within an area designated as a Architectural Resource Area.

THRESHOLD CRITERIA

When a project would result in the construction or a development within a designated architectural resource area, designated in accordance with applicable local policy, violates the locally adopted visual character or quality resource management standards of the designated architectural resource area, the project will have a significant adverse impact on the Visual Character or Quality of a site and its surroundings.

ASSESSMENT OF LIGHT AND GLARE

DEFINITION OF ISSUE

Light and glare creates environmental problems when it directly illuminates or reflects upon adjacent property or could be directly seen by motorists or persons residing, working or otherwise located within sight of the project. Light sensitive areas, such as view corridors to scenic resource areas or areas containing other important visual qualities, can be adversely impacted by light and glare sources that impair the visual quality of the vista.

DEFINITION LIGHT AND GLARE TERMS

Foot Candle: The primary measure of light intensity. One foot candle equals one lumen per square foot.

Glare: A continuous or periodic intense light that may cause eye discomfort or be blinding to humans.

Light Pattern: The area of direct illumination from a light source.

Light Source: A device that produces illumination, including incandescent bulbs, fluorescent and neon tubes, halogen and other vapor lamps, and reflecting surfaces or refractors incorporated into a lighting fixture. Any translucent enclosure of a light source is considered to be part of the light source.

Point of Overlap: The highest point vertically from ground level at which adjacent light patterns overlap.

THRESHOLD CRITERIA

A significant Light and Glare impact would result from any project that would result in:

a) A new light source that would adversely affect day or nighttime views of a designated scenic resource area, or

b) A new light source that does not conform with the standards for lighting established for a community with respect to signs, parking area or security lighting, or

c) Utilization of reflective exterior building materials where, due to the relation to the position of the sun, create glare on surrounding properties so as to create a nuisance, adversely effect view-sheds of, or the visual resources within, a designated scenic corridor or designated architectural resource area

B. Proposed CSU Stanislaus Physical Master Plan Update Policies and Standards Relating to Campus and Area Aesthetics:

The 1968 Physical Master Plan proposed that the college would conform to a set of Architectural Guidelines in order to avoid the potential for chaos as new buildings were added to the campus. Today, the look of the campus has benefited from a maturing landscape, while building variations, even as they conform to earlier guidelines, blend into their environment and are softened by the plantings that surround them. As with most of the campuses of the California State University System, no identifiable or distinct architectural style is apparent on the Stanislaus campus. However, individual buildings do exhibit design clues that stem from the "campus language" and can be incorporated in future structures. With 228 acres of land available on the main campus, the opportunity to zone different uses has resulted in yet another layer of "visual control" of the campus. It is this zoning that will continue to influence how certain building designs will be implemented based on their location.

"The following are the Architectural Guidelines that will be considered for future additions to the campus:

Building Height and Density
Of the approximately 45 buildings on campus, most are single story with few two and three story buildings, the tallest being the Mary Stuart Rogers Educational Services Gateway Building and the Nora and Hashem Naraghi Hall of Science at four stories. The proposed Library Addition is five stories. As future space is needed, the low scale trend of the campus will need to change and increase its density. Taller buildings up to five stories should be planned in the core area to increase the identity of the campus center. These will harmonize with the existing four story buildings.

New student housing may also be built with 3-4 story levels to concentrate housing and to minimize the ground area coverage of these structures.

Other campus structures, depending on function, can continue to remain at one to two stories, helping to emphasize land use contrast and offering a greater focus on the core.

Building Location and Orientation
The academic complex concept forming much of the campus core is still an effective idea and should be continued as instructional space is added. Buildings should not be located on the campus edge, but rather as part of a defined campus use. In California's Central Valley the orientation of windows away from the Sun can help minimize glare and reduce energy consumption.

Building Character
While many believe that the first generation of campus buildings is dated, inconsistent and of varying styles, this condition is partially mitigated by the plantings and open space that are so prominent on campus. Buildings that have used natural looking materials fit in better and offer clues for future projects. Outdoor seating spaces and plazas for different size groups to congregate are needed and will be considered when adding new structures to the campus.

Materials and Textures
The mix of materials on campus will align with existing conditions regarding scale, module and texture. Natural materials on smaller buildings can be appropriate contrasts to plainer surfaces on larger buildings. New technology can provide greater options in the appearance of new buildings."

C. Potential Significant Impacts:
Aesthetic Impacts Found Not to be Potentially Significant:
As a result of project analysis, based on data collected in the evaluation of the University's Physical Master Plan Update implementation, the following aspects of a potential aesthetic impact are found not to exist or exist at levels well below any reasonable expectation that a significant adverse impact is likely to result:

- *Substantially damage scenic resources including, but not limited to, trees, rock outcroppings, and historic buildings within a State scenic highway?*
  There are no scenic highways, rock outcroppings or other terrain features that will be adversely impacted by implementation of the CSU Stanislaus Physical Master Plan Update. The project does not have any direct adverse impacts on the scenic resources on the campus or the surrounding city. Implementation of the CSU Stanislaus Physical Master Plan Update will not impact historic buildings and structures within the campus or the city. The Plan contains policies and standards that will guide the design of future facility development.

- *Substantially degrade the existing visual character or quality of the site and its surroundings?*
  The implementation of the CSU Stanislaus Physical Master Plan Update will not result in any development that could have an impact on the visual character or quality of the Campus or the City. Development projects can be expected to be proposed in accordance with the Plan's standards for design. All development designs are subject to review by the University and would be reviewed according to the standards of the Master Plan Update. These projects will need to be evaluated on a case by case basis utilizing appropriate visual character and quality impact methodologies.

D. Potential Significant Aesthetic Impact Assessment:
As a result of project analysis, based on data collected in the evaluation of the University's proposed Physical Master Plan Update, some potential aesthetic impacts could result in a significant adverse environmental impact due to project implementation:

- *Have a substantial adverse effect on a scenic vista?*
  Views from the Campus are limited by existing structures, trees and landscaping. The Campus view-shed includes views of urban development within the surrounding city and includes roadways, commercial centers and residential development. The Campus, however, is an important visual asset to surrounding areas. The presence of its large trees and landscaping provides a park-like view that is an amenity to surrounding commercial and residential properties. New development on the Campus could adversely impact the view from surrounding properties.

- *Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?*

For safety and security reasons, roadways, bikeways and sidewalks will require nighttime lighting as part of the development process. This lighting will increase the overall night environment of the campus and surrounding area. The increased background urban lighting is not substantial by normal urban standards. The University's new construction review processes, combined with the policies and standards contained in CSU Stanislaus Physical Master Plan Update, combine to provide adequate provisions to minimize the potential impacts of excessive light and glare created by individual plan improvements.

E. Short-Term Impacts:

Adoption of the CSU Stanislaus Physical Master Plan Update will not have any immediate impact on the aesthetic environment other than to affirm existing policy regarding the future site development Master Plan strategy for providing educational facilities adequate to support the Campus capacity of 12,000 FTE as implemented through the adopted FY 09-10 through 13-14 CSU Stanislaus CIP-COP. In this regard, there are no physical short term effects of the project. Construction and maintenance lighting may be employed over short spans of time but this type of lighting will not have any off-campus impacts nor distract from the overall aesthetics of the campus as they would only be employed for specific construction related tasks and are part of the on-going campus development and maintenance strategy.

F. Long-Term Impacts:

The long term effects of the implemented CSU Stanislaus Physical Master Plan Update is that some open space that presently exists within the campus area will be converted to facilities resulting in the creation of new light and glare sources. New field and stadium lighting will be developed in the north-east portion of the campus that will be visible from sites located beyond the campus boundaries. Development of new buildings, including parking structures, along the perimeter of the campus will reduce the "park-like" views along certain roadways, such as Monte Vista Avenue/University Way, but retention of many of the older large trees, in these areas will soften this impact to a significant degree. Overall, with the application of proposed mitigation to new lighting sources, these impacts are not considered "significant" within the meaning of CEQA.

G. Cumulative Impacts:

The cumulative effects of the project are that the existing campus development will be expanded within the University's Master Plan area as the CSU Stanislaus Physical Master Plan Update is implemented. The campus will contribute to existing light and glare sources in the general area of the campus. However, the campus is in a generally urbanized area within the community of Turlock and this contribution to light and glare, as mitigated, is not considered to have a significant impact on the cumulative light environment.

H. Secondary Impacts:

Implementation of Aesthetic standards of the Master Plan will have a nominal effect on costs but these impacts will not be significant in light of the overall character and use of this public educational facility.

3.2.3 Mitigation Measures

The following mitigation measures are proposed to reduce potential Aesthetic impacts of increased light and glare to a level deemed less than significant.

3) New lighting to be located adjacent to or near (within 100-feet) of a residential area or vacant area designated for off-campus residential uses, shall be installed for use during evening events and shall be mounted in groups of 75 to 90 foot high standards to minimize effects on adjacent residential uses.
4) The best available fixtures will be used to avoid spillover. All lighting will be shielded and directed downwards to provide the necessary illumination and at the same time minimize visibility from nearby areas.
5) All lighting will be turned off after the sport games or other events end. Mitigation measures specified in Section 3.10, Noise, which limit the duration of athletic events at the sport fields, will also work to avoid lighting during nighttime.

3.2.4 Level of Significance After Mitigation

Implementation of these mitigation measures and adherence to the Master Plan's architectural guidelines will ensure that new buildings, other facilities, landscaping, and open space are appropriate to their context. The University will utilize shorter light standards for sports fields, located near residential areas, to minimize visibility of the lights from these nearby areas. With incorporation of these features and characteristics, impact will be less than significant.

Section 3.3
Air Quality

This environmental issue focuses on the impacts of a project on air quality. Issues over project consistency with applicable air quality plans, policies and regulations, increases of any pollutant for which the area has been designated as a "non-attainment" area. Additional concerns are over the exposure of sensitive receptors, such as people, to high levels of air pollution or odors and the project's contribution to Global Climate Change.

3.3 1 Environmental Setting

Climate and Topography The CSU Stanislaus Campus and the City of Turlock are located in the San Joaquin Valley Air Basin (SJVAB). The SJVAB, which is approximately 250 miles long and averages 35 miles wide, is the second largest air basin in the State. The SJVAB is defined by the Sierra Nevada mountains in the east (8,000–14,000 feet above sea level), the Coast Ranges in the west (averaging 3,000 feet above sea level), and the Tehachapi Mountains in the south (6,000–8,000 feet above sea level). The valley is basically flat with a slight downward gradient to the northwest. The valley opens to the sea at the Carquinez Straits, where the Delta empties into San Francisco Bay. The San Joaquin Valley could therefore be considered a "bowl" open only to the north.

The SJVAB has an "inland Mediterranean" climate averaging more than 260 sunny days per year. The valley floor experiences warm, dry summers and cool, wet winters. Summer high temperatures often exceed 100°F, averaging in the low 90s in the northern valley and high 90s in the south. In the entire San Joaquin Valley, high daily temperature readings in summer average 95°F.

During the last 30 years, the San Joaquin Valley averaged 106 days per year with 90°F or hotter, and 40 days per year with 100°F or hotter. The daily summer temperature variation can be as high as 30°F.

In winter, as the cyclonic storm track moves southward, the storm systems moving in from the Pacific Ocean bring a maritime influence to the San Joaquin Valley. The high mountains to the east prevent the cold, continental air masses of the interior from influencing the valley. Winters are mild and humid. Temperatures below freezing are unusual. Average high temperatures in the winter are in the 50s, but highs in the 30s and 40s can occur on days with persistent fog and low cloudiness. The average daily low temperature is 45°F.

Although marine air generally flows into the basin from the Delta, the region's topographic features restrict air movement through and out of the basin. The Coastal Range hinders wind access into the San Joaquin Valley from the west, the Tehachapis prevent southerly passage of airflow, and the high Sierra Nevada is a significant barrier to the east. These topographic features result in weak airflow that becomes blocked vertically by high barometric pressure over the San Joaquin Valley. As a result, the SJVAB is highly susceptible to pollutant accumulation over time. Most of the surrounding mountains are above the normal height of summer inversion layers (1,500–3,000 feet above sea level).

Existing Air Quality Conditions

Air Quality Pollutants and Ambient Air Quality Standards

The Federal and State governments have established ambient air quality standards for six criteria pollutants: ozone, carbon monoxide (CO), nitrogen dioxide (NO2), sulfur dioxide (SO2), particulate matter 10 microns or less in diameter (PM 10), and lead. Ozone is generally considered a regional pollutant, because it and its precursors affect air quality on a regional scale. Pollutants such as CO, NO2, SO2, and lead are considered local pollutants that tend to accumulate in the air surrounding the pollutant source. PM10 and PM2.5 are considered localized pollutant as well as a regional pollutant. In Stanislaus County, especially east of I-5, PM10 and ozone are of particular concern.

Air basins are classified as either attainment or non-attainment with respect to State and Federal ambient air quality standards. These classifications are determined by comparing actual monitored air pollutant concentrations to State and Federal standards. The pollutants of greatest concern in the valley are ozone, CO, PM10, and PM2.5. The State and Federal ambient air quality standards are summarized in table 3.3.1.

Ozone is a severe eye, nose, and throat irritant. It is also an oxidant that increases susceptibility to respiratory infections, and can cause substantial damage to vegetation and other materials. Ozone attacks synthetic rubber, textiles, plants, and other materials and can cause extensive cell damage and leaf discoloration in plants.

Ozone is not emitted directly into the air, but is formed by a photochemical reaction in the atmosphere. Ozone precursors, which include reactive organic gases (ROG) and oxides of nitrogen (NOx), react in the atmosphere in the presence of sunlight to form ozone. Because photochemical reaction rates depend on the intensity of ultraviolet light and air temperature, ozone primarily is a summer air pollution problem. The ozone precursors ROG and NOx are emitted by stationary combustion engines and mobile sources, such as construction equipment.

State and Federal standards for ozone have been set for a 1-hour averaging time. The State requires that a 1-hour ozone standard of 0.09 parts per million (ppm) not be violated. The Federal 1-hour ozone standard is 0.12 ppm, not to be violated more than three times in any 3-year period. As shown in table 3.3.1, pollutants at the monitoring station have consistently violated the State 1-hour ozone standard during the 3 most recent years for which data are available. The SJVAB is therefore classified as a non-attainment area for the State and Federal ozone standards.

Carbon Monoxide

CO is essentially inert to plants and materials but can have significant effects on human health. CO is a public health concern because it combines readily with hemoglobin and reduces the amount of oxygen transported in the bloodstream. Effects on humans range from slight headaches to nausea to death.

Motor vehicles are the dominant source of CO emissions in most areas. High CO levels develop primarily during winter when periods of light winds combine with the formation of ground-level temperature inversions (typically from the evening through early morning). These conditions result in reduced dispersion of vehicle emissions. Motor vehicles also exhibit increased CO emission rates at low air temperatures.

Table 3.3.1
Ambient Air Quality Standards

Pollutant	Averaging Time	California Standards	1	Federal Standards 2		
		Concentration 3	**Method** 4	**Primary** 3,5	**Secondary** 3,6	**Method** 7
Ozone (O3)	1 Hour	0.09 ppm (180 µg/m^3)	Ultraviolet Photometry	0.12 ppm (235 µg/m^3)[8]	Same as Primary Standard	Ultraviolet Photometry
	8 Hour	0.070 ppm (137 µg/m^3)*		0.08 ppm (157 µg/m^3)[8]		
Respirable Particulate Matter (PM10)	24 Hour	50 µg/m^3	Gravimetric or Beta Attenuation	150 µg/m^3	Same as Primary Standard	Inertial Separation and Gravimetric Analysis
	Annual Arithmetic Mean	20 µg/m^3		50 µg/m^3		
Fine Particulate Matter (PM2.5)	24 Hour	No Separate State	Standard	65 µg/m^3	Same as Primary Standard	Inertial Separation and Gravimetric Analysis
	Annual Arithmetic Mean	12 µg/m^3	Gravimetric or Beta Attenuation	15 µg/m^3		
Carbon Monoxide (CO)	8 Hour	9.0 ppm (1 0mg/m^3)	Non-Dispersive Infrared Photometry (NDIR)	9 ppm (10 mg/m^3)	None	Non-Dispersive Infrared Photometry (NDIR)
	1 Hour	20 ppm (23 mg/m^3)		35 ppm (40 mg/m^3)		
	8 Hour (Lake Tahoe)	6 ppm (7 mg/m^3)		—	—	—
Nitrogen Dioxide (NO2)	Annual Arithmetic Mean	—	Gas Phase Chemiluminescence	0.053 ppm (100 µg/m^3)	Same as Primary Standard	Gas Phase Chemiluminescence
	1 Hour	0.25 ppm (470 µg/m^3)		—		
Sulfur Dioxide (SO2)	Annual Arithmetic Mean	—	Ultraviolet Fluorescence	0.030 ppm (80 µg/m^3)	—	Spectrophotometry (Pararosaniline Method)
	24 Hour	0.04 ppm (105 µg/m^3)		0.14 ppm (365 µg/m^3)	—	
	3 Hour	—		—	0.5 ppm (1300 µg/m^3)	
	1 Hour	0.25 ppm (655 µg/m^3)		—	—	—

Table 3.3.1 *Continued*
Ambient Air Quality Standards

Lead[9]	30 Day Average	1.5 µg/m^3	Atomic Absorption	—	—	—
	Calendar Quarter	—		1.5 µg/m^3	Same as Primary Standard	High Volume Sampler and Atomic Absorption
Visibility Reducing Particles	8 Hour	Extinction coefficient of visibility of ten miles or more miles or more for Lake Tahoe) particles when relative humidity 70 percent. Method: Beta Transmittance through Filter	0.23 per kilometer — (0.07 — 30 due to is less than Attenuation and Tape.	**No Federal Standards**		
Sulfates	24 Hour	25 µg/m^3	Ion Chromatography			
Hydrogen Sulfide	1 Hour	0.03 ppm (42 µg/m^3)	Ultraviolet Fluorescence			
Vinyl Chloride 9	24 Hour	0.01 ppm (26 µg/m^3)	Gas Chromatography			

*This concentration was approved by the Air Resources Board on April 28, 2005 and is expected to become effective in early 2006.

1. California standards for ozone, carbon monoxide (except Lake Tahoe), sulfur dioxide (1 and 24 hour), nitrogen dioxide, suspended particulate matter—PM 10, PM2.5, and visibility reducing particles, are values that are not to be exceeded. All others are not to be equaled or exceeded. California ambient air quality standards are listed in the Table of Standards in Section 70200 of Title 17 of the California Code of Regulations.
2. National standards (other than ozone, particulate matter, and those based on annual averages or annual arithmetic mean) are not to be exceeded more than once a year. The ozone standard is attained when the fourth highest eight hour concentration in a year, averaged over three years, is equal to or less than the standard. For PM10, the 24 hour standard is attained when the expected number of days per calendar year with a 24-hour average concentration above 150 µg/m^3 is equal to or less than one. For PM2.5, the 24 hour standard is attained when 98 percent of the daily concentrations, averaged over three years, are equal to or less than the standard. Contact U.S. EPA for further clarification and current Federal policies.

3. Concentration expressed first in units in which it was promulgated. Equivalent units given in parentheses are based upon a reference temperature of 25°C and a reference pressure of 760 torr. 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.
4. Any equivalent procedure which can be shown to the satisfaction of the ARB to give equivalent results at or near the level of the air quality standard may be used.
5. National Primary Standards: The levels of air quality necessary, with an adequate margin of safety to protect the public health.
6. National Secondary Standards: The levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.
7. Reference method as described by the EPA. An “equivalent method” of measurement may be used but must have a “consistent relationship to the reference method” and must be approved by the EPA.
8. New Federal 8-hour ozone and fine particulate matter standards were promulgated by U.S. EPA on July 18,1997. Contact U.S. EPA for further clarification and current Federal policies.
9. The ARB has identified lead and vinyl chloride as 'toxic air contaminants' 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.

State and Federal CO standards have been set for both 1-hour and 8-hour averaging times. The State 1-hour standard is 20 ppm by volume, and the Federal 1-hour standard is 35 ppm. Both State and Federal standards are 9 ppm for the 8-hour averaging period. The CO monitoring data collected for the 3 most recent years for which data are available show no violations of the State or Federal CO standards. Stanislaus County is classified as an attainment area for the State and Federal CO standards.

PM10 AND PM2.5

Health concerns associated with suspended particulate matter focus on particles small enough to reach the lungs when inhaled. Particulates can damage human health and retard plant growth. Particulates also reduce visibility, soil buildings and other materials, and corrode materials.

PM10 emissions are generated by a wide variety of sources, including agricultural activities, industrial emissions, dust suspended by vehicle traffic and construction equipment, and secondary aerosols formed by reactions in the atmosphere. The State PM10 standards are 50 micrograms per cubic meter (μ/m^3) as a 24-hour average and 30 μ/m^3 as an annual arithmetic mean. The Federal PM 10 standards are 150 μ/m^3 as a 24-hour average and 50 μ/m^3 as an annual arithmetic mean. The SJVAB is therefore classified as a non-attainment area for the State and Federal PM10 standards.

Table 3.3.2
CSU Stanislaus Estimated 2007 Source Emissions Generation:

Emission	ROG	NO_X	CO	SO_2	PM_{10}	$PM_{2.5}$	CO_2
Area Source Emissions (TPY)							
Unmitigated	0.78	1.14	1.10	0.00	0.00	0.00	1,371.78
Mitigated	0.77	0.91	0.91	0.00	0.00	0.00	1,097.47
Percent Reduction (%)	1.28	20.18	17.27	n/a	n/a	n/a	20.00
Operational (Vehicle) Emissions (TPY)							
Unmitigated	42.85	64.04	393.34	0.22	19.41	4.89	22,353.04
Mitigated	25.75	29.67	182.21	0.10	8.99	2.27	10,354.96
Percent Reduction (%)	39.91	53.67	53.68	54.55	53.68	53.58	53.68
Sum of Area and Operation Emission (TPY) Estimates							
Unmitigated	43.63	65.18	394.44	0.22	19.41	4.89	23,724.82
Mitigated	26.52	30.58	183.12	0.10	8.99	2.27	11,452.43
Percent Reduction (%)	39.22	53.08	53.57	54.55	53.68	53.58	51.73

PM2.5 emissions are generated by a wide variety of sources, including fuel combustion from automobiles, power plants, wood burning, industrial processes, and diesel powered vehicles such as buses and trucks. PM2.5 refers to particulate matter that is 2.5 micrometers or smaller in size. 2.5 micrometers is approximately 1/30 the size of a human hair; so small that several thousand of them could fit on the period at the end of this sentence.

These fine particles are also formed in the atmosphere when gases such as sulfur dioxide, nitrogen oxides, and volatile organic compounds (all of which are also products of fuel combustion) are transformed in the air by chemical reactions. The State PM 2.5 standard is 12 micrograms per cubic meter (μ/m^3) as an annual arithmetic mean. The Federal PM 10 standards are 65 μ/m^3 as a 24-hour average and 15 μ/m^3 as an annual arithmetic mean. The SJVAB is therefore classified as a non-attainment area for the State and Federal PM2.5 standards.

Table 3.3.2 provides a summary of the estimated emissions associated with the CSU Stanislaus Campus during 2007 based on SJVAPCD application of the URBEMIS 9.2.4 Air Quality Modeling Program.

Climate Change

Naturally occurring greenhouse gases include water vapor, carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), and ozone (O_3). Several classes of halogenated substances that contain fluorine, chlorine, or bromine are also greenhouse gases, but they are, for the most part, solely a product of industrial activities. Chlorofluorocarbons (CFCs) and hydrochlorofluorocarbons (HCFCs) are halocarbons that contain chlorine, while halocarbons that contain bromine are referred to as bromofluorocarbons (i.e., halons).

Some other fluorine-containing halogenated substances—hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF_6)—do not deplete stratospheric ozone but are potent greenhouse gases. These latter substances are addressed by the UNFCCC and accounted for in national greenhouse gas emission inventories.

There are also several gases that do not have a direct global climate change effect but indirectly affect terrestrial and/or solar radiation absorption by influencing the formation or destruction of greenhouse gases, including tropospheric and stratospheric ozone. These gases include carbon monoxide (CO), oxides of nitrogen (NOx), and non-CH4 volatile organic compounds (NMVOCs). Aerosols, which are extremely small particles or liquid droplets, such as those produced by sulfur dioxide (SO2) or elemental carbon emissions, can also affect the absorptive characteristics of the atmosphere.

Although the direct greenhouse gases CO_2, CH_4, and N_2O occur naturally in the atmosphere, human activities have changed their atmospheric concentrations. From the pre-industrial era (i.e., ending about 1750) to 2004, concentrations of these greenhouse gases have increased globally by 35, 143, and 18 percent, respectively.

Gases in the atmosphere can contribute to the greenhouse effect 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 greenhouse gases, 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).

In 2005, total U.S. greenhouse gas emissions were 7,260.4 Tg CO_2 Eq. Overall, total U.S. emissions have risen by 16.3 percent from 1990 to 2005, while the U.S. gross domestic product has increased by 55 percent over the same period (BEA 2006). Emissions rose from 2004 to 2005, increasing by 0.8 percent (56.7 Tg CO2 Eq.). The following factors were primary contributors to this increase: (1) strong economic growth in 2005, leading to increased demand for electricity and (2) an increase in the demand for electricity due to warmer summer conditions. These factors were moderated by decreasing demand for fuels due to warmer winter conditions and higher fuel prices.

Recognizing the problem of potential global climate change, the World Meteorological Organization (WMO) and the United Nations Environment Program (UNEP) established the Intergovernmental Panel on Climate Change (IPCC) in 1988. It is open to all members of the UN and WMO. The IPCC developed the Global Warming Potential (GWP) concept to compare the ability of each greenhouse gas to trap heat in the atmosphere relative to another gas.

The GWP of a greenhouse gas is defined as the ratio of the time-integrated radiative forcing from the instantaneous release of 1 kilogram (kg) of a trace substance relative to that of 1 kg of a reference gas (IPCC 2001). Direct radiative effects occur when the gas itself is a greenhouse gas. The reference gas used is CO_2, and therefore GWP weighted emissions are measured in teragrams of CO2 equivalent (Tg CO2 Eq.). All gases in this Executive Summary are presented in units of Tg CO2 Eq.

The IPCC's *Good Practice Guidance* (IPCC 2000) defines a key category as a "[source or sink category] that is prioritized within the national inventory system because its estimate has a significant influence on a country's total inventory of direct greenhouse gases in terms of the absolute level of emissions, the trend in emissions, or both."[16] By definition, key categories are sources or sinks that have the greatest contribution to the absolute overall level of national emissions in any of the years covered by the time series. In addition, when an entire time series of emission estimates is prepared, a thorough investigation of key categories must also account for the influence of trends of individual source and sink categories. Finally, a qualitative evaluation of key categories should be performed, in order to capture any key categories that were not identified in either of the quantitative analyses.

Table 3.3.3
Global Warming Potentials (100-Year Time Horizon)

Gas	GWP
CO_2	1
CH_4	21
N_2O	310
HFC-23	11,700
HFC-32	650
HFC-125	2,800
HFC-134a	1,300
HFC-143a	3,800
HFC-152a	140
HFC-227a	2,900
HFC-336fa	6,300
HFC-4210mee	1,300
CF_4	6,500
C_2F_6	9,200
C_4F_{10}	7,000
C_6F_{14}	7,400
SF_6	23,900

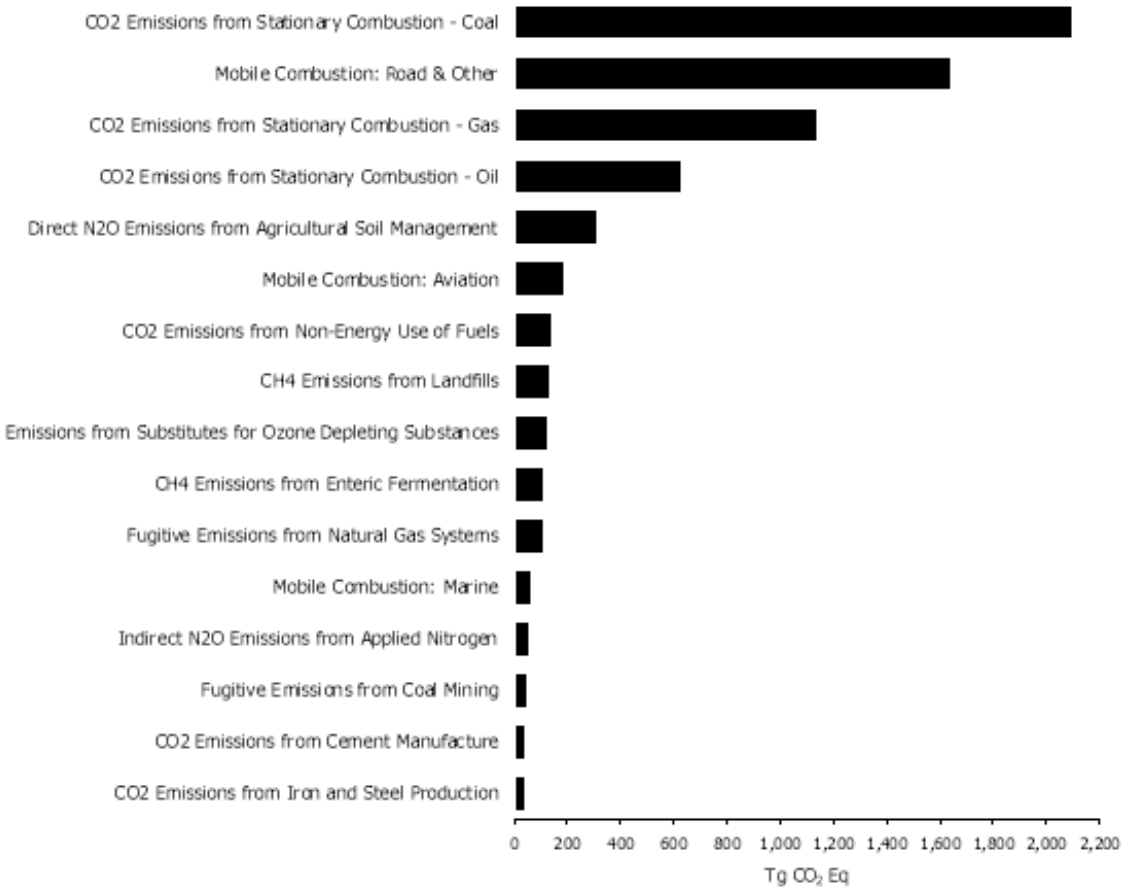
Source: IPCC (1996)

* The CH_4 GWP includes the direct effects and those indirect effects due to the production of tropospheric ozone and stratosphereic water vapor. The indirect effect due to the production of CO_2 is not included.

Table 3.3.4 presents 2005 emission estimates for the key categories as defined by a level analysis (i.e., the contribution of each source or sink category to the total inventory level).

The UNFCCC reporting guidelines for national inventories were updated in 2002 but continue to require the use of GWPs from the IPCC Second Assessment Report (SAR) (IPCC 1996). This requirement ensures that current estimates of aggregate greenhouse gas emissions for 1990 to 2005 are consistent with estimates developed prior to the publication of the IPCC Third Assessment Report (TAR). Therefore, to comply with international reporting standards under the UNFCCC, official emission estimates are reported by the United States using SAR GWP values. All estimates are provided throughout the report in both CO2 equivalents and un-weighted units.

Table 3.3.4
Key Categories of 2005 Global Warming Emissions

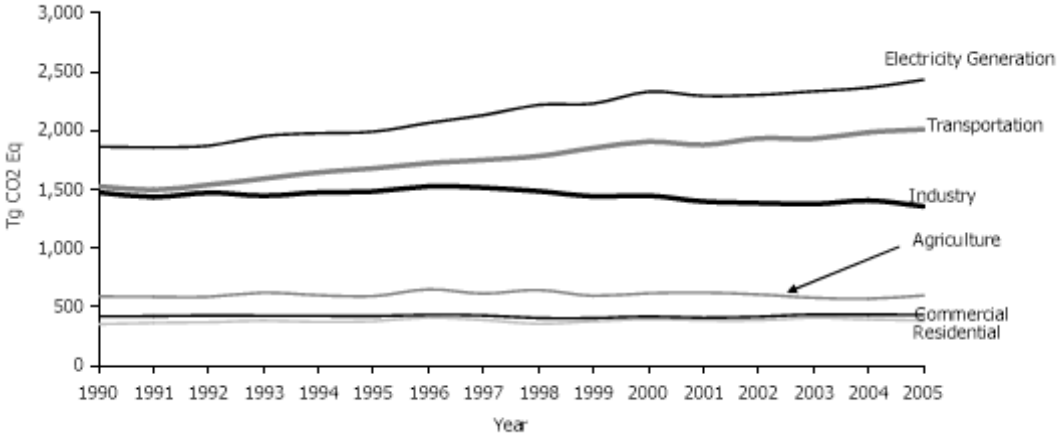


Global Climate Change -Regulatory Setting

Assembly Bill 1493 In 2002, then-Governor Gray Davis signed Assembly Bill (AB) 1493. AB 1493 requires that the California Air Resources Board (ARB) develop and adopt regulations by January 1, 2005, that achieve "the maximum feasible reduction of greenhouse gases emitted by passenger vehicles and light-duty truck and other vehicles determined by the ARB to be vehicles whose primary use is noncommercial personal transportation in the State."

Executive Order S-3-05 Executive Order S-3-05, which was signed by Governor Schwarzenegger in 2005, proclaims that California is vulnerable to the impacts of climate change. It declares that increased temperatures could reduce the Sierra's snow-pack, further exacerbate California's air quality problems, and potentially cause a rise in sea levels. To combat those concerns, the Executive Order established total greenhouse gas emission targets. Specifically, emissions are to be reduced to the 2000 level by 2010, the 1990 level by 2020, and to 80% below the 1990 level by 2050.

Table 3.3.5
Emissions with Electricity Distributed to Economic Sectors



The Executive Order directed the Secretary of the California Environmental Protection Agency (CalEPA) to coordinate a multi-agency effort to reduce greenhouse gas emissions to the target levels. The Secretary will also submit bi-annual reports to the governor and State legislature describing: (1) progress made toward reaching the emission targets; (2) impacts of global climate change on California's resources; and (3) mitigation and adaptation plans to combat these impacts. To comply with the Executive Order, the Secretary of the CalEPA created a Climate Act Team (CAT) made up of members from various State agencies and commissions. CAT released its first report in March 2006. The report proposed to achieve the targets by building on voluntary actions of California businesses, local government, and community actions, as well as through State incentive and regulatory programs.

Assembly Bill 32—California Global Warming Solutions Act On September 27, 2006, Governor Arnold Schwarzenegger signed AB 32, the California Global Warming Solutions Act. AB 32 requires that Statewide GHG emissions be reduced to 1990 levels by the year 2020. This reduction will be accomplished through an enforceable Statewide cap on GHG emissions that will be phased in starting in 2012. To effectively implement the cap, AB 32 directs ARB to develop and implement regulations to reduce Statewide GHG emissions from stationary sources. AB 32 specifies that regulations adopted in response to AB 1493 should be used to address GHG emissions from mobile sources (i.e., vehicles). AB 32 also states that if AB 1493 regulations cannot be implemented, then ARB should develop new regulations to control vehicle GHG emissions under AB 32's authorizations.

AB 32 requires that ARB adopt a quantified cap on GHG emissions representing 1990 emissions levels and disclose how it arrives at the cap; institute a schedule to meet the emissions cap; and develop tracking, reporting, and enforcement mechanisms to ensure that the State achieves reductions in GHG emissions necessary to meet the cap. AB 32 also includes guidance to institute emissions reductions in an economically efficient

manner and conditions to ensure that businesses and consumers are not unfairly affected by the reductions.

Senate Bill 1368 SB 1368 is the companion bill of AB 32 and was signed by Governor Schwarzenegger in September 2006. SB 1368 requires the California Public Utilities Commission (PUC) to establish a GHG emissions performance standard for base-load generation from investor owned utilities by February 1, 2007. The California Energy Commission (CEC) must establish a similar standard for local publicly owned utilities by June 30, 2007. These standards cannot exceed the GHG emissions rate from a base-load combined-cycle natural gas fired plant. The legislation further requires that all electricity provided to California, including imported electricity, must be generated from plants that meet the standards set by the PUC and CEC.

Senate Bill 375 (2008) Recently signed by the Governor, SB 375 builds on the existing regional transportation planning process (which is overseen by local elected officials with land use responsibilities) to connect the reduction of greenhouse gas (GhG) emissions from cars and light trucks to land use and transportation policy. In 2006, the Legislature passed AB 32—The Global Warming Solutions Act of 2006,—which requires the State of California to reduce GhG emissions to 1990 levels no later than 2020. According to the California Air Resources Board (CARB), in 1990 greenhouse gas emissions from automobiles and light trucks were 108 million metric tons, but by 2004 these emissions had increased to 135 million metric tons. SB 375 asserts that "Without improved land use and transportation policy, California will not be able to achieve the goals of AB 32."3

Accordingly, SB 375 has three goals: (1) to use the regional transportation planning process to help achieve AB 32 goals; (2) to use CEQA streamlining as an incentive to encourage residential projects which help achieve AB 32 goals to reduce Greenhouse Gas emissions (GhGs); and (3) to coordinate the regional housing needs allocation process with the regional transportation planning process.

3.3.2 Environmental Impacts

Development activities associated with implementation of CSU Stanislaus Physical Master Plan Update are expected to result in an increased campus population. Consequently, additional vehicle trip generation and resultant mobile source emissions of air pollutants, and a higher level of energy consumption on the campus will occur.

A. Thresholds of Significance

Appendix "G" of the CEQA Guidelines addresses potential impacts on Air Quality as follows:

Could The Project:

- Conflict with or obstruct implementation of the applicable air quality plan?
- Violate any air quality standard or contribute substantially to an existing or projected air quality violation?
- 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 (including releasing emission which exceed quantitative thresholds for ozone precursors)?
- Expose sensitive receptors to pollutant concentration?
- Create objectionable odors affecting a substantial number of people?

ASSESSMENTS FOR AIR OUALITY

DEFINITIONS OF AIR OUALITY

Air quality, as monitored by the San Joaquin Valley Air Pollution Control District (APCD), describes the ambient air, the air which people breathe outside of buildings, as they go about their daily activities. Poor air quality, when air pollutants in the ambient air exceed established thresholds, is hazardous to health, diminishes the production and quality of many agricultural crops, reduces visibility, degrades or soils materials, and damages native vegetation. The air pollutants of most concern in APCD are ozone and particulate matter. Toxic air pollutants, odors, carbon monoxide, and dust are also pollutants of concern, but on a more limited and localized basis than ozone and particulate matter.

DEFINITION OF TERMS

Carbon Monoxide (CO): A colorless, odorless, toxic gas produced by incomplete combustion of carbon-containing substances.

Nitrogen Oxides (NOx): Although there are a number of NOx compounds, only two are important in air pollution. These are: nitric oxide (NO), a colorless, odorless gas formed from atmospheric nitrogen and oxygen when combustion takes place under high temperature and/or pressure; and nitrogen dioxide ($N0_2$), a reddish-brown irritating gas formed by the combination of nitric oxide with oxygen. NOx plays a critical role in the photochemical reaction that produces ozone.

Ozone (O_3): The product of a series of complex chemical reactions and transformations between ROC and NOx in the presence of sunlight. Since ozone is formed in the atmosphere and not directly emitted by any source, it is known as a secondary pollutant. O_3 is the air pollutant of primary concern.

Particulate Matter (PM_{10}) Fine solids or liquids in the atmosphere made up of dust, soot, aerosols, fumes and mists. Federal and state standards exist for particulate matter less than or equal to 10 microns in size (PM_{10}).

Reactive Organic Compounds (ROC): A highly reactive group of hydrocarbons which play a critical role in the photochemical reactions that produce ozone.

Sulfur Dioxide (SO_2): A colorless, pungent, irritating gas formed primarily by the combustion of sulfur-containing fossil fuels. During humid conditions, SO_2 may, through a series of chemical reactions with other materials, produce sulfate particulates.

Toxic Air Pollutants: Substances in the air which are known or suspected to cause cancer, genetic mutations, birth defects, or other serious illness in people.

THRESHOLD CRITERIA

1. Local Air quality

Carbon Monoxide: A CO screening analysis should be conducted for any project exceeding 25 pounds per day of either ROC of NO_X which may significantly impact roadway intersections which are currently operating at, or which are expected to operate at, Levels of Service E, or F, or at any project-impacted roadway intersection at which there may be a CO hotspot.

METHODS

The screening analysis should be derived from CALINE3 and CALINE4, computer models developed by the California Department of Air Resources Control Board, and used to predict CO, NO_2, particulate or other inert gaseous pollutant concentrations near roadways.

It is suggested that the full CALINE3 or CALINE4 model be used instead of the screening analysis for any projects or plans that will generate 10,000 or more vehicle trips per day. It is also advised that the complete $CALINE_3$ or $CALINE_4$ model be used for smaller projects if the simplified screening runs indicate that a CO standard may be exceeded.

Toxic Air Pollutants: Any project that may release toxic or hazardous air pollutants to the atmosphere in amounts which may be injurious to nearby populations should be analyzed for potential toxic air pollutant impacts.

Particulate Matter/Dust: Any project which may create, either during construction or operation, excessive amounts of fugitive dust or other particulate matter, should be analyzed for potential adverse impacts, including nuisances.

Regional Air Quality

a. Any general development project in the SJVAPCD capable of emissions of:

Ozone Precursor Emissions:

Reactive Organic Compounds (ROG): 10 tons/year

- Nitrogen Oxides (NOx): 10 tons/year

PM-10 Emissions

Compliance with SJVAPCD Regulation VIII reduces to less than significant.

ASSESSMENTS FOR ODOR

DEFINITIONS OF ISSUE

An odor is the property of a substance that affects the sense of smell. Not all odors are objectionable to all receptors. A particular odor may be so strong that it can be detected by the average person, but it may not be considered a significant odor impact.

DEFINITIONS OF ODOR

Odors: Any project which may create objectionable odors that may impact sensitive receptors located within a one-mile radius of the project site or emission source should be analyzed for potential odor impacts.

THRESHOLD CRITERIA

A significant environmental impact may exist when the air quality analysis concludes that emissions from a particular plan or proposal exceeds the following standards:

Petroleum Refinery	2 miles
Asphalt Batch Plant	1 mile
Chemical Manufacturing Plant	1 mile
Fiberglass Manufacturing	1 mile
Paint/Coating Operations	1 mile
Rendering Plant	1 mile
Sanitary Landfills	1 mile
Food Processing Facility	1/2 mile
Wastewater Treatment Facilities	1/2 miles
Feed Lot/Dairy	1/2 mile
Poultry Farm	1/2 miles
Transfer Station	1/4 mile
Composting Facility	1/2 mile

Note: Distances are for screening purposes only. Odors may or may not be a problem for these facility types. Distances can vary significantly based on prevailing wind conditions, technology employed in the activity and the operating controls employed by the facility operator. If a facility or land use has the potential to create objectionable odors, it must submit a detailed air quality analysis listing all potential emissions and their concentrations.

B. Potential Significant Impacts:

Activities associated with normal operation of the CSU Stanislaus Campus along with expanded operations to accommodate the ultimate FTE goal of 12,000 students have impact on air quality and accelerated climate change.

An Air Quality Analysis was prepared for the quantified existing and expected future emissions related to normal Campus operations. The analysis was based on the CSU Stanislaus Physical Master Plan Update, forecasted enrollment in 2017 and 2027 along with the expected implementation of Rules and Regulations established by the San Joaquin Valley Air Pollution Control District (SJVAPCD).

The Air Quality Analysis concluded, on the basis of the results of an URBEMIS 9.2.4 air quality modeling of the Physical Master Plan Update growth forecast is summarized in Table 3.3.6. (2017) and Table 3.3.7 for 2027 build-out.

Air Quality Impacts Found Not to be Potentially Significant:
As a result of project analysis, based on data collected in the evaluation of the proposed CSU Stanislaus Physical Master Plan Update's implementation, the following aspects of a potential air quality impact are found not to exist or exist at levels well below any reasonable expectation that a significant adverse impact is likely to result:

The CEQA guidelines require lead agencies to either use a summary of projections or a list of past, present and probable future projects producing related or cumulative impacts. (CEQA Guidelines § 15130(b).) With respect to Global Climate Change, it must be assumed that the contribution of the campus to the problem is cumulatively "significant" and unavoidable.

- *Create objectionable odors affecting a substantial number of people?*
  Land uses such as dairy farms, poultry farms, wastewater treatment facilities, chemical manufacturing or storage facilities, etc., can generate unacceptable odors when situated near residential areas. Although adjacent to residential properties, proposed uses associated with the CSU Campus are not likely to result in the creation of objectionable odors. City zoning and development standards provide guidance during the project review phase of a project to minimize the risk of objectionable odor impacting a number of people.

Table 3.3.6
Project Area Estimated 2017 Source Emissions Generation:

Emission	ROG	NO_X	CO	SO_2	PM_{10}	$PM_{2.5}$	CO_2
Area Source Emissions (TPY)							
Unmitigated	0.98	1.43	1.34	0.00	0.00	0.00	1,718.26
Mitigated	0.96	1.15	1.10	0.00	0.00	0.00	1,374.66
Percent Reduction (%)	2.04	19.58	17.91	n/a	n/a	n/a	20.00
Operational (Vehicle) Emissions (TPY)							
Unmitigated	24.34	30.32	196.26	0.27	23.33	5.25	27,880.54
Mitigated	15.60	14.05	90.92	0.13	10.81	2.43	12,915.64
Percent Reduction (%)	35.91	53.66	53.67	51.85	53.66	53.71	53.68
Sum of Area and Operation Emission (TPY) Estimates							
Unmitigated	25.32	31.75	197.60	0.27	23.33	5.25	29,598.80
Mitigated	16.56	15.20	92.02	0.13	10.81	2.43	14,290.30
Percent Reduction (%)	34.60	52.13	53.43	51.85	53.66	53.71	51.72

Source: URBEMIS 9.2.4 Model-CSUS Master Plan (9-2008)

- *Expose sensitive receptors to pollutant concentration?*
  The Project is expected to generate automobile traffic that will affect air quality along adjacent streets and highways. Adjacent to such roadways, the measurable pollutant that is most significant is Carbon monoxide (CO). Federal regulations require that new roadway improvement projects, which may be implemented using Federal funds, must not exceed State or Federal standard CO concentrations of 20 parts per million

(PPM) for 1 hour (the Federal maximum standard of 35 PPM is far less stringent than the State's maximum standard of 20 PPM).

Plan policies and standards will not result in the exposure of sensitive receptors to pollutant concentrations. The most likely direct impact in the categorical area would be the potential for CO concentrations around congested intersections. As a result of traffic and transportation planning, intersection congestion potential is not expected to occur in a manner that would result in the creation of CO concentrations.

Table 3.3.7
Project Area Estimated 2027 Source Emissions Generation:

Emission	ROG	NO_X	CO	SO_2	PM_{10}	$PM_{2.5}$	CO_2
Area Source Emissions (TPY)							
Unmitigated	1.32	1.93	1.76	0.00	0.00	0.00	2,310.93
Mitigated	1.29	1.54	1.43	0.00	0.00	0.00	1,848.79
Percent Reduction (%)	2.27	20.21	18.75	n/a	n/a	n/a	20.00
Operational (Vehicle) Emissions (TPY)							
Unmitigated	22.78	21.10	166.84	0.36	31.06	6.77	37,308.90
Mitigated	14.69	9.77	77.28	0.17	14.39	3.13	17,281.58
Percent Reduction (%)	35.51	53.70	53.68	52.78	53.67	53.77	53.68
Sum of Area and Operation Emission (TPY) Estimates							
Unmitigated	24.10	23.03	168.60	0.36	31.06	6.77	39,617.83
Mitigated	15.98	11.31	78.71	0.17	14.39	3.13	19,130.37
Percent Reduction (%)	33.69	50.89	53.32	52.78	53.67	53.77	51.71

Source: URBEMIS 9.2.4 Model-CSUS Master Plan (9-2008)

Air Quality Impacts Found to be Potentially Significant:
As a result of project analysis, based on data collected in the evaluation of the CSU Stanislaus Physical Master Plan Update, the following aspects of a potential air quality impact may result in a significant adverse environmental impact due to project implementation:

- *Conflict with or obstruct implementation of the applicable air quality plan?*
- *Violate any air quality standard or contribute substantially to an existing or projected air quality violation?*
- *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 (including releasing emissions which exceed quantitative thresholds for ozone precursors)?*

The CSU Stanislaus Physical Master Plan Update will have an impact as follows:
Operation Emissions. The findings presented in the project's Air Quality Analysis concluded that the proposed project's air quality impacts would be above the San Joaquin

Valley Air Pollution Control Districts thresholds. Therefore, the Campus expansion plan would result in a significant impact with regard to air quality from operational emissions. Compliance with the District's Rules and Regulations, as well as implementation of the Mitigation Measures described in this Study, would reduce project-related air quality impacts, however these impacts would not be reduced to a level that can be found "less than significant".

Construction Emissions. The findings presented in the project's Air Quality Analysis concluded that the project may result in a potentially significant impact from short-term construction emissions. Construction-related emissions can cause a substantial increase in localized concentrations of PM_{10} for which the air basin is currently in non-attainment. Due to the non-attainment status of the air basin for PM_{10} it is PM_{10} emissions that the District targets during construction activities. Compliance with the District's Rule 9150 would reduce the PM_{10} emissions to a less than significant level.

Global Climate Change. Given the overwhelming scope of global climate change, it is not anticipated that a single development project, particularly one of the moderate scale of the CSU Stanislaus Master Plan, would have an individually discernable effect on global climate change, i.e. that any increase in global temperature or sea level could be attributed to the emissions resulting from a single project. On the other hand, individual activities and project contribute cumulative to the problem.

Global Green House Gas (GhG) emissions and the attendant effects of those emissions on global climate change can be attributed to every nation, region, and City, and virtually every individual on Earth. The challenge in assessing the significance of an individual project's incremental contribution to global climate change is to determine whether a project's individual GhG emissions—which can fairly be characterized as miniscule relative to global GhG emissions—will not result in a cumulatively considerable incremental contribution to global climate change.

The CEQA guidelines require lead agencies to either use a summary of projections or a list of past, present and probable future projects producing related or cumulative impacts. (CEQA Guidelines § 15130(b).) There is no summary of projections of the sort prescribed by the guidelines that describes or evaluates global, national, State, or regional conditions in anything but general terms unsuitable for impact analysis. In order to characterize the cumulative environment, any list of past, present, and probable future projects that generate greenhouse gases would need to include every foreseeable project across the globe. Clearly, preparing such a list is impractical.

And while the carbon footprint of a particular activity can be estimated, without some scientific consensus or methodology for determining which emissions are attributable to the project (as opposed to the environmental setting or baseline) and how or whether this project might influence the actual physical effects of global climate change in the region, whether a given project's effects are cumulatively considerable is entirely speculative. In fact, it is possible that a new project with smart growth design elements such as the CSU Stanislaus Physical Master Plan Update would reduce greenhouse gas emissions by

providing better transit opportunities, closer linkages between classrooms, on-campus residences and work spaces, along with more energy-efficient buildings than existing Campus projects. This design will help reduce local GhG emissions to the extent that it avoids the need for some additional vehicle trips.

Further more, as noted in the Utilities section of this report, the Campus is implementing programs to reduce energy use that contributes to the reduction of the Campus "Carbon Footprint". Moreover, because the effects of GhGs are global, a project that merely shifts the location of a GhG-emitting activity (e.g., people attend college, where vehicles drive, or where companies conduct business) would result in no net change in global GhG emission levels. For example, if a substantial portion of California's college student population migrated from the South Coast Air Basin (managed by the South Coast Air Quality Management District) to the San Joaquin Valley Air Basin (managed by the San Joaquin Valley Air Pollution Control District), this would likely result in decreased emissions in the South Coast Air Basin and increased emissions in the San Joaquin Valley Air Basin, but little change in overall global GhG emissions. However, if a student (or employee) moves from one location where the land use pattern requires substantial vehicle use for day-to-day activities (commuting, shopping, etc.) to a new campus that promotes shorter and fewer vehicle trips, more walking, and overall less energy usage, then it could be reasoned that the new campus development would result in a potential reduction in global GhG emissions. It should be kept in mind, however, the overall CSU Stanislaus campus will not grow beyond the 1968 Campus Master Plan population. The objective of the proposed Physical Master Plan Update is to locate future facilities, to accommodate "planned" student growth in such a manner as to improve the conditions of the campus which will reduce Campus impacts including the sources of Global Warming.

The success of any global climate change mitigation measure is difficult to assess. The precise threshold of significance and the impact itself is speculative. Notwithstanding such uncertainty, global climate change is a serious problem and this project's incremental contribution to cumulative global GhG emissions and the effects of those emissions on global climate change are considered potentially significant. Therefore, the project is required to implement proposed Mitigation Measures. These mitigation measures are anticipated to lessen the project's contribution to any cumulative effect on global climate change to a less-than-significant level. With these mitigation measures, the CSU Stanislaus Physical Master Plan Update impacts on global climate change are considered less than significant.

C. Proposed Master Plan Goals & Policies:

While there are no specific policies or goals in the CSU Stanislaus Physical Master Plan Update that addresses the issue of Air Quality directly, the emphasis on developing on-campus housing opportunities will result in lower commuter volumes and reduced travel related emissions.

Other Relevant Plans, Policies, and Regulations Regulatory Framework

The county is located in the San Joaquin Valley Unified Air Pollution Control District (SJVUAPCD). The SJVUAPCD has jurisdiction for air quality issues throughout the eight-county SJVAB, which includes Stanislaus County. The SJVUAPCD administers air quality regulations developed at the Federal, State, and local levels. Air quality regulations applicable to the CSU Stanislaus Physical Master Plan Update are described above. Recently the SJVUAPCD adopted Rule 9510, the Indirect Source Review (ISR) rule for establishing and collecting fees to mitigate indirect source air impacts. The rule also provides an economic incentive for new development to apply mitigation measures to reduce air quality pollutants. The Rule is summarized below:

Rule 9510 Indirect Source Review (ISR)
Adopted by the SJVRAPCB on December 15, 2005)

Purpose

The purposes of this rule are to:

- Fulfill the District's emission reduction commitments in the PM10 and Ozone Attainment Plans.
- Achieve emission reductions from the construction and use of development projects through design features and on-site measures.
- Provide a mechanism for reducing emissions from the construction of and use of development projects through off-site measures.

Applicability

This rule shall apply to any applicant that seeks to gain a final discretionary approval for a development project, or any portion thereof, which upon full build-out will include any one of the following:

- 50 residential units;
- 2,000 square feet of commercial space;
- 25,000 square feet of light industrial space;
- 100,000 square feet of heavy industrial space;
- 20,000 square feet of medical office space;
- 39,000 square feet of general office space;
- 10,000 square feet of government space;
- 20,000 square feet of recreational space; or
- 9,000 square feet of space not identified above.

This rule shall apply to any transportation or transit project where construction exhaust emissions equal or exceed two (2.0) tons of NOx or two (2.0) tons of PM_{10}.

Exemptions

Transportation projects shall be exempt from the requirements in Sections 6.2 and
Transit projects shall be exempt from the requirements in Sections 6.2 and 7.1.2

Development projects that have a mitigated baseline below two (2.0) tons per year of NOx and two (2.0) tons per year of PM10 shall be exempt from the requirements in Sections 6.0 and 7.0. There are other exemptions but they are not related to an educational facility such as the CSU Stanislaus Campus.

Federal Requirements

The primary legislation that governs Federal air quality regulations is the Clean Air Act Amendments of 1990. The act and amendments delegate primary responsibility for clean air to EPA. EPA develops rules and regulations to preserve and improve air quality and delegates specific responsibilities to State and local agencies.

EPA has established National Ambient Air Quality Standards (NAAQS) for criteria pollutants (table 3.4.1). Criteria pollutants include CO, NO_2, SO_2, ozone, PM10, and lead.

If an area does not meet the Federal NAAQS shown in table 11-1, Federal clean air planning requirements specify that states develop and adopt State Implementation Plans (SIP's), which are air quality plans showing how air quality standards will be attained. In California, EPA has delegated authority to prepare SIP's to the California Air Resources Board (ARB), which, in turn, has delegated that authority to individual air districts.

The Campus is located in a Federal non-attainment area for ozone and PM_{10}. The SJVUAPCD has adopted a SIP that addresses PM_{10}, ozone, and the ozone precursors NOx and ROG. The SIP specifies that the regional air quality standards for ozone and PM_{10} can be met through additional source controls and through trip-reduction strategies. The SIP also establishes "emission budgets" for transportation and stationary sources. The budgets, developed through air quality modeling, reveal how much air pollution can occur in an area without causing violations of the NAAQS.

State Requirements

ARB, which is part of Cal-EPA, develops air quality regulations at the State level. The State regulations mirror Federal regulations by establishing industry-specific pollution controls for criteria, toxic, and nuisance pollutants. California also requires areas to develop plans and strategies for attaining State ambient air quality standards as set forth in the California Clean Air Act of 1988 (table 3.4.1). In addition to developing regulations, ARB develops motor vehicle emission standards for California vehicles.

Local Requirements

At the local level, the SJVUAPCD is responsible for establishing and enforcing local air quality rules and regulations that address the requirements of Federal and State air quality laws. Air quality is also managed through the Campus Facilities Planning and development design and construction management practices.

D. Short-Term Impacts:

Adoption of the CSU Stanislaus Physical Master Plan Update will not have any immediate or short-term impact on air quality on the Campus or the region. The Plan, however, will re-affirm policy standards by which the Master Plan will guide future

decision making, with respect to air quality, for providing educational facilities adequate to support the Campus capacity of 12,000 FTE as implemented through the adopted CSU Stanislaus CIP-COP.

E. Long-Term Impacts:
Long term impact of growth and development are expected to result in increased traffic and the possible development of new sources of air pollution. This increase in emissions will contribute to the regional air quality problems. Given the nature of the problem, and the fact that regional solutions are required to make any impact, the District has devised a mitigation program that is linked to a District-wide strategy to reduce this regional problem. The Campus will participate in Air District program in accordance with the requirements of state law.

F. Cumulative Impacts:
Development impacts resulting from this growth, both on the Campus and the region, will result in increased transportation and traffic congestion region-wide. This impact will contribute to the regional air quality problems. Emissions from other sources will also contribute to the regional air pollution. As noted above, the participation in the Air District's mitigation program will reduce these impacts to a level deemed to be less than significant.

G. Secondary Impacts:
The effects of increased levels of air pollution are discussed above. As a result of the region being in non-conformance with State and national air quality standards, both State and Federal enforcement penalties could impose a hardship on the region's population and the expansion of public facilities and services such as institutions of higher education.

3.3.3 Mitigation Measures

Mitigation of increased impacts on air quality from CSU Stanislaus Campus growth and expansion is typically addressed through the design and development of new Campus facilities and implementation of the SJVUAPC District's Indirect Source Fee Program (Rule 9551). The Campus will comply with the requirements of the SJVUAPD with respect to new development.

The following mitigation measures are suggested from guidance available from the SJVUAPC District:

Mitigation Measure 3.1 Operational Emissions:
The Campus should prepare an Air Emissions Reduction Plan for each new building in excess of 20,000 gsf to be filed on the Project that includes, to the greatest extent feasible, the following pollution reduction measures:

a. Landscape plans that include planting deciduous trees on the south and westerly facing sides of buildings and on paved areas. Trees should be selected to provide canopy coverage that shades 50 percent of the paved areas within 15 years.

b. Measures that are in compliance with the SJVAPCD and implement the SJVAPCD's rules and regulations as applicable including, but not limited to, Rule 9510.
c. Energy-conserving, energy efficient, and/or zero emissions features in the design and construction of all structures. The following energy efficient features shall be implemented, or an alternative measure that provides similar or greater energy efficiency and air quality benefits as practical:

    1. Achieve energy efficiency beyond the requirements of Title 24 in the Building Code;
    2. Install automated control systems for heating/air conditioning;
    3. Install energy efficient heating and cooling systems;
    4. Use of light colored roofing material to reflect heat or other "cool" roofing materials including high albedo materials, materials that provide air circulation, and attic ventilating roofing construction, to prevent summer heat from penetrating buildings;
    5. Increase wall and ceiling insulation;
    6. Install energy efficient water heaters with low NO_X emissions;
    7. Install only Energy-Star rated appliances when available;
    8. Install energy efficient lighting including LED and compact fluorescents;
    9. Orient buildings to maximize passive solar cooling, heating and lighting;
    10. Install, or offer as upgrades to home purchasers, photovoltaic systems (solar energy absorption panels and associated equipment) and/or solar water heating systems; and
    11. Use "Cool" paving materials.

Mitigation Measure 3.2-Construction Related Diesel Emissions:
Campus construction project contracts shall include the following requirements in all construction bids and documents including contracts (and implemented during construction activities) for the purpose of reducing diesel particulates and acrolein emissions during construction of the project:

a. All pre-1994 model year and older diesel equipment shall be retrofitted with EPA-certified diesel oxidation catalyst filters;
b. Contractors shall maintain records of all purchases of diesel oxidation catalyst filters or bio-diesel fuel until construction is complete; and
c. The SJVAPCD shall have the right to inspect all construction and demolition equipment, as well as the contractor's records at any time during demolition and construction.

Mitigation Measure 3.3- Global Climate Change Emissions:
The Applicant shall include the following requirements and standards in the Project Master Development Plan:

a. Design all residential units to include energy efficient appliances and home systems such as Energy Star appliances, energy efficient (i.e., Low E2) windows, tightly sealed ducts, fluorescent or energy efficient light bulbs with motion sensors where

practicable, backyard outlets for electrical mower and other yard equipment operations, R-6 duct insulation, radiant roof barrier sheathing, 14 Seasonal Energy Efficiency Ratio (SEER) air conditioning and ventilation systems, air conditioning with Thermostatic Expansion Valve (TXV) metering devices which help regulate flow of liquid refrigerant, .95 Annual Fuel Utilization Efficiency (AFUE) furnaces, and gas dryer stubs.

b. Where practicable, provide residential units with a near-zero-emission option, which would include tank-less water heaters (.82 energy factor) and roof-integrated solar electric systems.
c. Where practicable, buildings and outdoor structures should include green-building materials such as, for example, low-emission concrete, recycled aggregate, recycled reinforcing, or waffle pods to be used in foundations; recycled plastics to be used in community structures such as fencing or playground equipment; wood flooring materials treated with low emission varnishes and floor board substrates to be made from low emission particleboard; compact fluorescent light bulbs in all buildings; and use of recycled building materials such as recycled aluminum for window frames or post-consumer plastic for piping.
d. Include information packets to new occupants of residential units and employees on ways to conserve energy and reduce individual GHG emissions such as, for example, cleaning and replacing filters on furnaces and air conditioners, periodic home energy audits, and vehicle maintenance.
e. Parking structures should include 220-volt outlets or other stations to provide students, faculty and employees with the opportunity to charge electric or plug-in hybrid vehicles.
f. During construction, mass-grading plans should be designed to minimize grading and the need for off-site fill material. Likewise, construction vehicles should not be left idling.

3.4.4 Level of Significance After Mitigation

It can be expected that the implementation of the CSU Stanislaus Physical Master Plan Update, which is proposed in response to a growing need for student facilities and educational services, will contribute to the regional air quality problem and the problem of climate change. Application of the proposed mitigation is deemed adequate to reduce Campus air quality/climate change impacts to a level deemed to be less than “significant” within the meaning of CEQA.

Section 3.4
Biological Resources

This environmental issue focuses on the impacts of a project on biological resources such as sensitive plant or animal species or its habitat, or riparian habitat or interfere with the normal movements of wildlife species in the vicinity of a project. Additional concerns focus on consistency of a project with adopted plans, policies and regulations regarding wildlife, habitat conservation plan, local wildlife preservation plans or policies or wetlands.

3.4 1 Environmental Setting

Past and Current Biological Context:

The project area is located in the San Joaquin Valley sub-region of the Great Central Valley geographic region. The Campus is situated in the northern portion of the City of Turlock, California (Figure 1). The site is within portions of Sections 2 and 3, Township 5 South, Range 10 East of the USGS 7.5-minute Denair topographic quadrangle (Figure 2). Topography of the site is flat due to past site development, including landscaping, and the site is located at approximately 100 feet in elevation. The California State University Stanislaus (CSU Stanislaus) campus is a mosaic of buildings, landscaped areas, open fields, parking lots, and ornamental water features within an urban setting. There are residences and open fields located to the North, South, West and East of the campus.

Vegetation:

The project site consists of a college campus vegetated primarily with numerous ornamental trees and shrubs. Besides lawns and areas landscaped with annuals and perennials, there are some open fields within the site that are vegetated with mostly ruderal species and appear to be routinely disked for weed control and fire suppression. Dominant ort-site native and non-native annual grass and weed species include wild radish *(Raphanus sativus),* common mallow *(Malva neglecta),* filaree *(Erodlum botrys),* ryegrass *(Lallum perenne),* and foxtail barley *(Hordeum murinum).* Plant species documented in the project site are listed in Table 3.4.1.

Ornamental trees associated with the campus include but are not limited to cedar *(Cedrus deodara),* redwood *(Sequoia sempervirens),* and white alder *(Alnus rhombifolia).* There are some native valley oaks *(Quercus lobata),* Fremont cottonwood *(Populus fremontii),* and willows *(Sallx* sp.) located near Willow Lake. No blue elderberry *(Sambucus mexicana)* shrubs were observed within or adjacent to the project site.

Wildlife:

A limited number of bird species were observed during the recent survey (Table 3.4.2). Some of the more common birds observed include red-tailed hawk *(Buteo Jamaicans),* yellow-billed magpie *(Pica nuttalli),* mourning dove *(Zenaida macroura),* American crow *(Corvus brachyrhynchos)* and house sparrow *(Passer domesticus).* All of these are species commonly found in rural areas in the greater project vicinity.

Table 3.4.1
Plant Species Observed During
A 2005 Survey of the Campus Site

Alnus rhombifolia	white alder
Amsinckia menziesii	rancher's fireweed
Avena sp.	oat
Bromus diandrus	ripgut brome
Capsella bursa var. pastoris	shepherds purse
Cedrus deodara	Deodar cedar
Centaurea solstitialis	yellow star-thistle
Chamomilla suaveolens	pineapple weed
Epllobium brachycarpum	willow herb
Erodium botrys	filaree
Eucalyptus sp.	eucalyptus
Fraxinus sp.	Modesto ash
Heterotheca grandiflora	telegraph weed
Hordeum murinum	foxtail barley
Malva neglecta	common mallow
Pinus sp.	pine
Poa annua	annual bluegrass
Polygonum lapathlfollurn	willow weed
Populus fremontii	Fremont cottonwood
Quercus lobata	valley oak
Raphanus sativus	wild radish
Salix babylonica	weeping willow
Sequoia sempervirens	coastal redwood

There are several potential nest trees within the project site as well as in areas surrounding the site that are suitable for nesting raptors and other protected migratory birds. However, no nesting raptors were observed during the recent survey. Given the size of the site and the presence of foraging and nesting habitat within and adjacent to the site, it is likely a variety of songbirds, and possibly one or more pairs of raptors, nest at or near the site each year.

A limited variety of semi-urban mammals have the potential to occur in the project site Although no mammals were observed during the recent field visit, small mammals and rodents such as pocket gopher *(Thomomys bottae).* striped skunk *(Mephitis mehitis),* and black rat *(Rattus rattus)* are expected to occur at the site at least on a transitory basis. A number of species of other small rodents including mice *(Mus museu/us, Reithrodontomys mega/otis,* and *Peromyscus manicu/arus)* and voles *(Microtus californicus)* also are likely to occur.

Table 3.4.2
Bird Species Observed During
A 2005 Survey of the Campus Site

Red-tailed howl	*Buteo jamalcensis*
Mourning dove	*Zenaida macroura*
Northern flicker	*Colaptes aurorus*
Black phoebe	*Sayornis nigricans*
Barn swallow	*Hirundo rustica*
Western scrub jay	*Aphelocoma coerulescens*
Yellow-billed magpie	*Pica nuttalli*
American crow	*Corvus brachyrhynchos*
Bushtit	*Psaltriparus minimus*
House finch	*Carpodacus mexicanus*
House sparrow	*Passer domesticus*

Based on habitat types present a limited number of amphibians and reptiles may use habitats in the project site. There is suitable habitat for western fence lizard *(Sce/oporu occident a/is)* and pacific chorus frog *(Pseudacris regllJo)* and these species are expected to occur at the site. However, no reptiles or amphibians were observed in the project site during the recent survey.

Waters of the U.S. & Wetlands:
Waters of the U.S., including wetlands, are broadly defined under 33 Code of Federal Regulations (CFR) 328 to include navigable waterways, their tributaries, and adjacent wetlands. State and Federal agencies regulate these habitats and Section 404 of the Clean Water Act requires that a permit be secured prior to the discharge of dredged or fill materials into any waters of the U.S., including wetlands. Both CDFG and ACOE have jurisdiction over modifications to riverbanks, lakes, stream channels and other wetland features.

Although definitions vary to some degree, wetlands are generally considered to be areas that are periodically or permanently inundated by surface or ground water, and support vegetation adapted to life in saturated soil. Jurisdictional wetlands are vegetated areas that meet specific vegetation, soil, and hydrologic criteria defined by the ACOE *Wetlands Delineation Manual* (ACOE, 1987). Waters of the U.S. are drainage features or water bodies as described in 33 CFR 328.4. ACOE holds sale authority to determine the Jurisdictional status of waters of the U.S., Including wetlands.

Jurisdictional wetlands and waters of the U.S. include, but are not limited to, perennial and intermittent creeks and drainages, lakes, seeps and springs, emergent marshes, riparian wetlands, and seasonal wetlands. Wetlands and Waters of the U.S. provide critical habitat components, such as nest sites and a reliable source of water for a wide variety of wildlife species.

The only potential waters of the U.S. that we observed in the project vicinity that could conceivably fait under the jurisdiction of ACOE are the series of six ornamental water features located throughout the campus (Figure 3). Willow Lake is the only feature that possesses some wildlife habitat function and value, as it is vegetated with cattail *(Typha* sp.) as well as other wetland plants, including trees and shrubs. All of these on-site features are entirely created and hydrologically manipulated to collect storm water from the campus that gets re-circulated through an on-site pumping facility to the water features.

Because these ponds were developed for specific purposes (aesthetics and storm-water control) certain management principals have been implemented to assure that they are able to perform for the purposes they were designed. These principals generally conform to the following:

Plant/Algae Control

- Algaecide (Cutrine Plus) and/or Copper Sulfate applied once a month during the summer.
- Herbicides (Diquad dibromide) for cattail and other perimeter plant growth sprayed as needed (3-4 times a year).
- Some cattails are allowed to grow in small designated area, but spread is curtailed with spraying and manual trimming once a year.
- Lawn areas and sedge areas mowed/trimmed regularly as needed.
- Trees and shrubs are regularly trimmed and pruned as needed.

Mechanical/Utility Maintenance

- Lakes are used as reservoir for storm water retention.
- Lakes are drained biannually for cleaning.
- Pumps for fountains/waterfalls have normal preventative maintenance quarterly.

Other

- Pathways around lake cleaned daily.
- Litter control daily.

Since these water features are spatially and hydrologically isolated from other waters of the U.S. (such as tributaries to navigable waters) and are created, isolated intrastate waters that are maintained for aesthetic ornamental purposes and serve storm-water detention basins during peak storm events. Therefore, ACOE would likely view them as Non-Jurisdictional pursuant to the SWANCC (2001) ruling by the U.S. Supreme Court. However, as ACOE holds the authority to determine jurisdiction or non-jurisdiction, formal wetland delineation, based on current regulations of ACOE, would need to be conducted to firmly establish the jurisdictional nature of the onsite water features with certainty.

Sensitive Species:

The likelihood of occurrence of listed, candidate, and other sensitive species in the project site is generally considered low. Table 3 provides a summary of the listing status

and habitat requirements of sensitive species that have been documented in the project vicinity or for which there is potentially suitable habitat in the project vicinity. This table also includes an assessment of the likelihood of occurrence of each of these species at the project site. The evaluation of the potential for occurrence of each species is based on the distribution of regional occurrences (if any), habitat suitability and field observations.

While the project site may have provided habitat for a subset of the sensitive species listed in Table 3.4.3 at some time in the past development has substantially modified natural habitats in the project vicinity. Through reviewing Table 3, it becomes apparent that the likelihood of occurrence of listed, candidate, and other sensitive species in the project site is considered remote. No sensitive species were observed during the recent survey and the ruderal annual grassland vegetation that is found within and adjacent to the project site provides marginally suitable habitat for a very limited subset of these species.

Sensitive Plants:
The likelihood of occurrence of sensitive plants within the site is considered very low to none. Sensitive plant species identified in the CNDDB (2005) query are limited to San Joaquin valley orcutt grass *(Orcuffia inaequalis)* and Merced monardella *(Monardella leucocephala).* Sensitive plants generally occur in relatively undisturbed areas and are largely found within unique vegetation communities and/or habitats such as venal pools and grassland habitat within pristine settings, which is not the scenario within the project site.

Sensitive Wildlife:
The potential for intensive use of habitats within the project site by sensitive wildlife species is considered very low to none. Sensitive wildlife species identified in the CNDDB (2005) query include Swainson's hawk *(Buteo Swanison).* Tri-colored blackbird *(Agelalus tricolor),* western pond turtle *(Emys marmorata)* and valley elderberry longhorn beetle *(Desmocerus californicus dimorphus).* Swainson's' hawk is the species with the most potential to occur within or adjacent to the site during its nesting season and is discussed further below.

Swainson's Hawk:
Swanson's hawk is listed as "Threatened" by CDFG and is a "Federal Species of Special Concern". In the Central Valley, this hawk typically nests in oak or cottonwood trees in or near riparian habitats. Swainson's hawks prefer nesting sites that provide sweeping views of nearby foraging grounds consisting of grasslands, irrigated pasture, alfalfa, hay, and wheat crops. Most Swainson's hawks are migratory, wintering in Mexico and breeding in California and elsewhere in the western United States. The raptor generally arrives in the Central Valley in mid-March, and begins courtship and nest construction immediately upon arrival at the breeding sites. The young fledge in early July, and most Swainson's hawks leave their breeding territories by late August to early September.

The CNDDB (2005) contains several records of nesting Swainson's hawk in the greater project vicinity, but none in or immediately adjacent to the project site. The nearest

occurrence of a nesting pair reported in the CNDDB is located approximately seven miles northwest of the site. While there are suitable nest trees within and surrounding the project site, there are only small areas of grasslands or annual cropland that Swainson's hawks could use for foraging. While the small amount of marginal foraging habitat may preclude intensive use of the site, the likelihood of Swainson's hawks nesting in trees within and surrounding the site in the future can not be precluded.

Regulatory Framework

Federal Regulations

Endangered Species Act: The Endangered Species Act (ESA), of 1973, and subsequent amendments provide for the conservation of endangered and threatened species and the ecosystems on which they depend. The USFWS (with jurisdiction over plants, wildlife and resident fish) and the National Oceanic and Atmospheric Administration Fisheries Service (NOAA Fisheries) with jurisdiction over anadromous fish and marine fish and mammals, oversee the ESA. Section 7 of the ESA mandates that all Federal agencies consult with USFWS and NOAA Fisheries if they determine that a proposed project may affect a listed species or its habitat. The purpose of consultation with USFWS and NOAA Fisheries is to ensure that the Federal agencies' actions do not jeopardize the continued existence of a listed species or destroy or adversely modify critical habitat for listed species.

Section 7 requirements do not apply to non-Federal actions. At present, no Federal permits are expected to be required for the CSU Stanislaus Physical Master Plan Update though it may be possible that some actions taken during the course of development may trigger Federal review and/or permitting. Therefore, the project is not subject to Section 7 of ESA, but could be subject to Section 10 of ESA (see below), if there are Federally listed species that could be affected by a project proposed in a manner that is consistent with the Plan.

Section 9 of ESA prohibits the "take" of any fish or wildlife species listed as endangered, including the destruction of habitat that prevents the species' recovery. "Take" is defined as the action of, or attempt to hunt, harm, harass, pursue, shoot, wound, capture, kill, trap, or collect a species. Section 9 prohibitions also apply to threatened species unless special rules have been defined with regard to take at the time of listing.

Under Section 9 of ESA, the "take" prohibition applies only to wildlife and fish species. However, Section 9 does prohibit the unlawful removal and reduction to possession, or malicious damage or destruction of, any endangered plant from Federal land. Section 9 prohibits acts to remove, cut, dig up, damage, or destroy an endangered plant species in non-federal areas in knowing violation of any state law or in the course of criminal trespass. Candidate species and species that are proposed or under petition for listing receive no protection under Section 9.

Section 10 of ESA requires the issuance of an incidental take permit before any public or private action may be taken that would potentially harm, harass, injure, kill, capture, collect, or otherwise hurt (i.e. take) any individual of an endangered or threatened

species. The permit requires preparation and implementation of a habitat conservation plan, incidental to implementation of the project, which would offset the take of individuals that may occur by providing the overall preservation of the affected species through specific mitigation measures.

Executive Order 13186: Migratory Bird Treaty Act: Executive Order (EO) 13186 directs each Federal agency taking actions that would have or would likely have a negative impact on migratory bird populations to work with the USFWS to develop a memorandum of Understanding (MOU) to promote the conservation of migratory bird populations. Protocols developed under the MOU must include the following agency responsibilities.

- Avoid and minimize, to the extent practical, adverse impacts on migratory bird resources when conducting agency actions.
- Restore and enhance habitat of migratory birds, as practicable.
- Prevent or abate the pollution or detrimental alteration of the environment for the benefit of migratory birds, as practicable.

The EO is designed to assist Federal agencies in their efforts to comply with the Migratory Bird Treaty Act (MBTA), it does not constitute any legal authorization to take migratory birds. Take, under the MBTA, is defined as the action of, or an attempt to, pursue, hunt, shoot, capture, collect, or kill (Title 50, Code of Federal Regulations [CFR], Section 10.12). The definition includes "intentional" take (take that is the purpose of the activity in question) and "unintentional" take (take that results from, but is not the purpose of, the activity in question).

Clean Water Act: Section 401 and Section 404: Clean Water Act (CWA) Section 401 requires that applicants for a Federal license or permit to conduct activities that may result in the discharge of a pollutant into waters of the United States obtain certification from the State in which the discharge would originate or, if appropriate, from the interstate water pollution control agency with jurisdiction over affected waters at the point where the discharge would originate. Therefore all projects that have a Federal component and may affect State water quality (including projects that require Federal agency approval, such as issuance of a CWA 404-permit) must also comply with CWA Section 401.

After the CEQA process is complete, the project sponsor would apply for water quality certification from the Regional Water Quality Control Board (RWQCB) to comply with the CWA Section 401 requirements. The Army Corps of Engineers (ACE) would require compliance with Section 401 as a prerequisite to authorization of the project under Section 404.

The Corps and the U.S. Environmental Protection Agency (EPA) regulate the placement of fill into "Waters of the United States" under CWA Section 404. "Waters of the United States" include lakes, rivers, streams and their tributaries, and wetlands. Wetlands are defined for regulatory purposes as areas inundated or saturated by surface or ground

water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions (33 CFR 328.3, 40 CFR 230.3).

Project proponents must obtain a permit from the Corps for all discharges of fill material into waters of the United States, including wetlands, before proceeding with a proposed project.

State Regulations

California Endangered Species Act: The California Endangered Species Act (SESA) California Fish and Game Code Section 2050 et seq.) establishes State policy to conserve, protect, restore, and enhance threatened or endangered species and their habitats. CESA mandates that State agencies should not approve projects that jeopardize the continued existence of threatened or endangered species if reasonable and prudent alternatives are available that would avoid jeopardy. There are no State agency consultation procedures under CESA. For projects that would affect a species that is Federally and State-listed, compliance with ESA satisfies CESA if the California Department of Fish and Game (DFG) determines that the Federal incidental take authorization is consistent with CESA under California Fish and Game Code Section 2080.1. For projects that would result in take or a species that is only State-listed, the project proponent must apply for a take permit under Section 2081(b).

California Fish and Game Code Sections 3503 and 3503.5: Under these sections of the California Fish and Game Code, it is unlawful to take, possess, or needlessly destroy the nest or eggs of any bird, or to take possess, or destroy any birds of prey or their nest or eggs.

Porter-Cologne Water Quality Control Act: The Porter-Cologne Water Quality Control Act authorizes the State Water Resources Control Board to regulate State water quality and protect beneficial uses. The Act is fully discussed in Chapter 3.9, *Hydrology & Water Quality.*

3.4.2 Environmental Impacts

The "urbanization" process creates both threats and opportunities for wildlife. Species that adapt to the human environment flourish in an urban setting. Others, which tend to rely a natural setting for food and shelter, will be diminished in population. The Campus, due to its park like setting provides habitat for a variety of "urban dwelling" wildlife.

A. Thresholds of Significance

Appendix "G" of the CEQA Guidelines addresses potential impacts on Biological Resources as follows:

Would the project:

- 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 Game or U.S. Fish and Wildlife Service?

- 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 Game or U.S. Fish and Wildlife Service?
- Have a substantial adverse effect on Federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?
- 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?
- Conflict with any local policies or ordinances protecting biological resources such as a tree preservation policy or ordinance?
- Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan or other approved local, regional ,or State habitat conservation plan?

ASSESSMENTS FOR BIOLOGICAL RESOURCES

DEFINITIONS OF BIOLOGICAL RESOURCES

Biological Resources include natural plant and animal species and their habitats, communities and ecosystems.

DEFINITION OF TERMS

The following is a partial glossary of biological terminology:

Significant Biological Resources: Include any of the following:

- Habitats of endangered, threatened or rare species
- Wetland habitats
- Migration corridors for fish or wildlife
- Locally important species/communities

Endangered Species:

(a) Listed on State or Federal endangered species lists, or
(b) A species whose survival and reproduction in the wild are in immediate jeopardy from one or more causes, including loss of habitat, change in habitat, over-exploitation, predation, competition, disease, or other factor.

Threatened Species:

(a) Listed on State or Federal threatened species lists, or
(b) Any species which is likely to become endangered in the foreseeable future.

Rare Species:

(a) Listed on State or Federal rare species lists, or

Table 3.4.3 Special-Status Plant & Wildlife Species Documented or Potential of Occurring in the Project Vicinity

Common Name	Scientific Name	Federal Status (1)	State Status (1)	CNPS List (2)	Habitats	Potential for Occurrence within Project Area
San Joaquin Valley orcutt grass	Orcuttia inaequalis	T	E	1B	Vernal pools	None: there is no suitable habitat for San Joaquin Valley orcutt grass within the project site. The nearest occurrence of this species is located approximately 6-miles northeast of the project site (CNDDB 2005)
Merced monardella	Monardella leucocephala	None	None	1A	Moist Riverbeds or sandy depressions.	None: There are no suitable habitat sites for this species within the project site. The nearest occurrence of Merced monardella is located approximately 8 miles southeast of the project site (CNDDB. 2006)
Swainson's hawk	*Buteo swainsoni*	None	T	N/A	Nesting: large trees, usually within riparian corridors. Foraging: agricultural fields and annual grasslands	Very Low: the project site contains a few open fields that Swainson's hawks could use for foraging and there are suitable nest trees within and surrounding the site. The nearest documented occurrence of the nesting Swainson's hawk in the CNDDB (2005) is a pair located approximately 7-miles north west of the site.
Tricolored blackbird	*Agelalus tricolor*	None	SC	N/A	Requires open water and protected nesting substrate, usually cattails, and surrounding foraging habitat of annual grassland	Very Low to None: the project site does not contain suitable nesting habitat for tricolored blackbirds. However, this species may fly over or forage at the project site on occasion. This species has been documented within the search area, although the location information in the CNDDB (2004) is suppressed.
Western pond turtle	*Emys marmorata*	SC	SC	N/A	Perennial drainages and ponds with adequate basking sites.	Very Low: Willow Lake is suitable habitat for western pond turtle. The other five water features are marginally suitable for western pond turtles. However, western pond turtle has not been documented near the site; the nearest occurrence of this species is located approximately 6-miles southeast of the site (CNDDB 2005)

Table 3.4.3 Special-Status Plant & Wildlife Species Documented or Potential of Occurring in the Project Vicinity-*Cont.*

Common Name	Scientific Name	Federal Status (1)	State Status (1)	CNPS List (2)	Habitats	Potential for Occurrence within Project Area
Valley elderberry longhorn beetle	*Desmocerus californicus dimorphus*	T	None	N/A	Elderberry shrubs within the Central Valley	None: there are no blue elderberry shrubs within the project site. This species is recorded in the CNDDB (2005) approximately 6-miles northeast of the project site.

Status Definitions:

1. Federal & State Lists:

E listed as endangered under the Federal Endangered Species Act.
T listed as threatened under the Federal Endangered Species Act.
SC other species of concern to the Service

2. California Native Plant Society List:

1A species are considered extinct.
1B includes species that are rare, threatened or endangered in California and elsewhere.

(b) Although not presently threatened with extinction, the species is existing in such small numbers throughout all or a significant portion of its range that it may become endangered if its environment worsens; or the species is likely to become endangered within the foreseeable future throughout all of a significant portion of its range and may be considered "threatened" as that term is used in the Federal Endangered Species Act.

Candidate Species:
Listed on Federal or State candidate species list (i.e., species is a candidate for listing as "threatened", "endangered", or "rare".

Note: The U.S. Fish and Wildlife Service and the California Department of Fish and Game can provide current lists of endangered, threatened, rare species.

Special Status or Sensitive Species
An Endangered, Threatened, Rare, or Candidate Species.

Wetland Habitat - Plant communities that are associated with lands which are transitional between terrestrial and aquatic systems where the water table is usually at or near the surface or the land is periodically covered with shallow water. The frequency of occurrence of water is sufficient to support a prevalence of vegetative or aquatic life that requires saturated or seasonally saturated soil conditions for growth and reproduction. Wetlands include marshes, bogs, sloughs, vernal pools, wet meadows, river and stream overflows, mudflats, ponds, springs and seeps. Wetlands, rivers, and streams are protected from dredging, filling and alteration. Any work in a creek requires a Streambed Alteration Agreement with the Department of Fish and Game (Fish and Game Code §1600-1606).

Migration Corridor - An area, as defined by a qualified biologist, which experiences recurrent fish or wildlife movement and which is important to fish or wildlife species seeking to move from one habitat area to another.

Migratory Birds - Migratory birds and their nests are protected from disturbance by the Migratory Bird Treaty Act. Most bird species are considered migratory.

Locally Important Species - A plant or animal species which is not an endangered, threatened, or rare species, but which is considered by qualified biologists to be a quality example or unique species within the City and region. This term also includes Candidate Species.

Locally Important Community - A plant or animal community which is considered by qualified biologists to be a quality example characteristic of or unique to the City or region.

Taking Permit for a "Sensitive Species" - The "taking" of an endangered or threatened species is allowed only by permission of the U.S. Fish and Wildlife Service (USFWS)

under Section 10 of the Federal Endangered Species Act. Extensive consultation with agency officials is required before a permit is considered. Persons wishing to obtain this permit must submit a Habitat Conservation Plan to the Secretary of the Interior. The Secretary is authorized to issue "incidental taking" permits only if the applicant has minimized and mitigated the impacts of the taking the fullest possible extent, adequate funding for the plan is provided, and the taking does not appreciably reduce the likelihood of the survival and recovery of the species in the wild.

THRESHOLD CRITERIA

Section 15065(a) of the CEQA Guidelines states that a project may have a significant effect if it has the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self sustaining levels, threaten to eliminate a plant or animal community, or reduce the number or restrict the range of an endangered, rare or threatened species.

The following general guidelines are presented to identify the general parameters of "significant impacts".

1. *Sensitive Species* A significant impact to such species would occur if a project would directly or indirectly:

- reduce sensitive species population
- reduce sensitive species habitat
- restrict sensitive reproductive capacity

2. *Wetland Habitat* A significant impact would result from the direct reduction of, or a substantial indirect impact to a Wetland Habitat. A substantial impact would involve grading, excavation, or other construction activities that would result in the removal of plant material within 50-feet of the high water level of the wetland unless the project is undertaken in accordance with the U.S. Army Corps of Engineers Section 404 Wetland Permit program.

3. *Migration Corridors* A significant impact to a migration corridor would result if a project would substantially interfere with the use of said area by fish or wildlife. A substantial impact would involve elimination of native vegetation, erection of physical barriers, or intimidation of fish or wildlife via introduction of noise, light, development or increased human presence within 100-feet of a designated migration corridor or such other standard established by the U.S. Fish and Wildlife Service, California Department of Fish and Game or adopted Habitat Conservation Plan.

4. *Locally Important Species/Communities.* Since this group of species/communities is so diverse, significance must be made by a qualified biologist on a case-by-case basis.

ASSESSMENTS FOR CONSISTENCY WITH A CONSERVATION PLAN

DEFINITION OF ISSUE

A Habitat Conservation Plan, Natural Community Conservation Plan or other approved local, regional or State habitat conservation plan is a plan for the conservation, preservation and protection of the habitat of a species or number of environmentally protected wildlife species. The goals, policies and programs contained in the Plan are established on the basis of scientific knowledge of the species and its habitat needs and adopted by Federal, State and/or local jurisdictions for the protection of sensitive wildlife species.

THRESHOLD CRITERIA

Any project that is inconsistent with a Habitat Conservation Plan, Natural Community Conservation Plan or other approved local, regional, or State habitat conservation plan is considered as having a significant impact.

Methods:

Biological resource impacts can occur at the level of major plant communities as well as at the individual species level (See Table 3.4.1 and Exhibit 3.4.1). Individual species live and depend upon the habitat that would be affected by development. Thus, an impact analysis examines whether or not potentially significant impacts are likely to occur on major habitat types.

If it is determined, through specific development plan site analysis, that major habitats are found to be significantly affected, then the analysis examines whether or not specific taxa of plants and animals of interest within each habitat type are also likely to be affected.

Potential significant impacts are evaluated within the context of present day mitigation technology and regulatory environment. Development will occur in the campus over the next twenty years in a manner consistent with the CSU Stanislaus Physical Master Plan Update or in a manner consistent with an approved amendment to the Plan. Site, project and building specific development review procedures ("Project" as defined by CEQA) will reflect the technology and environmental laws in effect at the time development is proposed.

B. Potential Significant Impacts:

Biological Impacts Found Not to be Potentially Significant:

As a result of project analysis, based on data collected in the evaluation of the CSU Stanislaus Physical Master Plan Update implementation, the following aspects of a potential biological impact are found not to exist or exist at levels well below any reasonable expectation that a significant adverse impact is likely to result:

- *Conflict with any local policies or ordinances protecting biological resources such as a tree preservation policy or ordinance?*
  The use and proposed development of the Campus site does not conflict with any local policies or ordinances, by the City of Turlock or the County of Stanislaus

that conflict with the implementation of the proposed CSU Stanislaus Physical Master Plan Update.

- *Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan or other approved local, regional, or State habitat conservation plan*?
  There is no proposed or adopted Habitat Conservation, Natural Community Conservation or other approved local, regional, or State habitat conservation plan on lands on the Campus site or within the immediate vicinity of the site.

- *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 Game or U.S. Fish and Wildlife Service.*
  The project site, and its surrounding area, does not contain 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 Game or the U.S. Fish and Wildlife Service.

- *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 Game or U.S. Fish and Wildlife Service.*
  The five ponds that have been developed and maintained on the Campus site do not contain any sensitive species or natural communities identified in any local or regional plans, policies, regulations or by the California Department of Fish and Game or the U.S. Fish and Wildlife Service.

- *Have a substantial adverse effect on Federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?*
  There are several man-made ponds situated on the Campus that have been developed to add to the attractiveness of the Campus and to serve as storm-water retention basins during peak storm events. Based upon preliminary investigations, it does not appear that these basins will qualify as "Federally protected wetlands" but a formal determination will need to be made by the Army Corp of Engineers before any substantial modifications, or the management changes, occur with these ponds.

Biological Impacts Found to be Potentially Significant:
As a result of project analysis, based on data collected in the evaluation of the CSU Stanislaus Physical Master Plan Update, there may be impacts that could result in a significant adverse impact to biological resources due to project implementation.

- *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.*
  As a result of on-site evaluations, it is not likely that use of the Campus site for educational purposes, or development of new Campus facilities, will interfere any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors. The existence of large trees, that may serve as nesting sites for area raptors, such as the Swainson's Hawk, may limit how, when and where large trees may be removed to make way for new construction. Mitigation is proposed to reduce this threat to a level deemed to be less than significant.

C. Proposed Master Plan Goals & Policies:

The CSU Stanislaus Physical Master Plan Update contains policies and goals that aim to preserve biological resources of the Campus.

Landscape Master Plan Policies That Impacts Biological Resource

Precedent for Sustainability

The landscape design for the campus should support an overall goal of sustainability. The landscape plan offers a unique opportunity to implement techniques that are meaningful and achievable for a sustainable outdoor environment. Selection of drought-tolerant plant material can have a major impact on promoting a sustainable landscape design for the campus. These materials require less irrigation and lower maintenance. Selection of this material should be balanced with the University's desire to create more manicured landscape areas within the campus.

Some drought tolerant plant material selections could include:

<u>Trees:</u>

- *Cedrus Atlantica Glauca (deodar cedar).*
- *Calocedrus deccurrens (incense cedar).*
- *Eucalyptus (eucalyptus tree).*
- *Ginkgo biloba (maidenhair tree).*
- *Quercus lobata (valley oak).*

<u>Shrubs:</u>

- *Arbutus unedo (strawberry tree).*
- *Fremontedendron (flannel bush)."*

Maintain Park-Like Character along Perimeter Road and Surface Lots

"Landscape plantings on the perimeter road should continue to promote its park-like character. These plantings will enhance the driving experience through the campus, minimize the appearance of the road for pedestrians, and continue to promote an inviting edge to the campus.

New surface parking areas in the landscape plan are designed with ample tree plantings to provide shade for parked cars. These planting also serve to screen the large lots from sight."

Master Plan Policies That Impacts Biological Resource

Landscaping and Open Space Landscape:

"Landscape is considered the most important element in defining the campus character. Certain areas of the campus landscape need improvement & renewal, specifically the Arts complex, Athletic complex and undeveloped portions of the campus. North & East edges of the campus require definition. Campus corners at West Monte Vista/Crowell, and Geer Road/Christofferson Way need improvement through signage, landscape, & edge definition. Reflecting pond cannot be enjoyed by pedestrians due to close proximity of University Circle. Its park-like atmosphere is important to maintain. Current positive attributes include good lighting, a positive safety factor, & inviting to the community. Open space is a distinguishing feature of the campus Preserve open space between union & housing".

D. Short-Term Impacts:

Adoption of the CSU Stanislaus Physical Master Plan Update will not have any immediate impact on the biological environment other than to affirm existing policy regarding the future site development Master Plan strategy for providing educational facilities adequate to support the Campus capacity of 12,000 FTE as implemented through the adopted CSU Stanislaus CIP-COP. These actions and activities will not have any adverse impacts on the biological resources of the area but will lead to improved facility design of development with respect to potential impacts on Campus biological resources.

E. Long-Term Impacts:

Expansion of Campus facilities on open areas of the campus will result in the loss of some landscape resources. Long-term development trends will increase some wildlife species that are compatible with urban development and reduce the populations of other less adaptive species. Given the nature of the site and the surrounding developed areas, it is not likely that new development on the campus will have any serious impacts on the existing biological communities or Campus biological resources.

There are potential impacts resulting from the disturbance or removal of large trees that are suitable nesting sites for raptors and other large bird species. Development and construction activities undertaken, in accordance with the goals, policies and standards of the CSU Stanislaus Physical Master Plan Update could result in diminishing the value of critical habitat of sensitive and or protected species.

F. Cumulative Impacts:

Further urbanization in the region resulting in the conversion of farmland to urban uses will, in turn, change the nature of wildlife habitat in the area. These changes may have little impact on overall wildlife populations in the region given the extensive area surrounding the City of Turlock that is maintained as farmland but will make the preservation of existing park-like settings, such as the CSU Stanislaus Campus more valuable to regional wildlife.

G. Secondary Impacts:

Maintenance of the existing Campus storm-water management system will continue to enhance the biological resources on site but may, upon review and determination by the Army Corp of Engineers, be found to have become "Waters of the US" and subject to rules and regulations that could modify their basic purpose.

3.4.3 Mitigation Measures

As part of the Campus construction planning and development, individual projects will need to comply with the following Mitigation measures where appropriate:

- Due to past development of the site, the likelihood of occurrence of sensitive plants within the site is considered remote to none.
- On-site trees could be used by nesting raptors and other protected birds. Any trees that need to be removed to facilitate future development should be felled outside of the general bird nesting season (February 1 through August 31) or a nesting bird survey should be conducted immediately prior to tree removal. If active nests are found, tree felling should be delayed until the young have fledged.
- Swainson's hawk is the only species with potential to occur within or adjacent to the site on more than a transitory basis. Pre-construction surveys for nesting Swainson's hawks should be conducted for construction activities between March 1 and September 15 pursuant to CDFG (1994). If active nests are found, a qualified biologist should determine the need (if any) for temporal restrictions on construction. The determination should be made pursuant to criteria set forth by CDFG (1994).
- The five Storm-Water ponds are potential waters of the U.S. or wetlands within the project site with potential to fall under the jurisdiction of the U.S. Army Corps of Engineers and/or CDFG. However, since these water features are created and maintained for aesthetic, ornamental and storm-water management purposes and possess little wildlife function or value we consider it highly unlikely that ACOE would assert jurisdiction over these five features. However, only ACOE possesses the authority to determine what is within their jurisdiction. Preliminary consultation with ACOE or formal wetland delineation may need to be conducted to make a jurisdictional determination in the event that there is any substantial change in the configuration, operation and management of these ponds.

3.4.4 Level of Significance After Mitigation

Implementation of these mitigation measures and adherence to the Physical Master Plan's guidelines will ensure that new buildings, other facilities, landscaping, and open space are appropriate to their context. The University will utilize landscape standards enhance "sustainability" of new landscape materials and follow accepted principals for protecting nesting raptors during construction activities. With incorporation of these features and characteristics, impact will be less than significant.

Section 3.5
Cultural Resources

This environmental issue focuses on the impacts of a project on cultural resources including, but not limited to, the adverse change to a significant historical or archaeological, resource. Other areas of concern include the potential for a project to adversely impact a unique paleontological resource, geologic feature or disturb any human remains.

3.5 1 Environmental Setting
Prehistoric Setting

Although early Holocene (10,000-12,000 years ago) peoples probably inhabited or passed through the San Joaquin Valley, few indications of their activities have been discovered, probably because of deep burial beneath accumulated silt. Examples of early Holocene cultural remains are known from the Tulare Basin in the southern San Joaquin Valley. Based on typological similarities with artifacts recovered in other parts of the western United States (fluted-point tradition), early occupation (Phase I) of the Tulare Basin may date to 11,500 years ago. Radiocarbon dating for material excavated in the Tulare Basin (specifically, Buena Vista Lake) established dates back to 8,250 and 7,650 years ago.

The prehistoric chronology of the western side of the San Joaquin Valley has been derived from the excavation of several sites discovered within reservoir project areas and can be divided into a series of complexes.

The Positas Complex, dating from approximately 3300 to 2600 B.C., is characterized by small shaped mortars, cylindrical pestles, milling stones, perforated flat cobbles, and spire-lopped Olivella beads.

The Pacheco Complex is dated from approximately 2600 B.C. to A.D. 300 and is characterized by foliate bifaces, rectangular shell ornaments, and thick rectangular Olivella beads in the early phase and spire-ground Olivella beads, perforated canine teeth, bone awls, whistles, grass saws, large-stemmed and side-notched points, milling stones, mortars, and pestles in the later phase.

The Gonzaga Complex, dating from approximately A.D. 300 to 1000, is characterized by extended and flexed burials; bowl mortars; shaped pestles; squared and tapered-stem points; few bone awls; distinctive shell ornaments; and thin rectangular, split-punched, and oval Olivella beads.

The Panoche Complex is dated from approximately A.D. 1500 to 1850 and is recognized by large circular structures (pits), flexed burials and primary and secondary cremations, varied mortars and pestles, bone awls, whistles, small side-notched points, clamshell disk beads, and other bead types.

These complexes appear to indicate occupation of the valley by people engaged in acorn gathering and hunting. Material found in Pacheco to Panoche strata indicates a trade relationship with people of the Delta, *the* south coast, and southern inland areas.

Ethnographic Setting

The project area was once occupied by the Northern Valley Yokuts, who lived in the northern San Joaquin Valley from around Bear Creek near Merced north of Stockton to the bend in the San Joaquin River near Mendota. "Yokuts" is a term applied to a large and diverse number of peoples who inhabited the San Joaquin Valley and Sierra Nevada foothills of central California. The Yokut cultures include three primary divisions corresponding to gross environmental zones: the Southern San Joaquin Valley Yokuts, the Northern San Joaquin Valley Yokuts, and the Foothill Yokuts.

The Yokut language belongs to the Yokutsan family, Penutian stock, and has been divided into between two and twelve subdivisions. Each of the primary Yokut cultural groups included speakers of several dialects.

No Yokut tribal organization encompassed all the peoples speaking Yokutsan languages, nor was there even a tribal organization that encompassed an entire primary division, such as Northern Valley Yokuts. These are linguistic and geographic designations only. Similar to most Native American groups in California, the largest political entity among the Yokuts was that of the tribelet. A tribelet consisted of a large village and a few smaller surrounding villages. Larger villages and tribelets had a chief or headman, an advisory position that was passed from father to son.

In general, the Yokuts were seasonally mobile hunter-gatherers with semi-permanent villages. Seasonal movements to temporary camps occurred to exploit food resources in other environmental zones. The primary differences between the various Yokut groups relate to the different resources available in their territories. The South Valley groups were adapted to a lake-dough-marsh environment and relied most heavily on fish, waterfowl, roots (especially tale roots), seeds, mussels, turtles, shellfish, and rabbits. Few insects or large mammals were consumed. Acorns were not readily available and thus were not as large a staple food source for these groups as for many other California Native Americans. In contrast, the North Valley Yokuts did rely heavily on acorns as a food staple, along with salmon and other fish.

The Yokuts first came into contact with Europeans when Spanish explorers visited the area, in the late 1700s. These early visits were followed by expeditions to recover individuals who had escaped from the missions located further west. The North Valley Yokuts were far more affected by missions than were the other Yokut groups. The loss of individuals to the missions, the influence of runaway neophytes, various epidemics in the 1800s, and the arrival of settlers and miners contributed to the disintegration of Yokut culture.

Historical Setting

The first settlers in the Turlock region arrived in the 1850's and their settlements were located along the banks of the Tuolumne and San Joaquin Rivers as the waterways provided easy transportation for supplies and exporting farm produce. The actual settlement of Turlock began in 1871 with the coming of the Central Pacific Railroad to the region. The location of Turlock was dictated by its suitability for shipping of grain and nearby ranches. The period of 1871 to 1900 in the Turlock region has been referred to as the "Grain Period". During this period, large areas were gang-plowed and crops of rye, barley and wheat were planted.

Irrigation became available to Turlock area farmers at the turn of the century. With the formation of the Turlock Irrigation District and the availability of irrigation water in the area, agriculture diversified. New wealth was created in the area with the growing of diverse crops. As a result, the City of Turlock was organized in 1908.

Historical Sites and Buildings

Prior to 1960, the CSU Stanislaus Campus site was farmland. The State Legislature established what was then known as Stanislaus State College in 1957. The first classes opened in September of 1960 in the Stanislaus County Fairgrounds. In 1965, the College moved to its permanent campus of approximately 220-acres on West Monte Vista Avenue/University Way on vineyards and farmland just north of the, then, existing City of Turlock. The area was relatively undeveloped at the time. Over the years housing and commercial development grew adjacent to the campus site. Stanislaus State College was awarded University status and renamed California State University, Stanislaus in 1985.

3.5.2 Environmental Impacts

To the extent that updating the Physical Master Plan may result in future development within the campus perimeter, an increase in construction activity will result. This activity will most likely involve excavation that could disturb cultural resource site presently unknown or impact historic buildings or structures.

A. Thresholds of Significance

Appendix "G" of the CEQA Guidelines addresses potential impacts on Cultural Resources as follows:

Would The Project:

- Cause a substantial adverse change in the significance of a historical resource as defined in Section 15064.5 of the CEQA Guidelines?
- Cause a substantial adverse change in the significance of and archaeological resource pursuant to Section 15064.5 of the CEQA Guidelines?
- Directly or indirectly destroy a unique a paleontological resource or site or unique geologic feature?
- Disturb any human remains, including those interred outside of formal cemeteries?

DEFINITION OF TERMS COMMONLY ENCOUNTERED:

Area of Potential Effects:

An Area of Potential Effects (APE): is established to define the boundaries of the area within which a proposed project might affect, either *directly* or *indirectly*, any historic properties. The APE should be large enough to include all listed, eligible, or potentially eligible properties which may reasonably be affected by the proposed project.

Direct APE Effect: Direct effects are associated with construction activity and have the potential to immediately alter, diminish, or destroy all or part of the character and quality of historic and archaeological resources (pre-historic and historic).

Indirect APE Effect: Indirect effects are related to the primary consequences of the completed project and may be several steps removed from the project in the chain of cause and effect. Indirect impacts can normally be expected to cause change in the character or use of a built environment by the introduction of undesirable auditory or visual intrusions. Noise and vibration from construction activity itself may be considered indirect effects. Indirect impacts generally have little potential to alter archaeological resources because the significance of the archaeological resources usually lies only in the information they contain.

Historical Resource: In accordance with Section 15064.5 of the CEQA Guidelines, a historical resource includes the following:

(1) A resource listed in, or determined to be eligible by the State Historical Resources Commission, for listing in the California Register of Historical Resources.
(2) A resource included in a local register of historical resources, as defined in section 5020.1(k) of the Public Resources Code or identified as significant in a historical resource survey meeting the requirements of section 5024.1(g) of the Public Resources Code.
(3) Any object, building, structure, site, area, place, record, or manuscript that the University determines to be historically significant or significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California and the resource meets the criteria for listing on the California Register of Historical Resources.

Historic Register Criteria: California Register of Historical Resources (Pub. Res. Code 5024.1, Title 14 CCR, Section 4852) includes the following criteria for determining the eligibility for listing a historical resource in the California Register of Historic Resources:

(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; or

(4) Has yielded, or may be likely to yield, information important in prehistory or history.

Substantial Adverse Effect: A project with an effect that may cause a substantial adverse change in the significance of a historical resource is a project that may have a significant effect on the environment.

(1) Substantial adverse change in the significance of a historical resource means 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.

(2) The significance of a historical resource is materially impaired when a project:

(A) Demolishes or materially alters in an adverse manner those physical characteristics of a historical resource that convey its historical significance and that justify its inclusion in, or eligibility for, inclusion in the California Register of Historical Resources; or

(B) 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 Public Resources Code or its identification in an historical resources survey meeting the requirements of section 5024.1(g) of the Public Resources Code, unless the public agency reviewing the effects of the project establishes a preponderance of evidence that the resource is not historically or culturally significant; or

(C) 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 of Historical Resources.

Note: Generally, a project that follows the Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for Preserving, Rehabilitating, Restoring, and Reconstructing Historic Buildings or the Secretary of the Interior's Standards for Rehabilitation and Guidelines for Rehabilitating Historic Buildings (1995), Weeks and Grimmer, shall be considered as mitigated to a level of less than a significant impact on the historical resource.

Historic Integrit: Integrity is defined in Bulletin 15; "How to Apply the National Register Criteria for Evaluation, (U.S. Department of the Interior, National Park Service 1982) as:

"The authenticity of a property's historic identity, evidenced by the survival of physical characteristics that existed during the property's historic or prehistoric period. If a property retains the physical characteristics it possessed in the past then it has the capacity to convey association with historical patterns or persons,

architectural or engineering design and technology, or information about a culture or peoples."

Integrity is a quality that applies to resources in specific ways:

- Location,
- Design,
- Setting,
- Materials,
- Workmanship, feeling, and
- Association.

A resource must possess two, and usually more, of these kinds of integrity, depending on the context and the reasons why the property is significant.

The principal test to assess whether a property retains integrity is to ask if it still retains the identity or character for which it is important. While it is not necessary for the property to retain all the physical features or characteristics it had during its period of significance, it must retain the essential physical features that convey its past identity or character and, thus its significance.

Historical Significance: A property must meet one or more to the following evaluation criteria to be considered representative of a significant theme or pattern in the history, architecture, archaeology, engineering or culture of an area. The criteria are applied after identifying relevant historical themes or patterns.

(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; or
(4) Has yielded, or may be likely to yield, information important in prehistory or history.

Properties considered significant for their information potential (Criterion "4") must contain data sets that, when analyzed, will address important defined research questions. Research questions are typically developed as part of a research design, which specifies not only the questions to be addressed, but also the types of data needed to address the questions and the techniques to be used to recover and analyze the data.

ASSESSMENTS FOR HISTORICAL RESOURCES

DEFINITION OF HISTORIC RESOURCES

Historic Resources include, but are not limited to, any object, building, structure, site, area, or place that has historic relevance to the development of City, County, the State of California, or the United States of America. The period of time inclusive of "historic resources" is generally considered to be the period of "post-contact" with European settlers, but can include archaeologically important items as well. (i.e. Archaeological resources can be historic resources, but historic resources are not always archaeological resources.)

THRESHOLD CRITERIA

Any alteration, change, movement, relocation, or disturbance of a resource which would have a "*substantial adverse effect*" on "*historical resources*" as defined by CEQA is to be deemed "significant". A substantial adverse effect may also result from activities undertaken within the "*area of potential effect*" (APE) of a project undertaken near a "*historical resource*".

ASSESSMENTS FOR ARCHAEOLOGICAL RESOURCES

DEFINITION OF ARCHAEOLOGICAL RESOURCES

Archaeological resources are the material remains (artifacts, structures, refuse, etc.) produced purposely or accidentally by members of prehistoric human cultures.

DEFINITION OF ARCHAEOLOGICAL TERMS

Archaeological Resources: The material remains (artifacts, structures, refuse, etc.) produced purposely or accidentally by members of prehistoric human cultures.

Record Search: Preliminary assessment of archaeological resource literature and other available data to determine whether prior survey, analysis, or excavation has occurred in the project area; and to provide initial interpretations of impact and significance.

Phase I Assessment: A surface survey of the project area conducted by a qualified consultant, combined with a detailed record search.

Phase II Assessment: A detailed assessment of archaeological resource sites or features, consisting of intensive surface analysis and, where appropriate, limited test excavations, auger-boring, etc., to help determine site spatial boundaries and temporal depth.

Phase III Assessment: A `mixed strategy reconnaissance' involving a combination of archaeological site analysis techniques, as determined by the archaeological consultant(s).

Project Area: The area covered by the discretionary permit request, usually including that area within 500 feet of the land area to be directly impacted by the proposed project.

THRESHOLD CRITERIA
CEQA requires protection of unique archaeological resources that may be damaged or destroyed by a development project. For the purposes of CEQA, a unique archaeological resource is 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 question and that there is a demonstrable public interest in that information.
(2) Has a special and particular quality such as oldest of its type or best available example of its type.
(3) Is directly associated with a scientifically recognized important prehistoric or historic event or person.

The determination as to the "unique" status of the archaeological resource is a determination that must be made by a qualified archaeologist following a Phase I Assessment of the site. The determination of the limits of the site may require a Phase II Assessment.

A construction project involving grading and excavation in a unique archaeological resource or site will be considered to create a potential significant impact on the environment with respect to archaeological resources.

ASSESSMENTS FOR PALEONTOLOGICAL RESOURCES
DEFINITION OF PALEONTOLOGICAL RESOURCES:
Paleontological resources refer to the fossilized remains of plant and animal life. Careful scientific study of fossilized life forms preserved in the sedimentary and metamorphic rocks of the region can result in the identification of local paleo-environmental conditions and biological evolutionary trends.

DEFINITION OF PALEONTOLOGICAL TERMS
The following is a glossary of paleontological terminology.

Fossils: The remains or indications of once-living organisms.

Vertebrate Fossils (Rare): Animals containing a spine or endoskeleton.

Megainvertebrate Fossils (Rare): Animals containing no bony or cartilaginous material.

Microinvertebrate Fossils (Abundant): Also known as Microfossils, and often of economic importance.

Floral Organic Remains (Abundant): Simple and complex non-faunal materials.

Paleoenvironment Indicators: The use of fossilized plant and animal materials, particularly pollens, in reconstructing past environmental conditions.

Paleontological Resource Importance: Reflects the potential productivity of a formation or exposure and the importance of the particular fossils located in the formation or exposure.

PALEONTOLOGICAL IMPACTS

The geologic formation in which proposed projects would be located can be used to establish the likelihood of paleontological resources being present and their relative importance.

Fossil remains are considered important if they are,

1) well preserved,
2) identifiable,
3) type/topotypic specimens,
4) age diagnostic,
5) useful in environmental reconstruction,
6) represent rare and/or endemic taxa,
7) represent a diverse assemblage,
8) represent associated marine and nonmarine taxa.

Vertebrate and Megainvertebrate fossils are considered highly important because they are comparatively rare and allow precise age determinations and environmental reconstructions for the strata in which they occur. Microinvertebrate fossils (microfossils) are much more abundant and, for this reason and because of their small size, would not be adversely impacted to the same degree as vertebrate and megainvertebrate fossils.

A variety of geologic formations are of undetermined paleontological importance due to a lack of data concerning the particular rock outcropping in question. In addition, Quaternary deposits which represent the last 10,000 years of geologic history and includes alluvial deposits and landslides, have the potential for high to no resource importance.

Direct impacts to fossil sites include grading and excavation of fossiliferous rock, which can result in the loss of scientifically important fossil specimens and associated geological data. Indirect impacts include increased access opportunities and unauthorized collection of fossil materials. Cumulative impacts include all projects which contribute to the progressive loss of exposed rock in the area that can be studied and prospected for fossil remains.

THRESHOLD CRITERIA

A construction project involving grading and excavation in an area where Vertebrate and Megainvertebrate fossils are likely to be found will be considered to create a potential significant impact on the environment with respect to paleontological resources.

ASSESSMENTS FOR HUMAN REMAINS

DEFINITION OF ISSUE

Cemeteries contain important cultural and historic information regarding a community. The accidental discovery or recognition of any human remains in any location other than a dedicated cemetery can also contribute important information regarding historic or pre-historic development patterns of the area. The need to record this information in a scientific manner is necessary to assure that this information is not lost as a result of the disinternment, disturbance or relocation of human remains.

THRESHOLD CRITERIA

Excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent human remains is considered significant unless compliance with all applicable provision of State law and local regulations has been achived including, but not limited to Public Resources Code Section 5097.98, 21082, 21083, 21083.2, 21084, 21084.1, and 21087.

B. Potential Significant Impacts:

Cultural Resource Impacts Found Not to be Potentially Significant:

As a result of project analysis, based on data collected in the evaluation of the CSU Stanislaus Physical Master Plan Update's implementation, the following aspects of a potential cultural resource impact are found not to exist or exist at levels well below any reasonable expectation that a significant adverse impact is likely to result:

- *Cause a substantial adverse change in the significance of a historical resource as defined in Section 15064.5 of the CEQA Guidelines?*
  The adoption and implementation of the Physical Master Plan Update is not likely to result in a substantial adverse change in the significance of a historical resource pursuant to Section 15064.5 of the CEQA Guidelines. There are no historical resources of significance located within the University campus.

- *Cause a substantial adverse change in the significance of and archaeological resource pursuant to Section 15064.5 of the CEQA Guidelines?*
  The adoption and implementation of Physical Master Plan Update is not likely to result in a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5 of the CEQA Guidelines. Due to the nature of the area, it is not likely that any archaeological resources exist on the Campus site. Projects undertaken in accordance with the Physical Master Plan Update may result in construction activities that could disturb an archaeological resource. However, these projects would be subject to individual review and approval and subject to the requirements of State law with respect to any disturbances to archaeological resources.

- *Directly or indirectly destroy a unique a paleontological resource or site or unique geologic feature?*
  The adoption and implementation of the Physical Master Plan Update is not likely to result in the direct or indirect destruction of any unique paleontological resource or

site or a unique geologic feature. Due to the nature of the area, it is not likely that any paleontological resources exist in the area. There are no unique geologic features within the University's future planning area. Projects undertaken in accordance with the Physical Master Plan Update may result in construction activities that could disturb a paleontological resource. However, these projects would be subject to individual review and approval and subject to the requirements of State law with respect to any disturbances to paleontological resources.

- *Disturb any human remains, including those interred outside of formal cemeteries?*
  The adoption and implementation of the Physical Master Plan Update is not likely to result in the disturbance of any human remains. Projects undertaken in accordance with the Physical Master Plan Update may result in construction activities that could disturb human remains. However, these projects would be subject to individual review and approval and subject to the requirements of State law with respect to any disturbances to a burial site.

Cultural Resource Impacts Found to be Potentially Significant:

As a result of project analysis, based on data collected in the evaluation of the University's proposed Physical Master Plan Update, no potential cultural resource impact is likely to result in a significant adverse environmental impact due to project implementation.

C. Proposed Physical Master Plan Update Guiding Principles Relating to Cultural Resources:

There are no Master Plan policies that directly relate to the preservation and protection of cultural resources within the campus development area.

D. Short-Term Impacts:

Adoption of the CSU Stanislaus Physical Master Plan Update will not have any immediate impact on cultural resources and environment other than to affirm existing policy regarding the future site development Master Plan strategy for providing educational facilities adequate to support the Campus capacity of 12,000 FTE as implemented through the adopted CSU Stanislaus CIP-COP. These actions and activities will not have any adverse impacts on the cultural resources of the area

E. Long-Term Impacts:

As student population growth occurs on the Campus, new construction will be proposed that will result to modification to the Campus site. These new improvements and buildings will be reviewed and approved based upon compliance with the cultural resource requirements of State and Federal law. As there are no known cultural resource sites existing on the campus, no impacts of cultural resources on the Campus is expect over its long-term build-out.

F. Cumulative Impacts:

There are no known cultural resources existing on the Campus site and no impacts are foreseen.

G. Secondary Impacts:

There are no significant secondary physical adverse impacts expected to result from the implementation of the CSU Stanislaus Physical Master Plan Update's goals or policies or Federal or State cultural resource preservation regulations.

3.5.3 Mitigation Measures

No mitigation is proposed or required as there are no significant adverse impacts likely to result from the adoption and implementation of the CSU Stanislaus Physical Master Plan Update. Development that is proposed within the Campus site will be required to comply with Federal, and State cultural resource preservation standards.

3.5.4 Level of Significance After Mitigation

Construction activities that are undertaken in a manner that are consistent with the applicable policies and standards and comply with all appropriate Federal and State cultural resource regulations and will not result in the creation of a significant adverse physical impact on Cultural Resources within the University campus.

Section 3.6
Geology and Soils

This environmental issue focuses on the impacts of natural geologic or soil conditions on a project. Specific concerns include earthquakes and seismic related hazards, or unstable soils. This section relies on data published in, in large part, within the Stanislaus County General Plan and Environmental Impact Report. These documents include all areas within Stanislaus County of which the City of Turlock and the CSU Stanislaus Campus is a part.

3.6 1 Environmental Setting

Geology

Stanislaus County consists of three distinct geologic regions: the eastern dissected uplands, the San Joaquin Valley, and the western mountains. The eastern portion of the county comprises Pliocene and Pleistocene non-marine and sedimentary deposits, recent river and major stream channel deposits, Pliocene non-marine sedimentary rocks, Quaternary non-marine terrace deposits, undivided Eocene and Miocene non-marine sedimentary rocks, and Jurassic and/or Triassic metavolcanic rocks. The San Joaquin Valley portion is primarily made up of recent alluvial fan deposits, recent river- and major stream–channel deposits, and recent basin deposits. The western mountain portion of the county is composed of rocks of the Franciscan Formation, Mesozoic rocks, upper Cretaceous marine sedimentary rocks, Paleocene and Eocene marine sedimentary rocks, and Pliocene non-marine sedimentary rocks.

Regional Geologic Hazards

Faults

Several faults extend through the county, although most have been inactive for the last 150 million years. The Ortigalita fault in the western portion of the county has been active within the last 12,000 years and has an associated Alquist- Priolo Earthquake Fault Zone.

Ground Shaking

Stanislaus County is subject to a range of ground-shaking intensities. Using the Modified Mercalli Intensity Scale of 1931 as a reference, the eastern half of the county can be expected to have an intensity of VI or VII, producing minor to moderate damage. The western half of the county can be expected to have an intensity of VII or VIII, producing considerable damage to ordinary structures (County of Stanislaus 1987). The probability of liquefaction (i.e., temporary loss of soil strength) and related ground failures is expected to be highest in areas that are subject to ground shaking; have clean, unconsolidated alluvial sediments and soils; and have groundwater within 50 feet of the ground surface.

Landslides

The Diablo Range in the western portion of the county is more prone to land-sliding than other areas. Of the two geologic formations in this portion of the county (the Franciscan Formation and the Great Valley sequence), the Franciscan Formation is considered more

unstable. Landslides in the Great Valley sequence is common adjacent to the Tesla-Ortigalita fault and along streams and road-cuts

Soils

The SCS (now known as the Natural Resources Conservation Service [NRCS]) has mapped 30 different soil associations in the eight physiographic provinces in the county. In the eastern portion of Stanislaus County (east of I-5), where the City of Turlock is located, there are six physiographic provinces and 16 soil associations. The physiographic provinces in this area are recent alluvial floodplains, basin lands, young alluvial fans, moderately old fans, low alluvial terraces, and high alluvial terraces. The following sections briefly describe the soil associations within each of the six physiographic provinces.

Recent Alluvial Floodplains

Soils in this physiographic province are members of the Columbia-Grangeville-Temple and the Honcut-Wyman associations. These soils are very young because of the repeated deposition of alluvium. Slopes are generally level. These soils are deep and range from very well drained and productive to poorly drained and saline-alkaline. Erosion hazard is estimated to be low.

Basin Lands

Soils in this physiographic province are members of the Camarillo-Orestimba, Waukena-Fresno, and Capay associations. Slopes are generally level. These soils are generally alluvial in origin and are poorly drained because of their high clay content. Some of these soils would be considered expansive under the Uniform Building Code. Erosion hazard is estimated to be low.

Young Alluvial Fans

Soils in this physiographic province are members of the Hanford-Tujunga, Vernalis-Salado-El Solyo, Hilmar-Delhi, Dinuba-Hanford, Myers-Stomar, and Modesto-Chualar associations. Slopes are generally level. These soils are generally found adjacent to the floodplains and basin lands on both sides of the San Joaquin River. Erosion hazard is estimated to be low.

Moderately Old Fans, and Low Alluvial Terraces

Soils in these physiographic provinces are members of the Azcharis-Positas, San Joaquin-Madera, and Madera associations. Slopes are generally level with some variability in the rolling hills. These soils are generally older than the soils of the young alluvial fans, resulting in rock-like hardness at shallow depths east of the San Joaquin River. Erosion hazard is estimated to be low to moderate.

High Alluvial Terraces

Soils in this physiographic province are members of the Whitney-Montpelier-Rocklin and Redding-Pentz-Peters associations. Slopes are generally level with some variability in the rolling hills. Where the land surface is nearly level or only gently undulating, the soils

have a subsoil of dense clay or a hardpan. The soils have a lower clay content on the rolling hills. Erosion hazard is estimated to be low to moderate.

The Natural Resource Conservation Service classifies soils into four hydrologic soil groups based on the soil's runoff potential:

> **Group A** is sand, loamy sand or sandy loam types of soils. These soils have low runoff potential and high infiltration rates even when thoroughly wetted. They consist chiefly of deep, well to excessively drained sands or gravels and have a high rate of water transmission.
> **Group B** is silt loam or loam. These soils have a moderate infiltration rate when thoroughly wetted and primarily consist of moderately drained soils with moderately fine to moderately coarse textures.
> **Group C** soils are sandy clay loam. These soils have low infiltration rates when thoroughly wetted and primarily consist of soils with a layer that impedes downward movement of water and soils with moderately fine to fine structure.
> **Group D** soils are clay loam, silty clay loam, sandy clay, silty clay or clay. These soils have the highest runoff potential and very low infiltration rates when thoroughly wetted. They primarily consist of clay soils with a high swelling potential and/or soils with a permanent high water table.

3.6.2 Environmental Impacts

The CSU Stanislaus Campus is not identified on an Alquist-Priolo Earthquake Fault Zoning Map, the Campus, however, lies within the Melones Fault system zone of influence. The earthquake history of the region indicates few damaging earthquakes and the historical record points to the Campus area as being earthquake insignificant; however, a large earthquake in the region should be considered possible.

Construction activities associated with projects pursued in implementation phases of the Master Plan will result in the over-covering of soils with hardscape, buildings and other generally impervious surfaces. Resultant increases in storm-water runoff may generate significant storm drainage-related concerns.

A. Thresholds of Significance

Appendix "G" of the CEQA Guidelines addresses potential impacts on Geology and Soils as follows:

Would the project:

- Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:
  i) 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?
  ii) Strong seismic ground shaking?
  iii) Seismic-related ground failure, including liquefaction?

iv) Landslides?

- Result in substantial soil erosion or loss of topsoil?
- 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?
- Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?

ASSESSMENTS FOR FAULT RUPTURE

DEFINITION OF FAULT RUPTURE HAZARD

Fault rupture hazards occur when regional earth movements change the surface configuration of the earth. The movement may be in response to an earthquake (seismically induced) or without any earthshaking (seismic). These vertical or horizontal changes in the earth can damage structures, utilities, and transportation corridors. Fault rupture/displacement may also alter natural drainage and ground water flow direction. Fault rupture hazards primarily exist along pre-existing faults. These faults are considered to pose a hazard if they have moved within a specific period of time. This period depends upon the type of project. For almost all projects, the period of interest is the past 11 thousand years.

DEFINITION OF TERMS COMMONLY ENCOUNTERED:

Fault: A fracture or a zone of fractures along which there has been displacement of the sides relative to one another parallel to the fracture.

Active Fault: A fault which has had demonstrated ground surface displacement within Holocene time (the past 11,000 years) and which is considered capable of experiencing movement in response to future earthquakes.

Alquist-Priolo Earthquake Fault Zone: A seismic hazard zoning map established by the Alquist-Priolo Act in 1972 (Public Resources Code Section 2621 et, seq.) for the purpose of assuring that homes, offices, hospitals, public buildings, and other structures for human occupancy are not built on active faults.

Blind thrust: A type of fault which does not intersect the earth's surface, but along which compressional stresses are accumulated and released in earthquakes that involve slippage and warping of buried strata.

Displacement: A general term for the relative movement of two sides of a fault, measured in any chosen direction; also, the specific amount of such movement.

Flexural Slip: A type of tectonic shear displacement that occurs during folding of sedimentary rocks that are characterized by distinct lithologies and well developed bedding surfaces. Not necessarily associated with earthquakes. (Related Term: Bedding Plane Thrust).

Left lateral slip: A strike slip fault on which the side opposite the observer has been displaced to the left.

Potentially Active Faults: A fault which has demonstrated ground surface displacement sometime within the Pleistocene epoch (approximately from 11,000 years ago to 1.6 million years ago). The potential for future ground surface displacement may not be known with confidence.

Right lateral slip: A strike slip fault on which the side opposite the observer has been displaced to the right.

Rupture: The portion of the earth surface that has moved due to movement along a fault or series of faults, usually an elongate or linear zone of fractures and furrows.

Thrust fault: A fault with a dip 45~ or less over much of its extent, on which the hanging wall appears to have moved upward relative to the foot wall. Horizontal compression rather than vertical displacement is its characteristic feature.

THRESHOLD CRITERIA
Threshold criteria for determining whether a project is potentially at risk with respect to fault rupture is its location within any of the following areas:

1) A State of California designated Alquist-Priolo Special Fault Study Zone,
2) A County designated Fault Hazard Area,
3) A County designated Potential Fault Hazard Area.

ASSESSMENTS FOR GROUND SHAKING
DEFINITION OF SEISMIC HAZARD
Ground shaking (i.e. cyclic earth movements) results from the sudden motions in the earth (earthquake) caused by the abrupt release of slowly accumulated strain energy. Earthquakes occur primarily along faults or folds in areas undergoing active deformation. The motion of each earthquake is characterized by a unique set of body, longitudinal, and transverse waves. These waves can cause damage to structures, utilities and transportation corridors; cause landslides, rockfalls and embankment failures and induce liquefaction failure in certain cohesionless soils.

THRESHOLD CRITERIA
Ground shaking hazards can occur throughout the County and, ground failure phenomena aside, are accommodated by the Building Code. The effects of ground shaking hazard are required to be considered within the existing framework of grading and Building Codes that apply to all sites and projects. Special threshold criteria for ground shaking hazard are thus not established. Failure to comply with the Earthquake standards of the Building Code would be considered a significant impact.

ASSESSMENTS FOR LIQUEFACTION

DEFINITION OF LIQUEFACTION

Liquefaction is the phenomena whereby strong, cyclic ground motions during an earthquake transform a soil mass from a solid to a liquid State. The process involves densification and pore pressure increases in a saturated soil mass. The occurrence of liquefaction is strongly dependent upon the strength and duration of ground shaking, the depth to saturated soil, and local soil properties. It most readily occurs in loose, Holocene-age soil with a near-surface groundwater table. Five types of ground failure are commonly associated with liquefaction: 1) loss of bearing, 2) flow failure, 3) lateral spreading, 4) ground oscillation, and 5) sand boils.

OTHER DEFINITIONS

Loss of Bearing: Liquefied ("Quick") soil has no internal shear resistance and ability to support load without deformation. Bearing failures can result in general settlements, tipping or toppling of buildings and the buoyant rise of empty buried tanks. This is the least common type of failure caused by liquefaction.

Flow Failure: Occurs where liquefied soil is present on an original slope usually greater than 3%. Liquefied soil and blocks of solid ground are often displaced many tens of feet at speeds up to several tens of miles per hour and can produce catastrophic effects. Almost all man-made structures are susceptible to damage by flow slides.

Lateral Spreads: Commonly develop adjacent to channels river banks on slopes between 0.3 and 3%. Movements commonly are several feet, although displacements up to several ten feet are possible. Solid blocks slide on a liquefied strata. Facilities with shallow foundations, and particularly pipelines, are susceptible to destruction by lateral spreading. More damage has been caused by lateral spreading than by any other form of liquefaction-induced ground fails.

Ground Oscillation: Ground oscillation can occur if liquefied layer is present at depth and the slope is gentle for flow failure or lateral spreading. Ground may open and close, settlement can occur and sand boils may be present. Overlying structures and particularly sub-grade facilities are commonly damaged through this mode of ground failure.

Sand Boils: These features are geyser-like eruptions of sand and water that result from soil liquefaction and may last from a few seconds to a minute or more. The geysers can rise several feet in height and leave circular deposits of sand a few inches thick around a vent. They result from lateral confined liquefied soil at depth releasing excess pore water pressure.

THRESHOLD CRITERIA

Liquefaction: Soils susceptible to Liquefaction are represented on geologic hazard maps in various scales and are contained in reports published by the State of California, Division Mines and Geology and the U.S. Geological Survey.

Liquefaction hazards can occur throughout the area and are accommodated by the Building Code. The effects of Liquefaction hazards are required to be considered within the existing framework of grading and Building Codes that apply to all sites and projects. Special threshold criteria for Liquefaction hazard are thus not established. Failure to comply with the Earthquake and Soil standards of the Building Code would be considered a significant impact.

ASSESSMENTS FOR LANDSLIDE/MUDFLOW

DEFINITION OF LANDSLIDE/MUDFLOW

Landslide and mud flow are terms to designate certain forms of natural or man-induced slope instability that may adversely influence life or property. Included are a number of different processes that range from very slow (a few inches in a hundred years) to extremely rapid (70 or more miles per hour). Included within the definition of this hazard, for the purposes of conducting environmental assessments, are all gravity-induced down-slope movements including the separate phenomena of rock-fall, soil creep, soil failures, dry raveling, rotational and transitional slides, flows, slumps and complex combinations of the above phenomena. The hazard applies to both natural and constructed slopes. Contributing factors include erosion, earthquake ground shaking, brush fires, and groundwater.

THRESHOLD CRITERIA

Landslide/mudflow hazards generally exist in and at the base of hillside terrain where channel erosion, weathering and tectonic movement have caused unstable conditions. Actual movement may be triggered by earthquakes and/or heavy periods of rain. A particular threat of landslide/mudflow exists in all areas that have already experienced mass movement and in areas subject to changes in topography and moisture content. This basically includes all hillside areas with slopes greater than 10%.

Location of a development project within an area identified as a landslide/mudflow hazard area would indicate a potential “significant” impact. The effects of landslide and mudflow hazards are required to be considered within the existing framework of grading and Building Codes that apply to all sites and projects. Special threshold criteria for landslide and mudflow hazard are thus not established. Failure to comply with the soil standards or other requirements of the Building Code, State law and other applicable development regulations relative to construction practices in an identified landslide/mudflow hazard area would be considered a significant impact.

ASSESSMENTS FOR EROSION/SILTATION

DEFINITION OF EROSION/SILTATION

The wearing away or deposition of land surface by wind or water. Erosion occurs naturally from weather or runoff, but can be intensified by land clearing practices.

THRESHOLD CRITERIA

Erosion/Siltation hazards exist throughout County and are accommodated by the Development Standards and other construction regulations. *Erosion/siltation* hazard are required to be considered within the existing framework of grading and building code

ordinances which apply to all sites and projects. Special threshold criteria for *erosion/siltation* hazard are thus not established. A determination of significant impact will be made for erosion and/or sediment producing projects not covered by the ordinary provisions of the Building Code, or other applicable development standards.

ASSESSMENTS FOR SUBSIDENCE

DEFINITION OF SUBSIDENCE

Subsidence is a general term for the slow, long-term regional lowering of the ground surface with respect to sea level. It can be caused by natural forces such as the consolidation of recently deposited sediments or by man-induced changes such as the de-watering of an aquifer. Subsidence occurs as a gradual change over a considerable distance (miles), or less commonly, it can occur in discrete zones. Subsidence is in contrast to “settlement", a term used to describe site-specific consolidation of strata from an imposed load such as a landfill or from some other man-caused increase in the effective stress conditions of subsurface earth materials.

Utilities and drainage facilities are particularly affected by subsidence due to their lateral extent, but small projects may also be affected when they are placed in an area that has discrete zones of subsidence or where subsidence will cause a secondary effect such as ponding or flooding.

THRESHOLD CRITERIA

Location of a development project within an area identified as a *subsidence* hazard area would indicate a potential “significant” impact. The effects of subsidence hazards are required to be considered within the existing framework of grading and Building Codes that apply to all sites and projects. Failure to comply with the Soil standards or other requirements of the Building Code, State law and other applicable development regulations relative to construction practices in an identified subsidence hazard area would be considered a significant impact.

The creation of a subsidence hazard is related to project type that would most likely be related to a project that would substantially reduce ground-water levels. These types of impacts would be evaluated under the heading of Hydrology and Water Quality.

ASSESSMENTS FOR EXPANSIVE SOILS

DEFINITION OF EXPANSIVE SOILS:

Expansive soils are primarily clay-rich soils subject to changes in volume with changes in moisture content. The resultant shrinking and swelling of soils can influence all fixed structures, utilities and roadways. Included within the definition of expansive soils are certain bedrock formations with expansive rock strata and weathered horizons.

THRESHOLD CRITERIA

Expansive soils are present throughout the area. They are present in some areas in thick accumulations and in others as a thin cover. Expansive soil hazards are assessed and mitigated within the existing regulatory framework of both the University as a normal part of the construction planning and development review process. An *expansive soil*

hazard is considered to exist where soils with an expansion index greater than 20 are present.

Location of a development project within an area identified as an *expansive soil* hazard area would indicate a potential "significant" impact. The effects of expansive soil hazards are required to be considered within the existing framework of grading and Building Codes that apply to all sites and projects. Failure to comply with the soil standards or other requirements of the Building Code, State law and other applicable development regulations relative to construction practices in an identified *expansive soil* hazard area would be considered a significant impact.

B. Potential Significant Impacts:

Geology and Soils Impacts Found Not to be Potentially Significant:

As a result of project analysis, based on data collected in the evaluation of the CSU Stanislaus Physical Master Plan Update's implementation, the following aspects of a potential geology and soils impact are found not to exist or exist at levels well below any reasonable expectation that a significant adverse impact is likely to result:

- *Result in substantial soil erosion or loss of topsoil?*

  All soil types located in the on or near the Campus are classified as having low to moderate erosion hazards but improper practices can still lead to some wind and water erosion. Soil erosion from water is minimal due to the relatively flat terrain of the area. Soil can also be lost in wind erosion if precautions are not taken. Dust blown off the project construction site would not only create a nuisance and create problems with air quality compliance, but can cause impacts down wind to items such as machinery and impact surrounding property.

  Wind erosion is primarily a concern during construction activities, but typical construction measures can be taken to reduce the amount of wind erosion that occurs during grading and excavation. Typically, erosion control and dust control (PM_{10} and $PM_{2.5}$) measures are applied to development permits during the construction contract phase.

- *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?*

  There are no known areas, geologic or soils units on the Campus that are unstable or would be unstable as a result of the implementation of the CSU Stanislaus Physical Master Plan Update. Due to the flat terrain and soil types on, around the site, there is no possibility of landslide, lateral spreading, subsidence, liquefaction or collapse.

- *Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?*

  Concentrations of Expansive Soils are not known to exist on or near the Campus. Implementation of the State Building Code reduces the risk of buildings or structures on expansive soils to a less than significant level.

- *Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:*
  - *i) 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?*
  - *ii) Strong seismic ground shaking?*
  - *iii) Seismic-related ground failure, including liquefaction?*
  - *iv) Landslides?*

  Occupancy of the CSU Stanislaus Campus site is not likely to expose people or structures to substantial adverse geologic risks from earthquake fault or rupture, strong seismic ground shaking, seismic-related ground failure or landslides.

Geology and Soils Impacts Found to be Potentially Significant:
As a result of project analysis, based on data collected in the evaluation of the CSU Stanislaus Physical Master Plan Update, there are no potential *geology and soils* impacts that are likely to result in a significant adverse environmental impact due to project implementation.

C. Proposed Physical Master Plan Goals & Policies:
There are no Master Plan policies that directly relate to the geology and soils within or underlying the Campus area. This area of environmental concern, however, is addressed as a matter of State law and regulation, the Stanislaus County General Plan and the City of Turlock General Plan.

Federal Geology and Soils Regulations
Non–point source pollution from sediment is regulated under NPDES requirements. EPA has delegated authority to SWRCB to administer the NPDES program. The general permit is enforced by one of the nine RWQCBs. A project that would result in the disturbance of more than 5-acres of land must obtain coverage under the State's general permit for construction activities. Development of a SWPPP (which includes erosion and sediment control measures) is required to obtain coverage under the general permit. A SWPPP for each project that exceeds the one-acre disturbance threshold would be prepared and implemented.

D. Short-Term Impacts:
Adoption of the CSU Stanislaus Physical Master Plan Update will not have any immediate impact on soils, geological structures and features other than to affirm existing policy regarding the future campus development. The Physical Master Plan strategy for providing educational facilities adequate to support the Campus capacity of 12,000 FTE is implemented through the adopted CSU Stanislaus CIP-COP. These actions and activities will not have any adverse impacts on the geological or soil resources of the area. The adoption of the Physical Master Plan Update will not have any adverse impacts on soils and geology of the area but will lead to improved regulation of construction with respect to potential construction proposed on unstable soils or underlying geologic structure.

E. Long-Term Impacts:
Growth student population, and development of new Campus facilities to accommodate this growth, will result in some modifications of the natural setting which presently is used for open-space. Water erosion will be managed through the development of surface water drainage systems that channel storm water into pipelines and other erosion proof structures and the storm-water retention pond system will limit the transport of sediments off-site. There are no serious geologic problems in the region and long term impacts from unstable geology are of little concern and can be easily addressed through the proper application of State Building Code standards.

F. Cumulative Impacts:
There are no identifiable cumulative impacts to geology and soils resulting from implementation of the CSU Stanislaus Physical Master Plan Update.

G. Secondary Impacts:
There are no identifiable secondary impacts to geology and soils resulting from implementation of the CSU Stanislaus Physical Master Plan Update.

3.6.3 Mitigation Measures

As part of the normal design and construction management process of the CSU system and the CSU Stanislaus Facilities Services Department, large individual improvement and construction projects are typically required to prepare foundation soils reports to evaluate the project site's soil stability. As a result of these studies, specific project level mitigation measures are required as part of the project's construction contract specifications.

No mitigation is proposed or required as there are no significant adverse impacts likely to result from the adoption and implementation of the CSU Stanislaus Physical Master Plan Update.

3.6.4 Level of Significance After Mitigation

Projects that are undertaken in a manner that is consistent with the policies and standards of the CSU Stanislaus Physical Master Plan Update and would normally comply with all appropriate building codes and therefore would not result in the creation of a significance adverse physical impact from unstable soils or earth conditions.

Section 3.7
Hazards and Hazardous Materials

Hazards Discussion: This environmental issue focuses on the impacts of a project with respect to hazards. The creation of new hazardous conditions or activities that will result in people or property being exposed to existing hazards is the primary area of focus under this environmental issue. Hazards include, but are not limited to, hazardous materials, hazards associated with aircraft and airports or wildland fires. An additional concern is the consistency of a project with emergency response plans or emergency evacuation plans.

3.7 1 Environmental Setting

This section provides an overview of the types of hazardous materials found at the CSU Stanislaus campus, the regulatory setting applicable to environmental protection, health, and safety, and existing CSU system and the campus environmental protection, health, and safety programs.

Within the context of this Environmental Document, the term "hazardous material" includes any material that, because of its quantity, concentration, or physical, chemical, or biological characteristics, poses a considerable present or potential hazard to human health or safety, or to the environment. It refers generally to hazardous chemicals, radioactive materials and bio-hazardous materials. "Hazardous waste," a subset of hazardous material, is material that is to be abandoned, discarded, or recycled, and includes chemical, radioactive, and bio-hazardous waste (including medical waste).

Existing Hazards

CSU Stanislaus uses various materials, some of which are considered hazardous, during the course of daily operations. These hazardous materials include many substances that are typically used in science laboratories, fine arts studios, and during maintenance work for buildings, grounds, and vehicles.

- A "radioactive material" is a special type of hazardous material that contains atoms with unstable nuclei that spontaneously emit ionizing radiation to increase their stability.

- A "bio-hazardous material" could contain infectious agents (microorganisms, bacteria, molds, parasites, or viruses that normally contribute to human mortality) or certain recombinant DNA molecules. ("DNA" stands for "deoxyribonucleic acid," the primary genetic material; recombinant DNA molecules are made outside a living cell by joining natural or synthetic DNA together with DNA that a living cell can copy.)

- "Medical waste" refers to both bio-hazardous waste and sharp waste (devices capable of cutting or piercing, such as hypodermic needles, razor blades, and broken glass). Medical waste does not include waste containing microbiological cultures associated with food processing or biotechnology that are not otherwise considered to be infectious.

It is typical practice to locate hazardous waste separation and storage lockers at least 20-feet away from occupied buildings. Small quantities or chemicals are held in the lockers for usually less than two weeks. Types of hazardous materials found in laboratories include acids, bases, solvents, and other reagents (chemical starting materials) and reaction products (products of chemical reactions).

Types of hazardous materials found in fine arts studios include paints and photo developing chemicals. Types of hazardous materials found in vehicle, grounds, and building maintenance areas include fuels (e.g., gasoline and diesel), oils and lubricants, antifreeze, cleaners (e.g., solvents, corrosives, and detergents), oil-based and latex paints and paint thinners, freons (refrigerants), and pesticides and herbicides.

Due to the nature of campus operations, the hazardous materials used on campus at any particular time change rapidly and unpredictably, as do the quantities of materials used. A list of the chemicals currently used at CSU Stanislaus Campus is available at its Environmental Protection, Health and Safety Office.

Hazardous Waste Generation

Hazardous materials use on campus generates hazardous byproducts that must eventually be handled and disposed of as hazardous waste. The Campus does operate a campus Health Center and this facility generates typical waste associated with medical facilities. Relatively small amounts of medical waste are generated as a result of operations at the campus health clinic.

Physical Safety Hazards

Many of the materials discussed above are hazardous due to their potential, if not managed properly, to affect the physical safety of campus occupants. Some hazardous materials present physical hazards such as the use of compressed gases or cryogenic (very cold) liquids. In addition to the health and safety hazards already described, some individuals on campus are exposed to hazards associated with the equipment they use. For example, operators of lasers or heavy equipment experience specific hazards. Electrical hazards arise when electrical equipment is used, and some level of risk always exists for vehicle or pedestrian accidents. These types of physical hazards are often similar to those that individuals experience while off campus.

Regulatory Environment

The CSU Campus Regulatory Setting

The use of hazardous materials is subject to numerous laws and regulations which are summarized in Table 3.7.1. CSU Stanislaus implements environmental protection, health, and safety programs to comply with legal and regulatory requirements applicable to health and safety. Moreover, CSU Stanislaus environmental protection, health, and safety programs are intended to protect the entire campus community, and in circumstances where appropriate governmental regulations do not exist or are not fully protective of the environment, health, or safety, CSU Stanislaus programs are intended to ensure that a

broader approach is implemented. For example, CSU Stanislaus programs incorporate, as necessary, the published standards of nationally recognized safety organizations.

TABLE 3.7.1
HEALTH AND SAFETY LAWS AND REGULATIONS

Management of Hazardous Chemicals	Both State and Federal laws require detailed planning to ensure that hazardous chemicals are properly handled, used, stored, and disposed of, and in the event that such materials are accidentally released, to prevent or to mitigate injury to health or the environment. These laws require hazardous chemical users to prepare written plans, such as Hazard Communication Plans, Hazardous Materials Business Plans, and Chemical Hygiene Plans. Laws and regulations require hazardous chemical users to store these materials appropriately and to train employees to manage them safely. A number of agencies participate in enforcing hazardous chemical management requirements. For CSUS, the Stanislaus County Department of Health is the agency most involved.
Hazardous Materials Transportation	The U.S. Department of Transportation regulates hazardous materials transportation between states. Within California, the State agencies with primary responsibility for enforcing Federal and State regulations and for responding to transportation emergencies are the California Highway Patrol and the California Department of Transportation. Together, Federal and State agencies determine driver training requirements, load labeling procedures, and container specifications. Although special requirements apply to transporting hazardous materials, requirements for transporting hazardous waste are more stringent, and hazardous waste haulers must be licensed to transport hazardous waste on public roads.
Hazardous Chemical Waste Handling	The California Environmental Protection Agency's Department of Toxic Substances Control regulates the generation, transportation, treatment, storage, and disposal of hazardous chemical waste. These laws impose "cradle-to-grave" regulatory systems that require generators of hazardous chemical waste to handle it in a manner that protects human health and the environment to the extent possible. At CSUS, the Stanislaus County Department of Health enforces on-site waste management requirements applicable to hazardous chemical waste generators, such as requirements for secondary containment around stored wastes to prevent environmental contamination in the event of a spill. The California Department of Toxic Substances Control permits and oversees hazardous chemical waste treatment, long-term storage, and disposal facilities.
Occupational Safety	Occupational safety standards exist in Federal and State laws to minimize worker safety risks from both physical and chemical hazards in the work place. The California Division of Occupational Safety and Health (Cal/OSHA) and the Federal Occupational Safety and Health Administration (Fed/OSHA) are the agencies responsible for assuring worker safety. In California, Cal/OSHA assumes primary responsibility for developing and enforcing standards for safe workplaces and work practices. Among other requirements, Cal/OSHA obligates many businesses to prepare Injury and Illness Prevention Plans and Chemical Hygiene Plans. Cal/OSHA also sets standards for fume hood operations (fume hoods are cabinets connected to overhead exhaust fans that draw air from inside the cabinet and expel it from the building through rooftop stacks).

TABLE 3.7.1
HEALTH AND SAFETY LAWS AND REGULATIONS
Continued

Radioactive Materials	The Radiologic Health Branch of the California Department of Health Services administers the Federal and State radiation safety laws that govern the storage, use, transportation, and disposal of sources of ionizing radiation (radioactive material) and provide for protecting the public from radiation hazards. The Radiologic Health Branch licenses institutions that use radioactive materials, requires them to implement training and safety requirements, and subjects them to routine enforcement inspections.
Biological Safety	The U.S. Department of Health and Human Services has established standards for working with bio-hazardous materials, including infectious agents, infected animals, and recombinant DNA (DHHS, 1993; DHHS, 1996). These standards are respected as guidelines for everyone who handles bio-hazardous materials. In some instances, following these guidelines is indirectly required by laws and regulations that incorporate them by reference (e.g., research funded by the National Institutes of Health must follow these guidelines).
Animal Care	Under the 1985 Animal Welfare Act, the U.S. Department of Agriculture establishes standards for animal care and worker safety for activities involving certain research animal species. Organizations are required to establish an Institutional Animal Care and Use Committee to review and approve all protocols for work in which laboratory animals are used.
Medical Waste Management	The California Medical Waste Management Act applies to the generation, transportation, treatment, storage, and disposal of medical waste, and imposes a cradle-to-grave tracking system. Facilities that treat medical wastes must obtain a permit and are subject to oversight by the Stanislaus County Department of Health.
Soil and Groundwater Contamination	The Comprehensive Environmental Response, Compensation, and Liability Act and associated Superfund Amendments provide the U.S. Environmental Protection Agency with the authority to identify hazardous sites, to require site remediation, and to recover the costs of site remediation from polluters. California has enacted similar laws intended to supplement the Federal program. The California Environmental Protection Agency's Department of Toxic Substances Control is primarily responsible for implementing California's Superfund law.
Structural and Building Components	Federal and State laws and regulations address building materials containing asbestos, which is regulated both as a hazardous air pollutant under the Clean Air Act and as a potential worker safety hazard under the authority of Cal/OSHA. Federal and State laws, implemented by the U.S. Department of Housing and Urban Development, also apply to lead-based paint in residential housing. These laws address abatement and worker protection. Federal and State laws and regulations relating to underground storage tanks include permitting, monitoring, closure, and cleanup requirements. Regulations set forth construction and monitoring standards, monitoring standards for existing tanks, release reporting requirements, and closure requirements. The Monterey County Department of Health is designated to permit and inspect underground storage tanks and to implement related regulations.
Emergency Response	California has developed an Emergency Response Plan to coordinate emergency services provided by Federal, State, and local government and private agencies. Responding to hazardous materials incidents is one part of this plan. The plan is administered by the State Office of Emergency Services, which coordinates the responses of other agencies, including the California Environmental Protection Agency, the California Highway Patrol, the Department of Fish and Game, the Central Valley Regional Water Quality Control Board, and the local fire department. The fire department provides first response capabilities, if needed, for hazardous materials emergencies at CSUS.

State Hazardous Sites List

One source of information on hazardous materials on the CSU Stanislaus campus site or in the surrounding area can be found in the Central Valley RWQCB's Site Cleanup and Leaking Underground Storage Tank lists (State Water Resources Control Board 2001). These lists, updated quarterly, identify sites by name and street address, identify the pollutants of concern, and identify the agency overseeing cleanup activities.

Hazardous substances include both hazardous wastes and hazardous materials. In general, a material or waste is classified as hazardous if it is one of more than 700 chemicals specifically listed in the California Code of Regulations; if it contains one of these chemicals; or if it is reactive, ignitable, corrosive, or toxic. Because of their potential threat to public health and the environment, hazardous substances are closely regulated by Federal, State, and local laws that focus on controlling their production, handling, storage, transportation, and disposal.

Federal and State environmental laws provide that all property owners be required to pay for cleanup, when necessary, of contamination by hazardous materials on or originating from their land. Because of the potential liability, purchasers or developers of commercial, industrial, or agricultural property should perform environmental assessments before development or purchase. In addition to being liable for cleanup, the owner can be responsible for toxic effects on human health, and measures should be taken to avoid exposing people to hazardous materials.

Emergency Operations Plan

California State University, Stanislaus maintains a written Emergency Operations Plan (EOP) that summarizes key points of emergency management. The EOP provides basic structure and procedures to guide the University's response to extraordinary emergency situations associated with natural and man-made disasters. Major components covered by the EOP are:

- *Readiness Plans – describes University priorities, hazard analysis, levels of emergencies phases of emergency management, activation of the plan, and mutual aid considerations*
- *Incident Command System – gives emergency response personnel descriptions and procedures for activation of the Emergency Operations Center*
- *Emergency Management – gives emergency procedures for response to earthquakes, fire, flood/severe weather, hazardous materials incidents and evacuation details*

The City of Turlock has adopted an Emergency Operations Plan. This Plan accomplishes the following:

- Establishes the emergency management organization required to mitigate any significant emergency or disaster affecting the city of Turlock,
- Identifies the policies, responsibilities and procedures required to protect the health and safety of the city of Turlock, public and private property and the environmental effects of natural and technological emergencies and disasters,

- Establishes the operation concepts and procedures associated with Initial Response Operations (field response) to emergencies, the Extended Response Operations (city and county Emergency Operations Center (EOC) activities) and the recovery process.

The Turlock Emergency Operations Plan is prepared and maintained in accordance with Federal and State law and periodically is reviewed and updated to reflect changes in circumstances with respect to disaster relieve, response and clean-up procedures.

The purpose of the Emergency Operations Plan is to provide emergency planning, organization and response. The document deals with emergency management, law enforcement, traffic control, fire, medical, rescue, radiological material, and shelter.

The Construction and Engineering section deals basically with emergency repairs, route recovery, and post-event inspection of facilities; and the Movement section deals with evacuation procedures. The plan is designed to prepare the community for responding to an emergency situation in a highly organized and efficient way so that chaotic situations are avoided.

Emergency Evacuation Routes

Earthquakes, fires, and flooding are all hazards that require planned evacuation routes to move residents to safer ground. For the most part, Highway 99 would be used for evacuation. However, alternative routes are available for emergency evacuation of the City/Campus and surrounding areas.

Intra-city routes would be regulated by the California Highway Patrol in conjunction with county sheriff and city police. For more detailed information on evacuation routes see the Stanislaus County General Plan. The city endorses and abides by the Office of Emergency Services "Multi-Hazard Functional Plan" as amended.

Wildland Fires

Wildland fires occur from a combination of climatic, vegetative and physiographic conditions and have the potential to cause loss of life and property damage. Wildland fire hazards exist in varying degrees throughout Stanislaus County, mostly outside urban areas and typically would not be a concern for the Campus. The Valley's long, dry summers and extensive vegetation makes for a fire season that extends from late spring to early fall, and does however, cause concern for vacant and unimproved areas where weeds are allowed to grow. Irrigated agricultural land (north of the City boundary) is less susceptible to wildland fires than grazing areas.

3.7.2 Environmental Impacts

Uses and activities conducted on the CSU Stanislaus campus could result in the creation of hazardous conditions for students, faculty and employees of the University.

A. Thresholds of Significance

Appendix "G" of the CEQA Guidelines addresses potential impacts on Hazards & Hazardous Materials as follows:

Would the project:

- Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?
- 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?
- Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?
- 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 a result, would it create a significant hazard to the public or the environment?
- 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 for people residing or working in the project area?
- For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?
- Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?
- Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?

ASSESSMENT OF HAZARDOUS MATERIALS
DEFINITION OF HAZARDOUS MATERIAL

A hazardous material, which because of its quantity, concentration, or physical, chemical, or infectious characteristics, may either:

a) Cause, or significantly contribute to an increase in mortality or an increase in serious irreversible, or incapacitating reversible illness; or

b) Pose a substantial present or potential hazard to human health or environment when improperly treated, stored, transported, or disposed of, or otherwise managed.

A hazardous material also includes any of the criteria for the identification of a hazardous waste adopted by the State Department of Health Services pursuant to Section 25141, Division 20, Chapter 6.5 of the California Health and Safety Code. Hazardous waste includes, but is not limited to, Resource Conservation and Recovery Act (RCRA) hazardous waste. Unless expressly provided otherwise, the term hazardous waste shall be understood to also include extremely hazardous and acutely hazardous waste.

DEFINITION OF TERMS

Underground Storage Tanks (UST): Any one or combination of tanks, including pipes connected thereto, which are used for the storage of hazardous substances as defined in the California Health and Safety Code, Division 20, Chapter 6.7, and which are substantially or totally beneath the surface of the ground.

Underground Storage Tank does not include any of the following:

1. A tank with a capacity of 1,100 gallons or less which is located on a farm and which stores motor vehicle fuel used primarily for agricultural purposes and not for resale.

2. A tank which is located on a farm or at the residence of a person, which has a capacity of 1,100 gallons or less, and which stores home heating oil for consumptive use on the premises where stored.

3. Structures such as sumps, separators, storm drains, catch basins, oil field gathering lines, refinery pipelines, lagoons, evaporation ponds, well cellars, separation swaps, lined and unlined pits, sumps and lagoons. Sumps which are a part of a monitoring system required under Section 25291 or 24292 and sumps or other structures defined as underground storage tanks under the Federal act are not exempted by this section. Structures identified in this paragraph may be regulated by the board and any regional board pursuant to the Porter-Cologne Water Quality Control Act (Division 7 [commencing with Section 13000] of the Water Code) to ensure that they do not pose a threat to water quality.

Pipeline - means any pipeline or system of pipelines which is used in connection with the storage of hazardous substances and which is not intended to transport hazardous substances in interstate or intrastate commerce or to transfer hazardous materials in bulk.

Existing Underground Storage Tank: Any underground storage tank that is not a new underground storage tank. The term includes any underground storage tank which has contained a hazardous substance in the past and, as of January 1, 1984, had the physical capability of being used again (i.e., it had not been removed or completely filled with an inert solid).

NOTE: For a more complete list of definitions, the reader is directed to California Health and Safety Code, Division 20, Chapter 6.5.

THRESHOLD CRITERIA

The storage, handling and disposal of potentially hazardous material shall be in conformance with the requirements set forth in the following regulations:

- Enabling Legislation California Administrative Code (CAC), Title 22, Division 4, Chapter 30.
- California Health and Safety Code, Division 20, Chapter 6.5.

- California Health and Safety Code, Division 20, Chapter 6.7 (Underground Storage of Hazardous Substances) and the California Code of Regulations Title 23, Chapter 3, Subchapter 26 (California Underground Storage Tank Regulations).
- Local county Permit Requirements, (Hazardous Substances), (Hazardous Wastes Producers).

The above State legislation and local ordinances have been enacted for the purpose of preventing contamination from, and improper storage, handling and disposal of, hazardous wastes. It is the intent of these regulations to establish procedures that will ensure that the generators of hazardous wastes employ technology, and destruction of their hazardous wastes prior to disposal.

ASSESSMENT OF AVIATION HAZARDS
DEFINITION OF ISSUE:
Aviation hazard is defined as the potential loss of life and/or property due to an aircraft accident. It is further defined as anything or act which increases, or may cause to increase, the hazard or risk of aircraft accidents to a greater degree than that which may occur characteristically as the result of mechanical failure, pilot error or inclement weather.

Incompatible land uses near airports include those associated with residential development, retail centers with high density uses, schools, churches, refineries and mobile home parks. The purpose of establishing land use restrictions in safety zones around an airport is to minimize the number of people exposed to aircraft crash hazards and unwanted aircraft generated noise. To achieve those objectives, decision-makers must limit the number of persons in an area and limit the area covered by structures occupied by people. Each additional person in an area near an airport becomes subject to a certain crash hazard risk by virtue of being located in the airport sphere of influence.

THRESHOLD CRITERIA:
A review of aviation hazards, as those hazards relate to proposed development of properties near private or public airports, will focus on compliance with the Comprehensive Land Use Plan and pre-established Federal criteria set forth in Federal Aviation Regulation Part 77 (Obstruction Standards), as well as those recommendations for good land-use planning made by State and county government agencies. Special attention should be given to all residential development within two (2) miles of either type of airport, as well as churches, schools and high commercial purpose buildings to be located within the same sphere of influence.

ASSESSMENT OF IMPACTS ON EMERGENCY RESPONSE PLANS
DEFINITION OF ISSUE
An *Emergency Response Plan* is a plan for a community, regional or State to respond to an emergency resulting from a natural or man-made disaster.

THRESHOLD CRITERIA
Any project that is inconsistent with an Emergency Response Plan, or creates obstacles to the orderly public agency response to a natural or man-made disaster is considered to have a significant impact.

ASSESSMENT OF WILDLAND FIRE HAZARDS
DEFINITION OF ISSUE:
Wildland fire hazard is defined as the potential loss of life and/or property due to fire in a rural or non-urbanized area designed as a Wildland Fire Hazard Area by the California Department of Forestry. Uniform Building Code identifies high fire hazard areas as any area within 500 feet of uncultivated brush, grass, or forest covered land wherein an authorized representative of the City of Turlock Fire Department or County Fire Marshal determines that a potential fire hazard exists due to the presence of such flammable growth.

THRESHOLD CRITERIA
A project will have a significant adverse wildland fire impact when located within:

- A Wildland Fire Hazard area and does not comply with California Department of Forestry regulations and standards; and/or
- An area addressed in the Uniform Building Code building and safety requirements for structures and does not comply with UBC and Uniform Fire Code regulations and standards; and/or
- An area subject to any local weed abatement program which calls for the clearing of brush, flammable vegetation, or combustible growth located within minimum distance of structures or buildings and does not comply with those standards.

B. Potential Significant Impacts:
Hazards and Hazardous Materials Impacts Found Not to be Potentially Significant:
As a result of project analysis, based on data collected in the evaluation of the Campus's Physical Master Plan Update implementation, the following aspects of a potential hazards and hazardous materials impact are found not to exist or exist at levels well below any reasonable expectation that a significant adverse impact is likely to result:

- *Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?*
  Adoption and implementation of the CSU Stanislaus Physical Master Plan Update will not result in the routine transport, use or disposal of hazardous materials that would be in violation of any Federal, State or local standard established for the safe handling, transport and disposal of hazardous materials.

- *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?*
  Adoption and implementation of the CSU Stanislaus Physical Master Plan Update will not result in any reasonably foreseeable upset or accident condition involving

the release of hazardous materials into the environment in violation of any Federal, State or local standard established for the safe management and containment of hazardous materials.

- *Emit hazardous emission or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?*
  Adoption and implementation of the CSU Stanislaus Physical Master Plan Update will not result in the handling or emission of hazardous materials within one-quarter mile of an existing or proposed school facility, including the CSU Campus, that would be in violation of any Federal, State or local standard established for the safe handling, transport and disposal of hazardous materials.

- *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 a result, would it create a significant hazard to the public or the environment?*
  Within the City of Turlock there are several identified hazardous sites, most involving underground storage tanks none of which exist on or near the CSU Stanislaus Campus. All of these sites are within the built urban environment of Turlock and are under the management of the Stanislaus County Department Environmental Resources in compliance with the environmental health laws of the State of California. These sites are managed under State regulations to assure that they do not create a significant hazard to the public or the environment.

- *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 for people residing or working in the project area?*
  The city and the area surrounding the city and its growth area do not contain any airports or airstrips.

- *For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?*
  The city and the area surrounding the city and its growth area, do not contain any private airports or airstrips.

- *Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?*
  Adoption and implementation of the Physical Master Plan Update will not result in the impairment of the implementation of City of Turlock or Stanislaus County's emergency response plan. Growth in the area will result in the improvement of the overall circulation system in the area which will improve these emergency access and evacuation plans.

  The Physical Master Plan will contribute to the University's Emergency Operations Plan through the addition of safety features and layout conducive to emergency response. The written EOP will be updated on a regular basis to reflect

all new physical changes that would affect emergency response plans and operations.

- *Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?*
  The CSU Stanislaus Campus is completely surrounded by urban areas, most of which are improved with residential and commercial development. There are some vacant (un-improved) lots but Turlock Municipal Code requires that vacant lots be cleaned to reduce fire dangers. There are no areas within the vicinity of the Campus that could be characterized as "wildlands".

Hazards and Hazardous Materials Impacts Found to be Potentially Significant:
As a result of project analysis, based on data collected in the evaluation of the Campus with respect to hazardous sites and the current regulatory environment regarding the disposal, storage, handling and use of hazardous materials, no potential hazards and hazardous materials impact are expected to result in a significant adverse environmental impact due to project implementation:

C. Proposed Physical Master Plan Update Goals & Policies:
The CSU Stanislaus Physical Master Plan Update does not contain policies, programs and address hazards and hazardous materials on the CSU Stanislaus Campus. There are, however, Federal, State and local regulations that address the storage, handling and use of hazardous materials and address other types of hazards.

Relevant Plans, Policies, and Regulations
***Injury and Illness Prevention Plan (IIPP*).** In California, Senate Bill 198, adopted during the 1989 legislative session, reminded employers that they are accountable for the safety and health of their workers. SB198 was codified in the California Insurance and Labor Codes on October 2, 1989. On December 13, 1990, General Industry Safety Orders (GISO) section 3203 in the California Code of Regulations was amended regarding workplace IIPP. Per the California Code of Regulations Title 8 Section 3203, the University maintains a written IIPP containing policy and procedures pertaining to:

- Hazard Communication.
- Environmental Health and Safety Inspections.
- Accident Investigation.
- Infectious Disease Exposure Control.
- Safety Training and Record Keeping.
- Biological Safety.
- Chemical Hygiene and Laboratory Safety.
- Emergency Preparedness.
- Fire Safety.
- Hazardous Materials Management.
- General Safety (ergonomics and violence prevention.

Federal Hazards Regulations

Resource Conservation and Recovery Act. The Resource Conservation and Recovery Act (RCRA) of 1976 (substantially amended in 1984), administered by EPA, is the principal Federal legislation regulating hazardous waste. RCRA imposes reporting, permitting, and operation control requirements on those who generate, treat, store, or dispose of hazardous materials or hazardous waste. RCRA is implemented by Title 40 of the CFR. The recent amendments to this act involve stringent monitoring of landfills and regulation of underground storage tanks for hazardous materials and hazardous wastes.

Comprehensive Environmental Response, Compensation, and Liability Act. In response to cleaning up pre-RCRA hazardous waste sites, Congress enacted the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) in 1980 (commonly referred to as "Superfund"). Consequently, abandoned hazardous waste sites had to be inspected and cleaned up, and the waste had to be properly disposed. The following were examined in the Superfund Amendments and Reauthorization Act (SARA) of 1986: The Superfund Amendments and Reauthorization Act and the risk to those exposed to hazardous waste as a result of RCRA and CERCLA. As a result of SARA, the Federal Occupational Safety and Health Administration (OSHA) published hazardous waste clean-up regulations in Section 29 CFR 1910.120.

Federally Reported Environmental Data National Priorities List of Superfund Sites The NPL is EPA's database of more than 1,200 sites designated for priority cleanup under the Superfund program. NPL sites may encompass relatively large areas.

Resource Conservation and Recovery Information System (RCRIS). The RCRIS is an EPA database that includes selective information on sites that generate, transport, store, treat, and/or dispose of hazardous waste as defined by RCRA. Identification on this list does not indicate that there has been an impact on the environment.

Comprehensive Environmental Response, Compensation and Liability Information System (CERCLIS): An EPA database that contains information on potential hazardous waste sites that have been reported to EPA by states, municipalities, private companies, and individuals, pursuant to Section 103 of CERCLA. CERCLIS contains sites that are either proposed for or on the NPL, as well as sites that are in the screening and assessment phase for possible inclusion on the NPL.

Corrective Action Report (CORRACTS). CORRACTS is an EPA database that identifies hazardous waste handlers with RCRA corrective action activity.

RCRA Administrative Action Tracking System (RAATS): An EPA database that contains records based on enforcement actions issued under RCRA pertaining to major violators, and includes administrative and civil actions brought by EPA.

PCB Activity Database System (PADS). PADS is an EPA database that identifies generators, transporters, commercial storage facilities, and/or brokers and disposers of polychlorinated biphynels (PCBs) who are required to notify EPA of such activities.

D. Short-Term Impacts:
Adoption of the CSU Stanislaus Physical Master Plan Update will result in the preparation of construction plans, bid documents, finance proposals and requests, none of which will have a physical impact on the campus environment. The Physical Master Plan strategy for providing educational facilities adequate to support the Campus capacity of 12,000 FTE is implemented through the adopted CSU Stanislaus CIP-COP. This and other actions and activities will not have any adverse impacts on hazards or use and handling of hazardous materials on Campus.

E. Long-Term Impacts:
With an increase in student population, the evolution of technology that utilizes hazardous substances, this concern of the storage and handling of hazardous materials on the CSU Campus can be expected to grow over time. With the University's mission to work with the latest technology and educate students as to the application and management of this technology, the use, storage and handling of hazardous materials can be expected to increase. It is also expected that as our institutional experience grows with respect to the use of technology that involves hazardous materials, the University will play a critical role in educating professionals in the medical and technology fields the appropriate techniques for safely managing these materials.

F. Cumulative Impacts:
With an increase of growth and the expanded role of technology in our society, there will be an increased reliance of substances that can be considered hazardous. Along with this increase use, storage and handling of hazardous substances is an increased need for emergency personnel (police and fire) to become informed as to the proper treatment and handling techniques for emergency response purposes. This situation applies to the Campus and the society in general. The education and training of these emergency personnel is typically within the scope of the educational mission of the University System.

G. Secondary Impacts:
As a result of the regulatory environment standards enforced by Federal, State, regional and local government agencies, it is expected that there is an increase in the cost of construction and development over time to address hazard management. These costs will be uniform throughout the region and the State and are not expected to be significant in most cases or create any substantial adverse economic impact that would hamper normal growth and development on the Campus, within the City of Turlock, Stanislaus County or the greater region.

3.7.3 Mitigation Measures

No mitigation is proposed or required as there are no significant adverse impacts likely to result from the adoption and implementation of the CSU Stanislaus Physical Master Plan Update. Development that is proposed within the Campus will be required to comply with all applicable Federal and State standards with respect to hazards and hazardous materials.

3.7.4 Level of Significance After Mitigation

Construction and operational activities that are undertaken in a manner that are consistent with the applicable Federal, State, and local regulations, policies and standards will not result in the creation of a significant adverse impact with respect to hazards and hazardous materials on the University campus or in the surrounding area.

Section 3.8
Hydrology and Water Quality

Water Discussion: This environmental issue focuses on the impacts of a project on surface and groundwater, including compliance with water quality standards and regulation, depletion of groundwater supplies, pollution or degradation of water quality. Additional concerns include water related hazards such as flooding, mudflows and similar hazards. This area of environmental concern also addresses potential project impacts on area drainage including storm water runoff.

3.8 1 Environmental Setting

General:

The City of Turlock, and the CSU Stanislaus Campus, is located above the 542 square mile San Joaquin Valley Groundwater Basin, Turlock Sub-basin (No. 5-22.03) lies between the Tuolumne and Merced Rivers and is bounded on the west by the San Joaquin River and on the east by crystalline basement rock of the Sierra Nevada foothills. The northern, western, and southern boundaries are shared with the Modesto, Delta-Mendota, and Merced Groundwater Sub-basins, respectively.

In terms of climate and precipitation, Turlock can be characterized as semi-arid which is typical of the San Joaquin Valley. The valley is protected from moist oceanic and continental fronts by surrounding coastal and inland mountain ranges. Annual rainfall, most of which takes place during the fall and winter, averages approximately 12.42 inches.

Summers are typically long, dry and hot with mid-day temperatures often exceeding 100 degrees Fahrenheit. Cool temperatures, fog and intermediate light rain characterize winter months. January is the coldest month with an average minimum temperature of 37.7 degrees Fahrenheit. July is the hottest month with an average minimum temperature of 94.1 degrees.

There are three ground water bodies in Turlock Sub-basin: the unconfined water body; the semi-confined and confined water body in the consolidated rocks; and the confined water body beneath the E-clay in the western Sub-basin. Groundwater flow is primarily toward the San Joaquin River, following the regional dip of basement rock and sedimentary units.

Based on recent groundwater measurements (2000), a paired groundwater mound appears beneath the City of Turlock and depression appears to its east. The lower to middle reaches of the Tuolumne River and the reach of the San Joaquin River in the sub-basin appear to be gaining streams during the period studied. There appear to be no faults within the geologic structure of this basin which might affect the movement of fresh groundwater.

Groundwater Quality

Groundwater in the Turlock Sub-basin is predominately of the sodium-calcium bicarbonate type, with sodium bicarbonate and sodium chloride types at the western margin and a small area in the north-central portion. TDS (Total Dissolved Solids, a measure of salinity) values range from 100 to 8,300 mg/L, with a typical range of 200 to 500 mg/L.

The Department of Health Services, which monitors Title 22 water quality standards, reports TDS values in 71 wells ranging from 100 to 930 mg/L, with an average value of 335 mg/L. The regulatory water quality standard for TDS is the Secondary Maximum Contaminant Level (MCL) of 500 mg/L. EC (Electrical Conductivity, a surrogate for salinity and TDS measurements) values range from 168 to 1,000 µmhos/cm, with a typical range of 244 to 707 µmhos/cm. The regulatory water quality standard for EC is the Secondary Maximum Contaminant Level (MCL) of 900 µmhos/cm.

There are localized areas of hard groundwater, and high nitrate, chloride, boron, and DBCP concentrations. Some sodium chloride type water with high TDS is found along the west side of the sub-basin.

Turlock Sub-basin Groundwater Supply

As discussed above, there are three ground water bodies in the Turlock Sub-basin:

(1) the unconfined water body;
(2) the semi-confined and confined water body in the consolidated rocks; and
(3) the confined water body beneath the E-clay in the western Sub-basin.

Groundwater flow is primarily toward the San Joaquin River, following the regional dip of basement rock and sedimentary units. The consolidated deposits include the Ione Formation of Miocene age, the Valley Springs Formation of Eocene age, and the Mehrten Formation, which was deposited during the Miocene to Pliocene Epochs. The consolidated deposits lie in the eastern portion of the sub-basin and generally yield small quantities of water to wells except for the Mehrten Formation, which is an important aquifer. Unconsolidated deposits include continental deposits, older alluvium, younger alluvium, and flood-basin deposits. Lacustrine and marsh deposits are the flood-basin deposits and form the Corcoran aquitard layer. The continental deposits and older alluvium are the main water-yielding units in the unconsolidated deposits.

Groundwater Level Trends

Changes in groundwater levels are based on annual water level measurements by California State Department of Water Resources (DWR) and other cooperating local water agencies. Water level changes were evaluated and computed through a custom DWR computer program using geostatistics. On average, the sub-basin water level has declined nearly 7-feet from 1970 through 2000. The sub-period between 1970 through 1992 showed a generally steep decline of roughly 15 feet. Measurements taken from 1992 to 1994, showed water levels were remained at this low level. In the six year sub-period, 1994 to 2000, the water levels rose about 8 feet, bringing them to approximately 7 feet below the 1970 levels.

Groundwater Storage
According to published literature, the amount of stored groundwater in this sub-basin in 1961 was 23,000,000 acre-feet to a depth of less than 1000 feet (Williamson 1989). In 1995, estimations of the total storage capacity of the sub-basin and the amount of water in storage were calculated using an estimated specific yield of 10.1 percent and water level data collected by DWR and cooperators. These same calculations estimate the total storage capacity at 15,800,000 acre-feet to 300 feet deep and 30,000,000 acre-feet to the base of fresh groundwater in the Mehrten formation below 800 feet in the eastern portion. These same calculations give an estimate of 12,800,000 acre-feet of groundwater to a depth of 300 feet stored in this sub-basin as of 1995 (DWR 1995). Generally, complete knowledge of the sub-basin is inconclusive; hence, other methods have been developed to estimate the groundwater supplies.

Sub-basin Groundwater Budget (Inflows and Outflows)
An estimate of groundwater demand was calculated based on the 1990 normalized year and data on land and water use. A subsequent analysis was done by a DWR water budget spreadsheet to estimate overall applied water demands, agricultural groundwater pumping, urban pumping demands and other extraction data. The inflows to the groundwater basin are:

(1) Recharge from landscape irrigation,
(2) Recharge from crop irrigation,
(3) Recharge from Turlock Lake and the Merced, Tuolumne, and San Joaquin rivers,
(4) Precipitation percolation and,
(5) Ground-water underflows from the Sierra Nevada foothills and deep geologic formations.

Natural recharge of the sub-basin was estimated to be 33,000 acre-feet. Artificial recharge and subsurface inflow were not determined. Applied water recharge was calculated to be 313,000 acre-feet. The outflows from the groundwater basin include;
(1) pumping for municipal supply,
(2) pumping for agricultural supply and drainage, and
(3) groundwater discharges to the Merced, Tuolumne, and San Joaquin rivers.

Annual urban extraction and annual agricultural extraction were calculated at 65,000 and 387,000 AFA, respectively. Other extractions and subsurface inflow have not yet been determined. The sole source of water for the Campus, and the surrounding city area, is from wells drawing from the Turlock Groundwater Basin.

Current Groundwater Use
City of Turlock has drilled 39 wells, 22 of which are operational. In 2004, total groundwater production in the City was 25,465 acre-feet. Two additional wells are set to come on-line soon. Well No. 21 is used solely for the irrigation of Pedretti Park and is not connected to the distribution system. Fifteen wells have been closed due to casing or pump failures, high sand production, or contamination. Contamination sources have been

PCE, nitrates, magnesium, carbon tetrachloride, or hydrogen sulfide. Two wells have been drilled but have not been brought as of September 2006. The wells are evenly distributed throughout the City and therefore, eliminate the need for large (greater than 16-inch) diameter pipes. Turlock has adopted an AB 3030 ground water management plan and the Eastside Water District adopted its plan on September 25, 1997. Turlock is in the process of updating its plan in conjunction with other water agencies in the basin.

The CSU Stanislaus campus uses ground water for landscape maintenance and other "non-potable" uses. The water is pumped from that well to the existing reflection pond, and from that pond the water is pumped directly into the irrigation system via a hydro pneumatic irrigation pumps.

Reliability of Water Supplies

Groundwater from the Turlock sub-basin, although generally a reliable source of water for both municipal and industrial (M&I) purposes, cannot support the planned growth in Turlock and the surrounding communities. For this reason, the Turlock Irrigation District is studying the feasibility of developing a surface water treatment system that would serve the communities of Turlock, South Modesto, Ceres, Hughson, and Keyes.

Hydrology, Water Quality, and Water Supply

Concerns about possible future groundwater overdraft persist in light of historical groundwater level fluctuations within the sub-basin. In the event that increased pumping in the future results in substantial reductions in groundwater levels, growth in the county could be constrained by a perceived reduction in the reliability of long-term potable water supply.

Soils

The Natural Resource Conservation Service classifies soils into four hydrologic soil groups based on the soil's runoff potential:

Group A is sand, loamy sand or sandy loam types of soils. These soils have low runoff potential and high infiltration rates even when thoroughly wetted. They consist chiefly of deep, well to excessively drained sands or gravels and have a high rate of water transmission.

Group B is silt loam or loam. These soils have a moderate infiltration rate when thoroughly wetted and primarily consist of moderately drained soils with moderately fine to moderately coarse textures.

Group C soils are sandy clay loam. These soils have low infiltration rates when thoroughly wetted and primarily consist of soils with a layer that impedes downward movement of water and soils with moderately fine to fine structure.

Group D soils are clay loam, silty clay loam, sandy clay, silty clay or clay. These soils have the highest runoff potential and very low infiltration rates when thoroughly

wetted. They primarily consist of clay soils with a high swelling potential and/or soils with a permanent high water table.

Soils within the study area range from B-D, with Type C soils accounting for approximately 56 percent of the soils, Type B soils accounting for 42 percent of the soils and Type D soils accounting for approximately 4 percent of the soils.

Drainage

The San Joaquin regional drainage basin extends from near the city of Stockton to the north to near the city of Fresno to the south, and from the Sierra Nevada on the east to the coastal ranges on the west. The basin encompasses approximately 11,000 square miles. The principal tributaries to this basin include the Tuolumne, Stanislaus and Merced rivers. The Campus is located south of the Tuolumne River, north of the Merced River and east of the San Joaquin River.

Flooding:

The FEMA Flood Insurance Studies (FIS) and Flood Insurance Rate Maps (FIRM) for the area were analyzed to determine the 100-year floodplain elevations and flood categories for the area. The City of Turlock and CSU Stanislaus campus area are not located within a Flood Zone according to the latest (June 20, 2008) Flood Zone mapping. The nearest flood zone is located along the Tuolumne River approximately 5 miles north of the Campus. To the west, approximately seven miles, is the Flood Zones along the San Joaquin River and the Merced River is approximate ten miles to the south. There are some areas approximately two and a half miles east of the Campus, located along some seasonal streams and the Tuolumne Irrigation District canals that are subject to seasonal flooding but none of the areas impact the City of Turlock or the Campus.

Regulatory Environment:

Water is one of the most highly regulated resources in the State of California. The following provides a detailed overview of the water regulatory environment with respect to planning, conservation, discharge of contaminants, potable (drinking) water supplies and overall management.

Federal Clean Water Act

The Clean Water Act (CWA) was designed to restore and maintain the chemical, physical, and biological integrity of the Nation's waters. The CWA also directs states to establish water quality standards for all "waters of the United States" and to review and update such standards on a triennial basis. Other provisions of the CWA related to basin planning include Section 208, which authorizes the preparation of waste treatment management plans, and Section 319, which mandates specific actions for the control of pollution from non-point sources. The EPA has delegated responsibility for implementation of portions of the CWA, including water quality control planning and control programs, such as the National Pollutant Discharge Elimination System (NPDES) Program, to the individual States.

Section 303 of the CWA requires states to adopt water quality standards for all surface waters of the United States. Section 304(a) requires the EPA to publish water quality criteria that accurately reflect the latest scientific knowledge on the kind and extent of all effects on health and welfare that may be expected from the presence of pollutants in water. Where multiple uses exist, water quality standards must protect the most sensitive use. Water quality standards are typically numeric, although narrative criteria based upon bio-monitoring methods may be employed where numerical standards cannot be established or where they are needed to supplement numerical standards.

Section 303(c)(2)(b) of the CWA requires states to adopt numerical water quality standards for toxic pollutants for which EPA has published water quality criteria and which reasonably could be expected to interfere with designated uses in a water body. Numeric criteria are required by the CWA for many priority toxic pollutants. However, in 1994, a State court overturned the State's water quality control plans containing water quality criteria for priority toxic pollutants. To fill in the gap between the water quality control plans and CWA requirements, on May 18, 2000, the EPA promulgated the California Toxics Rule based on the Administrator's determination that the numeric criteria are necessary in the State of California to protect human health and the environment. These Federal criteria are numeric water quality criteria for priority toxic pollutants and other provisions for water quality standards legally applicable in the State of California for inland surface waters, enclosed bays and estuaries for all purposes and programs under the Clean Water Act.

All projects resulting in discharges, whether to land or water, are subject to Section 13263 of the California Water Code and are required to obtain approval of Waste Discharge Requirements (WDRs) by the Regional Water Quality Control Boards (RWQCBs). Land and groundwater-related WDRs (i.e., non-NPDES WDRs) regulate discharges of privately or publicly treated domestic wastewater, process and wash-down wastewater. WDRs for discharges to surface waters also serve as NPDES permits, which are further described below.

Federal Safe Drinking Water Act

The Safe Drinking Water Act (SDWA) and subsequent amendments authorize the USEPA to set health-based standards (maximum contaminant levels or MCLs) for drinking water to protect public health against both naturally-occurring and man-made contaminants. The USEPA administers the SDWA at the Federal level and establishes MCLs for bacteriological, inorganic, organic, and radiological constituents (United States Code Title 42, and Code of Federal Regulations Title 40). California administers and enforces the drinking water program at the State level, and has adopted its own SDWA, which incorporates the Federal SDWA requirements including some requirements specific only to California (California Health and Safety Code, Section 116350). The adoption of implementing regulations and the enforcement of the drinking water laws of California are the responsibility of the California Department of Health Services (DHS).

National Primary Drinking Water Regulations: Stage 2 Disinfectants and Disinfection

Byproducts Rule (DPB Rule)

Congress required EPA to promulgate the Stage 2 DBPR as part of the 1996 Safe Drinking Water Act (SDWA) Amendments (section 1412(b)(2)(C)). The Stage 2 DBPR augments the Stage 1 DBPR that was finalized in 1998 (63 FR 69390, December 16, 1998). (USEPAEPA has developed the Stage 2 Disinfectants and Disinfection Byproducts Rule (DBP rule) to improve drinking water quality and provide additional protection from disinfection byproducts. The Stage 2 DBP rule was published in the Federal Register on January 4, 2006.

Disinfectants are an essential element of drinking water treatment because of the barrier they provide against harmful waterborne microbial pathogens. Pathogens, such as Giardia, are often found in source water, and can cause gastrointestinal illness (e.g., diarrhea, vomiting, cramps) and other health risks. In many cases, water needs to be disinfected to inactivate (or kill) these microbial pathogens. However, disinfectants like chlorine can react with naturally-occurring materials in the water to form byproducts such as: Trihalomethanes (THM), Haloacetic acids (HAA), Chlorite, and Bromate.

These byproducts, if consumed in excess of EPA's standard over many years, may lead to increased health risks. EPA has developed the Stage 2 DBP rule to protect public health by limiting exposure to these disinfectant byproducts. The Stage 2 DBPR is designed to reduce the level of exposure from DBPs without undermining the control of microbial pathogens.

National Drinking Water Standards: Long Term 2 Enhanced Surface Water Treatment Rule (LT2 Rule)

The LT2 rule was published in the Federal Register on January 5, 2006. The purpose of the LT2 rule is to reduce disease incidence associated with Cryptosporidium and other pathogenic microorganisms in your drinking water. The rule applies to all public water systems that use surface water or ground water that is under the direct influence of surface water. The rule will bolster existing regulations and provide a higher level of protection of your drinking water supply by:

- Targeting additional Cryptosporidium treatment requirements to higher risk systems.
- Requiring provisions to reduce risks from uncovered finished water storage facilities.
- Providing provisions to ensure that systems maintain microbial protection as they take steps to reduce the formation of disinfection byproducts.

This combination of steps, combined with the existing regulations, is designed to provide protection from microbial pathogens while simultaneously minimizing health risks to the population from disinfection byproducts.

Filtered water systems will be classified in one of four treatment categories (bins) based on their monitoring results. Most systems are expected to be classified in the lowest bin and will face no additional requirements. Systems classified in higher bins must provide additional water treatment to further reduce Cryptosporidium levels by 90 to 99.7 percent (1.0 to 2.5-log), depending on the bin. Systems will select from different treatment and management options in a "microbial toolbox" to meet their additional treatment requirements. All unfiltered water systems must provide at least 99 or 99.9 percent (2 or 3-log) inactivation of Cryptosporidium, depending on the results of their monitoring.

National Pollutant Discharge Elimination System (NPDES)

The NPDES permit system was established in the CWA to regulate both point source discharges (a municipal or industrial discharge at a specific location or pipe) and non-point source discharges (diffuse runoff of water from adjacent land uses) to surface waters of the United States. As defined in the Federal regulations, non-point sources are generally exempt from Federal NPDES permit program requirements, with two exceptions:

(1) non-point source discharges caused by general construction activities of over one acre; and
(2) storm-water discharges in municipal storm-water systems either as part of a combined system or as a separate system in which runoff is carried through a developed conveyance system to specific discharge locations.

One of the primary objectives of the regulations for non-point source discharges is the reduction of pollutants in urban storm-water discharge through the use of structural and nonstructural Best Management Practices (BMPs). The EPA implemented the NPDES storm-water program in two phases. Phase I addressed large dischargers and construction activities that affect five acres or greater, while Phase II, which was implemented in 1999, addressed smaller dischargers and construction activities that affect one or more acres. The City of Turlock are permitted under NPDES Phase II for small municipal storm-water and urban runoff discharges (NPDES Permit No. CAS000004, WQO 2003-0005-DWQ) (Small MS4 General Permit).

Best Management Practices (BMPs) are intended to reduce impacts to the Maximum Extent Practicable (MEP), which is a standard created by Congress to allow regulators the flexibility necessary to tailor programs to the site-specific nature of municipal storm-water discharges. Regulations do not define a single MEP standard, but reducing impacts to the MEP generally relies on BMPs that emphasize pollution prevention and source control, with additional structural controls, as needed.

Construction Activities

Construction activity subject to the NPDES Construction General Permit includes clearing, grading, and disturbances to the ground, such as stockpiling or excavation, which result in soil disturbances of at least one acre of total land area. Construction activity that results in soil disturbances of less than one acre is subject to this General Permit if the construction activity is part of a larger common plan of development that

encompasses one or more acres of soil disturbance, or if there is significant water quality impairment resulting from the activity. The SWRCB permits all regulated construction activities under Order No. 98-08-DWQ (1999). This Order requires that prior to beginning any construction activities, the permit applicant must obtain coverage under the General Construction Permit by preparing and submitting a Notice of Intent (NOI) and appropriate fee to the SWRCB. Additionally, coverage will not occur until an adequate Storm-water Pollution Prevention Plan (SWPPP) has been prepared. A separate NOI shall be submitted to the SWRCB for each construction site.

Required elements of a SWPPP include:

1) site description addressing the elements and characteristics specific to the site;
2) descriptions of BMPs for erosion and sediment controls;
3) BMPs for construction waste handling and disposal;
4) implementation of approved local plans;
5) proposed post-construction controls, including a description of local post-construction erosion and sediment control requirements; and
6) non-storm water management.

Typical construction BMPs include, but are not necessarily limited to,

- scheduling or limiting activities to certain times of year;
- prohibiting certain construction practices;
- implementing equipment maintenance schedules and procedures;
- implementing a monitoring program;
- other management practices to prevent or reduce pollution, such as using temporary mulching, seeding, or other suitable stabilization measures to protect uncovered soils;
- storing materials and equipment to ensure that spills or leaks do not enter the storm drain system or surface waters;
- developing and implementing a spill prevention and cleanup plan;
- installing traps, filters, or other devices at drop inlets to prevent contaminants from entering storm drains;
- and using barriers, such as straw bales or plastic, to minimize the amount of uncontrolled runoff that could enter drains or surface water.
- Typical operation BMPs include, but are not necessarily limited to, controlling roadway and parking lot contaminants installing oil and grease separators at storm drain inlets,
- cleaning parking lots on a regular basis,
- incorporating peak-flow reduction and infiltration features (such as grass swales, infiltration trenches, and grass filter strips) into landscaping, and
- implementing educational programs.

Domestic Water Supply Permit

Water is supplied to the Campus by the City of Turlock. The City must comply with the California Safe Drinking Water Act. A key feature of the Safe Drinking Water Act is the requirement that no person may operate a public water system without having secured a domestic water supply permit from the California Department of Health Services (DHS).

Operating a public water system without the proper permit not only constitutes a danger to consumers, but may also subject the operator of such a system to substantial liability in the event of a consumer illness. In addition, the DHS may impose significant civil penalties on the operator. Before issuing a water supply permit, the DHS conducts a thorough evaluation of the system or proposed system to provide assurance that the system will be able to provide a safe and reliable supply of drinking water.

As described in detail in the drinking water regulations, the water system must be monitored to assure that none of the drinking water standards are exceeded in the water delivered to consumers. The monitoring requirements are extensive and cover many different types of constituents including organic and inorganic chemicals, bacteria, radioactivity, and general minerals.

In order to obtain a permit, it is required that a Water Quality Monitoring Plan (WQMP) be developed and submitted that describes the proposed methods for compliance with these regulations. The WQMP for example, must show the locations of sampling points, the frequency of sampling at each point, and the types of analyses to be run on the samples. If there will be rotational sampling for coliform bacteria, the method and locations of the rotational points should be described.

The WQMP should also indicate who will be collecting the samples (e.g. water system personnel, certified laboratory) and the training those persons have or will receive. Once the WQMP has been approved, it will be incorporated into the permit and will be enforced.

State Drinking Water Standards

The California Department of Health Services (DHS) is the State agency responsible for identifying and enforcing drinking water standards. DHS has adopted drinking water quality standards for large system water suppliers promulgated in Title 22 of the California Code of Regulations.

The California Office of Environmental Health Hazard Assessment (OEHHA) is initiating evaluation for several chemicals for which new MCLs have been promulgated by U.S. EPA, which triggers a requirement that OEHHA prepare a Public Health Goal (PHG) designed to define the level of pollutant at which no adverse health effect is expected to occur. PHGs are concentrations of chemicals in drinking water that are not anticipated to produce adverse health effects following long-term exposures. These goals are advisory but must be used as the health basis to update the State's primary drinking water standards (MCLs) by DHS (Health and Safety Code Section 116365(b) (1). In addition, re-review, as required by Health and Safety Code Section 116365(e) (1), is being initiated for chemicals for which initial PHGs were published in 1997 and 1999.

Risk assessments are being initiated for the chemicals listed below that are newly regulated:

- Bromate
- Chlorite
- Haloacetic acids
- Nitrosodimethylamine (NDMA)

State of California Porter-Cologne Water Quality Control Act

Responsibility for the protection of water quality in California rests with the State Water Resources Control Board (SWRCB) and nine Regional Water Quality Control Boards (RWQCBs). The Campus is located within the jurisdiction of the Central Valley Regional Water Quality Control Board (CVRWQCB). The SWRCB establishes statewide policies and regulations for the implementation of water quality control programs mandated by Federal and State water quality statutes and regulations. The CVRWQCB develops and implements a Water Quality Control Plan (Basin Plan) that consider regional beneficial uses, water quality characteristics, and water quality problems within the San Joaquin River Basin. The Central Valley RWQCB implements a number of Federal and State laws, the most important of which are the State Porter-Cologne Water Quality Control Act and the Federal CWA.

The Porter-Cologne Water Quality Control Act establishes the SWRCB and each RWQCB as the principal State agencies for coordinating and controlling water quality in California. Specifically, the Porter-Cologne Water Quality Control Act authorizes the SWRCB to adopt, review, and revise policies for all waters of the State (including both surface and ground waters) and directs the RWQCBs to develop regional Basin Plans. The Water Quality Control Plan for the Sacramento and San Joaquin River Basins (rev. 2004) (Basin Plan), which is the basis for regulating water quality in the Tuolumne River watershed, was prepared by the RWQCB and adopted into Administrative Law in 1975 and is in its fourth edition (1998).

Water Quality Control Plan for the Sacramento and San Joaquin River Basins (Basin Plan)

The Water Quality Control Plans list the water quality standards and objectives for all water-bodies with specific objectives for certain ones. The Central Valley Regional Water Quality Control Board (CVRWQCB) has established water quality objectives (by beneficial use) for the Tuolumne and San Joaquin Rivers in the Basin Plan for the following substances: bacteria, bio-stimulatory substances, chemical constituents, color, floating material, oil and grease, dissolved oxygen, pH, methylmercury, pesticides, radioactive substances, suspended material, settleable material, salinity, taste and odor, temperature, toxicity, and turbidity.

The Water Code defines water quality objectives as “the allowable limits or levels of water quality constituents or characteristics which are established for the reasonable protection of beneficial uses of water or the prevention of nuisance within a specific area.

A Basin Plan Amendment (BPA) for Selenium was adopted and approved in 1996, for salt, Boron and Organophosphates, was adopted by the RWRCB in 2006 and approved by the Office of Administrative Law (OAL). Selenium is found throughout the Central

Valley waterways, but it primarily originates on the west side of the valley along the eastern slope of the Coast Range.

Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California" (a.k.a. State Implementation Plan or SIP)

In cases where the Basin Plan does not contain a standard for a particular pollutant, other criteria are used to establish a standard. These may be applied from SWRCB documents (e.g., the Inland Surface Waters Plan and the Pollutant Policy Document) or from water quality criteria developed under Section 304(a) of the Clean Water Act (e.g., California Toxics Rule). Numeric criteria are required by the CWA for many priority toxic pollutants. However, in 1994, a State court overturned the State's water quality control plans containing water quality criteria for priority toxic pollutants. To fill in the gap between the water quality control plans and CWA requirements, on May 18, 2000, the EPA promulgated the California Toxics Rule based on the Administrator's determination that the numeric criteria are necessary in the State of California to protect human health and the environment.

These Federal criteria are numeric water quality criteria for priority toxic pollutants and other provisions for water quality standards legally applicable in the State of California for inland surface waters, enclosed bays and estuaries for all purposes and programs under the Clean Water Act.

In March 2000, the State Water Board adopted the SIP in Resolution No. 2000-015. This Policy establishes:

(1) Implementation provisions for priority pollutant criteria promulgated by the U.S. Environmental Protection Agency (U.S. EPA) through the National Toxics Rule (40 CFR 131.36) (promulgated on 22 December 1992 and amended on 4 May 1995) and through the California Toxics Rule (40 CFR 131.38) (promulgated on 18 May 2000 and amended on 13 February 2001), and for priority pollutant objectives established by Regional Water Boards in their basin plans;
(2) Monitoring requirements for 2, 3, 7, 8-TCDD equivalents; and (3) Chronic toxicity control provisions. In addition, this Policy includes special provisions for certain types of discharges and factors that could affect the application of other provisions in this Policy.

Dewatering and Other Low Threat Discharges To Surface Waters

The CVRWQB has adopted a General Permit (NPDES CAG995001, Order No. 5-00-175) for discharge of low-threat water (Low-Threat Discharge General Permit). This order was adopted on 18 June 2000, and continues in force and effect until a new General Permit is issued or until it is rescinded. The following discharges may be covered by this permit provided they do not contain significant quantities of pollutants and they are either:

(1) four months or less in duration, or
(2) the average dry weather discharge does not exceed 0.25 mgd:

- Well development water;
- Construction dewatering;
- Pump/well testing;
- Pipeline/tank pressure testing;
- Pipeline/tank flushing or dewatering;
- Condensate discharges;
- Water supply system discharges; or
- Miscellaneous dewatering/low threat discharges.

Dischargers must submit an NOI to comply with requirements of the permit and obtain coverage under this general permit. Permit requirements include discharge prohibitions, effluent limitations (for flow less than 4 months in duration, these include Biochemical Oxygen Demand, Suspended Solids, Settleable Solids, and pH), solids disposal, receiving water limitations (above and below outfall Temperature, pH, Electrical Conductivity, and Dissolved Oxygen), and standard provisions requirements.
The Discharger shall also comply with an attached Monitoring and Reporting Program.

Storm Water Management Plans (SWMPs)
In addition to the State and Federal regulations and municipal codes and ordinances, the Campus Master Plan's implementation is covered by the City of Turlock Water Resources Division NPDES Phase 2 Storm Water Management Plan (2003). This SWMP governs implementation of NPDES Phase II permit provisions within the City.

3.8.2 Environmental Impacts

Parking areas, roadways, landscape areas and other human activities will result in the deposit of certain pollutants that can be washed into the regional surface water system and contaminate surface water supplies. Facility expansion and development, proposed within the Physical Master Plan, could result in the location of structures within flood areas and will most likely result in the creation of impervious surfaces that will increase the flow of flood waters during times of intense storm activity. Campus water uses will increase demands on groundwater resources.

A. Thresholds of Significance

Appendix "G" of the CEQA Guidelines addresses potential impacts on Hydrology and Water Quality as follows:

Would the project:

- Violate any water quality standards or waste discharge requirements?
- Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?

- Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?
- Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?
- Create or contribute runoff water which would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff?
- Otherwise substantially degrade water quality?
- Place housing within a 100-year flood hazard area as mapped on a Federal Flood Insurance Rate Map or other flood hazard delineation map?
- Place within a 100-year flood hazard area structures which would impede or redirect flood flows?
- Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?
- Result in inundation by seiche, tsunami, or mudflow?

ASSESSMENT OF WATER QUALITY

DEFINITION OF GROUNDWATER QUALITY

Water of suitable quality to meet mineral (water) quality objectives and beneficial uses defined in the current adopted Water Quality Control Plan for the area within which the project is located.

DEFINITION OF TECHNICAL TERMS

Ground Water: That part of the subsurface water which is in the zone of saturation (DWR Bulletin Number 74).

Groundwater Quality Objectives: Mineral (water) quality objectives and present and potential beneficial uses of groundwater contained in the most recent Water Quality Control Plan, adopted for the area within which the project is located.

Hydrologic Unit: A drainage area boundary delineated by the California Department of Water Resources (DWR) into a hydrologic unit, sub-unit or sub-area.

Surface Water: All water which occurs upon the earth's surface.

Surface Water Quality Objectives: Mineral (water) quality objectives and present and potential beneficial uses of surface water contained in the most recent Water Quality Control Plan for the area within which the project is located.

THRESHOLD CRITERIA
A land use or activity which could cause a significant adverse impact upon groundwater resources quality in itself or on a cumulative basis. Threshold criteria include, but are not limited to:

1. Projects that will individually or cumulatively degrade the quality of ground or surface water in such a manner as to cause it to fail to meet groundwater quality objectives for a hydrologic unit defined in the basin plans is a significant adverse impact.

2. Failure to meet the water quality standards of the State Department of Health Services or waste discharge standards of the Regional or State Water Quality Control Board.

ASSESSMENT OF GROUNDWATER QUANTITY
DEFINITION OF GROUNDWATER QUANTITY:
The volume of groundwater for one or more beneficial uses usually expressed in gallons or acre-feet. (One acre-foot is 325,851 gallons.)

DEFINITION OF TECHNICAL TERMS
Ground Water: That part of the subsurface water which is in the zone of saturation (DWR Bulletin Number 74) is the annual decrease in the amount of groundwater in storage that occurs during a long time period under a particular set of physical conditions reducing the supply and adversely affecting the use and disposal (including extractions) of water in the groundwater basin.

Hydrologic Unit: A drainage area boundary delineated by DWR as a hydrologic unit, sub-unit or sub-area which may contain one or more groundwater basins.

THRESHOLD CRITERIA
A land use or activity which could cause a significant adverse impact upon ground water resources quantity in itself or on a cumulative basis. Threshold criteria include, but are not limited to:

1. Any use that will increase the net utilization of groundwater in a basin that is over-drafted or adversely impacts an over-drafted basin is a significant adverse impact.

2. In groundwater basins that are not over-drafted or that do not impact an over-drafted basin, net water use that will individually or cumulatively cause the basin to become over-drafted is a significant adverse impact.

3. In areas where the basin condition is not known, it must be assumed that any net increase in water use may potentially cause a significant impact until such time as reliable studies determine otherwise.

ASSESSMENT OF EROSION

DEFINITION OF ISSUE

Erosion and the resulting siltation of streams, lakes and water ways is a natural process. However, certain development or construction projects can accelerate the natural erosion process and contaminate surface water courses and water bodies with sediments. Building codes (UBC) and local development and improvement standards regulate construction activities that could result in accelerated man-made erosion and the generation of sediments discharged into surface water systems.

THRESHOLD CRITERIA

A project that does not comply with the discharge standards established in a Water Basin Plan or a project that does not comply with local regulations and standards for erosion and sediment control would normally be expected to create a significant adverse environmental impact.

ASSESSMENTS OF FLOODING

DEFINITION OF ISSUE

Changes in the natural drainage course of an area or development that results in altering the course of a stream or water course, can result in directing storm water flows onto areas not previously subject to inundation during peak storm events. This new flooding condition can also result from development that substantially increases storm water runoff into established storm water drainage courses as a result of the creation of new impervious surfaces.

THRESHOLD CRITERIA

A project is considered to result in significant impacts to flood management and drainage facilities if it creates impacts as follows:

- Proposes construction of a storm water facility that does not comply with standards of the city, county or any flood management district with flood management jurisdiction over the site where the facility is to be located.
- Results in the obstruction of normal flow or restricts the natural flow of a storm water channel in such a manner as to create the potential for storm water flows to overflow existing water course channels and cause flooding of surrounding areas.

ASSESSMENT OF STORMWATER RUNOFF

DEFINITION OF ISSUE

Increased storm water runoff can result in the over-taxing of existing storm water drainage systems or could result in the introduction of polluted storm water into a natural drainage system. The pollution could include sediments, oil and other chemicals from lawns, roadways, parking lots and unprotected excavations.

THRESHOLD CRITERIA
A project is considered to result in significant impacts if it creates storm water runoff impacts as follows:

- The potential to increase runoff by 10 percent or more during peak storm periods.
- The potential to generate storm water runoff during peak storm periods that will exceed the design capacity of downstream storm water diversion or detention facilities or any bridge, culvert or similar downstream structure used to cross a storm water channel.
- Increase storm water flows into any designated flood hazard area.

The preservation of water resources within the State are identified CEQA priorities. From the CEQA Checklist of the CEQA Guidelines, threshold environmental standards have been developed to identify potential significant impacts to hydrological resources and water quality.

B. Potential Significant Impacts:
Hydrology and Water Quality Impacts Found Not to be Potentially Significant:
As a result of project analysis, based on data collected in the evaluation of the CSU Stanislaus Physical Master Plan Update implementation, the following aspects of a potential hydrology and water quality impact are found not to exist or exist at levels well below any reasonable expectation that a significant adverse impact is likely to result:

- *Violate any water quality standards or waste discharge requirements?*
  Any Campus construction or development project will be undertaken in a manner that is consistent the policies, standards and requirements of the Federal, State and local government water regulatory system, including sewer, wastewater treatment, potable water and storm drain standards, and cannot violate any water quality standard or waste discharge requirement.

- *Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?*
  The Campus site is relatively flat with an established drainage pattern that is not altered by the proposed Physical Master Plan Update. There are no natural streams or other water courses passing through or near the Campus and a complex of storm-water detention ponds provide an opportunity for sediment to settle out of the water prior to entering the storm water system. All construction projects are required, as part of the construction contract management process, to implement erosion control measures using appropriate Best Management Practices. As a result it is highly unlikely that there could be any substantial erosion or siltation either on or off-site.

- *Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?*

The project does not propose to modify campus drainage patterns. There will be an increase in the rate of surface runoff as the result of the construction of new hard-scapes (building, parking and walkway areas). This increase will not be substantial relative to the total project site with approximately 228-acres and an additional 10-acres that will be added to the approximately 79-acres of impervious surfaces on the site leaving approximately 39% of the site in a "open" condition with landscaping, water storage areas, etc.

- *Create or contribute runoff water which would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff?*
  Development of the 228-acre Campus site is accommodated by utility plans for storm drainage. The on-campus storm water retention ponds meter the flow of storm water into the regional system to reduce peak storm even flows. This storm-water run-off may include pollutants that could enter regional surface waters. Federal and State standards, along with elements of the Master Plan's design for the discharge of storm water, will reduce this potential impact to an acceptable level.

- *Otherwise substantially degrade water quality?*
  Any new construction or development, proposed in a manner consistent with the Physical Master Plan Update would be served by the City of Turlock's sewage disposal system and would be subject to regulatory standards that would preclude the potential to add pollutants to the groundwater. Policies and standards contained in the Federal, State, regional and local water quality regulatory structure will minimize pollutant loading resulting from new campus construction and increased campus population to an acceptable level.

- *Place housing within a 100-year flood hazard area as mapped on a Federal Flood Insurance Rate Map or other flood hazard delineation map?*
  There are no flood-hazard areas within several miles of the CSU Stanislaus campus site. The project does not propose construction of any housing within a designated flood-hazard area.

- *Place within a 100-year flood hazard area structures which would impede or redirect flood flows?*
  There are no flood-hazard areas within several miles of the CSU Stanislaus campus site. The project does not propose any construction within a designated flood-hazard area.

- *Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?*
  The project area is not located within an area that is likely to subject people or property to significant risk of loss, injury or death as a result of flooding. The community is not in the direct path of a flood area from a dam or reservoir of sufficient volume to represent any significant potential hazard from dam or levee failure.

Inundation by seiche, tsunami, or mudflow?

The project area is not located adjacent to the ocean or any large body of water that would create the potential for inundation by seiche or tsunami. The terrain and soils found in the project area are not likely to result in a mudflow.

- *Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?*

  The CSU Stanislaus campus receives its water from the City of Turlock. The Turlock system has planned capacity to service the existing campus and planned expansion. The City of Turlock is working with the Turlock Irrigation District with plans for the conversion of the existing ground water system to a surface water system at some future point in time as part of a regional strategy to reduce impacts on ground water resources.

Hydrology and Water Quality Impacts Found to be Potentially Significant:
As a result of project analysis, based on data collected in the evaluation of the CSU Stanislaus Physical Master Plan Update, the City of Turlock's water management and service programs and the future surface water treatment options being studied by the Turlock Irrigation District, no potential hydrology or water quality impact is expected to result in a significant adverse environmental impact due to project implementation.

C. Proposed Master Plan Goals & Policies:
The CSU Stanislaus Physical Master Plan Update contains policies and programs that aim to preserve hydrological resources of the Campus. Their policies, while not directly aimed toward hydrological resource preservation, have the effect of preserving and protecting region's hydrological assets.

Other Regulations:
As a requirement of law, the Campus must work with the City of Turlock in its program to regulate storm water discharge. This program is part of the Storm Drain Master Plan adopted and maintained by the city. This plan includes Best Management Practices (BMPs) and Minimum Control Measures (MCMs) to be implemented by the city.

D. Short-Term Impacts:
Adoption of the CSU Stanislaus Physical Master Plan Update will not have any immediate impact on hydrology and water quality other than to affirm existing policy regarding the future site development Master Plan strategy for providing educational facilities adequate to support the Campus capacity of 12,000 FTE as implemented through the adopted CSU Stanislaus CIP-COP.

E. Long-Term Impacts:

Growth and development of the CSU Stanislaus campus, within the urban area of the City of Turlock, will not result in modifications to the surface water quality. Landscaping and earth modifications may result in some increased erosion and sedimentation but this will be captured by the Campus storm-water retention basins and not impact stream-beds or result in the deposition of chemical nutrients into stream waters. Increased storm water runoff can be contained within existing surface water drainage facilities. Long-term campus development will increase demands on groundwater resources and possibly surface water resources if the City of Turlock and the Tuolumne Irrigation District develop a surface water treatment and distribution system as planned.

F. Cumulative Impacts:

Growth in the Central Valley, Stanislaus County, the City of Turlock and the Campus will have a long-term cumulative impact of regional water resources. The complex water management regulatory system will limit development to reflect the natural constraints of the region (and State's) water resources and maintain water quality standards. Regulatory standards are in place or being developed to address the causes of Global Climate Change and planning is under way to accommodate the expected changes in the region's water cycle that is expected to result from Climate Change. All of these changes are the result of growth and the over-use of carbon based fuels without adequate environmental controls. These regulatory and control systems are being developed and put in place and are expected to minimize the adverse cumulative impacts on air quality, water resources and quality and the general quality of life of people and wildlife.

G. Secondary Impacts:

As a result of the regulatory environment standards enforced by Federal, State, regional and local government agencies, it is expected that there will be an increase in the cost of construction and development over time to address the increased demands for water throughout the State and within the San Joaquin Valley in particular. These costs will be uniform throughout the region and the State and are not expected to be significant in most cases or create any substantial adverse economic impact that would hamper normal growth and development within the City of Turlock, Stanislaus County or the greater region.

3.8.3 Mitigation Measures

No mitigation is proposed or required as there are no significant adverse impacts likely to result from the adoption and implementation of the CSU Stanislaus Physical Master Plan Update. Development that is proposed within the Campus will be required to comply with Federal, and State standards with respect to water quality and quantity.

3.8.4 Level of Significance After Mitigation

Construction and operational activities undertaken in a manner that are consistent with the applicable policies and standards and comply with all appropriate Federal and State water resource regulations and will not result in the creation of a significance adverse physical impact on Hydrological Resources within the University campus and the surrounding region.

Section 3.9
Land Use and Planning

Land Use & Planning Discussion: This environmental issue focuses on the impacts of a project on adopted land use, habitat conservation or natural community conservation plans. The specific focus of this area of environmental concern is potential project conflicts with established plans and policies or the potential for the project to physically divide a community area. The City of Turlock General Plan designates the CSU Stanislaus campus as a Public Site and City policy supports development of the campus in a manner consistent with the Campus Physical Master Plan.

3.9.1 Environmental Setting

California planning law requires that consistency be maintained between various planning requirements that exist within the State. The City of Turlock's General Plan was developed within the context of the Stanislaus County General Plan.

Within Turlock's General Plan, existing and proposed uses are established within the context of existing planning policy (local, county and LAFCO) and reasonably expected need. In this regard, great effort goes into maintaining the integrity of existing communities and/or neighborhoods. To assure that new growth and development does not physically divide a community or neighborhood, land use policy and distribution is closely linked to the infrastructure plans for the City; this is particularly true with respect to the designation of new street and highway corridors.

The Land Use Element of Turlock's General Plan Designates the CSU Stanislaus campus site as Public/Institutional (PUB). The City's Zoning designation for the Campus is Public & Semipublic (P-S) District. As State property, the State of California exercises land use control over the property but efforts are made to develop the site in a manner that is compatible with the City's intent and to integrate the Campus into the surrounding community.

3.9.2 Environmental Impacts

Implementation of the CSU Stanislaus Physical Master Plan Update continues the facility location policies established in previous Master Plans with some additional attention to the clustering of similar types of educational and service facilities with respect to future building expansion. None of the contemplated changes, however, will physically divide an established community or neighborhood on campus or impact the surrounding community. There are no habitat conservation or natural community conservation plans presently adopted and applied to lands located within the CSU Stanislaus campus or in the surrounding area.

A. Thresholds of Significance

Appendix "G" of the CEQA Guidelines addresses potential impacts on Land Use and Planning as follows:

Would the project:

- Physically divide an established community?
- Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?
- Conflict with any applicable habitat conservation plan or natural community conservation plan?

ASSESSMENTS FOR COMMUNITY DIVISION

DEFINITION OF ISSUE

A "community" is a particular area within which people with common interests reside. Typically, a "community" can be defined by a distinctive physical quality, attributes or features which sets it apart from other communities or areas. The location of highways, greenbelts or other physical barriers that separate a "community" can cause economic and social dislocation and disrupt the efficient delivery of community services.

DEFINITION OF TERMS

Division is likely to occur within a defined community where the creation of some obstacle to normal circulation and/or communication within that community is created (i.e. a major roadway or highway, wall, fence, rail corridor, etc).

Obstacle to Normal Circulation would be created when normal pedestrian traffic patterns are disrupted and/or residential areas are separated from their normal access to service or employment centers, parks, playgrounds and other community open space areas.

THRESHOLD CRITERIA:

Conformance with an adopted General Plan, Specific Plan or other plan regulating land use and community circulation would normally assume that an impact on community division will not result. Specific project design details need to be evaluated to assure that community division does not occur as a result of project implementation.

ASSESSMENTS FOR CONSISTENCY WITH GENERAL PLAN *ENVIRONMENTAL GOALS, POLICIES AND PROGRAMS*

DEFINITION OF ISSUE

General Plan environmental goals, policies and programs means the General Plan (including Area and Specific Plans) goals, policies and programs are designed to protect the environment (e.g., preservation or conservation of resources, avoidance of hazards, etc.). As such, not all General Plan goals, policies and programs are designed to protect the environment.

DEFINITION OF CONSISTENCY
The California Attorney General has opined that the term "consistent with" is used interchangeably with "conformity with" (58 OPS. Cal. Atty. Gen. 21, 25 (1975). A general rule for consistency determinations can be stated as an action, program, or project is consistent with the plan if, considering all its aspects, it will further the objectives and policies of the plan and not obstruct their attainment.

THRESHOLD CRITERIA
Any project that is inconsistent with a specific environmental policy of the General Plan is considered as having a significant impact.

ASSESSMENTS FOR CONSISTENCY WITH A HABITAT CONSERVATION PLAN
DEFINITION OF ISSUE
A Habitat Conservation Plan is a plan for the conservation, preservation and protection of the habitat of a species or number of environmentally protected wildlife species. The goals, policies and programs contained in the Habitat Conservation Plan are established on the basis of scientific knowledge of the species and its habitat needs and adopted by Federal, State and/or local jurisdictions for the protection of sensitive wildlife species.

THRESHOLD CRITERIA
Any project that is inconsistent with a Habitat Conservation Plan is considered as having a significant impact.

B. Potential Significant Impacts:
Land Use and Planning Impacts Found Not to be Potentially Significant:
As a result of project analysis, based on data collected in the evaluation of the CSU Stanislaus Physical Master Plan Update implementation, the following aspects of a potential land use and planning impact are found not to exist or exist at levels well below any reasonable expectation that a significant adverse impact is likely to result:

- *Physically divide an established community?*
  The proposed CSU Stanislaus Physical Master Plan Update does not propose to physically divide any portion of the campus or any of the adjacent neighborhoods within the community in such a manner as to create an adverse physical impact on the environment. New streets and roadways will include pedestrian facilities and through the normal development review process, traffic and circulation issues are subject to development permit review.

- *Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance adopted for the purpose of avoiding or mitigating an environmental effect?*
  The proposed Physical Master Plan Update is the primary campus planning and design document for the CSU Stanislaus campus. The layout, design policies and standards do not need to be reconciled with the Turlock General Plan for the most part but efforts have been made to locate compatible uses (residential-near

residential) so as to minimize potential conflicts between campus and off-campus uses. With respect to circulation (streets and roadways, public transportation services, etc.) there is a close linkage between the City of Turlock's General Plan Circulation Element and the parking and internal circulation plan of the Campus. This is a formal public process between public agencies, as set forth in State law, in the General Plan process. The City of Turlock and the CSU Stanislaus planners and administrators have enjoyed a close working relationship over the years that has gone beyond the minimum requirements of law. There are no other plans or policies, either adopted or contemplated, that could conflict with the proposed Physical Master Plan Update.

- *Conflict with any applicable habitat conservation plan or natural community conservation plan?*
  There are no habitat conservation plans or natural community conservation plans in place or contemplated within the area of the proposed CSU Stanislaus Physical Master Plan Update area or in the vicinity of the Campus.

Land Use and Planning Impacts Found to be Potentially Significant:
As a result of project analysis, based on data collected in the evaluation of the proposed California State University, Stanislaus Physical Master Plan Update, a potential land use or planning impact is not likely result in a significant adverse environmental impact from Plan adoption and/or implementation.

C. Proposed Physical Master Plan Update Goals & Policies:
The CSU Stanislaus Physical Master Plan Update contains policies and programs that aim to preserve existing character and feel of the Campus while providing new facilities and resources to support planned Campus student population growth.

With in the context of the CSU Stanislaus Physical Master Plan Update the Guiding Principles define a direction for the Physical Master Plan Update. Future goals, objectives, and implementation measures are developed from these principles. Therefore, the Guiding Principles must reflect and consider all issues of importance to the physical campus and the campus' philosophy. Issues often incorporated into a campus Physical Master Plan Update include the character of the campus, architectural guidelines for height, mass and density, vehicular circulation and parking, universal access, open space, housing, infrastructure and sustainable design and landscape.

The California State University, Stanislaus Physical Master Plan Update Guiding Principals are as follows:

> ***"Dynamic Campus Core***
> *A dynamic campus core shall be the center of student life on campus. The core will become the central community, turning the campus inward and encouraging interaction. Activities will be integrated with the campus providing events and services to foster social relations on campus. Building density will be greatest surrounding the Main Quad with primary building entrances oriented toward this center of activity. A balance shall*

be maintained between building footprints, open space, vistas, and the surrounding facilities to enhance the pedestrian experience.

Exhibit 3.9.1
The Proposed Physical Master Plan Update – 2008

Centers of Activity
Surrounding the campus core are the academic clusters of Humanities, Sciences, and Arts; immediately outside these inner clusters are the Physical Education Complex and Student Housing. Each academic cluster and center of activity shall retain an individual character defined by the programs and activities unique to the area. A portion of open space will be incorporated into each cluster emphasizing and defining the cluster's boundaries and character.

Campus Coherence through Landscaping, Pathways, Signage and Building Design
Landscaping, pathways, and signage shall connect the various campus elements and create overall campus coherence. The pedestrian experience will be enhanced as orientation and movement is strengthened across campus; this is accomplished through the use of defined pathways,

building design, and vistas. Campus edges will be primarily defined through landscape, not buildings. The entire campus should be viewed as a special, inviting place within its surrounding community.

Housing Neighborhoods
Housing clusters shall evoke a neighborhood environment, promoting resident kinship. These neighborhoods will incorporate areas of open space, and be placed outside of the campus core and academic clusters. Adjacency to co-curricular activities is determined by the resident type.

Positive Presence in Community
The University shall continue to foster a positive physical and intellectual relationship within the community. Community members will be welcomed on campus. The campus boundaries will be clearly defined, creating a distinct edge to identify the campus within the surrounding community. Future land acquisitions will be accomplished with community support.

Precedent for Sustainability
Sustainable practices shall be established on campus to provide an example of an environmentally sensitive existence for campus users and the community. The stewardship of campus land will efficiently balance building footprint with open space needs. Facilities and infrastructure will be fully utilized to reduce energy use. Landscaping will attempt to minimize irrigation and maintenance. Buildings will be oriented to embrace nature, use locally available materials, and be efficient to operate.

Adaptability
Design of buildings and grounds will allow future adaptability and renovation. Campus infrastructure will be accessible, expandable, reliable, and simultaneously, unobtrusive.

Vehicular Perimeter
A vehicular perimeter shall be maintained and enhanced to retain a pedestrian campus core. Campus entry points will be located on all four sides of campus. The southern University Way entrance at the Reflection Pond will remain the ceremonial entrance. Vehicular traffic will be easy to navigate and travel along a loop road outside the pedestrian core. Required vehicular service access to buildings will be visually minimized. Surface parking will be shaded with a park-like character, and parking structures sited, designed, and constructed to minimize the impacts on the campus and the surrounding community.

The Physical Master Plan Update is guided by these principles so that a broader long term vision for the campus can be realized by the decisions that are made today. The Guiding Principles are planning benchmarks for

this document – and for those that are charged with implementing future campus projects."

D. Short-Term Impacts:
Adoption of the CSU Stanislaus Physical Master Plan Update will not have any immediate impact on land use other than to affirm existing policy regarding the future site development Master Plan strategy for providing educational facilities adequate to support the Campus capacity of 12,000 FTE as implemented through the adopted CSU Stanislaus CIP-COP. These actions and activities will not have any adverse impacts on the existing land use of the Campus and the area. The existence of adopted plans and policies will guide short-term decision making, however, in light of future long term uses.

E. Long-Term Impacts:
Adoption of the CSU Stanislaus Physical Master Plan Update will provide for the long-term facility growth needs of the Campus to guide decision making with respect to the placement of new facilities and structures and create a blue print for future Campus construction needs relative to student population growth over the next 10-15years. Adoption of the CSU Stanislaus Physical Master Plan Update will provide for the long-term growth needs of the University.

F. Cumulative Impacts:
Growth in the Central Valley, Stanislaus County, the City of Turlock and the Campus will have a long-term cumulative impact of land use. Land use has implications with respect to transportation and travel, air quality, utilities and infrastructure, and the overall quality of life in a community and a region.

G. Secondary Impacts:
There are no adverse physical secondary impacts expected to result from the adoption and implementation of the CSU Stanislaus Physical Master Plan.

3.9.3 Mitigation Measures
There are no mitigation measures needed to address potential adverse impacts on Land Use that can reasonably be expected to result from the adoption and implementation of the CSU Stanislaus Physical Master Plan.

3.9.4 Level of Significance After Mitigation
There are no potential adverse physical impacts on Land Use that can reasonably be expected to result from the adoption and implementation of the CSU Stanislaus Physical Master Plan Update.

Section 3.10
Noise

Noise Discussion: This environmental issue focuses on the impacts of a project with respect to noise or ground-borne vibration. The creation of new noise or ground-borne vibration conditions or activities that will result in people or property being exposed to existing noise or vibrations is the primary area of focus under this environmental issue. Noise will be generated by the project as a result of traffic, construction and public outdoor events conducted as a normal part of Campus activities.

3.10.1 Environmental Setting

The principal noise sources on the CSU Stanislaus campus are traffic on campus and adjacent roadways, campus residences and special events. On campus noise sources, including residence areas, sports, concerts and other special events are subject to campus rules and regulations as enforced by the Campus police department. Potential construction impacts are normal and General Construction Contract provisions, policies and standards are in place to reduce these impacts to a level that is normally considered "less than significant".

Traffic Noise

The firm of Brown-Buntin Associates, Inc. was retained to prepare a traffic noise study for the CSU Stanislaus Physical Master Plan Update. The following is a summary and conclusions of this study which can be found in Appendix "C" of this document.

The Federal Highway Administration (FHWA) Highway Traffic Noise Prediction Model (FHWA-RD-77-108) was used for the prediction of traffic noise levels around the CSU Stanislaus Campus. The model is based upon the CALVENO noise emission factors for automobiles, medium trucks and heavy trucks, with consideration given to vehicle volume, speed, roadway configuration, distance to receiver, and the acoustical characteristics of the site.

The FHWA model was developed to predict hourly L_{eq} values for free-flowing traffic conditions, and is considered to be accurate within 1.5 dB. To predict L_{dn} values, it is necessary to determine the day/night distribution of traffic and to adjust traffic volume input data to yield an equivalent hourly traffic volume.

Inputs to the FHWA model include the Average Daily Traffic volume (ADT), daytime/nighttime traffic distribution, medium and heavy truck percentages, and vehicle speed. The existing daily traffic volumes were based upon data supplied by the project traffic consultant. The mix of truck traffic and normal automobile traffic was estimated from traffic observations and the noise consultant's experience with traffic counts on local roadways.

The day/night traffic distribution was assumed to be 87% and 13% respectively, consistent with the noise consultant's ambient noise measurements in typical residential and commercial areas. An acoustically soft site was assumed.

TABLE 3-10-1
EXISTING TRAFFIC NOISE LEVELS

Roadway Name	Segment Description	Predicted Ldn, dB, at 50 Feet
Taylor Road	East of Golden State Blvd	68.0
Taylor Road	Walnut Ave to Geer Road	64.4
Taylor Road	East of Geer Road	63.1
Christofferson Pkwy	East of Golden State Blvd	65.3
Christofferson Pkwy	Mountain View Road to Kilroy Road	67.3
Christofferson Pkwy	Kilroy Road to Walnut Avenue	67.0
Christofferson Pkwy	Walnut Ave to Crowell Road	67.9
Christofferson Pkwy	Crowell Road to McKenna Drive	68.1
Christofferson Pkwy	McKenna Drive to Picadilly Lane	67.9
Christofferson Pkwy	Picadilly Lane to Geer Road	67.3
Christofferson Pkwy	East of Geer Road	66.4
Monte Vista Ave/University Way	SR 99 to Country Side Drive	71.7
Monte Vista Ave/University Way	Country Side Drive to Golden State Blvd	71.0
Monte Vista Ave/University Way	Golden State Blvd to Walnut Avenue	71.4
Monte Vista Ave/University Way	Walnut Avenue to Crowell Road	71.1
Monte Vista Ave/University Way	Crowell Road to Dels Lane	70.8
Monte Vista Ave/University Way	Dels Lane to Andre Lane	69.9
Monte Vista Ave/University Way	Andre Lane to Geer Road	70.2
Monte Vista Ave./University Way	East of Geer Road	68.6
Walnut Avenue	Taylor Road to Christofferson Pkwy	62.6
Walnut Avenue	Christofferson Road to Monte Vista Ave./University Way	63.7
Walnut Avenue	South of Monte Vista Ave./University Way	61.5
Crowell Road	North of Christofferson Road	57.0
Crowell Road	Christofferson Road to Monte Vista Ave./University Way	60.2
Crowell Road	South of Monte Vista Ave./University Way	56.4
McKenna Drive	North of Christofferson Road	50.6
Picadilly Lane	North of Christofferson Road	50.8
Dels Lane	South of Monte Vista Avenue/University Way	61.0
Andre Lane	South of Monte Vista Ave./University Way	50.8
Geer Road	Taylor Road to Christofferson Road	68.1
Geer Road	Christofferson Road to Monte Vista Ave./University Way	69.3
Geer Road	South of Monte Vista Ave./University Way	67.4
Countryside Drive	South of Monte Vista Ave./University Way	69.0
Source: Brown-Buntin Associates, Inc., 2008		

Based upon field experience, traffic noise levels at upper story building facades are expected to be at least 3 dB higher than the noise levels reported below.

Table 3-10-1 shows the estimated worst-case traffic noise levels based on existing traffic volumes at a reference distance of 50 feet from the centerlines of the roadways in the vicinity of the Proposed Project.

This distance represents the possible location of a typical first-floor building facade, and may be used to approximate the noise exposure for typical noise sensitive uses.

Table 3.10.2
Typical Construction Equipment Noise Levels

Equipment	Noise Level (dBA) @ 50 Feet
Earthmoving	
Front Loader	79
Backhoe	85
Dozer	80
Tractor	80
Scraper	88
Grader	85
Paver	89
Materials Handling	
Concrete Mixer	85
Concrete Pump	82
Stationary	
Pump	76
Generator	78
Impact	
Jack Hammer	88
Pneumatic Tools	86
Other	
Saw	78
Vibrator	76

Construction Noise
Another source of noise, with the potential to have substantial impact on-campus and the CSU Stanislaus surrounding neighborhoods is the noise generated by construction activities.

Construction activities generate considerable amounts of noise, especially during the demolition phase and the construction of project infrastructure when heavy equipment is used. Typical hourly average construction generated noise levels are about 81 dBA to 89 dBA measured at a distance of 50 feet (see Table 3.10.2) from the center of the site during busy construction periods (e.g., earth moving equipment, impact tools, etc.). Depending on the location and duration of construction activities, project related construction noise is a potentially significant impact.

Noise generation resulting from construction activities are typically regulated through the Construction Contract provisions and administration of the contract provisions by Campus administrators.
Athletic Fields and Special Events

The Campus presently contains an outdoor amphitheater located in the western portion of the campus. This facility is used for both campus and community events. Athletic fields and the new Student Recreation Complex are located in the north east corner of the campus adjacent to two major roadways. Surrounding uses include some residential uses to the north of Christofferson Parkway and existing and potential commercial services uses to the east of Geer Road.

While noise will be audible to the closest residences and commercial areas from occasional on-campus activities, this noise is typically short-term (special events) and intermittent; only occurring for short periods during a game or event. These activities do not occur on a daily basis. While there have been some complaints filed by campus neighbors over excessive noise at special events, the complaints were responded to by campus administrators by means of establishing standards of design of amplification equipment and operational standards for such equipment.

The University maintains a written policy and procedures for the management of noise from outdoor special events. The procedures include sound level maximum setting and physical monitoring by sound level meter at outdoor events with amplified sound. Records on past events and noise levels are on file with the Campus Environmental Health & Safety Office.

3.10.2 Environmental Impacts

With Campus student enrollment increase, an increase in noise is likely to result from increase roadway traffic, construction and normal Campus activities.

A. Thresholds of Significance

Appendix "G" of the CEQA Guidelines addresses potential impacts of Noise as follows:

Would the project result in:

- Exposure of persons to, or generation of, noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?
- Exposure of persons to or generation of excessive ground-borne vibration or ground-borne noise levels?
- A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?
- A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?
- 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 a public use airport, would the project expose people residing or working in the project area to excessive noise levels?
- For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?

DEFINITION OF NOISE

Noise is defined as any unwanted sound that is undesirable because it interferes with speech and hearing, or is intense enough to damage hearing, or is otherwise annoying. Because the effects of noise accumulate over time, it is necessary to deal not only with the intensity of sound but also the duration of human exposure to the sound.

DEFINITION OF TERMS

Airport Approach or Landing Zone: A landing or approach zone designated on an adopted Airport Land Use Plan prepared in accordance with Public Utilities Code Section 21670 and 2160.1.

Ambient Noise Level: The *Community Noise Equivalent Level (CNEL)* for the project site and an area within 200-feet of the boundaries of the project site.

A-Weighted Sound Level (dBA): Except as specified, all sound levels referred to in this policy document are in *A-weighted* decibels. A-weighting de-emphasizes the very low and very high frequencies of sound in a manner similar to the human ear. Most community noise standards utilize A-weighting, as it provides a high degree of correlation with human annoyance and health effects.

Community Noise Equivalent Level (CNEL): The average equivalent sound level during a 24-hour day, obtained after addition of approximately five decibels to sound levels in the evening from 7:00 p.m. to 10:00 p.m. and ten decibels to sound levels in the night before 7:00 a.m. and after 10:00 p.m.

Day/Night Average Sound Level (L_{dn}): The average equivalent sound level during a 24-hour day, obtained after addition of ten *A-weighted* decibels to sound levels in the night after 10:00 p.m. and before 7:00 a.m.

Equivalent Sound Level (L_{eq}): The sound level containing the same total energy as a time varying signal over a given sample period. L_{eq} is typically computed over 1, 8 and 24-hour sample periods.

Maximum Sound Level (L_{max}): The maximum sound level recorded during a noise event.

New Development: Projects requiring land use approval or building permits, but excluding remodeling or additions to existing structures.

Noise-Sensitive Land Use: Residential land uses, transient lodging, schools, libraries, churches, hospitals and nursing homes.

Outdoor Activity Areas: Patios, decks, balconies, outdoor eating areas, swimming pool areas, yards of dwellings and other areas which have been designated for outdoor activities and recreation.

Stationary Noise Source: Any fixed or mobile source not preempted from local control by existing Federal or State regulations. Examples of such sources include industrial and commercial facilities, and vehicle movements on private property. Activity areas, such as out-door concert areas, amphitheaters, sports stadiums can also be classified as stationary noise source by virtue of the events and activities conducted within the facilities.

Transportation Noise Source: Traffic on public roadways, railroad line operations and aircraft in flight. Control of noise from these sources is preempted by existing Federal or State regulations. However, the effects of noise from transportation sources may be controlled by regulating the location and design of adjacent land uses.

THRESHOLD CRITERIA

A project will have a significant impact on noise if it would result in any of the following:

- New development of noise-sensitive land uses located in an area exposed to existing or projected future levels of noise from transportation noise sources which exceed 65 dB L_{dn} in outdoor activity areas or 45 dB L_{dn} in interior spaces.
- Noise created by new transportation noise sources, including roadway improvement projects that cannot be mitigated so as not to exceed 65 dB L_{dn} within outdoor activity areas and 45 dB L_{dn} within interior spaces of existing noise-sensitive land uses.
- New development of noise-sensitive land uses located in an area where the noise level from existing stationary noise sources exceeds the noise level standards of the following Table 3-10-3
- Noise created by new proposed stationary noise sources or existing stationary noise sources which undergo modifications that may increase noise levels but cannot be mitigated so as not to exceed the noise level standards of Table 3-10-3 at noise-sensitive uses.
- A temporary noise created by new proposed stationary noise sources or existing stationary noise sources which undergo modifications that may increase ambient noise levels by more than 40%.
- A permanent noise created by new proposed stationary noise sources or existing stationary noise sources which undergo modifications that may increase ambient noise levels by more than 20%.

- Ground-borne vibration or ground-borne noise created by new proposed stationary sources or existing stationary sources which undergo modifications that may increase noise or vibration levels at noise-sensitive uses.
- A noise-sensitive use proposed within the approach or landing zone of an airport.

Table 3-10-3
MAXIMUM ALLOWABLE NOISE EXPOSURE-STATIONARY NOISE SOURCES[1]

	Daytime (7 a.m. to 10 p.m.)	Nighttime (10 p.m. to 7 a.m.)
Hourly L_{eq}, dB	55	50
Maximum level, dB	75	70

[1]As determined at the property line of the receiving land use. When determining the effectiveness of noise mitigation measures, the standards may be applied on the receptor side of noise barriers or other property line noise mitigation measures.

Absolute Noise Level Criteria
Transportation noise sources affecting residential, transient lodging, and other noise-sensitive land uses, the exterior noise threshold of significance for the Proposed Project is 60 dB Ldn or CNEL. An exterior noise level of up to 70 dB Ldn or CNEL may be allowed, provided that practical exterior noise level reduction measures have been implemented and that an interior noise level standard of 45 dB Ldn or CNEL is achieved.

Criteria for Increases in Noise Exposure
Guidance as to the significance of changes in ambient noise levels is provided by the 1992 findings of the Federal Interagency Committee on Noise (FICON), which assessed the annoyance effects of changes in ambient noise levels resulting from aircraft operations. The FICON findings are based upon studies that relate aircraft and traffic noise levels to the percentage of persons highly annoyed by the noise. Annoyance is a summary measure of the general adverse reaction of people to noise that generates speech interference, sleep disturbance, or interference with the desire for a tranquil environment.

The rationale for the FICON findings is that it is possible to consistently describe the annoyance of people exposed to transportation noise in terms of Ldn or CNEL. The changes in noise exposure that are shown in Table 3.10.4 are expected to result in equal changes in annoyance at sensitive land uses. Although the FICON findings were specifically developed to address aircraft noise impacts, they are considered in this analysis as the thresholds of noise impacts for traffic noise.

TABLE 3.10.4
POTENTIALLY SIGNIFICANT INCREASES IN CUMULATIVE NOISE EXPOSURE FOR TRANSPORTATION NOISE SOURCES

Ambient Noise Level Without Project (L_{dn} or CNEL)	Change in Ambient Noise Level Due to Project
<60 dB	+5.0 dB or more
60-65 dB	+3.0 dB or more
>65 dB	+1.5 dB or more

Source: Federal Interagency Committee on Noise (FICON), 1992, as applied by Brown-Buntin Associates, Inc.

The FHWA Highway Traffic Noise Prediction Model was used to predict traffic noise levels for future conditions. The reference distance is 50 feet from the centerline of the major roadways in the vicinity of the campus Physical Master Plan Update Project. This distance represents the possible location of a typical first-floor building facade facing each roadway, and may be used to approximate the noise exposure for typical noise sensitive uses.

The noise study prepared for this project predicted short term (10 year) and 2027 "No Project" traffic noise levels at 50 feet from the major roadway centerlines would exceed the City standards for new residential and other noise sensitive uses. This condition would occur with or without the project, and would not be an effect of the project.

Table 3-10-5 shows the differences between predicted noise levels for the future scenarios, comparing the noise levels with and without the Project.

TABLE 3-10-5

CHANGES IN PREDICTED FUTURE TRAFFIC NOISE LEVELS

Roadway Name	Segment Description	Difference, dB at Reference Distance by Scenario			
		Short Term with No Master Plan Minus Existing	Short Term With Master Plan Minus Short Term No Project	2027 with No Master Plan Minus Existing	2027 With Master Plan Minus 2027 No Project
Taylor Road	East of Golden State Blvd	0.3	0.0	2.0	0.0
Taylor Road	Walnut Ave to Geer Road	2.6	0.0	3.5	0.0
Taylor Road	East of Geer Road	1.7	0.0	2.0	0.2
Christofferson Road	East of Golden State Blvd	2.0	0.2	2.5	0.3
Christofferson Road	Mountain View Road to Kilroy Road	1.6	0.2	1.9	0.3
Christofferson Road	Kilroy Road to Walnut Avenue	1.8	0.2	2.2	0.4
Christofferson Road	Walnut Ave to Crowell Road	2.3	0.2	2.7	0.5
Christofferson Road	Crowell Road to McKenna Drive	2.2	0.2	2.6	0.6
Christofferson Road	McKenna Drive to Picadilly Lane	1.9	0.6	2.6	0.6
Christofferson Road	Picadilly Lane to Geer Road	2.4	0.2	2.8	0.5
Christofferson Road	East of Geer Road	2.5	0.2	3.2	0.3
Monte Vista Avenue/University Way	SR 99 to Country Side Drive	1.7	0.1	1.7	0.2
Monte Vista Avenue/University Way	Country Side Drive to Golden State Blvd	2.3	0.1	2.2	0.2

TABLE 3-10-5

CHANGES IN PREDICTED FUTURE TRAFFIC NOISE LEVELS

Roadway Name	Segment Description	Difference, dB at Reference Distance by Scenario			
		Short Term with No Master Plan Minus Existing	Short Term With Master Plan Minus Short Term No Project	2027 with No Master Plan Minus Existing	2027 With Master Plan Minus 2027 No Project
Monte Vista Avenue/University Way	Golden State Blvd to Walnut Avenue	1.0	0.2	1.1	0.3
Monte Vista Avenue/University Way	Walnut Avenue to Crowell Road	0.8	0.2	1.0	0.3
Monte Vista Avenue/University Way	Crowell Road to Dels Lane	0.9	0.2	1.1	0.4
Monte Vista Avenue/University Way	Dels Lane to Andre Lane	1.1	0.3	1.3	0.4
Monte Vista Avenue/University Way	Andre Lane to Geer Road	0.9	0.3	1.1	0.4
Monte Vista Avenue/University Way	East of Geer Road	1.0	0.1	1.4	0.0
Walnut Avenue	Taylor Road to Christofferson Road	1.3	0.0	3.3	0.1
Walnut Avenue	Christofferson Road to Monte Vista Ave/University Way	3.8	0.0	4.4	0.2
Walnut Avenue	South of Monte Vista Ave/University Way	2.4	0.2	3.0	0.3
Crowell Road	North of Christofferson Road	1.7	0.0	2.0	0.1
Crowell Road	Christofferson Road to Monte Vista Ave/University Way	0.5	0.4	0.8	0.8
Crowell Road	South of Monte Vista Ave/University Way	1.0	0.4	1.8	0.5
McKenna Drive	North of Christofferson Road	2.6	0.2	2.6	0.3
Picadilly Lane	North of Christofferson Road	3.0	0.2	3.3	0.3
Dels Lane	South of Monte Vista Ave/University Way	0.1	0.4	0.6	0.3
Andre Lane	South of Monte Vista Ave/University Way	0.6	0.3	1.1	0.5
Geer Road	Taylor Road to Christofferson Road	0.5	0.1	1.2	0.2
Geer Road	Christofferson Road to Monte Vista Ave/University Way	0.3	0.4	0.6	0.6

TABLE 3-10-5

CHANGES IN PREDICTED FUTURE TRAFFIC NOISE LEVELS

Roadway Name	Segment Description	Difference, dB at Reference Distance by Scenario			
		Short Term with No Master Plan Minus Existing	Short Term With Master Plan Minus Short Term No Project	2027 with No Master Plan Minus Existing	2027 With Master Plan Minus 2027 No Project
Geer Road	South of Monte Vista Ave/University Way	0.4	0.2	0.7	0.4
Countryside Drive	South of Monte Vista Ave/University Way	0.8	0.0	0.8	0.0

Note: Shaded cells would indicate a significant change in traffic noise levels due to project-related traffic.

Source: Brown-Buntin Associates, Inc., 2008

Based upon Table 3.10.5, traffic noise levels along the roadways selected for this analysis would increase by significant amounts in the future in both the short term (10 years) and 2027 scenarios, regardless of whether the Master Plan were implemented. However, the CSU Stanislaus Master Plan Update project would not result in any significant increases in the forecasted traffic noise levels.

Interior Traffic Noise

Typical facade construction in accordance with the Uniform Building Code will provide an exterior to interior traffic noise reduction of 20 to 25 dB. Compliance with the interior noise standard of 45 dB Ldn can therefore be expected with standard energy-conserving construction practices where the affected buildings are outside the 65 dB Ldn contour. It is usually feasible to attain the interior noise level standard of 45 dB Ldn where the exterior traffic noise level is 75 dB Ldn or less, using acoustically-rated glazing and doors, and other practical acoustical design features.

Therefore, compliance with the interior noise standard of 45 dB L_{eq} can therefore be expected with standard energy-conserving construction practices where the traffic noise exposure is 65 dB L_{dn} or less. Existing noise sensitive uses along the roadways near the Project may be exposed to traffic noise levels exceeding that value. However, this condition would exist with or without the project and would not be considered a project-related impact.

B. Potential Impacts:

As implementation of the CSU Stanislaus Physical Master Plan Update occurs, additional sources of noise may be generated from additional motor vehicle traffic on the local streets and highway network. New construction of noise sensitive uses near historic sources of noise, such as streets and highways, will create new potential conflicts and incompatibilities with some types of land uses. Construction activities will result in the creation of short-term increases in the ambient noise level of the campus and may have some off-campus impacts.

C. Potential Significant Noise Impact Assessment:

Noise Impacts Found Not to be Potentially Significant:

As a result of project analysis, based on data collected in the evaluation of the CSU Stanislaus Physical Master Plan Update implementation, the following aspects of a potential noise impact are found not to exist or exist at levels well below any reasonable expectation that a significant adverse impact is likely to result:

- *Exposure of persons to, or generation of, noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?*
  The CSU Stanislaus Physical Master Plan update does not propose new uses or activities that would violate the noise standards of the City of Turlock. Campus operations include established regulatory, design and operational standards for sound amplification equipment that are consistent with the policies and standards of the City of Turlock and the CSU Stanislaus campus.

- *Exposure of persons to or generation of excessive ground-borne vibration or ground-borne noise levels?*
  The CSU Stanislaus Physical Master Plan Update does not propose any activities that are likely to result in the creation of ground-born vibrations and noise.

- *A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?*
  The CSU Stanislaus Physical Master Plan Update will accommodate approved campus FTE growth on campus that will in turn result in a permanent increase in the ambient noise levels on and around the campus. The increase, however, is forecasted to be within established limits for the various uses and activities proposed and therefore considered acceptable, and not substantial, within the context of an urban environment.

- *A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?*
  Campus growth and development that is accommodated in the CSU Stanislaus Physical Master Plan Update will result in construction activity and construction equipment being used on a temporary basis. The use of this equipment will result in short-term and temporary noise impacts. The construction project review process will be utilized to moderate construction noise impacts through the construction contract conditions such as limiting hours of operation and other acceptable noise limiting techniques. As a result on the application of these construction conditions of construction contracting, it is expected that short-term or temporary noise impacts on the ambient noise levels can be reduced to an acceptable level.

- *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 a public use airport, would the project expose people residing or working in the project area to excessive noise levels?*

The campus is not located within an airport land use plan area or within a two-mile radius of an airport.

- *For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?*
  There are no private airstrips within a two-mile radius of the University that would result in the exposure of people residing or working in the city to excessive noise levels.

As a result of project analysis, based on data collected in the evaluation of the proposed CSU Stanislaus Physical Master Plan update, no potential noise impact are likely to result in a significant adverse environmental impact due to project implementation.

D. Relevant Plans, Policies and Regulations

City of Turlock-Noise Element of the General Plan: The CSU Stanislaus Campus is located in the northern portion of the City of Turlock. Within the City, noise standards are established under the City's General Plan and administered through the City's Municipal Code and development standards. Criteria for evaluating noise impacts within the City of Turlock are set forth in the Noise Element of the General Plan. The policies of the Noise Element include compatible land use guidelines in Figure 8-2, of the plan. The relevant Noise Element policies are listed below:

8.4-f Require all major development projects and noise-sensitive receptors (major residential developments, schools, hospitals, nursing homes, parks, and playgrounds) to comply with the land use compatibility guidelines indicated by Figure 8-2. Compliance shall be based upon projected noise levels at General Plan build-out.

8.4-g New residential, transient lodging, school, library, church, hospital, and convalescent home development should be designed to provide a suitable interior noise environment of no greater than 45 dB CNEL or Ldn.

Although Policies 8.4-f and 8.4-g do not apply directly to this Project, the land use compatibility guidelines in the City's General Plan, and the interior noise standard for noise sensitive uses, provide measures of significance for the purposes of this PEIR.

Proposed Physical Master Plan Update Guiding Principles Relating to Noise: The Physical Master Plan Update contains several policies that indirectly address the noise impacts of the project. These policies are set forth below:

1. *Housing Neighborhoods*
   Housing clusters shall evoke a neighborhood environment, promoting resident kinship. These neighborhoods will incorporate areas of open space, and be placed outside of the campus core and academic clusters. Adjacency to co-curricular activities is determined by the resident type.

2. *Relationship with Community*
   A positive relationship with the community has always been an important University priority. Following the involvement of community members in the preparation of this plan, it will be important to continue a working dialog with the City of Turlock. Many overlapping areas such as regulation of traffic, parking demand, noise, and neighborhood light pollution need continuing attention. The University should establish a way to inform the community of University events related to campus change. As much as possible, the community should feel welcome and encouraged to enjoy the campus grounds for passive and casual recreation. Access to University resources and programs helps neighbors feel connected to the University.

3. *Vehicular Perimeter*
   A vehicular perimeter shall be maintained and enhanced to retain a pedestrian campus core. Campus entry points will be located on all four sides of campus. The southern University Way entrance at the Reflection Pond will remain the ceremonial entrance. Vehicular traffic will be easy to navigate and travel along a loop road outside the pedestrian core. Required vehicular service access to buildings will be visually minimized. Surface parking will be shaded with a park-like character, and parking structures sited, designed, and constructed to minimize the impacts on the campus and the surrounding community."

E. Short-Term Impacts:

Adoption of the CSU Stanislaus Physical Master Plan update will not have any immediate impact on the noise environment other than to affirm existing policy regarding the Master Plan strategy for providing educational facilities adequate to support the Campus capacity of 12,000 FTE as implemented through the adopted CSU Stanislaus CIP-COP. Short-term impacts will occur as a result of construction activities related to the building of new facilities proposed in the Physical Master Plan Update. Other sources of noise impacts result from the day-to-day activities carried out on the existing campus such a special events, concerts and sports events but are not resulting from adoption of the Physical Master Plan.

F. Long-Term Impacts:

Long term impact of growth and development are expected to result in increased ambient noise levels in the City of Turlock overall and within the vicinity of the CSU Stanislaus campus. Noise impacts will result from increased traffic in addition from construction activities related to the building of additional campus facilities.

G. Cumulative Impacts:

Noise levels resulting from traffic on roadways surrounding the campus are forecasted to increase to levels that could be viewed as "significant". This impact will occur regardless of the addition of campus traffic. Overall regional and city-wide growth is the cause of this traffic noise increase, however, campus traffic generation will "cumulatively" contribute to this impact.

Increases in noise levels into areas surrounding the CSU Stanislaus campus, combined with new light sources, increased traffic and the related population impacts of growth and development of the City of Turlock will change the character of the environment in the vicinity of the campus. These cumulative impacts, however, are not likely to result in a significant adverse physical impact on the environment provided that such "cumulative" changes occur in a manner that is consistent with the Physical Master Plan Update, City of Turlock General Plan along with the growth and development rules, regulations and standards of both the Campus and the City.

H. Secondary Impacts:

There are no adverse physical secondary impacts expected to result from the adoption of the CSU Stanislaus Physical Master Plan Update on the noise environment. Noise thresholds that have been affirmed in the Plan and implemented by campus policy, rules and regulations are presently in place and have been applied by the Campus for many years.

3.10.3 Mitigation Measures

Traffic noise impacts will be less than significant and no mitigation is required. To ensure that noise from athletic events and other special events on campus continues to be a less than significant impact, the following design and conduct measures will be implemented:

3.10.a. A facility operational plan, implemented by CSU Stanislaus administrative staff, shall contain standards for the use of campus facilities and the operation and maintenance of various public address systems so that they do not create a source of noise that becomes a nuisance to adjacent residential properties.

3.10.b. The University Scheduling Officer may require sponsors of non-university sponsored events, at various campus facilities, to contract for acoustic analysis to be performed during planned events to ensure that City of Turlock noise standards are being met. In every situation, the event sponsor shall reduce noise levels to meet City standards should it be determined that noise is exceeding standards established by the City of Turlock.

3.10.c. The PA system design and set-up will include the following:

1. The system will be configured and calibrated to generate maximum noise level of 65 db(A) at the nearest noise sensitive uses (residential structures). Once calibrated, the system will be "locked" to ensure that individual users cannot operate them at higher noise level
2. The Loudspeakers will be small and highly directional with a narrow spread.
3. The loudspeakers will have sufficient mass so that no substantial noise leaks through the cabinet.
4. The loudspeakers will be located above the spectators and oriented downwards.
5. The height of the loudspeakers above spectators will be minimized to permit a lower volume setting.

3.10.d. Implement Campus Construction Contract Standards *that* include the following provisions as appropriate to the specific construction project carried out on the CSU Stanislaus campus:

1. Comply with Policy 8.4-f and 8.4-g of the City of Turlock General Plan regarding equipment noise levels.
2. Limit construction hours and days to the applicable City of Turlock requirements.
3. Incorporate the quietest construction equipment and techniques feasible for the construction task.
4. Specify all noisy motorized equipment to include mufflers.
5. During mobilization of earth-moving equipment near residential areas, equipment operations should be performed during the peak traffic hours.
6. Locate lay down/staging areas and stationary equipment as far away from noise sensitive receivers as feasible.
7. Establish a noise complaint liaison for the project with available contact information posted.

3.10.4 Level of Significance After Mitigation

With implementation of the identified design features and operational procedures, the impact from sports and activities at the Campus sports fields, the amphitheater and at public activities conducted at other locations around the Campus and traffic noise will continue to be less than significant.

Section 3.11
Population and Housing

This environmental issue focuses on the impacts of a project on population and housing including population growth or displacement of human population and housing resulting from campus growth and physical expansion.

3.11.1 Environmental Setting

The City of Turlock's population has grown steadily from 14,000 when the campus opened in 1965 to 69,321 according to the 2007 census. The CSU Stanislaus Physical Master Plan Update maintains the growth capacity of the Campus established in 1968 of 12,000 Full-Time Equivalent (FTE) students, when the Physical Master Plan was first approved, the area surrounding the campus was mostly used for agriculture and there was limited off-campus housing available to students. The Plan include modifications to the number of on-site housing opportunities that will be provided in the future and the type of housing that might be developed.

Table 3-11-1
Student Enrollment (FTE)-Population Forecasts
A Comparison for Turlock, Stanislaus & California 2008-2050

Year	CSU Stanislaus (FTE) (1)	Turlock	Stanislaus County	California
2008	*6,713*	*70,158*	*525,903*	*38,049,462*
2020	9,771	93,269	699,144	44,135,923
2030	12,000	114,447	857,893	49,240,891
2040	n/a	135,321	1,014,365	54,226,115
2050	n/a	158,931	1,191,344	59,507,876

1) FTE Forecast-CSU Chancellors Office
2) Turlock Forecast- Shift-Share Percent of Stanislaus Growth Forecast (13.3404829%)
3) County Growth Forecast-California State Department of Finance (P-1 Report July 9, 2007).

The Table 3-11-2 depicts the enrollment trends of the University in a number of categories. The chart suggests that continued increase in enrollment will require a parallel increase in capacity space to accommodate future students.

Population Service Area

The CSU Stanislaus Campus has 7,042 FTE students which translates into a student population of approximately 8,836 enrolled students. There are 432 faculty employed on the Campus and around 809 non-teaching staff. Some students are also employed by the campus in various capacities and this "population" is not physically on the campus at the same time. This campus "population" estimate does not include visitors and people conducting business on campus.

At build-out, the campus will accommodate approximately 12,000 FTE and 15,000 students, 736 faculty and 1,145 staff for a total "population" estimated to be around 16,880 people.

Table 3-11-2
Student Enrollment & Forecasts 2008-2027

YEAR	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
FALL HC	7,858	8,137	8,374	8,836	8,606	8,839	9,175	9,523	9,895	10,281	10,682	11,098
STOCKTON CY FTES	429	455	467	462	459	471	489	508	528	548	570	592
TURLOCK CY FTES	5,826	6,277	6,541	7,042	6,713	6,996	7,202	7,414	7,632	7,856	8,087	8,325
FALL FTE	5,778	6,020	6,314	6,640	6,455	6,629	6,881	7,142	7,421	7,710	8,011	8,324
CY FTE Resident	6,255	6,732	7,008	7,504	7,250	7,468	7,692	7,922	8,160	8,405	8,657	8,917
CSU TARGET Resident	6,462	6,624	6,765	7,090	7,090	7,280	7,560	7,849	8,155	8,472	8,801	9,141
CSU TARGET TOTAL	6,255	6,732	7,085	7,552	7,172	7,366	7,646	7,936	8,246	8,567	8,901	9,248

YEAR (cont.)	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
FALL HC	11,531	11,981	12,304	12,661	13,028	13,406	13,795	14,195	14,606	15,030	15,466	15,914
STOCKTON CY FTES	615	639	656	675	695	715	736	757	779	802	825	849
TURLOCK CY FTES	8,569	8,821	9,087	9,360	9,642	9,932	10,231	10,538	10,855	11,182	11,518	11,864
FALL FTE	8,648	8,985	9,228	9,496	9,771	10,054	10,346	10,646	10,955	11,272	11,599	11,936
CY FTE Resident	9,184	9,460	9,743	10,036	10,337	10,647	10,966	11,295	11,634	11,983	12,343	12,713
CSU TARGET Resident	9,495	9,884	10,154	10,440	10,743	11,012	11,331	11,660	11,998	12,346	12,704	13,072
CSU TARGET TOTAL	9,609	9,984	10,253	10,551	10,857	11,172	11,496	11,829	12,172	12,525	12,888	13,262

Table 3.11.3
Number of Students by County of Permanent Residence - 2004

County	Number of Students	Percentage	Cumulative Percentage
Stanislaus	4,197	53.41%	53.41%
San Joaquin	1,549	19.71%	73.12%
Merced	1,349	17.17%	90.29%
Tuolumne	133	1.69%	91.98%
Calaveras	60	0.76%	92.75%
Sacramento	54	0.69%	93.43%
Los Angeles	43	0.55%	93.98%
Alameda	42	0.53%	94.52%
Contra Costa	38	0.48%	95.00%
Santa Clara	37	0.47%	95.47%
Fresno	30	0.38%	95.85%
Madera	29	0.37%	96.22%
Tulare	29	0.37%	96.59%
Monterey	26	0.33%	96.92%
Placer	21	0.27%	97.19%
Mariposa	17	0.22%	97.40%
Riverside	16	0.20%	97.61%
San Bernardino	16	0.20%	97.81%
Unknown	16	0.20%	98.01%
San Diego	14	0.18%	98.19%
San Mateo	14	0.18%	98.37%
Orange	12	0.15%	98.52%
Solano	11	0.14%	98.66%
Balance of State (1)	95	1.21%	99.87%
Out of State	10	0.13%	100.00%

Note: 23-Counties.
Source: E-mail correspondence from Victor Takahashi, CSU-Stanislaus, consisting of a magnetic data file in Excel format providing a summary of hometown and zip code data for students on campus in 2004.

The California State University System serves the entirety of California and attracts students from other states and countries as well. The student body on the CSU Stanislaus campus is representative of these various characteristics; however the CSU Stanislaus Campus is primarily a "region" serving entity.

The CSU Stanislaus Campus primarily serves six-county area in central California that includes the counties of Calaveras, Sacramento, Merced, San Joaquin, Stanislaus, and Tuolumne. An analysis of parking permit data for 2004 provided by CSU Stanislaus, which included hometown and zip code information of the students. This data is comparable to current resident data.

The student origin data summarized in Table 3.11.3, which shows the percentage of students by county sorted in descending order of the number of students. The last column illustrates the cumulative concentration of students. Approximately 93.43 percent of the students are represented in the six counties.

It is expected that there has been some changes in these overall numbers since 2004 as a result of the growth in the UC Merced Campus to the south and the CSU-Monterey Bay Campus on the Coast. The overall shift in population between these areas is not expected to have been significant and the six-county service area concept is still valid with respect to population growth influences, in the region, on potential student enrollment.

Housing
Housing will increase under the new plan. A major commitment by the University is to retain the goal for on-campus housing of 3,000 beds, or 25% of FTE students as noted in the 1968 Master Plan. To reach this goal multi-story dormitory style housing will be developed to preserve green space. Presently there are 656 beds on campus, leaving a need for an additional 2,344 beds. The University recognizes the importance of student housing and its contribution to promoting student life and fostering community. Additional housing, proposed to be located in the new southeast quadrangle of the campus and across Geer Road, will accommodate the shifting demographics as more students opt for full-time attendance.

Future housing will retain the "neighborhood" qualities of existing student housing. Available future housing typologies should be explored to provide a mix of options. Demand will determine the growth rate for future campus housing.

3.11.2 Environmental Impacts
Adoption and implementation of the Physical Master Plan Update will accommodate the planned growth set forth in the 1968 Master Plan because it expands current educational and service opportunities as well as provides additional student housing.

A. Thresholds of Significance

Appendix "G" of the CEQA Guidelines addresses potential impacts on Population and Housing as follows:

Would the project:

- Induce substantial 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)?
- Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?
- Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?

ASSESSMENT FOR GROWTH INDUCEMENT

DEFINITION OF ISSUE:

Growth inducement is defined as any action that would eliminate or remove an impediment to growth in an area. This includes both physical impediments (lack of sewers, water, etc.) and policy impediments (Guidelines for Orderly Development, General Plan Policies, etc.).

THRESHOLD CRITERIA:

The CEQA Guidelines state that a project may have a significant impact if it would induce substantial growth.

Whether the growth inducing impacts of a project are significant should be decided on a case-by-case basis and depends on:

a) how much added growth would be accommodated by removing the impediment and setting a precedent for similar actions in the future,
b) whether that growth is consistent with the planned land use of an area, and
c) the physical impacts of said growth (secondary impacts).

Generally speaking, growth and development anticipated and accommodated within an adopted General Plan, Specific Plan or other land use planning document will be considered to create a less than significant impact.

ASSESSMENTS FOR HOUSING DISPLACEMENT IMPACTS

DEFINITION OF ISSUE:

This issue addresses the impacts of development on the existing housing supply. Of specific concern is the impact of new development on low and moderate income housing. Loss of low and moderate income housing opportunities, through the process of displacement, can create economic dislocation in a community and create losses in affordable housing opportunities that may result in a violation of the communities adopted General Plan Housing Element.

THRESHOLD CRITERIA:
If the project would result in the loss or displacement of five or more dwellings which are currently, or were recently, rented at or below a Moderate Income Monthly Rental Rate, then the impact is considered significant.

ASSESSMENTS FOR POPULATION DISPLACEMENT IMPACTS
DEFINITION OF ISSUE:
This issue addresses the impacts of development on the existing population. Of specific concern is the impact of new development on low and moderate income individuals, the elderly or populations with special needs.

THRESHOLD CRITERIA:
If the project would result in the loss or displacement of fifty or more people who are considered a special need population by definition of low-moderate income status, age, race or other similar type of special need criterion established by local policy or State law, then the impact is considered significant.

B. Potential Significant Impacts:
Population and Housing Impacts Found Not to be Potentially Significant:
As a result of project analysis, based on data collected in the evaluation of the University's Physical Master Plan Update implementation, the following aspects of a potential population and housing impact are found not to exist or exist at levels well below any reasonable expectation that a significant adverse impact is likely to result:

- *Induce substantial 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)?*
  The Physical Master Plan Update provides for an increase existing residences on the campus to accommodate the 1968 Master Plan goal of 3,000 beds. Currently there is residential capacity for 656 students. The Update proposes residences for 2,344 additional students in accordance with the 1968 Master Plan. The complete implementation of the Master Plan Update will improve the current housing-per-student ratio.

- *Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?*
  The implementation of the Master Plan Update will not necessitate the construction of replacement housing elsewhere. Existing housing will not be displaced.

- *Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?*
  Implementation of the Master Plan Update will not displace people and necessitate construction of replacement housing elsewhere. Build-out of the Master Plan Update provides a greater housing/student ratio than presently exists on the campus.

Population and Housing Impacts Found to be Potentially Significant:
As a result of project analysis, based on data collected in the evaluation of the University's proposed Physical Master Plan Update, there are no potential population and housing impacts that are expected to result in a significant adverse environmental impact due to project implementation:

C. Proposed Physical Master Plan Update Policy Relating to Population and Housing:
The CSU Stanislaus Physical Master Plan Update contains some very specific policy direction with respect to future housing. The Plan states:

> "Housing clusters shall evoke a neighborhood environment, promoting resident kinship. These neighborhoods will incorporate areas of open space, and be placed outside of the campus core and academic clusters. Adjacency to co-curricular activities is determined by the resident type."
>
> "The original Physical Master Plan goal for 3,000 beds should be maintained, but remain flexible to accommodate future needs. This is important as development studies are prepared for the property east of campus across Geer Road. Future housing will retain the "neighborhood" qualities of existing student housing. Available future housing typologies should be explored to provide a mix of options. Demand will determine the growth rate for future campus housing."

The Master Plan lists seven new structures proposed to house students. These structures will accommodate 2,344 beds and includes over 568,000 s.f. in new housing, dining, and related facilities.

D. Short-Term Impacts:
Adoption of the CSU Stanislaus Physical Master Plan update will not have any immediate impact on population and housing other than to affirm existing policy regarding the Master Plan strategy for providing educational facilities adequate to support the Campus capacity of 12,000 FTE as implemented through the adopted CSU Stanislaus CIP-COP.

E. Long-Term Impacts:
Implementation of the Physical Master Plan Update will provide for the long-term growth needs of the University and will provide for increased educational opportunities and housing for students. The number of full-time equivalent students will be doubled under the proposed Physical Master Plan Update. However, housing will be tripled.

F. Cumulative Impacts:
Population growth and the need to house this growing population will have impacts on other environmental factors such as traffic, public services, recreation, public utilities, etc. This Campus related growth, however, has been anticipated since the 1968 Master Plan first established the 12,000 FTE student population standard. These other elements of the overall environmental system in the region can accommodate this Campus

population growth within the regional infrastructure, transportation and related plans that have been developed.

G. Secondary Impacts:

There are no adverse physical secondary impacts expected to result from the Physical Master Plan Update. The influx of new students will increase traffic on area roadways as well as the demand for off-campus housing. However, these impacts are not seen as significant in light of the overall population growth in the City of Turlock.

3.9.3 Mitigation Measures

There are no mitigation measures needed to address potential adverse impacts on Population and Housing that can reasonably be expected to result from the adoption and implementation of the Physical Master Plan Update.

3.9.4 Level of Significance After Mitigation

There are no potential adverse physical impacts on Population and Housing that can reasonably be expected to result from the adoption and implementation of the Physical Master Plan Update.

Section 3.12
Public Services

This environmental issue focuses on the impacts of a project on public service facility needs and the potential environmental impacts of developing and/or expanding these facilities. Facility needs can be defined by the need to maintain acceptable levels of service such as response times, or such other community service standard as may apply.

3.12.1 Environmental Setting

The CSU Stanislaus is a well established State University campus with its own University police force and associated student services. While the plan does not change the planned student population for the campus, the location and distribution of campus resources may have an impact on future service delivery on the campus.

Fire

The Campus is served by fire protection services provided by the City of Turlock Fire Department. The department has three divisions; Operations, Fire Prevention, and Training. The department's Operations Division provides for the supervision and evaluation of assigned emergency personnel and the day-to-day emergency response activities of the department. This includes medical emergencies, fires, hazardous materials spills, public assistance and other emergency calls. The Division also manages various operational programs including emergency vehicle management, emergency equipment management, map development, pre-fire planning and facility operations.

An executive captain commands each individual shift. The captain supervises all on-duty companies, administers daily staffing, and operates as the Incident Commander at emergencies involving multiple engine and truck companies.

The Fire Department operates a total of four fire stations which are staffed by two-person engine companies. The four facilities are located throughout Turlock, Station No. 1, located at Minaret near Hamilton, serves as the central station housing suppression vehicles, fire personnel, and the Department's administrative support staff. Stations No. 2 and 3, located on Monte Vista Avenue/University Way near Radcliffe and Walnut Avenue near Highway 99, respectively, are satellite support stations housing suppression equipment and 24-hour fire personnel. Station No. 4 is located at 2820 N. Walnut Road.

All personnel assigned to Fire Operations are divided into three shifts: A-shift, B-shift, and C-shift. Each shift works a 24-hour period from 8:00 a.m. to 8:00 a.m. Turlock's Fire Department has historically met or exceeded "Level of Service" standards relating to fire protection services established by the National Fire Protection Agency.

Police Protection

The CSU Stanislaus Campus, like other State University Campuses, maintains its own University Police Services. Other police protection resources available, in support of the University Police Department include the California Highway Patrol, the Stanislaus County Sheriff's Department and the City of Turlock Police Department.

The University Police Department employs trained, full-time, sworn police officers, community service officers, and an active support staff for the 24-hour protection of the campus. The peace officers of the department have statewide police authority per Penal Code 830.2 and Education Code 89560, and are vested with law enforcement powers and responsibilities, identical to the local police and sheriff departments in the community. The department is made up of the following sections

- University Police
- Parking Management Bureau
- Environmental Health and Occupational Safety
- Community Service Officers
- Crime Prevention and Emergency Resources
- Communications and Records

University Police personnel are available 7-days a week to escort students, faculty and staff between campus buildings and parking areas after dark. The Department also provides keychain whistles for use as alert devices, personal safety tips to new students, sexual assault prevention and awareness services, safety policies and procedures to new employees every month, and monthly workshops regarding the awareness and prevention of violence in the workplace. When necessary the Department also issues timely warning notices describing recent crime trends or dangerous incidents that represent an immediate threat. Notices are posted around the campus within 24-hours of certain verified trends or incidents. A 24-hour, button activated, telephone system, which includes 35 call stations throughout the campus, is available for emergency needs.

The University Police Department maintains close working relationships with all local, county, State and Federal public safety agencies. Information involving all incidents of suspected criminal activity known to involve off-campus organizations representing the University community is routinely directed to the University Police by allied agencies. Additionally, the University Police and Turlock Police Department share dispatching and mutual officer assistance. The University Police routinely patrol off-campus within 1-mile of the Campus boundaries.

Turlock Police Department

The Turlock Police Department operates from a central public safety building located immediately north of City Hall along Starr Avenue. Operations within this facility include administrative, patrol and detective divisions, records, communications and dispatch, and customer reception. Community Activities operates from a smaller building on a city-owned site across Starr Avenue which also includes a small modular structure used for property recovery storage. This level of police patrol activity is responded to be a four-beat patrol system operating on a 24-hour basis. Average response time to life threatening and major property damage calls (emergencies) is surprisingly good at 4.8 minutes.

The Turlock Police Department offers a number of programs oriented to community education and support of citizen safety and crime prevention, including Drug Abuse

Resistance Education (DARE) and Youth & Law classes taught in the schools by uniformed police officers. Other efforts by the Department to maintain a close working relationship with the city's citizens include Neighborhood Watch and Bicycle Rodeos (Including bike violator diversion). The Police Activities League (PAL) sponsors many activities for citizens, particularly Turlock's youth, including soccer, girls' softball, baseball, and amateur boxing.

Schools

There are three high school districts serving the Turlock Planning Area as identified in the City of Turlock General Plan; Turlock Unified School District, Denair Unified, and Hughson Union High School. Five elementary school districts serve the area; Turlock School District, Denair Union, Keyes Union, Hughson Union Elementary, and Chatom Union. The majority of residents in the Planning Area are served by school districts in Turlock

In addition to the public schools listed above, there are three private elementary schools, two private junior high schools, and one private high school in Turlock.

The Turlock Unified School District provides for the K-12 school needs of the City. The 2004 enrollment in this district was 13,720. The district serves Turlock and outlying unincorporated communities, including Keyes, Chatom and Mountain View. The district operates one primary school, eight elementary schools, one middle school, one junior high school, two high schools, and two alternative high schools.

The Denair school districts operate three schools – elementary (grades K-4), middle (grades 5-8) and a high school (grades 9-12). Only a small part of the Planning Area is within the jurisdiction of the Hughson school districts.

Parks

The issue of the Physical Master Plan Update's impact on parks facilities is addressed in Section 3.13 – *Recreation* below.

3.12.2 Environmental Impacts

Campus growth will have some impact on the surrounding community and the City of Turlock's community service system. Most of the impacts, however, will impact the on-campus service systems and programs. Off-campus impacts will result from students occupying off-campus housing developments and patronizing off-campus retail and service establishments.

On-campus service expansion facility needs are programmed into the Master Plan Update. On-campus services are budgeted on an annual basis as part of the State University System's budget process.

Off-campus service impacts, resulting from housing and the patronizing of local (City) business establishments is addressed through the normal City development mitigation and revenue (tax) programs as any other governmental service facility or system.

A. Thresholds of Significance

Appendix "G" of the CEQA Guidelines addresses potential impacts on Public Services as follows:

- Would the project 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:
  i). Fire protection?
  ii) Police protection?
  iii) Schools?
  iv) Parks?
  v) Other public facilities?

DEFINITION OF ISSUE

Growth and development typically entails the expansion of public services that may involve the development of new or expanded public service facilities. These new or expanded facilities may cause significant adverse impacts on the physical environment as a result of construction. The physical environmental impacts of new or expanded facilities resulting from the need to maintain acceptable public service ratios, response times or other performance objectives is the focus of this topic analysis.

ASSESSMENTS FIRE PROTECTION FACILITIES:

DEFINITION OF ISSUE

The term "fire protection facilities" includes fire stations or "fire house" facilities, training facilities, dispatch centers, communications facilities and other related facilities for the purposes of providing fire protection services. Projects may result in demand for fire protection services that exceed the existing facility capacity or result in the extension of fire protection service areas beyond the acceptable fire response time service standards established by the community. This issue entails the direct impact to fire protection facilities.

THRESHOLD CRITERIA

A project will normally have a significant impact on fire protection facility if it would substantially interfere with the operations of an existing fire protection facility, or would put additional demands on a fire protection facility that is currently over-utilized. The impact will be measured based on existing fire protection facility utilization and capacity compared to the increment of new demand created by the project. A project that would result in the creation of a service response time that exceeds the adopted fire service response time for the community by more than one-minute may result in the determination of the need for a new fire protection facility and/or a determination of a significant impact on the provision of fire protection services in the community.

Where a project would result in the increase of 5% or more in the need for new or

expanded fire protection facilities and where the general plan and zoning maps of the City do not designate adequate areas for expansion of fire protection facilities, the impacts of fire protection facilities expansion may be considered potentially significant and will require further evaluation on a case-by-case basis.

ASSESSMENTS POLICE PROTECTION FACILITIES:

DEFINITION OF ISSUE

The term "police protection facilities" includes police stations, training facilities, dispatch centers, police parking and vehicle maintenance facilities, communications facilities and other related facilities for the purposes of providing police protection services. Projects may result in demand for police protection services that exceed the existing facility capacity or result in the extension of police protection service areas beyond the acceptable police and emergency response service standards established by the community. This issue entails the direct impact to police protection facilities.

THRESHOLD CRITERIA

1. A project will normally have a significant impact on a police protection facility if it would substantially interfere with the operations of an existing police protection facility, or would put additional demands on a police protection facility that is currently over-utilized. The impact will be measured based on existing police protection facility utilization and capacity compared to the increment of new demand created by the project.
2. A project will normally have a significant impact on police protection when the project will result in the officer-per-resident ratio exceeding the standard established by the City Council or result in the determination of need for a new police protection facility.
3. Where a project would result in the increase of 5% or more in the need for new or expanded police protection facilities and where the general plan and zoning maps of the City do not designate adequate areas for expansion of police protection facilities, the impacts of police protection facilities expansion may be considered potentially significant and will require further evaluation on a case-by-case basis

ASSESSMENT OF SCHOOL FACILITIES:

DEFINITION OF ISSUE

The term "school facilities" includes public school classrooms, libraries, cafeterias, administrative facilities, private and public parking areas, bus maintenance and parking facilities and other types of facilities necessary for the operation of a public school. This issue entails the direct impact to, and demand for, public school facilities.

THRESHOLD CRITERIA

A project will normally have a significant impact on public school facilities if it would substantially interfere with the operations of an existing public or private school facility, or would put additional demands on a public school facility that is currently overcrowded. The impact will be measured based on existing public school facility utilization and capacity compared to the increment of new demand created by the project.

Where a project would result in the increase of 5% or more in the need for new or expanded public school facilities and where the general plan and zoning maps of the City do not designate adequate areas for expansion of public school facilities, the impacts of public school facility expansion may be considered potentially significant and will require further evaluation on a case-by-case basis.

ASSESSMENTS OTHER PUBLIC FACILITIES:

PUBLIC LIBRARIES

DEFINITION OF ISSUE

The term "public libraries" includes public library facilities and services. This issue entails the direct impact to, and demand for, public library facilities.

THRESHOLD CRITERIA

A project will normally have a significant impact on public library facilities and services if it would substantially interfere with the operations of an existing public library facility, or would put additional demands on a public library facility that is currently overcrowded. The impact will be measured based on existing public library facility utilization and capacity compared to the increment of new demand created by the project.

Where a project would result in the increase of 5% or more in the need for new or expanded library facilities and where the general plan and zoning maps of the City do not designate adequate areas for expansion of library facilities, the impacts of library facility expansion may be considered potentially significant and will require further evaluation on a case-by-case basis.

PUBLIC OFFICES AND ADMINISTRATIVE FACILITIES

DEFINITION OF ISSUE

The term "public offices and administrative facilities" includes public administrative offices, public meeting rooms and related facilities and services. This issue entails the direct impact to, and demand for, public offices, administrative facilities and services.

THRESHOLD CRITERIA

A project will normally have a significant impact on public offices, administrative facilities and services if it would substantially interfere with the operations of an existing public office or administrative facility, or would put additional demands on a public office and/or administrative facility that is currently overcrowded. The impact will be measured based on existing public office and administrative facility utilization and capacity compared to the increment of new demand created by the project.

Where a project would result in the increase of 5% or more in the need for new or expanded public offices, administrative facilities and where the general plan and zoning maps of the City do not designate adequate areas for expansion of public offices, administrative facilities, the impacts of public offices, administrative facilities expansion may be considered potentially significant and will require further evaluation on a case-by-case basis.

COMMUNITY CULTURAL FACILITIES

DEFINITION OF ISSUE

The term "cultural facilities" includes public community centers, museums, art centers, senior and youth facilities, public meeting rooms and related facilities and services. This issue entails the direct impact to, and demand for, cultural facilities and services.

THRESHOLD CRITERIA

A project will normally have a significant impact on cultural facilities and services if it would substantially interfere with the operations of existing cultural facilities, or would put additional demands on cultural facilities that are currently overcrowded. The impact will be measured based on existing cultural facilities utilization and capacity compared to the increment of new demand created by the project.

Where a project would result in the increase of 5% or more in the need for new or expanded cultural facilities and where the general plan and zoning maps of the City do not designate adequate areas for expansion of cultural facilities, the impacts of cultural facilities expansion may be considered potentially significant and will require further evaluation on a case-by-case basis.

B. Potential Significant Impacts:

Public Service Impacts Found Not to be Potentially Significant:

As a result of project analysis, based on data collected in the evaluation of the CSU Stanislaus Physical Master Plan Update implementation, the following aspects of a potential public services impact are found not to exist or exist at levels well below any reasonable expectation that a significant adverse impact is likely to result:

- *Would the project 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:*

    i). Fire protection?
    ii) Police protection?
    iii) Schools?
    iv) Parks?
    v) Other public facilities?

  Local governments have authority to implement impact mitigation programs on new development to assure that adequate resources are available to meet public facility and service needs resulting from growth. The location, design, and development of these facilities are regulated under current development laws. Where applicable, the location of these facilities are accommodated within the General Plan either by direct reference or by establishment standards for location relative to the maintenance of community service standards.

The CSU Stanislaus Campus assumes primary responsibilities for providing services to its student and employee population with respect to health care, police protection, libraries, recreation, etc. The exception to this rule is the provision of fire protection services. With respect to off-campus impacts, normal municipal revenue systems, including building impact fees, service fees, taxes, etc., apply to students, faculty and employees who either reside in off-campus residences or are served by off-campus businesses.

Public Impacts Found to be Potentially Significant:
As a result of project analysis, based on data collected in the evaluation of the Physical Master Plan Update, no potential public services impacts are likely to result in a significant adverse environmental physical impact due to project implementation.

C. Proposed Physical Master Plan Update Guiding Principles Relating to Public Services:
There are no Master Plan policies that directly relate to public services within the campus development area and surrounding community. As noted, however, the academic programs of the University impacts nearly every local government service provider in the region either through direct participation of local government employees in the CSU Stanislaus academic programs or through the resources of the Campus in support of local governmental operations and efforts.

D. Short-Term Impacts:
Adoption of the CSU Stanislaus Physical Master Plan Update will result in the modification of the CIP-COP, preparation of construction plans, bid documents, finance proposals and requests, none of which will have a physical impact on the campus environment. These actions and activities will not have any adverse impacts on the public services in the area.

E. Long-Term Impacts:
The impacts of Campus growth in student population and employment for the next twenty years have not changed since adoption of the 1968 Master Plan that established the planned FTE student population at 12,000. With the addition of more FTE students over the next twenty years in a manner consistent with the 1968 Master Plan has been previously anticipated. The long term impacts associated with the implementation of the 1968 Master Plan and this Physical Master Plan Update is expected to result in gradual growth in public services and the need to develop public service facilities by local governmental service providers. Overall future campus student population growth, however, is seen as insignificant within the overall context of regional and City growth in Turlock. The overall Campus operation's impact on public services is not seen as being significant and has been anticipated by public agency service providers since 1968.

Public Services
The long-term impact on law enforcement from the implementation of the Physical Master Plan Update would be felt primarily by the University Police Department. It can be assumed that on-campus reporting, arrests and student discipline referrals will increase

commensurately with increased student body population and additional on-campus residents.

Other services, including general government, fire protection, libraries, etc., will experience some increase in service demands that are not otherwise met by on-campus service providers. While there will be some increase in off-campus public service demand related to employees and students of the Campus, these impact will be directly related to off-campus housing and commercial activity that would typically contribute to the City's development impact mitigation program and is otherwise supported by the various tax revenues contributed by all City residents and service consumers, including residents and employees of CSU Stanislaus and service consumers from the Campus.

Schools
This district, and the other districts that provide educational opportunities to students from Turlock and the surrounding area, will be required to expand to meet the demand of increased population growth.

The Physical Master Plan Update maintains the 1968 Campus student population of 12,000 FTE students at build-out of the proposed campus facilities. However, the increased student population will not have a significant impact on the ability of the providers of K-12 education in the city to adequately serve their students. Students enrolled at the University are primarily younger people who are unmarried and not have children who would utilize K-12 school facilities. The number of students attending the University with families would be minimal in relation to the total campus student population. They would have a less than significant impact on the operations of the K-12 school districts serving the city and surrounding area.

Faculty and other Campus employees typically live off-campus in housing normally available on the open market. New housing is required, by law, to participate in school impact mitigation programs and contribute property tax and other revenues for support of their school systems like employees of any other business or institution in the region.

F. Cumulative Impacts:
Growth in the Central Valley, Stanislaus County, the City of Turlock and the Campus will have a long-term cumulative impact on local governmental service providers. Growth in regional population will result in a corresponding need for expansion of infrastructure and other public facilities. As a result of planning and policy implementation, these cumulative impacts are not likely to result in a significant adverse physical impact on the environment.

G. Secondary Impacts:
There are no adverse physical secondary impacts expected to result from the expansion of public services and facilities necessary to support the CSU Stanislaus Physical Master Plan Update as the planned capacity of the existing facility has not changed as a result of this update.

3.12.3 Mitigation Measures

No mitigation is proposed or required as there are no significant adverse impacts likely to result from the adoption and implementation of the CSU Stanislaus Physical Master Plan Update. Existing revenue programs in place to support the expansion of public services necessary to meet future growth impacts resulting from implementation of the CSU Stanislaus Physical Master Plan Update are sufficient to off-set the costs of such Campus student and employment growth. As a requirement of law, however, the Campus must work with the City of Turlock in its program to address Campus impacts on the surrounding community (see Section 1.7. of this PEIR).

3.12.4 Level of Significance After Mitigation

No significant adverse physical impact on Public Services is expected to result from the Physical Master Plan Update's adoption and implementation.

Section 3.13
Recreation

Recreation Discussion: This environmental issue focuses on the impacts of a project on recreation, including existing recreational facilities or the future need for new facilities that could have an impact on the environment.

3.13.1 Environmental Setting

The students, faculty and staff of the CSU Stanislaus Campus enjoy a full range of passive and active recreational space and facilities. The Campus also provides recreational resources that are made available to residents and the area school system for major sports events including field events. This is in addition to the City of Turlock's three community parks, Donnelly, Crane and Pedretti. These parks total 67.1 acres in size. There are 12 Neighborhood parks in the community totaling 116.5 acres.

A generally accepted standard for the instructional portion of a campus provides 250 square feet of land area per FTE enrollment. By that standard, the requirement for land to accommodate a capacity of 12,000 FTE is fewer than 70 acres. With 228 acres of land within its boundaries, the anticipated growth of enrollment and programs can easily be accommodated. Other support uses increase the need for land, e.g. parking, housing and outdoor physical education areas.

Approximately 32-acres of the Campus is dedicated to out-door physical education space including track, ball fields, practice fields, a swimming pool, gyms, dressing rooms, storage space, etc. There are over 177,000 square feet of recreation and recreation service building space presently on Campus that supports recreation education activities, student and employee leisure time recreation needs. This space is also made available to the general community in special circumstances. The Physical Master Plan Update contemplates development of an additional 131,117 square feet of facility space.

The campus is well known for its abundant open areas, and "park-like" setting. There are 8.1-acres of water features on the campus and approximately 148-acres of the total 227.3-acre campus (65% of the total land area) is considered "open" with large trees and grassy areas regularly used for passive recreation. This "open" area will be reduced somewhat with expansion of campus education and support facilities but the total reduction is expected to be approximately 10-acres and the campus will continue to maintain approximately 61% of its total site area as "open" after full build-out of the Physical Master Plan Update in 2027.

3.13.2 Environmental Impacts

Increased population growth can reduce the quality of life in a community if the growth in recreation facilities does not increase at the same rate as population.

A. Thresholds of Significance

Appendix "G" of the CEQA Guidelines addresses potential impacts on Recreation as follows:

- Would the project 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?
- Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?

ASSESSMENTS PARKS AND PARK FACILITIES:

DEFINITION OF ISSUE

The term "public parks and facilities" includes public park land, playfields, playgrounds, ball courts, recreation maintenance facilities and related facilities necessary for the operation and maintenance of park and recreation facilities in the community. This issue entails the direct impact to, and demand for, public recreation facilities.

THRESHOLD CRITERIA

A project will normally have a significant impact on public recreation facilities and services if it would substantially interfere with the operations of an existing public recreation facility, or would put additional demands on a public recreation facility that is currently overcrowded or serving a population in excess of established recreation facility standards. The impact will be measured based on existing public recreation facility utilization and capacity compared to the increment of new demand created by the project.

Where a project would result in the increase of 5% or more in the need for new or expanded recreation facilities and where the general plan and zoning maps of the City do not designate adequate areas for expansion of park land and recreation facilities, the impacts of park and recreation facility expansion may be considered potentially significant and will require further evaluation on a case-by-case basis.

THRESHOLD CRITERIA

A project will have a significant impact on recreation if it would cause an increase in the demand for recreation when measured against the following City of Turlock standards. Such standards are to be used as a method of measuring whether an impact will be "significant" to the point of requiring an Environmental Impact Report.

Neighborhood Parks	2.1-acres per 1,000 residents
Community Parks	2.1-acres per 1000 residents
Total	4.2-acres per 1000 residents

A project will have a significant impact on recreation if it would impede future development of Recreation Parks/Facilities and/or Regional Trails/Corridors designated on an adopted recreation trail or similar plan.

B. Potential Significant Impacts:

Recreation Impacts Found Not to be Potentially Significant:

As a result of project analysis, based on data collected in the evaluation of the University's Master Plan Update's implementation, the following aspects of a potential recreation impact are found not to exist or exist at levels well below any reasonable expectation that a significant adverse impact is likely to result:

- *Would the project 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?*

  The CSU Stanislaus Campus has 7,042 FTE students which translates into a student population of approximately 8,836 enrolled students. There are 432 faculty employed on the Campus and around 809 non-teaching staff. That totals to around 10,077 people on campus. Note that this figure overstates the population of the campus due to the fact that some students are also employed by the campus in various capacities and this "population" is not physically on the campus at the same time. This campus "population" estimate does not include visitors and people conducting business on campus.

  Using the 10,077 "population" figure, however, the campus would require approximately 42-acres of recreation space or approximately 28% of the "open" space presently available on-campus. This does not include the improved facilities, the 32-acres formal outdoor recreation space, the improved facility space or the space that is provided by the City of Turlock for students, faculty and staff where they reside off-campus. In general, the future expansion of the campus will reduce some of this "open" passive recreation park area but will increase on-campus facilities.

  With implementation of the CSU Stanislaus Physical Master Plan Update, overall recreation resources for the Campus, and the surrounding community of Turlock, can be expected to increase and there is not likely to be an increase of existing neighborhood or regional parks, or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated.

- *Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?*

  With implementation of the CSU Stanislaus Physical Master Plan Update, new and expanded recreational facilities are proposed on Campus and are discussed and documented in this PEIR. As noted above, overall growth in the City and region, coupled with some off-campus student/employee/faculty population growth, it is expected that the City of Turlock will undertake planned expansion of its recreation resources. It is expected that this planned expansion will occur in a manner that is consistent with all the environmental standards of the City and conform to the requirements of CEQA with respect to mitigating any significant adverse physical effect on the environment.

Recreation Impacts Found to be Potentially Significant:
As a result of project analysis, based on data collected in the evaluation of the Campus's proposed Master Plan Update, recreation impacts are not likely result in a significant adverse environmental impact as a result of CSU Stanislaus Physical Master Plan Update adoption and/or implementation.

C. Proposed Physical Master Plan Update Goals & Policies:
The CSU Stanislaus Physical Master Plan Update does not directly contain policies and programs that aim to preserve existing recreation resources of the Campus or within the surrounding community of Turlock. The Master Plan does contain some language that at addresses, indirectly the issue of "community impacts" and the Plan itself provides for the expansion of recreation resources in the form of new facilities. The Master Plan states:

> ***"Positive Presence in Community***
> *The University shall continue to foster a positive physical and intellectual relationship within the community. Community members will be welcomed on campus. The campus boundaries will be clearly defined, creating a distinct edge to identify the campus within the surrounding community. Future land acquisitions will be accomplished with community support."*

New recreation facilities include a 9,117 sf. expansion of the Physical Education Facility, an 85,000 sf. Physical Education/Wellness Facility, development of three buildings in support of the Baseball Field Facility (total of 15,000 sf.), a 12,000 sf. Fitness Center, currently under construction, in addition and 10,000 sf. (3 buildings) addition to the Softball Field Facilities.

Other Regulations:
As a requirement of law, the Campus must work with the City of Turlock in its program to address Campus impacts on the surrounding community (see Section 1.7. of this PEIR). Aside from the CSU Stanislaus program for developing recreational space and facilities, the City of Turlock's General Plan contains policies, programs and implementation strategies for the development of recreation resources that reflect a growing City population. The City has established a standard of parkland acreage per 1,000 residents along with standards for improved park resources. The City has established a development mitigation system that is applied to new development in the City. This mitigation system applies to all residential development including such off-campus development proposed to house, serve or employ University students and staff.

D. Short-Term Impacts:
Adoption of the CSU Stanislaus Physical Master Plan Update will result in the modification of the campus CIP-COP, preparation of construction plans, bid documents, finance proposals and requests, none of which will have a physical impact on the campus environment. These actions and activities will not have any adverse impacts on the recreation resources on campus or in the area.

E. Long-Term Impacts:
Growth and development of the CSU Stanislaus Campus, within the urban area of the City of Turlock, will not result in an increase on the need for recreation resources including land, facilities and recreation program support.

F. Cumulative Impacts:
Growth in recreation facilities, along with other segments of the public service sector on the Campus, within the City of Turlock and the overall region, will result in the need for other related governmental support services such as administrative offices, increased public protection services and maintenance services. Some of these increased service needs may result in a need for additional facilities. The planning, development and construction of any new facilities will be subject to specific environmental evaluation and significant impact will be reduced to a level deemed less than significant as a matter of public policy and law. As a result, the impact of developing new public facilities for expanded services is not likely to result in a significant adverse physical impact on the environment.

G. Secondary Impacts:
There are no secondary impacts expected to result from the development of on-campus and off-campus recreation resources to serve the expanded Campus population.

3. 13.3 Mitigation Measures

No mitigation is proposed or required as there are no significant adverse impacts likely to result from the adoption and implementation of the CSU Stanislaus Physical Master Plan Update. Development that is proposed within the Campus includes the provision of recreation resources on campus and off-campus impacts are expected to be addressed through the mitigation systems established on off-campus residential development which would generate impacts on the City's recreation resources.

3. 13.4 Level of Significance After Mitigation

Construction and operational activities that are undertaken in a manner that are consistent with the CSU Stanislaus Physical Master Plan Update, and comply with all applicable CEQA standards for environmental compliance, will not result in the creation of a significance adverse physical impact on Recreation Resources within the University campus and the surrounding region.

Section 3.14
Transportation and Traffic

Transportation/Circulation Discussion: This environmental issue focuses on the impacts of the updated CSU Stanislaus Master Plan Update on transportation systems including roads and highways, public transportation systems, pedestrian circulation and access, parking, and emergency access. Impacts can be in the form of new hazardous circulation or traffic conditions, conflict with existing plans or policies or creation of an unacceptable traffic level on a transportation system or facility.

3.14.1 Environmental Setting

Traffic and circulation patterns on and around the campus have been studied over the years as growth and development has occurred in the area around the Campus. The primary mode of travel for students, faculty and staff at CSU Stanislaus is by automobile. Truck transportation used for the movement of goods to and from the campus plays a role as well, but in this analysis is treated as a subset of autos. Local and regional public transit also plays a role as discussed later. Aviation and rail services are also examined. This analysis focuses on operating conditions within the vicinity of the CSU Stanislaus campus under the following scenarios:

- Existing Conditions
- Short Term No MP Growth Conditions
- Short Term Plus 10 Year MP Growth Conditions
- Year 2027 No MP Growth Conditions
- Year 2027 Plus 20 Year MP Growth Conditions

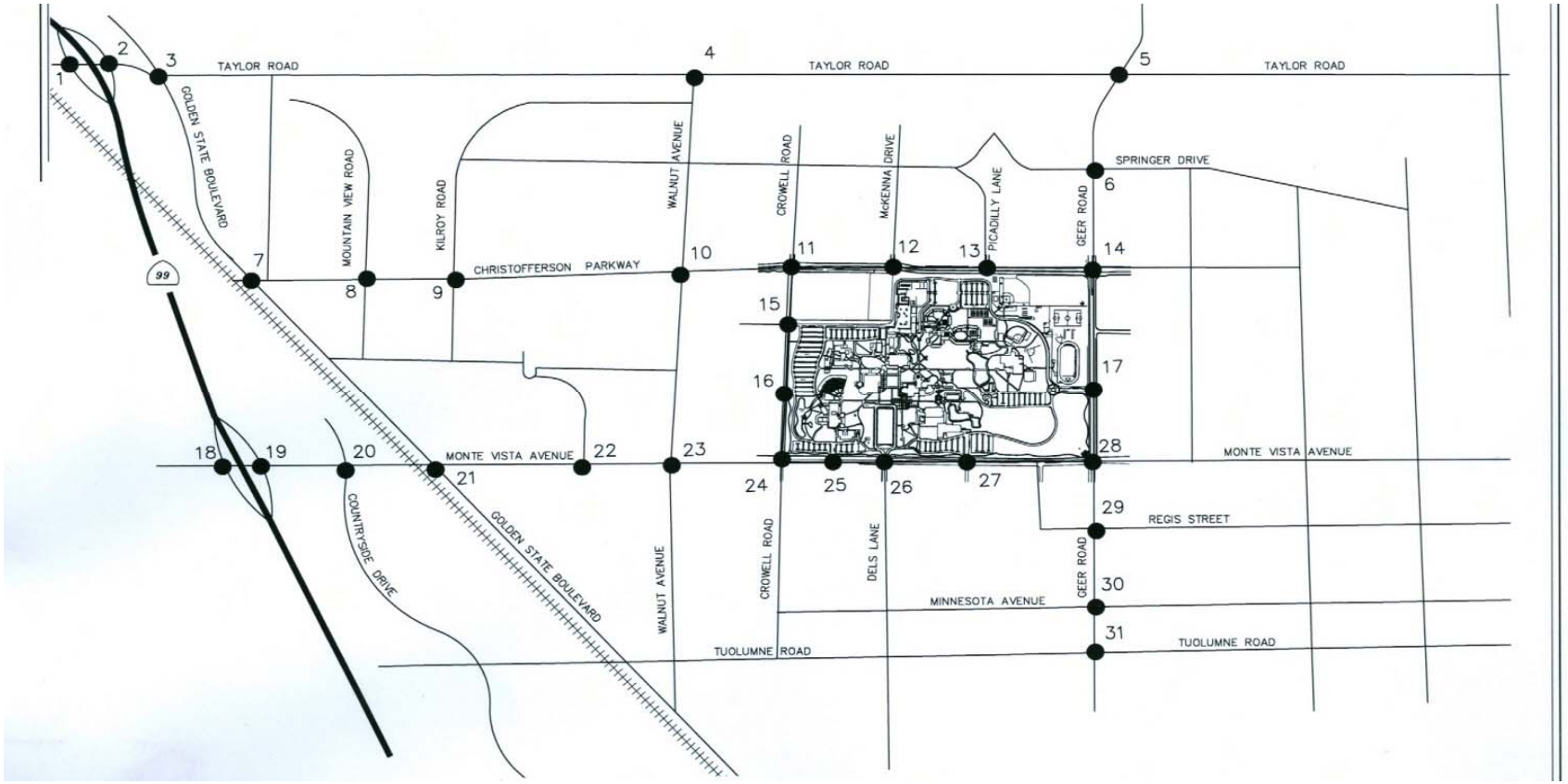
What makes this information and analysis different from most traffic studies is that the CSU Stanislaus campus is already an existing entity generating large volumes of traffic on a daily basis. Recent traffic studies, including an update to the Transportation Element of the City of Turlock's General Plan, incorporates some representation of existing CSU Stanislaus traffic. Since CSU Stanislaus is an established land use, transportation impacts associated with the revised Master Plan are based on the increment of new transportation demand which is determined by comparing the existing CSU Stanislaus demand for transportation with its short- and longer-term future demand for transportation, both with and without Master Plan Update growth assumptions, and evaluating the difference.

Existing Streets and Roads

Roadways that provide primary circulation in the vicinity of the CSU Stanislaus campus are identified on Figure 3.14.1. Those roadways that are of specific interest for this analysis are described in the following paragraphs.

The following roadways provide primary circulation within the City of Turlock and in the vicinity of the proposed project.

Figure 3.14.1
CSU Stanislaus Physical Master Plan Update
Project Site Location & Vicinity Map



- ***State Route 99*** is a major north-south State freeway that spans the majority of California's Central Valley. SR 99 serves as the principal interregional auto and truck route, connecting the Central Valley cities of Stockton, Modesto, Merced and Fresno to the Sacramento area to the north and the Cities of Fresno, Visalia and Bakersfield to the south. The freeway provides the primary connection between the cities of Modesto and Turlock within Stanislaus County and serves as a major north-south route within the City. SR 99 has six lanes with posted speed limits of 65 mph within the Turlock City Limits. The freeway forms a full-access interchange with Monte Vista Avenue/University Way about 2 miles west of the campus.

- ***Taylor Road*** is a two-lane east-west local roadway in Stanislaus County just beyond the City's northern urban growth boundary. Taylor Road's westernmost terminus is at Moorehead Road, over 10 miles west of the city limits. Taylor Road continues east where it begins a long continuous segment through the City beginning at Washington Road. Taylor Road provides a full interchange with SR 99, continues east with residential development and an irrigation canal to the south, farmland to the north, and terminates at Quincy Road. Taylor Road resumes discontinuously east of Santa Fe Avenue, between Sperry Road and Gratton Road, and from Merriam Road to its easternmost terminus at Hall Road over 5 miles east of the city limits.

- ***Christofferson Parkway*** is a four-lane east-west expressway that extends from Golden State Boulevard to Berkeley Avenue, a little over 600 yards east of the city limits. This roadway becomes Zeering Road from Berkeley Avenue through the City of Denair. This roadway provides access to residential areas and represents the northern boundary of the CSU Stanislaus campus.

- ***Monte Vista Avenue/University Way / University Way*** is a four-lane east-west arterial within the City of Turlock that provides access to major commercial areas near SR 99 and represents the southern boundary of the CSU Stanislaus campus. Adjacent to the campus, this roadway is named University Way but is referred to throughout this report as Monte Vista Avenue/University Way. Monte Vista Avenue/University Way has three campus access points, including the main entrance, Monte Vista Avenue/University Way's westernmost terminus is at Jennings Road, about 9 miles west of the City Limits, and runs discontinuously east from there until Faith Home Road. Monte Vista Avenue/University Way resumes continuously from Tegner Road to its easternmost terminus about 14 miles east of the city limits.

- ***Golden State Boulevard*** is a four- to six-lane divided arterial that runs parallel to SR 99 and the Union Pacific Railroad. Golden State Boulevard represents a major arterial route within the City and connects to SR 99 at both ends. Golden State Boulevard was the original alignment for US Highway 99 prior to the construction of the SR- 99 freeway bypass in the 1970s.

- ***Walnut Road*** is a north-south collector that runs from Bradbury Road, about 2 miles south of the City Limits, to East Service Road, about 3 miles north of the city limits. Walnut Road is discontinuous between the southern segment's northernmost abutment at Canal Drive and the northern segment's southernmost abutment at Golden State Boulevard. The southern segment is a two-lane facility providing access to commercial areas near the SR 99 / Main Street interchange and industrial areas between Main Street and West Linwood Avenue. The northern segment is a two-lane facility south of Monte Vista Avenue/University Way and north of Taylor Road. Between Monte Vista and Christofferson Parkway, Walnut Road is a four-lane arterial with a two-way left turn lane. Between Christofferson Parkway and Taylor Road, Walnut Road has recently been widened to four-lane divided arterial standards to serve new residential development.

- ***Crowell Road*** is a two-lane north-south collector running from Tuolumne Road to Taylor Road. Crowell Road also delineates the western boundary of the CSU Stanislaus campus, and provides two access points to and from the campus.

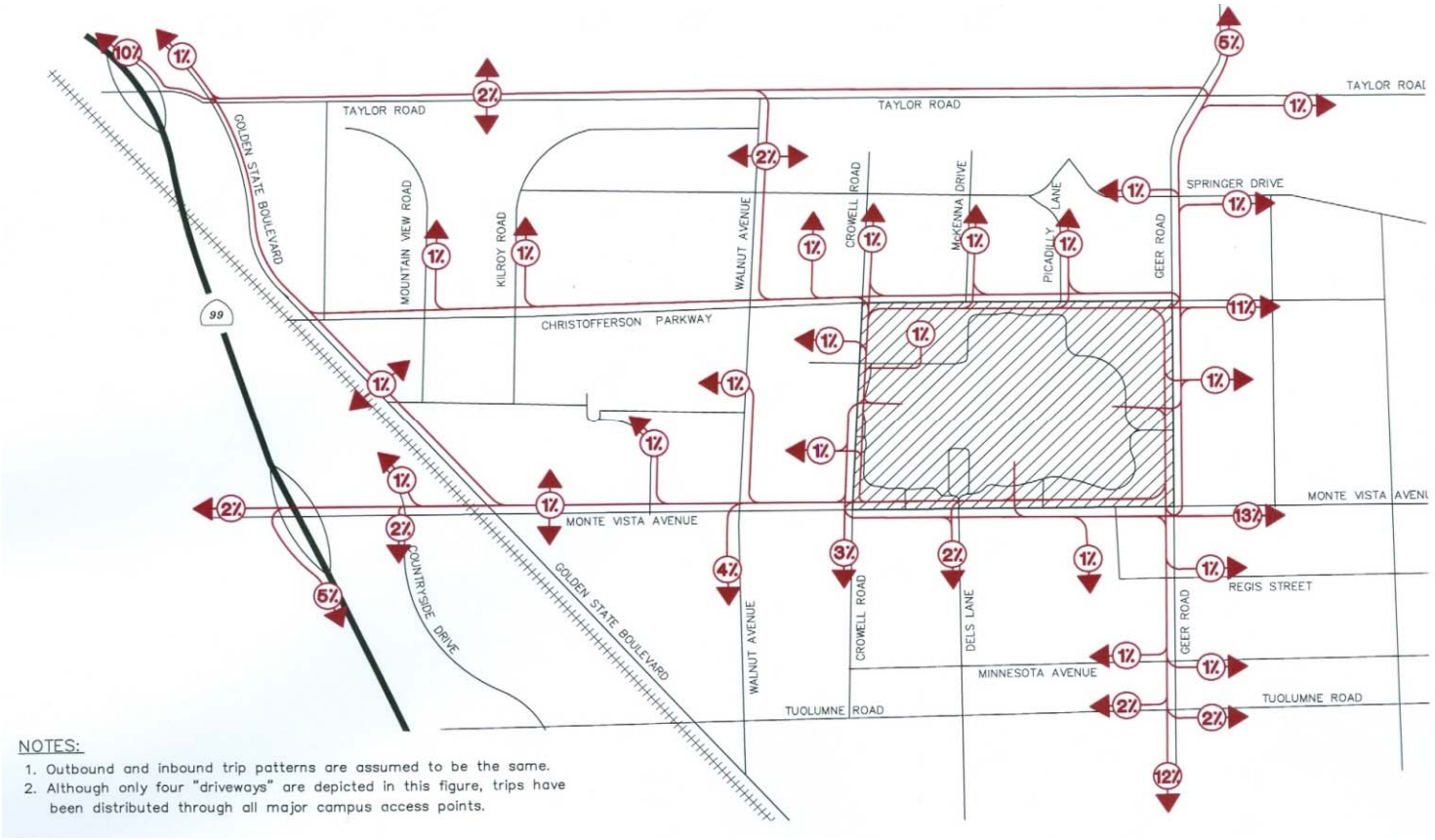
- ***Geer Road*** is a four-lane arterial that provides north-south circulation through the City of Turlock. Geer Road's southernmost terminus is at Golden State Boulevard. Geer Road extends to the northern City Limits and then tapers down to a two-lane facility reaching almost 7 miles north of the city limits to abut at Yosemite Boulevard.

- ***Dels Lane*** is a two-lane north-south collector road serving residential neighborhoods south of the CSU Stanislaus campus. Dels Lane intersects Monte Vista Avenue/University Way opposite the University Circle entrance to the campus.

Within the CSU Stanislaus campus ***University Circle***, ***Ansel Adams Boulevard***, ***Mariposa Drive***, and ***Merced Way*** provide perimeter circulation between existing parking lots. These on-campus roadways provide one lane in each direction. University Circle and Ansel Adams also serve as entrance points to the campus, with University Circle being the Main Entrance. University Circle is located opposite Dels Lane. The University Circle entrance provides access to parking lots on the east side of the campus but the configuration requires drivers to go around the circle in order to reach parking lots on the western side of the campus. As noted above, Ansel Adams Boulevard is the primary access point for the western side of the campus.

There are also a number of other entrance roadways that include ***Calaveras Way***, ***Andre Lane***, and ***Theater Drive***. Both Andre Lane and Theater Drive provide access to the campus from Monte Vista Avenue/University Way and each have a 4-lane cross section, but operate as 2-lane streets. Although Andre Lane extends both north and south from Monte Vista Avenue/University Way there is no cut in the Monte Vista Avenue/University Way median at Andre Lane so access to the campus at this point is only from the east and egress only to the west.

Figure 3.14.2
CSU Stanislaus Campus Master Plan
Project Trip Distribution



Access and egress at Theater Drive is restricted by a median. Many drivers appear to use Dels Lane to exit the campus and travel east on Monte Vista Avenue/University Way because the intersection is signal controlled. Calaveras Way is the only entrance point on the east side of the campus.

Project Trip Distribution

The directional trip distribution of project-generated trips was based on the *City of Turlock* travel demand model and supplemented by knowledge of the existing traffic flow patterns, as provided by parking lot survey data. While the travel demand model is instrumental in determining regional and local trip ends, the parking lot survey data refines the model outputs in that it provides a more specific look at how trips are distributed, and paths are assigned amongst the various campus driveways. The trip distribution patterns are presented in Figure 3.14.2.

Existing Intersections & Traffic Volumes

Intersections that are of interest in this evaluation are identified by number on Figure 3.14.1 and listed below. Figure 3.14.1 also provides an indication of the current lane geometrics and traffic controls at these intersections.

Intersection traffic counts were obtained by OMNI-MEANS between April 24th and 26th, 2007 during the AM and PM peak-hour periods. The AM peak-hour is defined as the one-hour of peak traffic flow (which is the highest total volume count over four consecutive 15-minute count periods) counted between 7:00 AM and 9:00 AM on a typical weekday. The PM peak-hour is defined as the one-hour of peak traffic flow counted between 4:00 PM and 6:00 PM on a typical weekday. The traffic report analyzed the following critical study intersections:

1. Taylor Road / SB SR 99 ramps
2. Taylor Road / NB SR 99 ramps
3. Taylor Road / Golden States Boulevard
4. Taylor Road / Walnut Avenue
5. Taylor Road / Geer Road
6. Springer Drive / Geer Road
7. Christofferson Parkway / Golden State Highway
8. Christofferson Parkway / Mountain View Road
9. Christofferson Parkway / Kilroy Avenue
10. Christofferson Parkway / Walnut Avenue
11. Christofferson Parkway / Crowell Road
12. Christofferson Parkway / McKenna Drive
13. Christofferson Parkway / Picadilly Lane
14. Christofferson Parkway / Geer Road
15. Ansel Adams Boulevard / Crowell Road
16. Mariposa Drive / Crowell Road
17. Calaveras Way / Geer Road
18. Monte Vista Avenue/University Way / SB SR 99 ramps
19. Monte Vista Avenue/University Way / NB SR 99 ramps

20. Monte Vista Avenue/University Way / Countryside Drive
21. Monte Vista Avenue/University Way / Golden State Boulevard
22. Monte Vista Avenue/University Way / Four Season Drive
23. Monte Vista Avenue/University Way / Walnut Avenue
24. Monte Vista Avenue/University Way / Crowell Road
25. Monte Vista Avenue/University Way / Theater Drive (right-turn only in future)
26. Monte Vista Avenue/University Way / Dels Lane
27. Monte Vista Avenue/University Way / Andre Lane
28. Monte Vista Avenue/University Way / Geer Road
29. Regis Street / Geer Road
30. Minnesota Avenue / Geer Road
31. Tuolumne Road / Geer Road

Traffic Volumes and Levels of Service

Level of service (LOS) is a qualitative measure of traffic service along a roadway or at an intersection. Level of service values range from "A" to "F", with LOS "A" being best and LOS "F" being worst. Table 3.14.1 describes level of service criteria for roadways and intersections. LOS A, B and C indicate conditions where traffic can move relatively freely. LOS D describes conditions where delay is more noticeable and average travel speeds are as low as 40 percent of the free flow speed. LOS E indicates significant delays and average travel speeds of one-third the free flow speed or lower; traffic volumes are generally at or close to capacity. Finally, LOS F characterizes arterial flow at very slow speeds (stop-and-go), and large delays (more than one minute) with queuing at signalized intersections; in effect, traffic demand on the roadway exceeds the roadway's capacity.

The City of Turlock's General Plan Transportation Element contains a number of policies that set level of service standards for City roadways. The City strives to maintain LOS "C" on all freeways and expressways. Consistent with Caltrans and City of Turlock policies, LOS "D" has been taken as the general threshold for acceptable operations at study intersections maintained by the City of Turlock. However, under *Year 2027 No MP Growth Conditions* and *Year 2027 Plus 20 Year MP Growth Conditions*, consistent with the policies set forth in the *City of Turlock General Plan 1992-2012*, LOS "D", "E", and "F" where applicable will be taken as the acceptable LOS thresholds for those locations identified in the *City of Turlock General Plan 1992-2012* "Transportation Element."

Table 3.14.1
Level of Service Criteria for Intersections

Level of Service	Type of Flow	Delay	Maneuverability	Stopped Delay/Vehicle (in Seconds)		
				Signalized	Unsignalized	All Way Stop
A	Free Flow	Very slight delay. Progression is very favorable, with most vehicles arriving during the green phase not stopping at all.	Turning movements are easily made, and nearly all drivers find freedom of operation.	< 10.0	10.0	< 10.0
C	Stable Flow	Higher delays resulting from fair progression and/or longer cycle lengths. Individual cycle failures may begin to appear at this level. The number of vehicles stopping is significant, although many still pass through the intersection without stopping.	Back-ups may develop behind turning vehicles. Most drivers feel somewhat restricted	> 20 and < 35.0	> 15 and < 25.0	> 15 and < 25.0
D	Approaching Unstable Flow	The influence of congestion becomes more noticeable. Longer delays may result from some combination of unfavorable progression, long cycle lengths, or high volume-to-capacity ratios. Many vehicles stop, and the proportion of vehicles not stopping declines. Individual cycle failures are noticeable.	Maneuverability is severely limited during short periods due to temporary back-ups.	> 35 and <55.0	> 25 and <35.0	> 25 and < 35.0
E	Unstable Flow	Generally considered to be the limit of acceptable delay. Indicative of poor progression, long cycle lengths, and high volume-to-capacity ratios. Individual cycle failures are frequent occurrences.	There are typically long queues of vehicles waiting upstream of the intersection.	55 and <80.0	> 35 and <50.0	> 35 and < 50.0
F	Forced Flow	Generally considered to be unacceptable to most drivers. Often occurs with over-saturation. May also occur at high volume-to-capacity ratios. There are many individual cycle failures. Poor progression and long cycle lengths may also be major contributing factors.	Jammed conditions. Back-ups from other locations restrict or prevent movement. Volumes may vary widely, depending principally on the downstream back-up conditions.	> 80.0	> 50.0	> 50.0

Source: *Highway Capacity Manual, Special Report No. 209,* Transportation Research Board, Third Edition, Updated December 1997.

Parking

The campus parking facilities are provided within 13 surface parking lots located about the campus, but heavily oriented to the westerly side of the campus where the majority of the classroom and administrative facilities are located. A parked vehicle on the CSU Stanislaus campus requires a valid CSU Stanislaus parking permit. However, the purchase of a standard parking permit does not guarantee a parking space on campus. Various types of permits are available including daily, semester, annual, and reserved. The daily permits are available from dispensers on the campus.

The campus contains a total of 2667 parking spaces of all types, from dedicated spaces for campus police, visitors, and motorcycle users, to faculty/staff and student/general designated lots.

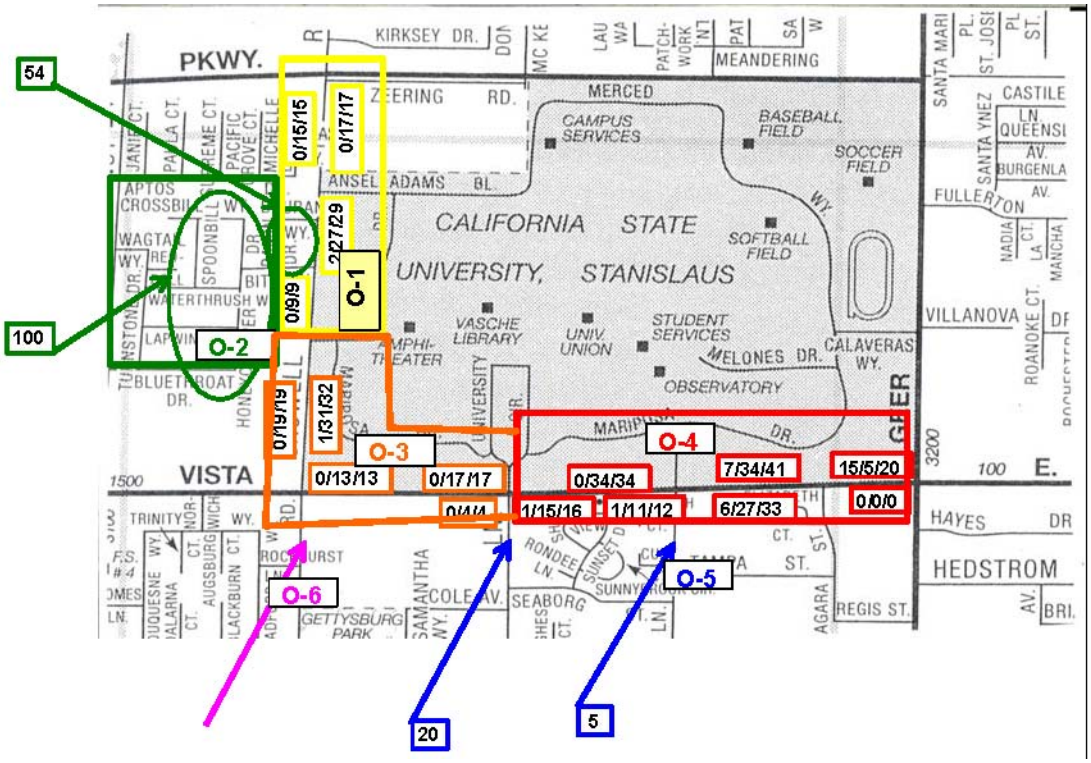
Facilities which are dedicated for principally faculty and staff use contain a total of 382 spaces, State vehicle restricted spaces total four, 19 are signed for service and visitor and the balance of 2644 are available to students and the general public. These spaces are open to faculty and staff parking as well, and as such it is nearly impossible to ascertain the parking component represented by students and/or faculty and staff within these spaces.

The annual permits are available for faculty and staff, who along with physically disabled persons can obtain a "reserved" permit, which for an additional fee guarantees a parking space on campus. In addition to displaying the physical disabled placard, issued by the California State Department of Motor Vehicles persons utilizing such placards must purchase and display a valid CSU Stanislaus parking permit. Semester permits offer parking privileges for a more limited time period and are available for faculty, staff, and students. Special permits are available for motorcycles to allow parking in areas set aside for such vehicles. The parking permits are portable for persons who drive more than one vehicle throughout the year or semester.

The parking fee schedule is established by the campus parking program of the California State University Stanislaus. The parking rules are enforced and fines can be assessed. Fines can go much higher if lost or stolen decals are being used to circumvent the parking rules.

As noted in the discussion of streets and roads above, on-street parking with no time limits is allowed along both sides of Crowell Road, Monte Vista Avenue/University Way and Geer Road, but no parking is allowed along Christofferson Parkway. Based on a few sample counts, it was estimated that between 180 and 200 spaces are available along the campus side of these three roadways. A similar range of parking spaces is available on the opposite side of each street. These on-street parking spaces are shared with adjacent commercial or residential development and without further detailed analysis it is not possible to determine the use of these spaces by commuting students.

Figure 3.14.3
Off Campus Paring



Parking lots and on-street spaces on the western side of the campus are generally filled early in the day causing late arrivals to roam through the lots to find a space. From a student's perspective, the "right" space may be a shady spot to sleep, study, or do homework during open periods between classes, or just to provide the shortest walk at the beginning or end of the day. During peak campus hours (about 10:00 AM to 2:00 PM) significant roaming was observed in the crowded west-side parking lots while plenty of parking spaces were available on the east side of the campus.

On-Street and Neighborhood Parking

There is significant parking activity occurring on all streets surrounding the campus, with the exception of Christopherson Parkway, and into the neighborhoods both west and south of the campus.

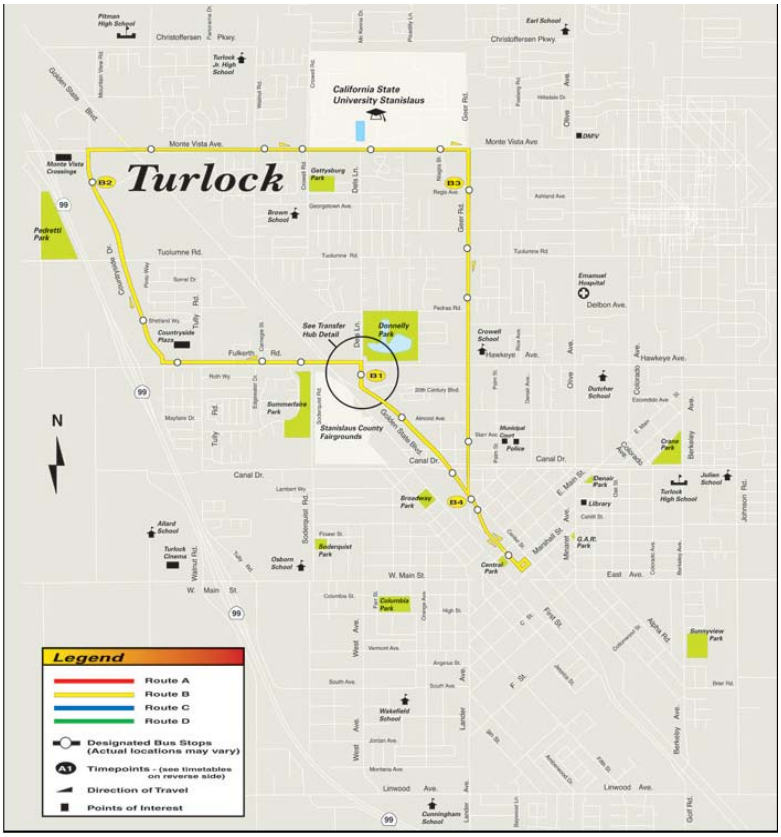
The on-street parking along Monte Vista Avenue/University Way and Crowell Road tended to fill early, a clear indication that when given the choice between adjacent campus fee parking and the nearly as close to the campus facilities free curb parking the curb parking was being selected in large numbers by early arrivals.

Public Transportation

The city of Turlock is served by three (3) public transit carriers; "BLAST" operated by the City of Turlock, "THEBUS" operated by a Merced County Joint Powers Authority, and the "StaRT" operated by Stanislaus County. While all three provide mobility to Turlock only one, "BLAST" has a route which serves the campus. With incentives, high fuel prices, and perhaps more costly campus parking an increase in transit ridership will likely become the trend in the future.

The fixed route system, identified as Bus Line Service of Turlock (BLAST), includes four routes identified as "A", "B", "C" and "D". Each route is scheduled to meet together at Turlock's Central Park every 40 minutes. The "B" route provides service to the CSU Stanislaus campus with a stop at Christofferson Parkway and Geer Road. During the normal weekday, service at this stop begins at about 6:15 AM and ends about 5:45 PM. The same frequency of service is available on Saturdays over a more limited time period beginning at about 9:00 AM and ending at about 4:00 PM.

Figure 3.14.4
City of Turlock
Blast Route "B"



Dial-A-Ride Turlock (DART) also operated by Turlock Transit Lines provides curb to curb service to senior and disabled passengers in the greater Turlock and Denair areas.

Also eligible for DART service are elementary students going to or from school and passengers who need a ride to or from an area outside the BLAST bus service area. All DART busses are wheelchair accessible.

The Transit Division of the Stanislaus County Public Works Department is responsible for operating the Stanislaus Regional Transit, referred to as "StaRT". The StaRT system serves the CSU Stanislaus campus along Monte Vista Avenue/University Way through three fixed routes: Route 45 – Westside Runabout which serves Patterson, Crows Landing and Gustine; Route 15 – Modesto/Turlock which serves Keyes, Ceres, and Modesto; and Route 10 Express - Modesto/Turlock links the StaRT Downtown Transportation Center in Modesto to Turlock along State Highway 99. Through the StaRT Downtown Transportation Center in Modesto other routes serve Oakdale, Riverbank, and Grayson. The CSU Stanislaus bus stop is located at Dels Lane and Monte Vista. StaRT also operates a Turlock/Modesto Runabout service (dial a ride) serving the State Highway 99 corridor from the Stanislaus County line north to Vintage Faire Mall near Standiford Avenue. All buses have space for up to four wheelchairs and are equipped with bike racks.

Merced County Transit operates a service known as “The Bus”. The North County Shuttle (Route 6) links the communities of Hilmar and Livingston in Merced County to a bus stop at the Country Side Plaza on Fulkerth Road in the City of Turlock. Front-mounted bike racks on all regularly scheduled buses and bicycle lockers available for rent at major locations in Merced, Atwater, and Los Banos provide a way to extend the service to the CSU Stanislaus campus. The first bus is scheduled to arrive at the shopping center by 7:30 AM and the last bus departs at about 5:00 PM.

Amtrak, in conjunction with the State of California, operates the San Joaquin Valley’s rail service multiple times daily between San Francisco (via Thruway Motorcoach first to either Emeryville or Stockton) and Bakersfield, or Sacramento and Bakersfield. The nearest rail stop to the CSUS campus is in Denair, about 6 miles to the east. The station is located at the corner of Santa Fe Avenue and Elm Street in Denair. There are at least seven trains per day in each direction. “Student Advantage” fares are available. Travel time to Merced is about 30 minutes and to Stockton about 50 minutes.

Pedestrian and Bicycle Transportation

Bicycling and walking continue to grow in popularity due to their health benefits and recreational value. These transportation modes are particularly emphasized on the CSU Stanislaus campus and, as noted in the preceding discussion, are supported through public transit services. For some students, these sources are their only mode of transportation. The City’s General Plan identifies Class I, II and III bikeways. The perimeter of the CSU Stanislaus campus along Monte Vista Avenue/University Way, which consists of a very broad sidewalk, is considered an existing Class I bikeway. Students are not restricted to bicycles or walking and many also use skate boards.

Air Services

There is no scheduled air services available at the Turlock Municipal Airport located about 9 miles east of the City in Merced County. None are planned for the foreseeable future. Air taxi service could be available at the Airport, if prearranged. Air passengers would need to travel to Stockton, Modesto, or Merced to obtain scheduled services.

CSU Stanislaus Traffic Generation

The general methodology used to define transportation impacts of the CSU Stanislaus campus begins with a forecast of the campus population, and proceeds through an assessment of trip generation, trip distribution, and finally trip assignment. The traffic model, used for determining impact of campus generated traffic utilized these parameters in determining necessary regional circulation system improvements and the percentage of the campus traffic, which has contributed to the need for improvements to the regional circulation system.

TABLE 3.14.2
CSU Stanislaus Daily
Trip Generation [1]

Land Use Category	**Rate Unit**	**Daily Trip Rate[2]**
University Campus	per student	2.25
Land Use Description	**Quantity**	**Week Daily Trips (avg.)**
CSU Stanislaus	7,042 FTE	15,803
	2017	**Projected Daily**
Land Use Description	**Quantity**	**Trips (avg.)**
CSU Stanislaus	8,821 FTE	19,847
Trips Added at 2017 Campus Update Conditions		***4,044***
Land Use Description	**2027 Quantity**	**Projected Daily Trips (avg.)**
CSU Stanislaus	11,864 FTE	26,694
Trips Added at 2027 Campus Update Conditions		***10,891***

1. Trip Generation Rates calculated using average of the total trips from actual 24-hour counts conducted at the six CSU Stanislaus campus access point intersections between Monday and Friday.
2. Based on FTE.
3. Campus Trip Generation w/o correction for expanded on-campus housing.

Table 3.14.2 is the basis for determining trip generation based on student population. Overall, the trip rate of 2.25 trips per student is the basis of calculating traffic volumes. It should be noted that this figure is conservative, with respect to future trip generation figures, in that it over states the likely number of trips. As a result of increased on-campus housing opportunities, it is expected that future trip generation will be substantially reduced. At present, however, there is no information available to calculate the impact of increased on-campus housing opportunities on overall campus trip generation.

Campus Traffic Volume Pro-Rata Share:
As part of the CSU Stanislaus Physical Master Plan Update EIR Traffic Impact Analysis Report, an addendum was prepared to estimate pro rata share contributions (fair share contributions) to improvement projects called out in the report. These calculations were prepared as applicable for the "Short Term" and "Year 2027" analysis scenarios of the report.

CSU Stanislaus Pro-Rata Share Calculations:
The proposed project's equitable share is calculated using the method in the *Caltrans Guide for the Preparation of Traffic Impact Studies* (State of California, DOT, December 2002), which is shown below:

> P=T/(TB - TE) Where: P = The equitable share for the proposed project's traffic impact. T = The vehicle trips generated by the project during the peak hour of adjacent State highway facility in vehicles per hour (vph). TB = The forecasted traffic volume on a impacted State highway facility at the time of general plan build-out (e.g., 20 year model or the furthest future model date feasible), vph. TE = The traffic volume existing on the impacted State highway facility plus other approved projects that will generate traffic that has yet to be constructed/opened, vph.

Year 2017 and 2027 Pro-Rata Percentages:
Tables 3.14.3 and 3.14.4 identify the pro rata share calculations as documented in the Caltrans *Guide for the Preparation of Traffic Impact Studies* (December 2002).

It should be noted that the methodology employed to generate the results in Tables 3.14.3 and 3.14.4 is neither intended as, nor does it establish, a legal standard for determining equitable responsibility and cost of the project's traffic impact; the intent is to provide:

- A starting point for early discussions to address traffic mitigation equitably;
- a means for calculating the equitable share for mitigating traffic impacts; and
- a means for establishing rough proportionality [Dolan vs. City of Tigard, 1994, 512 U.S. 374 (114 S. Ct. 2309)].

Table 3.14.3
CSU Stanislaus Traffic Impact Calculations
"Short-Term" Pro-Rata Share

Intersection[1]	Existing Volume	Short Term Volume[2]	Project Only Volume[3]	Pro Rata %
Taylor Road / SB SR 99 Ramps	1,361	2,061	14	2.0%
Taylor Road / NB SR 99 Ramps	1,979	2,914	37	4.0%
Taylor Road / Walnut Avenue	983	1,237	8	3.1%
Taylor Road / Geer Road	1,579	1,971	27	6.9%
Monte Vista Avenue/University Way / Countryside Drive	3,897	5,974	79	3.8%
Monte Vista Avenue/University Way / Four Seasons Drive	2,687	3,867	98	8.3%
Monte Vista Avenue/University Way / Walnut Avenue	2,843	4,224	122	8.8%
Monte Vista Avenue/University Way / Crowell Road	2,808	3,508	133	19.0%

Notes:

1. *Only intersections requiring mitigation during "Short Term Plus 10 Year MP Growth Conditions" are included.*
2. *Short Term Volume = "Short Term Plus 10 Year MP Growth Conditions" PM peak-hour intersection turning movements.*
3. *Project Only Volume = Estimated PM peak-hour traffic generated by 10-year student population growth projections.*

Table 3.14.4
CSU Stanislaus Traffic Impact Calculations
"Year 2027" Pro-Rata Share

Intersection[1]	Existing Volume	2027 Volume[2]	Project Only Volume[3]	Pro Rata %
Taylor Road / SB SR 99 Ramps	1,361	2,783	38	2.7%
Taylor Road / NB SR 99 Ramps	1,979	3,815	101	5.5%
Taylor Road / Golden State Boulevard	2,298	4,453	111	5.2%
Taylor Road / Walnut Avenue	983	1,667	20	2.9%
Taylor Road / Geer Road	1,579	2,319	70	9.5%
Monte Vista Avenue/University Way / Walnut Avenue	2,843	4,630	321	18.0%
Monte Vista Avenue/University Way / Geer Road	2,695	4,220	413	27.2%

Notes:

1. *Only intersections requiring mitigation during "Year 2027 Plus 20 Year MP Growth Conditions" are included.*
2. *2027 Volume = "Year 2027 Plus 20 Year MP Growth Conditions" PM peak-hour intersection turning movements.*
3. *Project Only Volume = Estimated PM peak-hour traffic generated by 20-year student population growth projections.*

Short Term Analysis

Short Term Conditions

The analysis scenarios contained herein quantify projected increases in travel demand approximately 10-years from now. Traffic operations are quantified at all 31 study locations both with and without project-related growth. Short Term analysis will include the following Physical Master Plan Update improvements in the roadway network:

- Installation of traffic signal at Calaveras Drive / Geer Road.
- Opening of new CSU Stanislaus parking lot and driveway off of Geer Road, across from the existing Calaveras Way driveway.
- Opening of new CSU Stanislaus Physical Master Plan driveway access off of Christofferson Parkway.

Short Term No Master Plan Growth Traffic Operations

Short Term No Master Plan Growth Conditions have been simulated by retrieving traffic forecasts from the *City of Turlock* travel demand forecast model. The conditions present in this scenario represent projected traffic operations 10-years in the future, without any assumed increases in student population. None of the trips projected to be generated upon the partial build-out of the CSU Stanislaus Physical Master Plan Update is included in this scenario. Individual intersection turning movements were derived using industry-standard methodologies.

The added traffic assumed under *Short Term No Master Plan Growth Conditions* yields new delay-based deficiencies at the following study locations:

- Taylor Road / Geer Road
- Monte Vista Avenue/University Way / Four Seasons Drive
- Monte Vista Avenue/University Way / Walnut Avenue

The following previously identified deficiencies carry over from existing conditions into *Short Term No Master Plan Growth Conditions*:

- Taylor Road / SB SR 99 Ramps
- Taylor Road / NB SR 99 Ramps
- Taylor Road / Walnut Road

All identified delay-based intersection deficiencies are addressed in the concluding *Mitigated Conditions* section of this report, along with proposed Physical Master Plan Update improvement measures to obtain acceptable LOS operations.

Short Term Plus 10 Year Master Plan Growth Traffic Operations

Short Term Plus 10-Year Master Plan Growth Conditions traffic forecasts are obtained by estimating the trips generated by the projected increase in student population over 10 years, as provided by CSU Stanislaus. The trips generated are then distributed through study intersections and subsequently added to *Short Term No Master Plan Growth* turning movements for analysis.

One additional intersection is projected to operate deficiently with the inclusion of assumed 10-year student enrollment forecasts. The following intersection, found to be operating acceptably during *Short Term No Master Plan Growth Conditions*, is projected to operate unacceptably with the addition of new student trips:

- Monte Vista Avenue/University Way / Crowell Road
- Monte Vista Avenue/University Way / Countryside Drive

The following previously projected deficiencies carry over from *Short Term No Master Plan Growth Conditions* into *Short Term Plus 10-Year Master Plan Growth Conditions*:

- Taylor Road / SB SR 99 Ramps
- Taylor Road / NB SR 99 Ramps
- Taylor Road / Walnut Road
- Taylor Road / Geer Road
- Monte Vista Avenue/University Way / Four Seasons Drive
- Monte Vista Avenue/University Way / Walnut Avenue

All identified delay-based intersection deficiencies are addressed in the concluding *Mitigated Conditions* section of this report, along with proposed Master Plan Update improvement measures to obtain acceptable LOS operations. Impacts related to the Physical Master Plan Update student population growth forecasts are identified and proposed improvements are identified for project mitigation purposes.

Year 2027 Conditions

The analysis scenarios contained herein quantify projected increases in travel demand approximately 20-years from now. Traffic operations will be quantified at all 31 study locations both with and without project-related growth. Year 2027 analysis will include the following improvement in the roadway network:

- Opening of new Tuolumne Road over-crossing, spanning SR 99 to provide additional connectivity between developing areas east and west of the State highway.

These scenarios will assume the same geometrics as during Short Term conditions.

Year 2027 No Master Plan Growth Traffic Operations

Short Term No Master Plan Growth Conditions have been simulated by retrieving traffic forecasts from the *City of Turlock* travel demand forecast model. The conditions presented in this scenario represent projected traffic operations 20-years in the future, without any assumed increases in student population. None of the trips projected to be generated upon the partial build-out of the CSU Stanislaus Physical Master Plan Update is included in this scenario. Individual intersection turning movements were derived using industry-standard methodologies.

The added traffic assumed under *Year 2027 No Master Plan Growth Conditions* yields new delay-based deficiencies at the following study locations which were not identified during *Short Term No Master Plan Growth Conditions*:

- Taylor Road / Golden State Boulevard
- Monte Vista Avenue/University Way / Crowell Road

The following previously projected deficiencies carry over from *Short Term No Master Plan Growth Conditions* into *Year 2027 No Master Plan Growth Conditions*:

- Taylor Road / SB SR 99 Ramps
- Taylor Road / NB SR 99 Ramps
- Taylor Road / Walnut Road
- Taylor Road / Geer Road
- Monte Vista Avenue/University Way / Four Seasons Drive
- Monte Vista Avenue/University Way / Walnut Avenue

The deficiency previously identified at Monte Vista Avenue/University Way / Countryside Drive is no longer present in this condition, due to the new Tuolumne Road over-crossing structure. This new facility is projected to reroute trips from the Monte Vista Avenue/University Way vicinity that currently take a circuitous route to access either side of the currently discontinuous Tuolumne Road facility.

All identified delay-based intersection deficiencies are addressed in the concluding *Mitigated Conditions* section of this report, along with proposed improvement measures to obtain acceptable LOS operations.

Year 2027 Plus 20 Year Master Plan Growth Traffic Operations

Short Term plus 10-Year Master Plan Growth Conditions traffic forecasts are obtained by estimating the trips generated by the projected increase in student population over 20 years, as provided by CSU Stanislaus. The trips generated are then distributed through study intersections and subsequently added to *Year 2027 No Master Plan Growth* turning movements for analysis.

One additional intersection is projected to operate deficiently with the inclusion of assumed 20-year student enrollment forecasts. The following intersection, found to be operating acceptably during *Year 2027 No Master Plan Growth Conditions*, is projected to operate unacceptably with the addition of new student trips:

- Monte Vista Avenue/University Way / Geer Road

The following previously projected deficiencies carry over from *Year 2027 No Master Plan Growth Conditions* into Y*ear 2027 Plus 20-Year Master Plan Growth Conditions*:

- Taylor Road / SB SR 99 Ramps
- Taylor Road / NB SR 99 Ramps

- Taylor Road / Golden State Boulevard
- Taylor Road / Walnut Road
- Taylor Road / Geer Road
- Monte Vista Avenue/University Way / Four Seasons Drive
- Monte Vista Avenue/University Way / Walnut Avenue
- Monte Vista Avenue/University Way / Crowell Road

All identified delay-based intersection deficiencies are addressed in the concluding *Mitigated Conditions* section of the TIAR, along with proposed improvement measures to obtain acceptable LOS operations. Impacts related to the Physical Master Plan Update student population growth forecasts are identified and proposed improvements are identified for project mitigation purposes.

3.14.2 Environmental Impacts

Transportation related environmental impacts associated with the updated CSU Stanislaus Physical Master Plan Update based on information developed in preceding sections. Appendix "G" of the CEQA Guidelines address these topical issues:

- Traffic Load, Capacity and Level of Service
- Adequate Parking
- Effects on Alternative Transportation
- Transportation Safety
- Emergency Access
- Air Traffic Patterns

To the extent that updating the Physical Master Plan may result in future development within the campus and the City of Turlock, an increase in automobile traffic may result in the need to expand, extend and improve transportation facilities and services.

A. Thresholds of Significance

The influx of new students and the expansion of educational and non-educational facilities on the camps are expected to generate an increase in volume of traffic on the local street and highway network, including the roadways within the campus.

Appendix "G" of the CEQA Guidelines addresses potential impacts on Transportation and Traffic as follows:

Would the project:

- Cause an increase in traffic which is substantial in relation to the existing traffic load and capacity of the street system (i.e., result in a substantial increase in either the number of vehicle trips, the volume to capacity ratio of roads, or congestion at intersections)?
- Exceed, either individually or cumulatively, a level of service standard established by the county congestion management agency for designated roads or highways?

- Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?
- Substantial increase hazards due to a design feature(e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?
- Result in inadequate emergency access?
- Result in inadequate parking capacity?
- Conflict with adopted policies, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks)?

ASSESSMENTS FOR PUBLIC ROADS AND HIGHWAYS LEVEL OF SERVICE

DEFINITION OF LEVEL OF SERVICE (LOS): A qualitative measure describing the collective traffic flow condition on a roadway, including such factors as speed, delay, driving comfort, and freedom to change lanes.

THRESHOLD CRITERIA:

Impact Criteria:

A project that would result in 10% or more of the total project traffic and one or more vehicle trips during the peak hour on a road segment or intersection, will be considered to have an impact on that road segment or intersection's traffic flow.

Significance Criteria:

1) A project that would have an impact on a road segment or intersection that is currently operating at a less than acceptable level of service (LOS “E” or “F”) will be considered to have a significant impact.

2) A project that would have an impact on a road segment or intersection that is currently operating at an acceptable level of service, where the cumulative traffic impacts would result in the level of service falling to an unacceptable level (LOS “E” or “F”) will be considered to have a significant impact.

ASSESSMENTS FOR AIR TRAFFIC PATTERNS

DEFINITION OF ISSUE

The generation of substantial new air traffic or the re-routing of air traffic into new areas can result in the creation of hazards to the public.

THRESHOLD CRITERIA

Any project that does not conform to an adopted Airport Land Use Plan, as required under Public Utility Code Section 21670 and 21670.1 is likely to result in the creation of a significant adverse impact to air traffic patterns.

ASSESSMENTS FOR PUBLIC HIGHWAY SAFETY AND DESIGN

DEFINITION OF SAFETY/DESIGN

A safe design is one that meets current approved Community Road Standards unless a deviation is approved by the Director of Public Works, as applicable.

THRESHOLD CRITERIA

Most development projects affect the public road system through access encroachments, improving or widening existing roads, and/or constructing new road sections. Projects that comply with the City Road Improvement Standards or Caltrans Design Standards as applicable generally have a less-than-significant impact on the safety and design of the public road system. Project impacts on intersections, that exceed State accident warrants for signalization, will be considered significant.

ASSESSMENTS FOR EMERGENCY OR TACTICAL ACCESS

DEFINITION OF ISSUE

Emergency or tactical access is an organized system of roads/access to and from a project utilized in the event of any emergency or disaster. An access road may be impaired by vehicle congestion, condition of terrain, climatic conditions or other factors that could limit emergency access. Standards utilized in the evaluation of emergency or tactical access are included in the State Fire Safe Guidelines and local emergency access standards.

THRESHOLD CRITERIA

Projects that do comply with local standards or the Fire Safe Guidelines, whichever is applicable, for tactical access are likely to result in a significant adverse impact with respect to access and emergency service.

ASSESSMENTS FOR OFF-STREET PARKING

DEFINITION OF ISSUE

Off-street parking means a facility, area, or the need, for vehicle parking located outside of a public street right-of-way.

THRESHOLD CRITERIA

Any project which generates additional vehicle trips during the construction or operation phases would have an impact on off-street parking. For the construction phase, if there is sufficient space on-site to park construction vehicles, then the project would have a less-than-significant impact. Conversely, if there would not be sufficient space on-site to accommodate construction vehicles, then the significance must be determined on a case-by-case basis.

For the operation phase, if the project includes parking that meets the zoning requirements, then the project would have a less-than-significant impact. Conversely, if the project does not meet the zoning parking requirements, then significance must be determined on a case- by-case basis.

ENVIRONMENTAL ASSESSMENTS FOR BUS TRANSIT

DEFINITION OF ISSUE

Bus transit means a system of, or the need for, public bus transportation.

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THRESHOLD CRITERIA

Bus transit is an important component of the regional transportation system. A project will normally have a significant impact on bus transit if it would substantially interfere with existing bus transit facilities or routes, or if it would create a substantial demand for bus transit facilities/services.

METHODOLOGY

Any project which generates additional alternative transportation trips (public transit, pedestrian, bicycle, etc.) during the construction or operation phases would have an impact on alternative transportation services. For the construction phase, if there is sufficient alternative transportation service capacity for construction workers, then the project would have a less-than-significant impact. Conversely, if there would not be sufficient capacity to accommodate construction workers, then the significance must be determined on a case-by-case basis.

For the operation phase, if the project includes alternative transportation facilities or the expansion of alternative transportation services that meets the projected needs, then the project would have a less-than-significant impact. Conversely, if the project does not meet the alternative transportation requirements or standards established by transportation service providers or other adopted alternative transportation plans or policies, then significance must be determined on a case-by-case basis.

B. Potential Significant Impacts:

Transportation and Traffic Impacts Found Not to be Potentially Significant:

As a result of project analysis, based on data collected in the evaluation of the University's Master Plan Update implementation, the following aspects of a potential transportation and traffic impact are found not to exist or exist at levels well below any reasonable expectation that a significant adverse impact is likely to result:

- *Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?*
  The generation of substantial new air traffic or the re-routing of air traffic into new areas can result in the creation of hazards to the public. Any project that does not conform to an adopted Airport Land Use Plan, as required under Public Utility Code Section 21670 and 21670.1 is likely to result in the creation of a significant adverse impact to air traffic patterns.

  The Turlock Municipal Airport is located about 9 miles south of the City in Merced County. The Merced County Airport Land Use Commission has responsibility to develop the relevant Airport Land Use Plan. The current Airport Land Use Plan for the Turlock Municipal Airport indicates that existing and planned future air traffic patterns do not come sufficiently close enough to the City of Turlock or the CSU Stanislaus campus to influence either land use patterns or safety. Consequently, there are no impacts associated with established air traffic patterns.

- *Substantial increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?*
  A safe design is one that meets current approved road standards unless a deviation is approved. Most development projects affect the public road system through access encroachments, improving or widening existing roads, and/or constructing new road sections. Projects that comply with the City of Turlock Road Improvement Standards or Caltrans Design Standards, as applicable, generally have a less-than-significant impact on the safety and design of the public road system. Project impacts on intersections that exceed State accident warrants for signalization, will be considered significant.

  The Physical Master Plan Update is proposing no new roadways. The City of Turlock and Caltrans are expected to apply current highway and intersection design standards for the development of intersection improvements as proposed. Based on the fact that the CSU Stanislaus Master Physical Plan Updated is not increasing transportation demands over and above levels already approved in the 1968 Master Plan, nor is the Updated Plan adding new roadways, thus, impacts to transportation safety are considered insignificant.

- *Result in inadequate emergency access?*
  Emergency access is an organized system of roads that provide access to and from a project utilized in the event of any emergency or disaster. An access road may be impaired by vehicle congestion, condition of terrain, climatic conditions or other factors that could limit emergency access. Standards utilized in the evaluation of emergency or tactical access are included in the State Fire Safe Guidelines and local emergency access standards. Projects that do comply with local standards or the Fire Safe Guidelines, whichever is applicable, for tactical access are likely to result in a significant adverse impact with respect to access and emergency service.

  The campus road system established in the 1968 Master Plan remains essentially unchanged in the Physical Master Plan Update. The campus road system provides emergency access to the perimeter of the campus and additional service roads provide access to specific structures. Parking restrictions along the perimeter roadway and service roads, which are enforced by the University Police Department, ensure that adequate emergency access is available when needed. Since established emergency access facilities and policies are not changed by the Physical Master Plan Update there are no significant impacts to emergency access.

- *Result in inadequate parking capacity?*
  A project must address the adequacy of off-street parking during the construction or operational phases:

1. For the construction phase, if there is sufficient space on-site to park construction vehicles, then the project would have a less-than-significant impact. Conversely, if there would not be sufficient space on-site to accommodate construction vehicles, then the significance must be determined for an individual construction project on a case-by-case basis.

2. For the operation phase, if the project includes parking that meets the planned (FTE/Space) parking ratio requirements, then the project would have a less-than-significant impact. Conversely, if the project does not meet the planned parking ratio (FTE/Space) requirements, then significance must be determined on a case- by-case basis.

The 1968 Master Plan included provisions for 6,194 parking spaces. Additional parking spaces are planned to be developed between now and full build out of the campus including some spaces to be located in parking structures. The combination of existing and planned parking spaces is adequate and no significant impacts are created by the revised Master Plan.

- *Conflict with adopted policies, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks)?*
  Bus transit is an important component of the regional transportation system. A project will normally have a significant impact on bus transit if it would substantially interfere with existing bus transit facilities or routes, or if it would create a substantial demand for bus transit facilities/services. A project must address alternative transportation issues during the construction and operational phases.

  1. For the construction phase, if there is sufficient alternative transportation service capacity for construction workers, then the project would have a less-than-significant impact. Conversely, if there would not be sufficient capacity to accommodate construction workers, then the significance must be determined on a case-by-case basis.
  2. For the operation phase, if the project includes alternative transportation facilities or the expansion of alternative transportation services that meets the projected needs, then the project would have a less-than-significant impact. Conversely, if the project does not meet the alternative transportation requirements or standards established by transportation service providers or other adopted alternative transportation plans or policies, then significance must be determined on a case-by-case basis

  That portion of the Physical Master Plan Update already developed supports all means of public and personal transportation. Bus stops served by local public transit services are available along the campus perimeter. Based on the Federal Transportation Improvement Program developed by the Stanislaus Council of Governments public transit investments are being made for the purchase of additional dial-a-ride buses, improvements to the maintenance facility and for

operational assistance. The existing public transit services are underutilized by students and the general population in the City of Turlock and transit service operators would welcome the ridership of additional university students, as well as construction workers.

With regard to other forms of transportation, a portion of the campus perimeter along Monte Vista Avenue/University Way is one of the City of Turlock's Class I bikeways. Within the campus bicycle racks are strategically located near classrooms and broad walkways support the use of more personal transportation such as skateboards or street skates.

Nothing in the Physical Master Plan Update is proposed that would detract from the use of public transit services or discourage other alternative forms of transportation. No significant impacts are created by the Physical Master Plan Update.

Transportation and Traffic Impacts Found to be Potentially Significant:
As a result of project analysis, based on data collected in the evaluation of the CSU Stanislaus Physical Master Plan Update, the following aspects of a potential transportation and traffic impact may result in a significant adverse environmental impact due to project implementation:

- *Cause an increase in traffic which is substantial in relation to the existing traffic load and capacity of the street system (i.e., result in a substantial increase in either the number of vehicle trips, the volume to capacity ratio of roads, or congestion at intersections)?*
- *Exceed, either individually or cumulatively, a level of service standard established by the county congestion management agency for designated roads or highways?*

The following significant criteria are relevant:

1. A project that would have an impact on a road segment or intersection that is currently operating at a less than acceptable level of service (LOS "E" or "F") will be considered to have a significant impact.
2. A project that would have an impact on a road segment or intersection that is currently operating at an acceptable level of service, where the cumulative traffic impacts would result in the level of service falling to an unacceptable level (LOS "E" or "F") will be considered to have a significant impact.

The various transportation demands, identified throughout earlier parts of this section, are not new or unforeseen trip demands, but rather an updated quantification of the travel demands of the originally approved 12,000 FTES in the 1968 Master Plan. The circumstances of this project are that growth and development of the previous vacant land in the vicinity has significantly contributed to the regional traffic volumes as demonstrated in Table 3.14.4.

Conversely, previous commitments in the Physical Master Plan Update, with respect to housing and parking, will substantially reduce the expected trip generation rates of the Campus in future years.

The campus is being developed over a long time period and there are a number of long-term influences on campus development that add significant uncertainty to understanding the need for a new entrance along Christofferson Parkway and for that matter, the total transportation demand of the campus itself. The analysis herein presumed a continuation of existing trends in automobile usage and teaching practices. However, technology associated with the delivery of education, particularly "distance learning" and the "virtual classroom," suggest that travel demands might be significantly altered if the educational technology achieves a significant developmental breakthrough.

In general, current traffic modeling suggests that an increase in campus population (students, faculty and employees) will result in more traffic impacts on local roads and streets. The model suggests several improvements to area streets, roads, highways and intersections which will reduce forecasted impacts. These improvements are identified as possible mitigation measures. With the implementation of these mitigation measures, these traffic impacts are expected to be reduced to a level that would be deemed "less than significant" within the context of CEQA.

C. Proposed Physical Master Plan Update Goals & Policies:

The CSU Stanislaus Physical Master Plan Update contains several policies directly and indirectly addressing the traffic impacts of the project. Development of on-campus housing opportunities is expected to significantly reduce traffic generation at the Campus site. Other aspect of the Master Plan, addressing design and parking are set forth below:

"Vehicular Perimeter
Successful design development for a vehicular perimeter road and parking will include:

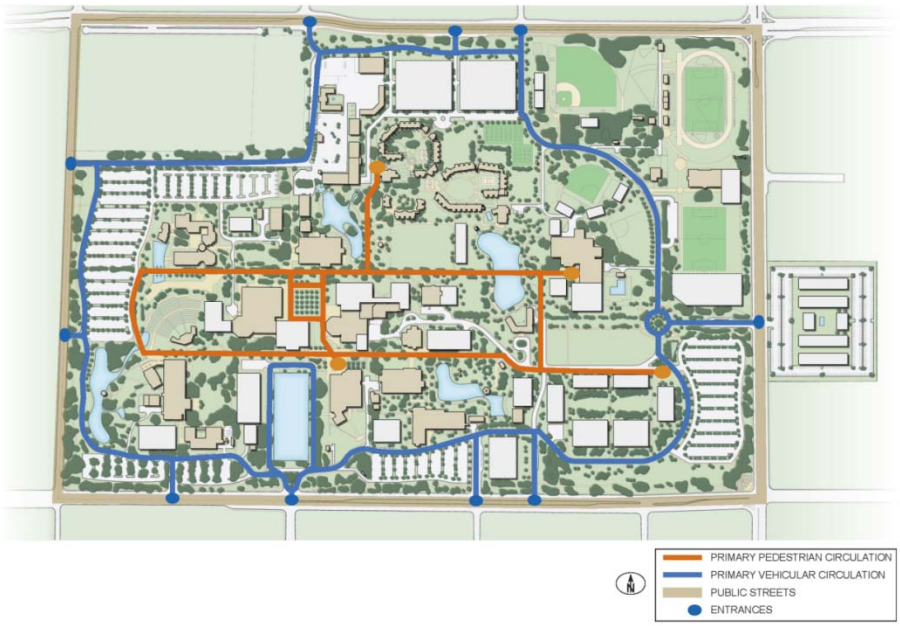
- *Maintain Park-Like Character along Perimeter Road and Surface Lots.*
- *Minimizing the potential for vehicular and Pedestrian Conflicts.*
- *Accentuate Entry Features.*
- *Minimizing Visual Impacts of Service Roads and Areas.*

A vehicular perimeter shall be maintained and enhanced to retain a pedestrian campus core. Campus entry points will be located on all four sides of campus. The southern University Way entrance at the Reflection Pond will remain the ceremonial entrance. Vehicular traffic will be easy to navigate and travel along a loop road outside the pedestrian core. Required vehicular service access to buildings will be visually minimized. Surface parking will be shaded with a park-like character, and parking structures sited, designed, and constructed to minimize the impacts on the campus and the surrounding community."

"Campus Access
Arrival and way finding will be improved for all campus users. The main campus entry needs greater emphasis as the preferred point of arrival for visitors. Coordinated directional signage will help improve circulation around the Reflection Pond. All campus entry points will benefit from widening and enhancement of landscaping and signage. The Christofferson Parkway entry will benefit from site improvements on the north campus edge."

"Vehicular Circulation
The plan emphasizes the need to retain vehicular circulation at the campus perimeter and to buffer the road and parking from the community through planting areas. The perimeter road will serve as a guide to campus locations through a coordinated and enhanced directional signage system. An informational kiosk located near the main entry will assist in orienting visitors. Circulation on the perimeter road will also benefit from additional drop-off locations that will be designed to not affect the flow of campus traffic."

Figure 3.14.5
CSU Stanislaus
Vehicular and Pedestrian Circulation



"Informational signage announcing the University on major approaches to the campus will minimize any confusion for visitors. The University will coordinate off-campus signs with appropriate jurisdictions. Future consideration will be given to implementing appropriate controls based on volume shifts with increased campus parking. An improved entry/exit point on Christofferson Parkway will help to distribute traffic on the campus perimeter. Bicycle racks and related facilities distributed on the campus will help promote alternate means of reaching and circulating on campus."

"Pedestrian Circulation
The entire campus is contained within a ten-minute radius of the Library commons, making pedestrian travel convenient to most areas. A major improvement for pedestrian circulation will be the systematic addition of directional signs and visual clues as building projects are added to the campus. Much of this can be accomplished through paving design, lighting and landscape."

"Parking
The 2009 Physical Master Plan Update reinforces the 1968 Plan in calling for an increase in parking spaces up to 6,000 by the year 2027. Since surface spaces would result in a loss of open space, the implementation of this is possible only through the construction of multi-story parking structures. Four structures consisting of four stories each are recommended in three locations. This would accommodate 3,860 vehicles on land predominantly used for surface parking. The structures are to be strategically located on three perimeter sites. The proposed locations of all parking facilities will be evenly distributed around the campus to accommodate access to all destinations."

"Parking Structures
The Physical Master Plan Update calls for four structures on campus to hold a total of 3,860 cars, leaving 2,140 surface spaces, a reduction in surface parking of 18%.

Adding structures to the campus brings new challenges not previously faced on campus; that of adding structures of significant mass to an otherwise low-scale development. Two of the four structures would have 900 spaces and two will have 1000. Also, the preferred placement of future buildings is internal, avoiding the campus edges. Parking structures are best located at the perimeter to allow easy and efficient in and out circulation."

Other Regulations:

The Campus will work with the City of Turlock in its program to develop the circulation infrastructure. The City's Circulation Element of the City General Plan provides the standard for determining adequacy of the City's transportation infrastructure and establishes the overall plan for transportation improvements.

Policies concerning acceptable LOS standards are contained in the "Transportation Element" section of the *City of Turlock General Plan 1992-2012 (Reviewed in 2002)*. The default standard is to "strive to maintain LOS C for all freeways and expressways," as determined in policy "5.1-c". However, policy "5.1-d" sets an exception to this guideline, stating the following:

> "Approve LOS D as an allowable standard for arterial and collector streets where existing conditions limit improvements.
>
> *The traffic forecast indicates that the following street segments may operate at Service Level D upon build out of the General Plan: Monte Vista Avenue/University Way*

> *between SR 99 and Walnut Avenue; Hawkeye Avenue between SR 99 and Golden State Boulevard; and SR 99 between Main Street and Monte Vista Avenue/University Way. "*

Lastly, policy "5.1-e" provides further exceptions to the default LOS C standard, stating the following:

> "Recognize that the City's land use pattern, the limited number of continuous north-south streets, and the concentration of activity on the east side of the freeway will result in very poor service levels on a small number of streets where capacity cannot be increased because it would create unacceptable disruptions.
>
> *The following locations are projected to operate at LOS E or F at General Plan build out: Geer Road between Canal Drive and Tuolumne Road; Lander Avenue between Main Street and Linwood Avenue; Main Street between West Avenue and Lander Avenue; and Olive Avenue between Main Street and Canal Drive."*

The Caltrans publication *Guide for the Preparation of Traffic Impact Studies* (December 2002) states the following:

> *"Caltrans endeavors to maintain a target LOS at the transition between LOS 'C' and LOS 'D' on State highway facilities, however, Caltrans acknowledges that this may not be always feasible and recommends that the lead agency consult with Caltrans to determine the appropriate target LOS."*

D. Short-Term Impacts:

Adoption of the CSU Stanislaus Physical Master Plan Update will result in the modification of the campus CIP-COP, preparation of construction plans, bid documents, finance proposals and requests, none of which will have a physical impact on the campus environment. These actions and activities will not have any adverse impacts on traffic and circulation of the campus or the area, but could lead to improved practices with respect to traffic management and operations on a short-term basis.

Long-Term Impacts:

With the development of proposed parking structures and new on-campus housing opportunities, the overall Campus impact on the local circulation system is expected to decline over time. The long term impacts of growth and development of the CSU Stanislaus campus on transportation demand are less clear as a result of evolving educational and communications technologies, improvements in broadband internet

services and other technologies that affect the delivery of educational services. Future transportation demand is going to be influenced by some blending of the traditional classroom attendance with these new technologies and the combination will define the University's long-term transportation demands.

F. Cumulative Impacts:

Growth in the Central Valley, Stanislaus County, the City of Turlock and on the Campus will have a long-term cumulative impact on the Campus and the local (City of Turlock) regional transportation system. Growth in traffic volumes will have impacts on air quality, noise, and other areas of environmental quality and the overall quality of life in the area.

G. Secondary Impacts:

Short-term secondary impacts could result from construction activities associated with the University's various parking facilities and mitigation measures. These are addressed within the context of normal construction impacts (noise, air quality, etc) within this PEIR. No other transportation related secondary impacts are anticipated.

3.14.3 Mitigation Measures

As a result of the CSU Stanislaus Physical Master Plan Update EIR Traffic Impact Analysis Report, it was determined that improvements to local streets will be necessary to reduce traffic impacts resulting from regional growth and expanded population on the CSU Stanislaus campus. If these improvements are made, no significant adverse impacts are likely to result from the adoption and implementation of the CSU Stanislaus Physical Master Plan Update.

The Campus will work with the City of Turlock, the County of Stanislaus, STANCOG and the Caltrans in assuring that identified improvements are made in a timely manner. Campus impacts on traffic and circulation within the surrounding community must be addressed in the context of the California Supreme Court ruling in *City of Marina v. Board of Trustees of The California State University* (2006) 39 Cal.4th 341. (see Section 1.7. of this PEIR).

On the basis of the Physical Master Plan Update Traffic Impact Analysis, the following mitigation measures were identified:

1. **Taylor Road/ SB SR 99 Ramps &**
   Taylor Road /NB SR 99 Ramps
   - *Existing Status:* Install actuated-uncoordinated traffic signal
   - *Short Term No MP Growth Conditions:* Add southbound left turn pocket at Taylor Road at SB SR 99 Ramps. Add eastbound receiving lane for new turn lane and carry receiving lane through Taylor Road / NB SR 99 as additional eastbound through lane (2)
   - *Short Term Plus 10-Year MP Growth Conditions:* None

- *Year 2027 No MP Growth Conditions:* Reconstruct Taylor Road / SR 99 interchange. East-west capacity should be increased in accordance with City plans to widen Taylor Road to a four-lane expressway.
- *Year 2027 Plus 20-Year MP Growth Conditions:* None

2. Taylor Road / Golden State Boulevard

- *Existing Status:* None
- *Short Term No MP Growth Conditions:* None
- *Short Term Plus 10-Year MP Growth Conditions:* None
- *Year 2027 No MP Growth Conditions:* Add second EBT lane in accordance with City plans to widen Taylor Road to a four-lane expressway. Alternatively, if it is deemed more desirable to route projected traffic increases south to Christofferson Parkway via Golden State Boulevard, a second eastbound right turn pocket could supplant the proposed through lane with the goal of making Taylor Road a less appealing path.
- *Year 2027 Plus 20-Year MP Growth Conditions:* None

3. Taylor Road /Walnut Avenue

- *Existing Status*: Install actuated –coordinated traffic signal.
- *Short Term No MP Growth Conditions:* Add eastbound right turn pocket.
- *Short Term Plus 10-Year MP Growth Conditions:* None
- *Year 2027 No MP Growth Conditions:* Add westbound left turn pocket.
- *Year 2027 Plus 20-Year MP Growth Conditions:* None

4. Taylor Road / Geer Road

- *Existing Status:* None
- *Short Term No MP Growth Conditions:* Add southbound right turn pocket.
- *Short Term Plus 10-Year MP Growth Conditions:* None
- *Year 2027 No MP Growth Conditions:* Add westbound right turn pocket. Add eastbound left and right turn pockets. Change traffic signal phasing from split to protected.
- *Year 2027 Plus 20-Year MP Growth Conditions:* None.

5. Monte Vista Avenue/University Way / Countryside Drive

- *Existing Status:* None
- *Short Term No MP Growth Conditions:* None
- *Short Term Plus 10-Year MP Growth Conditions:* No improvements recommended during this condition. LOS operations are projected to become acceptable upon completion of the planned Tuolumne Road over-pass structure.
- *Year 2027 No MP Growth Conditions:* None
- *Year 2027 Plus 20-Year MP Growth Conditions:* None

6. Monte Vista Avenue/University Way / Four Seasons Drive

- *Existing Status:* None
- *Short Term No MP Growth Conditions:* Install actuated-uncoordinated traffic signal.
- *Short Term Plus 10-Year MP Growth Conditions:* None
- *Year 2027 No MP Growth Conditions:* None
- *Year 2027 Plus 20-Year MP Growth Conditions:* None

7. Monte Vista Avenue/University Way / Walnut Avenue

- *Existing Status:* None
- *Short Term No MP Growth Conditions:* Add additional eastbound left turn pocket.
- *Short Term Plus 10-Year MP Growth Conditions:* None
- *Year 2027 No MP Growth Conditions:* None
- *Year 2027 Plus 20-Year MP Growth Conditions:* Add northbound right turn pocket. This will require the elimination of some on-street parking in the vicinity.

8. Monte Vista Avenue/University Way / Crowell Road

- *Existing Status:* None
- *Short Term No MP Growth Conditions:* None
- *Short Term Plus 10-Year MP Growth Conditions:* Add southbound right turn pocket.
- *Year 2027 No MP Growth Conditions:* None
- *Year 2027 Plus 20-Year MP Growth Conditions:* None

9. Monte Vista Avenue/University Way / Geer Road

- *Existing Status:* None
- *Short Term No MP Growth Conditions:* None
- *Short Term Plus 10-Year MP Growth Conditions:* None
- *Year 2027 No MP Growth Conditions:* None
- *Year 2027 Plus 20-Year MP Growth Conditions:* Add southbound right turn pocket.

The CSU Stanislaus campus will participate in negotiations/discussions regarding these improvements in accordance with the California Supreme Court case *City of Marina v. Board of Trustees of The California State University* (2006) 39 Cal.4th 341 and discussed in Section 1.7 of this document.

3.14.4 Level of Significance After Mitigation

Road improvements that are undertaken in accordance with the identified improvements listed under the Mitigation section of this PEIR will reduce traffic and congestions impacts on area roadways to a level deemed to be “less than significant”.

Section 3.15
Utilities and Service Systems

Utilities & Service System Discussion: This environmental issue focuses on the impacts of a project on public utility systems or facilities such water, wastewater, storm water drainage or other utility or service systems.

3.15.1 Environmental Setting

The CSU Stanislaus campus is served with sewer and water service by the City of Turlock. The campus storm-water drainage system discharges into the Turlock Irrigation District drainage canal system. The system of on-site ponds meter storm water discharge into this system and serve as storm water detention and sediment settling facilities.

Storm Water:

The Campus is served by the City of Turlock's storm water drainage system. On the campus, a series of storm-water retention ponds controls the flow of storm water in into the City's system. The pond system is landscaped and maintained as an aesthetic element of the campus.

The storm water system in Turlock is owned and operated solely by the City of Turlock. The storm water system is comprised of 28 active storm lift stations, 66 storm ponds (which total 140 acres), 1,300 storm water catch basins and a total of 102 miles of storm pipe. Turlock's storm water system manages storm runoff in several ways. Water landing on pervious surfaces is most commonly filtered through the earth until completely saturated. Once the ground is completely saturated, excess storm water enters the storm system in the form of runoff.

Water that lands on impervious surfaces immediately flows to a storm drain via a structure's gutter or a valley gutter. It is then transferred through plastic, clay, or concrete storm pipe to a storm basin. From there, the water either percolates down to recharge the groundwater or is pumped to a larger storm basin or canal. If the excess water is pumped to a larger storm pond, the water then percolates down and recharges the groundwater. Excess storm water that is pumped into a canal ultimately drains into the San Joaquin River. Occasionally during agricultural irrigation seasons it is possible that some storm water is diverted from the canal to irrigate farmland.

The streets in Turlock are also designed as part of the City's storm water drainage system. During larger storm events, city streets serve to retain excess water for a number of hours to allow our storm drains to catch up with the higher water demand being placed on them.

The City's storm system is maintained financially through the Water Quality Control fund, which is a fund established for the purpose of the maintenance and operations of the Water Quality Treatment Facility/Sanitary Sewer and Storm Systems. Regular user fees, metered fees, monitoring station fees, reserve capacity fees, connection charges and engineering charges are all deposited into the WQC fund. Expenses are then charged to

the appropriate department.

The City also has a Master Storm Drainage Construction fund that was adopted in the late 1980s. This fund is separate from the WQC fund, because rather than go toward maintenance or capital improvement projects this fund is solely for storm system expansion. Since most of the City's new storm lines are built in the new developing areas, development fees support this fund.

Water:

Domestic water is supplied to the CSU Stanislaus and all of the City of Turlock by groundwater. The City currently operates 25 deep groundwater wells that that produce 13 million gallons per day (mgd) with a peak delivery of 38 MGD during the summer months. The system serves over 17,382 water connections. The average daily flow in 2007 was 8.3 billion gallons of drinking water.

Table 3.15.1 below is part of the City's 2005 Urban Water Management Plan update and it addresses the City's projections for water usage in five-year increments to the year 2025. The City projects a 3% yearly growth in water consumption. The projections include some additional water for expansion at CSU Stanislaus. The City states that if the University plans include a large increase in water use, the City would need to determine when the expansion would occur so that planning could be undertaken to ensure that there are sufficient supplies available.

The City is currently considering the use of surface water sources to help serve its domestic needs. Surface water would be provided by the Turlock Irrigation District utilizing water from the Tuolumne River. The potential use of surface water will depend upon the overall cost of such use and will need to meet the approval of the Turlock City Council. If surface water is found not to be feasible, the City will increase its use of groundwater to compensate for and serve the City's water requirements. The figures in the table below reflect the use of surface water in the future.

Table 3.15.1
City of Turlock
Projected Water Needs-Acre Feet/Year
2005-2025

Water Sources	2005	2010	2015	2020	2025
Deep Groundwater wells (potable)	26,790	10,001	10,459	6,854	8,411
Surface Water	0	17,000	17,000	22,400	22,400
Recycled Water	50	100	100	100	100
Recycled Wastewater	570	2,200	5,000	10,000	20,000
Shallow groundwater wells	170	200	250	300	400
Total all Sources	27,580	29,501	37,400	44,200	52,300

Campus Water System and Use

The campus water distribution system is a dual water system, comprised of the irrigation system and the potable water distribution system.

The potable water is provided to the campus by the City of Turlock through two 10-inch water meters. The distribution system beyond these two meters and within the campus is maintained and operated by the campus. The current campus average daily water demand for all uses except irrigation is approximately 130 gallons per minute (gpm) and a maximum day water demand is 250 gpm with a peak hour demand of approximately 599 gpm. There are two 7.5 horsepower (hp) pumps with variable frequency drives installed at the Monte Vista water meter connection point. These currently run when water pressure goes below 55 pounds per square inch (psi). At build out, the campus will need to install a booster pump on the north side of campus.

Landscape irrigation water is provided by a campus owned water well. The water is being pumped from this well to the existing reflection pond, and from that pond the water is pumped directly into the irrigation system via a hydro pneumatic irrigation pumps. The irrigation pump system is adequate at this time. The campus will need additional capacity through build out to provide the needed water pressure.

City of Turlock Wastewater Treatment

The City of Turlock provides the CSU Stanislaus Campus with sewer service. The City of Turlock's Regional Water Quality Control Facility is located at 901 S. Walnut Road. The facility serves the City of Turlock as well as the Community Service Districts of Denair and Keyes. In addition, the City of Ceres also discharges 1 million gallons per day (MGD) of primary treated wastewater to the facility. The facility has been upgraded to provide tertiary treatment of wastewater. The treatment facility has a current design capacity of 20 MGD. An average of 13.0 MGD is currently treated by the facility.

The facility's treated effluent is discharged into Harding Drain at a point approximately five miles upstream from the drain's discharge point into the San Joaquin River. Harding Drain (Lateral No. 5) is a man-made agricultural drainage facility designed and maintained by Turlock Irrigation District for drainage purposes. The City plans to construct a pipeline to bypass the Harding Drain and discharge directly into the San Joaquin River.

Campus Wastewater System

The Campus owns and maintains approximately 10,000 linear feet (L.F.) of sanitary sewer lines ranging from 4-inch to 18-inch diameter pipeline mostly Vitrified Clay Pipe (VCP). The campus sanitary sewer collection system functions by gravity discharging into a wet well located near Monte Vista Avenue/University Way from which the sewage is pumped into the City owned collection system.

The pipeline diameter sizes of the existing sewage collection system appear to be adequate for the current sewage flow and ultimate future campus growth. Although the existing sewage collection system is sized to carry the required flow to the wet well, the

slope of these sewer lines seems to be extremely flat. Therefore, the velocity of flow in the pipe line will never reach the cleansing velocity (2 ft/sec.)

Solid Waste

Currently, the only operational landfill that serves the project area is the Fink Road Landfill, located at 4000 Fink Road, near Crows Landing, approximately 30 miles west of the project site. The landfill is a Class II and Class III facility managed by the Stanislaus County Department of Public Works. The 164-acre landfill can accept a maximum of 1,500 tons per day and had a remaining capacity of 10,000,000 Cubic yards in 2004. The Fink Road Landfill is a municipal landfill and does not accept industrial waste. Solid waste accepted at the landfill includes agricultural, ash, construction/ demolition, mixed municipal, and tires. The landfill is expected to cease operations in 2011.

Other landfills that could accept industrial waste, including sludge created during operation of the proposed project, include Forward Landfill, approximately 30 miles northwest, in Manteca, and Altamont Landfill and Resource Recovery, approximately 50 miles west, in Livermore.

Forward Landfill is owned and operated by Allied Waste North America. Solid waste accepted at the landfill includes agricultural, asbestos, ash, construction/demolition, contaminated soil, green materials, industrial, mixed municipal, sludge (biosolids), tires, and shreds. Forward Landfill is permitted to accept a maximum of 8,668 tons per day, has a remaining capacity of 40,031,058 cubic yards, and is expected to cease operations in 2020.

Altamont Landfill and Resource Recovery is owned and operated by Waste Management of Alameda County. Solid waste accepted by the landfill includes ash, construction/ demolition, contaminated soil, green materials, industrial, mixed municipal, other designated, tires, and tire shreds. The landfill is permitted to accept a maximum of 6,000 tons per day, has a remaining capacity of 124,400,000 cubic yards, and is currently expected to cease operations in 2025.

The City of Turlock contracts with a franchise hauler to collect garbage and recyclables at curbside. City and University garbage is taken to the transfer station on Walnut Road, and from there to the Fink Road landfill near Crows Landing, or to the waste-to-energy facility adjacent to the landfill. The waste-to-energy facility reduces the volume of waste going into the landfill by about 90 percent. The Fink Road landfill has capacity until 2017 for garbage and 2023 for the waste-to-energy ash. The total landfill capacity is 6.8 million tons. There are also plans for further expansion.

AB 939 mandated that the City of Turlock divert a minimum of 50% away from the waste stream that would normally go to the waste-to-energy burner or to the Fink Road landfill by the year 2000.

The City developed a program to implement the Source Reduction and Recycling Element (SRRE) adopted in 1994. The SRRE includes source reduction, including recycling and composting activities for solid waste generated within the City. The element also details means of reducing commercial and industrial sources of solid waste. Funding and public information components are also included. The City, in cooperation with the other jurisdictions comprising the RSWPA, is meeting the State waste diversion requirements.

The Campus contributes and average (past six years) of 461 tons of waste to the local solid waste site and 4.6 tons of Hazardous waste. Conversely, the Campus diverts between 57% and 85% of is waste from the normal waste stream in compliance with State law. The Campus generated 1,153 tons of solid waste in 2007, 68.4% of which was diverted.

Table 3.15.2
California State University-Stanislaus
Waste Disposal/Diversion

Year	Total Tonnage Generated	Tonnage Diverted	Tonnage Disposed	Percent Diverted	Hazardous Waste (Tons)
2002	2,135	1,622	513	76.0%	1
2003	1,344	892	452	66.4%	3
2004	1,297	931	365	71.8%	4
2005	3,064	2,313	448	85.4%	189 (1)
2006	1,452	824	628	56.8%	7
2007	1,153	789	364	68.4%	8

Note: 1) increase in total waste disposed during 2005 is the result of construction and demolition activities.

Table 3.15.2 summarizes the State Organization and Agency Recycling Database (SOARD) tracking report from CSU Stanislaus Campus to the Integrated Waste Management Board with respect to compliance with AB-75 (Strom-Martin, Chapter 764 Statutes 1999). AB-75 mandates that State agencies divert at least 50% of their waste stream from land fills.

Gas and Electricity

Turlock Irrigation District's (TID) retail electric service area covers 662 square miles, including the communities of Ceres, Turlock, Keyes, Denair, Hughson, Hickman, La Grange, South Modesto, Delhi, Hilmar, Patterson, Crows Landing, and Diablo Grande.

Turlock Irrigation District electricity facilities include small-scale power plants and two natural gas-fired turbine generating plants. In addition, TID is a co-owner of the Don Pedro Powerhouse with the Modesto Irrigation District. Turlock Irrigation District's 68.46% share of the Don Pedro Powerhouse generating capacity is 139 megawatts (MW). All of these facilities combined generate approximately 35 to 40 percent of TID's energy. The Turlock Irrigation District also purchases electricity from other suppliers.

Energy Resources:

Another critical aspect of future energy use is the expected growth in the consumption of electrical energy. California's overall energy demand for electricity is expected to grow at an average rate of two percent per year into the future. However, peak demand for electricity is forecast to grow at an average rate of 2.7 percent per year.

A significant portion of this increased peak demand is attributable to expected population growth in the inland areas of the State such as the San Joaquin Valley. Compared to the State's temperate coastal zone, the climate of California's Central Valley and desert is more extreme. As residential and commercial development expands throughout the Central Valley, more peak generating capacity will be needed to meet greater demands for summer air conditioning.

In 2005, Californians spent $31 billion for electricity, $16 billion for natural gas, $39 billion for gasoline and $7.7 billion for diesel. In 2006, California produced 13.6% of the natural gas that it used, 38.8% of its petroleum needs and 78.1% of its electricity needs.

Natural gas, after gasoline, is one of the most important carbon based fuel sources in California. About half of the natural gas used in California produces electricity. Approximately 22% of our natural gas production is used for residential heating and the balance is used for industrial purposes.

Electricity represents one of the largest challenges to California with respect to meeting the demands of a growing population and the need to reduce the carbon foot-print of the State in light of global climate change.

CSU Stanislaus Energy Use:

CSU Stanislaus, like California as a whole and the Central Valley, is facing a challenge of using energy more efficiently in the face of growing population and increasing energy demand. The Campus has implemented several operational strategies to reduce energy usage of both natural gas and electricity.

Electrical: The campus electric power is provided by the Turlock Irrigation District (TID) through a 15 kV feeder. The current campus power demand is approximately 3MVA and is expected to reach 10 MVA at the projected ultimate growth. The main switchgear is new and expandable. The power distribution employs a loop distribution system with two feeders to distribute electricity throughout the campus. Distribution switchgear is installed at various locations of the main feeder providing connection points to the building service feeders. All of the campus oil switches and cabling have been replaced over the last ten years and should serve the campus needs for the next 40 years. Most of the building transformers are new and have adequate reserve capacity. The main electrical duct bank runs have available space for an additional main feeder backup.

Natural Gas: The existing campus gas service is provided by the Pacific Gas & Electric Company (PG & E) through a 6-inch gas service located at the east end of the campus. The natural gas is provided with a pressure of 15 psi where a pressure reducer is utilized

at the service connection to drop the pressure to 10 psi. All natural gas lines beyond the service connection are maintained and operated by the campus. The existing service connection is adequate to provide for the current and future campus natural gas demand.

Chilled Water Plant: The chillers cooling load will proportionately increase with future additions throughout the campus. The existing load is currently at 2000 tons cooling and is expected to rise to 4000 tons. There are 5 existing chillers on the campus. Two of which are at 350 tons, one at 600 tons, one at 800 tons and one at 1200 tons. The existing 600 ton chiller requires more frequent maintenance than others.

The two 350 ton existing chillers are no longer in operation due to wear and age, they also use Chloro-Flouro-Carbon (CFC, R-13) refrigerants that are ozone depleting and are strictly regulated by recent Federal laws that control their use.

Hot Water Heating Plants: The existing three 300 HP boilers are capable of meeting campus heating need through the completion of the build out of the campus.

Chilled & Hot Water Distribution System: The existing underground distribution and pumping system has reached its maximum capacity. Future buildings will also require additional pump and pipe capacity to a total of 4000 tons of cooling demand. The distribution system is designed with a high system pressure loss and full flow water circulation with a by-pass system which does not function correctly at low load conditions.

Campus Pond: The existing pond represents a potential valuable asset in the central plant system. The pond may be used for heat rejection of the new chillers which would eliminate partial cooling tower operation.

Campus Air & Water Systems: The Central Plant upgrades, as described, will produce a significant operational and maintenance cost savings in the future.

Telecommunications: The campus telecommunications cable plan was upgraded in 2002 to CSU Standards. The infrastructure has the projected capacity to meet the University's needs for the next 20 years. Some lateral duct banks with cabling will need to be installed to serve new buildings. Category 6 cabling has been installed in recently constructed buildings.

Regulatory Setting

There are several areas where Federal, State, regional and local regulatory systems dictate the operations, development and management of utility systems and infrastructure. The following provides an overview of the regulatory environment for some of the utility systems discussed in this section.

Solid Waste Management

Federal Resource Conservation and Recovery Act Volume 40 of the Code of Federal Regulations, Part 258 (Resource Conservation and Recovery Act (RCRA, Subtitle D)) contains regulations for municipal solid waste landfills and requires states to implement their own permitting programs incorporating the Federal landfill criteria. The Federal regulations address the location, operation, design, groundwater monitoring, and closure of landfills.

State California Integrated Waste Management Board Titles 14 and 27 of the California Code of Regulations (CCR) contain regulations and standards enforced by the California Integrated Waste Management Board pertaining to waste management on lands within the State.

The California Integrated Waste Management Board (CIWMB) is responsible for monitoring compliance with AB 75 (Strom-Martin, 1999) that requires that State agency's reduce their waste stream.

State agencies and facilities were required to meet a waste diversion goal of 50 percent by 2004. State agencies and large State facilities were required to submit an Integrated Waste Management Plan (IWMP) to the California Integrated Waste Management Board showing how they would meet the diversion goals of 25 percent by 2002 and 50 percent by 2004. State agencies and large State facilities also must submit annual reports showing how they are meeting and/or maintaining the 50 percent goal.

In 1989, the California Legislature passed AB 939 requiring California cities to implement plans designed to reduce waste deposited in landfills by 50 percent per person by December 31, 2000. As part of AB 939, cities and counties were required to develop a Source Reduction and Recycling Element (SRRE).

Local Stanislaus County Code; Title 9 of the Stanislaus County Code includes standards and regulations for solid waste collection and disposal.

Energy:

Federal The Federal Energy Regulatory Commission regulates the transmission and sale of electricity in interstate commerce, licensing of hydroelectric projects, and oversight of related environmental matters.

State The California Public Utilities Commission (PUC) sets forth specific rules that relate to the design, installation, and management of California's public utilities, including electric, natural gas, water and transportation, and telecommunications.

Title 20 and Title 24, California Code of Regulations (CCR)

New buildings constructed in California must comply with the standards contained in Title 20, Energy Building Regulations, and Title 24, Energy Conservation Standards, of the CCR. CSU Stanislaus exceeds Title 24 standards by 15 percent. Title 24 (AB 970)

also contains energy efficiency standards for residential and nonresidential buildings based on a State mandate to reduce California's energy demand.

Warren-Alquist Energy Resources Conservation and Development Act

The State Energy Commission regulates energy resources by encouraging and coordinating research into energy supply and demand problems to reduce the rate of growth of energy consumption (Warren-Alquist Energy Resources Conservation and Development Act Government Code section 25000 *et seq*.).

3.15.2 Environmental Impacts

To the extent that updating the Physical Master Plan Update will result in future development within the campus, an increase in the demand for utilities and utility facilities such as sewer, water and storm drainage facilities will result. The City's existing utility facilities may require enhancement to accommodate such increases.

A. Thresholds of Significance

Appendix "G" of the CEQA Guidelines addresses potential impacts on Utilities and Service Systems as follows:

Would the project:

- Exceed water treatment requirements of the applicable Regional Water Quality Control Board?
- Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, that construction of which could cause significant environmental effects?
- Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?
- Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?
- 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?
- Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?
- Comply with Federal, State and local statutes and regulation related to solid waste?

ASSESSMENTS WATER OR WASTEWATER FACILITIES:

DEFINITION OF ISSUE

The term "water or wastewater facilities" includes water treatment and distribution facilities, wastewater treatment and disposal facilities, maintenance facilities and similar facilities for the purposes of providing water and wastewater services. Projects may result in demand for water and wastewater services that exceed existing facility capacity.

THRESHOLD CRITERIA

A project will normally have a significant impact on water and wastewater facility if it would substantially interfere with the operations of an existing water and wastewater facility, or would put additional demands on a water and wastewater facility that is currently operating at capacity. The impact will be measured based on existing water and wastewater facility utilization and capacity compared to the increment of new demand created by the project. A project that would result in need for a new or expanded water and wastewater facility may result in the determination of a significant impact on the provision of water and wastewater services in the community.

Where a project would result in the need for new or expanded water and wastewater facilities and where the general plan and zoning maps of the City do not designate adequate areas for expansion of water and wastewater facilities, the impacts water and wastewater facilities expansion may be considered potentially significant and will require further evaluation on a case-by-case basis.

ASSESSMENTS STORMWATER DRAINAGE FACILITIES:

DEFINITION OF ISSUE

The term "stormwater drainage facilities" includes culverts, bridges, stormwater drains, stormwater detention ponds, Best Management Practices stormwater treatment and similar stormwater drainage facilities, for the purposes of providing stormwater drainage services. Projects may result in demand for stormwater drainage services that exceed existing facility capacity.

THRESHOLD CRITERIA

A project will normally have a significant impact on a stormwater drainage facility if it would substantially interfere with the operations of an existing stormwater drainage facility, or would put additional demands on a stormwater drainage facility that is currently operating at capacity. The impact will be measured based on existing stormwater drainage facility utilization and capacity compared to the increment of new demand created by the project. A project that would result in need for a new or expanded stormwater drainage facility may result in the determination of a significant impact on the provision of stormwater drainage services in the community.

Where a project would result in the need for new or expanded stormwater drainage facilities and where the general plan and zoning maps of the City do not designate adequate areas for expansion of stormwater drainage facilities, the impacts stormwater drainage facilities expansion may be considered potentially significant and will require further evaluation on a case-by-case basis.

ASSESSMENT OF DOMESTIC WATER QUANTITY

DEFINITION OF WATER QUANTITY

The amount of water from either an individual source (water wells) or public water purveyor necessary to meet the long term domestic water needs for development.

DEFINITION OF TERMS
Availability Letter: A statement from a public water purveyor indicating that a supply of domestic water is available or will be available to serve the development.

Individual Water Supply System: A water supply system consisting of a well or wells for providing a supply of domestic water to fewer than (5) service connections.

Production Test: A procedure is used for determining the amount of water an individual well can produce and the long term reliability of the water source. The production test consists of a 24-hr. constant rate pump discharge test and a 12-hr. recovery test. The well must provide at least 5 gpm for each domestic service connection and must fully recover to the pre-test static water level.

Public Water System: A water system, regardless of type of ownership, for the provision of piped water to the public for domestic use, if such system has at least five (5) service connections or regularly serves an average of at least twenty-five (25) individuals daily at least sixty (60) days of the year, and has an un-revoked permit from the County Environmental Health Department or the State Department of Health Services.

THRESHOLD CRITERIA
An individual water system will be considered to create a potential significant impact on the environment if it does not comply with applicable sections of the following documents:

- Local Code regulating the minimum amount of water required to be available for a domestic water supply.
- California Code of Regulations Title 22, Chapter 16 (California Water Works Standards).
- Water well production testing procedures established by the County Public Works Department and/or the County Environmental Health Department.

ASSESSMENT OF DOMESTIC WATER QUALITY
DEFINITION OF ISSUE
Domestic Water: A supply of potable water used for human consumption or connected to domestic plumbing fixtures in which the supply is obtained from an individual water supply system or a public water system operating with an un-revoked permit from the County Environmental Health Department or the California State Department of Health Services.

DEFINITION OF TERMS
Water Quality: Refers to the chemical, biological, radiological, and physical quality of water used for human consumption.

Drinking Water Standards:
1. Primary drinking water standards that specify maximum contaminant levels (MCL) as described in Title 22, California Code of Regulations.

2. Secondary drinking water standards specify the maximum contaminant levels as described in Title 22, California Code of Regulation, which may adversely affect the odor or appearance of water, and may cause a substantial number of persons served by the public water system to discontinue its use.

Maximum Contaminant Level (MCL): The maximum level of a contaminant in water.

Individual Water Supply System: A system which obtains water from an onsite water well or wells used to supply domestic water to no more than four (4) service connections.

Public Water System: A system, regardless of type of ownership for the provision of piped water to the public for domestic use, if such system has more that four (4) service connections or regularly serves an average of at least 25 individuals daily at least 60 days of the year, and require a permit from the County Environmental Health Department or the California Department of Health Services.

Note: The reader is directed to Title 22 of the California Code of Regulations for additional definitions (classifications) of public water systems.

THRESHOLD CRITERIA
A domestic water system will be considered to create a potential significant impact on the environment with respect to water quality if it does not comply with the applicable State Drinking Water Standards as described in Title 22 of the California) Code of Regulations, Section 64421 et Seq.

Note: Domestic water quality regulations for water systems with over 200 service connections are enforced by the State Department of Health Services.

ASSESSMENT OF FIRE FLOW REQUIRMENTS INFLUENCING WATER SUPPLY
These standards are used to assess development project related impacts relative to required fire flow and where applicable requirements for private water systems having to do with storage needs (duration) and reliability.

DEFINITION OF ISSUE
Fire flow is defined as the number of gallons per minute (GPM) of water available from a fire hydrant in the event of an emergency situation. This issue will also cover requirements for a private water system when the project is not provided with water from a purveyor. Specific concerns for private water systems include, but are not limited to, flow, duration, and reliability.

THRESHOLD CRITERIA
A project will be considered having a significant impact if:

1. It cannot meet the required fire flow as determined by:

a. The I.S.O. Guide for Determination of required fire flow.
b. The City or County Waterworks Manual as applicable.
c. The Uniform Fire (UFC).

ASSESSMENT OF INDIVIDUAL SEWAGE DISPOSAL SYSTEMS

DEFINITION OF INDIVIDUAL SEWAGE DISPOSAL SYSTEM:
A system which disposes of domestic waste (sewage) generated by individual residences and businesses located in areas without access to public sewer service. These are also referred to as septic systems and onsite sewage disposal systems.

DEFINITION OF TERMS:
Alternative Sewage Disposal Systems Specially designed systems that are used in areas in which conventional sewage disposal systems cannot be approved:

(1) Mound filtration system. This is an above ground disposal system consisting of a septic tank; wet well and pump, and an above ground mound effluent disposal field.

(2) Subsurface sand filtration system. A subsurface disposal system which utilizes a sand filtration system (bed) in areas with bedrock formations.

Conventional Sewage Disposal System A system consisting of a septic tank and an effluent disposal field of either leach lines or seepage pits.

THRESHOLD CRITERIA:
A. Individual Sewerage disposal systems will be considered to create a potential significant impact on the environment if it does not comply with applicable sections of the following documents:

- Uniform Building Code (UBC)
- Uniform Plumbing Code (UPC)
- City or County Sewer Policy
- Central Valley Regional Water Quality Control Board Basin Plan.

B. Individual sewerage disposal system that does not meet the Central Valley Regional Water Quality Control Board's Waste Discharge Requirements.

ASSESSMENT OF SEWAGE COLLECTION/TREATMENT FACILITIES

DEFINITION OF ISSUE: Sewage collection/treatment facilities are those which collect wastewater from domestic, commercial, industrial and institutional uses, treat it to remove organic and inorganic hazardous or noxious waste materials, and discharge the treated effluent into the environment.

THRESHOLD CRITERIA:
A. Public or community wastewater disposal systems will be considered to create a potential significant impact on the environment if it does not comply with Central

Valley Regional Water Quality Control Board Basin Plan.

B. Project that contributes to or results in wastewater discharge that does not meet the Central Valley Regional Water Quality Control Board's Waste Discharge Requirements.

ASSESSMENT OF SOLID WASTE IMPACTS

DEFINITIONS

Definition of Integrated Solid Waste Management: The systematic hierarchical administration of activities which provide for the collection, reuse, recycling, composting, transformation and disposal of solid waste.

Definition of Technical Terms:

The following definitions refer to terms used in these guidelines, and shall be used in the completion of the project impact assessment worksheet.

Diversion Rate: That amount of solid waste that is diverted from landfills by recycling and composting programs.

Generation Rate: That amount of solid waste produced by residential, commercial, industrial uses, etc.

Project Waste Disposal Rate: The residual amount of solid waste expected to be generated by the project reduced by the amount of materials diverted from disposal through source reduction, recycling , and/or composting.

Recycling: The process of collecting, sorting, cleansing, treating, and reconstituting materials that would otherwise become solid waste, and returning them to the economic mainstream in the form of raw material for new, reused, or reconstituted products which meet the quality standards necessary for use in the marketplace.

Source Reduction: Any action which causes a net reduction in the generation of solid waste. Source reduction includes, but is not limited to, reducing the use of non-recyclable materials, replacing disposable materials and products with reusable materials and products, reducing packaging, reducing the amount of yard wastes that generators produce, and increasing the efficiency of the use of paper, cardboard, glass, metal, plastic, and other materials in the manufacturing process. Special Wastes: Those waste products that are restricted from a Class 3 landfill site.

Wasteshed: A general geographic area which is served by a common waste handling, processing or disposal facility.

THRESHOLD CRITERIA

A project is considered to result in significant impacts to landfill capacity if it generates more than five percent of the expected average increase in waste generation thereby using a significant portion of the remaining landfill capacity and/or is inconsistent with the

County Solid Waste Management Plan.

ASSESSMENTS FOR PUBLIC UTILITIES

DEFINITION OF UTILITIES: Utilities include electrical, gas and communication facilities:

Electric: Electrical facilities include generation plants, transmission substations, and transmission lines.

Gas: The fixed transmission and distribution system for natural gas supplies and/or propane bulk storage, distribution system and domestic supply tanks.

Communication: Such uses and structures as radio and television transmitting and receiving antennas, radar stations, microwave towers and telephone facilities, community cable systems and other similar types of communication and telecommunication infrastructure.

THRESHOLD CRITERIA:

A project will normally have a significant impact on a public utility facility if it would substantially interfere with the operations of an existing public utility facility, or would put additional demands on a public utility facility that is currently operating at capacity. The impact will be measured based on existing public utility facility utilization and capacity compared to the increment of new demand created by the project. A project that would result in need for a new or expanded public utility facility may result in the determination of a significant impact on the provision of public utility services in the community.

Where a project would result in the need for new or expanded public utility facilities and where the general plan and zoning maps of the City do not designate adequate areas for expansion of public utility facilities, the impacts public utility facilities expansion may be considered potentially significant and will require further evaluation on a case-by-case basis.

B. Potential Significant Impacts:

Utility and Service System Impacts Found Not to be Potentially Significant:

As a result of project analysis, based on data collected in the evaluation of the University's Physical Master Plan Update implementation, the following aspects of a potential utility and service system impact are found not to exist or exist at levels well below any reasonable expectation that a significant adverse impact is likely to result:

- *Exceed water treatment requirements of the applicable Regional Water Quality Control Board?*

  Wastewater service is provided by the City of Turlock. The CSU Stanislaus Physical Master Plan Update is not increasing planned capacity of the Campus. Design of the infrastructure system supporting the Campus anticipated the Campus population at buildout (12,000 FTE). Treatment capacity of the City is expected to increase as City

population increases. No growth in the City, or the Campus, will be permitted that would result in the treatment capacity of the City's wastewater treatment facility being exceeded.

- *Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, that construction of which could cause significant environmental effects?*
  Planning is under way to develop surface water treatment facilities to serve the City of Turlock, along with several nearby communities, by the Turlock Irrigation District. An Environmental Impact Report has been prepared for the development of this service and the construction of the surface water treatment plant to be owned an operated by the District. This Environmental Impact Report found that all potential significant impacts could be mitigated to a level deemed less than significant with two exceptions.

  First, the loss of approximately 15 to 20-acres of Prime Farmland, as defined by the California Department of Conservation Farmland Mapping Program, resulting from the construction of the proposed Water Treatment Plant was considered to be a significant and unavoidable direct and cumulative impact on regional agricultural resources. Second, construction activities associated with the Water Treatment Plant, pipeline and terminal facilities were found to have a significant and unavoidable cumulative impact on air quality. Note that this system will be developed or not developed regardless of the action of the Physical Master Plan Update.

- *Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?*
  Implementation of the CSU Stanislaus Physical Master Plan Update is not likely to have an impact on regional drainage facilities given the relatively small size of the planned facility growth relative to the overall Campus and the growth occurring within the greater urban area of Turlock.

- *Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?*
  Implementation of the CSU Stanislaus Physical Master Plan Update is not likely to have an impact on overall City water supplies or require the development of new water sources given the relatively small size of the planned facility growth relative to the overall Campus and the growth occurring within the greater urban area of Turlock.

- *Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the projects projected demand in addition to the provider's existing commitments?*
  As noted above, the relatively small scale of proposed facility expansion and the fact that overall campus population, as planned, is not increasing, it is highly unlikely that the City would not approve increased capacity for this educational facility. CSU

Stanislaus works closely with the City of Turlock to coordinate normal planned utility expansion to assure that wastewater treatment plant capacity is sufficient to service the new campus building programs.

- *Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?*
  Operations of the Campus, as required by State law, divert more than 50% of its solid waste from the normal waste stream. The existing land fills in the region have operating capacities that extend beyond 2020. Facilities are planned to accommodate the planned growth of the region, the City of Turlock and the CSU Stanislaus Campus.

- *Comply with Federal, State and local statutes and regulation related to solid waste?*
  The Campus complies with all Federal, State and local regulations with respect to the handling, storage, transfer and disposal of solid waste.

Utility Impacts Found to be Potentially Significant:
As a result of project analysis, based on data collected in the evaluation of the University's proposed Physical Master Plan Update, no potential utility impacts are likely to result in a significant adverse environmental impact due to project implementation.

C. Proposed Physical Master Plan Update Guiding Principles Relating to Utilities:
"1. Precedent for Sustainability
Sustainable practices shall be established on campus to provide an example of a socially and environmentally sensitive existence for campus users and the community. The stewardship of campus land will efficiently balance building footprint with open space needs. Facilities and infrastructure will be fully utilized to reduce energy use. Landscaping will attempt to minimize irrigation and maintenance. Buildings will be oriented to embrace nature, use locally available materials, and be efficient to operate."

"2. Adaptability
Design of buildings and grounds will allow future adaptability and renovation. Campus infrastructure will be accessible, expandable, reliable, and simultaneously, unobtrusive."
.

3. Utility Master Plan
Other aspect of the Master Plan, addressing Utilities are set forth below:

Water: Improvements for the campus' water distribution system will take place as follows:

1. Construct new water lines to replace some of the smaller diameter pipelines or provide additional loops in the domestic and irrigation water distribution system to improve the water flow conditions.

2. Install additional irrigation pump station before build out of the campus to provide adequate water pressure.

Sewer: All future building laterals will be a minimum of 6-inches in diameter and shall be properly sized to carry the estimated flow; additionally, where possible, a minimum slope of 1% will be provided or the collection system will be designed for a 2 ft/sec. velocity.

Storm Drain: The existing collection system appears to have been properly sized to carry the 100 year storm flow. There is no need for construction of any new storm drain facilities. The new storm drain collection system for future improvements must be designed to convey the flow from each drainage area.

Electrical: The main electrical duct bank runs have available space for accepting a feeder for the main feeder backup. As the campus reaches its build-out an additional main distribution switch will need to be installed at the main switchgear location.

Natural Gas: The existing black iron distribution system is forty (40) years old. The total length is about four thousand (4000) feet .The natural gas distribution lines will need to be replaced at some future point in time to reduce maintenance and operation costs.

Chilled Water Plant: As part of the chiller system upgrade the existing cooling towers will be completely upgraded and new cooling tower(s) will be added to ensure that higher chiller operating efficiencies are achieved.

Hot Water Heating Plants: The loop will need to be expanded and lateral connection made to new buildings.

Chilled & Hot Water Distribution System: In order to increase energy efficiency and to reduce maintenance and operation cost, buildings that are not presently served by the Central Plant will be connected to the new distribution loop. The new loop will result in lower pumping energy, maintenance and operation costs and will provide more accurate control during low load conditions campus wide. A building will be constructed near the Gymnasium to house chiller operations to serve the future development of the east area of the campus.

Campus Pond: The campus will further evaluate the feasibility of using the Pond for cooling purposes.

Campus Air & Water Systems: The Central Plant upgrades will produce a significant operational and maintenance cost savings in the future. In addition, further savings may be achieved with the modification of campus building air conditioning systems.

A detailed analysis of these air conditioning systems in each major building will include:

1. Fan operation efficiency
2. Air distribution

3. Terminal devices
4. HVAC controls

Telecommunications: In the future, buildings with Category 5e or older cabling will need to be upgraded to Category 6 or the latest standard.

D. Short-Term Impacts:
As a result of adoption of the updated Facility Master Plan, and update to the Campus CIP-COP will be processed, facility and improvement design plans can be prepared and financial programs developed to construct, maintain and operate these new and expanded facilities. None of these activities can be expected to have a "physical" impact on the environment. Adoption of the CSU Stanislaus Physical Master Plan Update will not have any immediate or short-term impact on utilities on the campus or within the City of Turlock.

E. Long-Term Impacts:
Long term impact of growth and development are expected to result in a balance between increased need for utility facilities and programs and increases in facilities and services.

F. Cumulative Impacts:
Growth in regional population and corresponding expansion of the utility infrastructure and facilities will require development of new or expanded roadways and other types of public service facilities. At present, the City and the County of Stanislaus have plans to develop necessary infrastructure to support planned growth and mitigation programs in place to support this growth. As a result, these impacts, however, are not likely to result in a significant adverse physical impact on the environment.

G. Secondary Impacts:
There are no adverse physical secondary impacts expected to result from the development of the expanded utility infrastructure and facilities necessary to support the CSU Stanislaus Physical Master Plan Update as the planned capacity of the existing facility has not changed as a result of this update.

3.15.4 Mitigation Measures
No mitigation measures are proposed as there are no significant adverse impacts expected to result from the adoption and implementation of the CSU Stanislaus Physical Master Plan Update with respect to Utilities.

3.15.5 Level of Significance After Mitigation
No significant adverse physical impact on utilities and service systems is expected to result from the CSU Stanislaus Physical Master Plan Update's adoption and implementation.