SECTION FOUR

REVISED PAGES OF THE DRAFT EIR

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This section contains the corrections that have been made to the Draft EIR (DEIR) based on comments received on the document and updated information that has become available. The corrections on the following pages are formatted as follows: deletions to the text are shown in ~~strikethrough~~ text and additions to the text are <u>underlined</u>.

EXECUTIVE SUMMARY

Introduction

Under the California Environmental Quality Act (CEQA), when discretionary projects are undertaken by public agencies, an Environmental Impact Report (EIR) is required if the Lead Agency determines that the project may cause a significant environmental impact. This was concluded by the Notice of Preparation (NOP) prepared and published for this project in July 2008 (Appendix A). Comments received during the public review of the Notice of Preparation follow in Appendix A. The purpose of an EIR is to provide full disclosure of the potentially significant environmental effects of the project to the public and their decision-makers and explore means to mitigate (i.e., reduce, avoid, or eliminate) those impacts through special mitigation measures or alternatives to the project. CEQA intends the preparation of an EIR to be a public process that provides meaningful opportunities for public input with regard to potential environmental effects.

The project evaluated in this EIR involves the adoption of the *Merced Vision 2030 General Plan* for the City of Merced.

It is the intent of the Executive Summary to provide the reader with a clear and simple description of the proposed project and its potential environmental impacts. Section 15123 of the CEQA Guidelines requires that the summary identify each significant impact, and recommend mitigation measures and alternatives that would minimize or avoid potential significant impacts. The summary is also required to identify areas of controversy known to the lead agency, including issues raised by agencies and the public, and issues to be resolved, including the choice among alternatives and whether or how to mitigate significant impacts. This section focuses on the major areas of the proposed project that are important to decision-makers and utilizes non-technical language to promote understanding.

This EIR will be used as a Program EIR. The City of Merced is the Lead Agency for the preparation of this Program EIR. Further environmental review may be required for specific activities resulting from the proposed Merced Vision 2030 General Plan's adoption. Section 15168(a) of the CEQA Guidelines defines a Program EIR as:

> An EIR which may be prepared on a series of actions that can be characterized as one large project and are related either:
>
> 1) Geographically,
>
> 2) As logical parts in the chain of contemplated actions,
>
> 3) In connection with issuance of rules, regulations, plans, or other general criteria to govern the conduct of a continuing program, or

4) As individual activities carried out under the same authorizing statutory or regulatory authority and having generally similar environmental effects which can be mitigated in similar ways.

Project Description

The proposed project includes an update of the City of Merced's General Plan. California state law requires each city and county to adopt a general plan "for all the physical development of the county or city, and any land outside its boundaries which bears relation to its planning" (Government Code Section~~s~~ 65300). The General Plan will include Urban Expansion, Land Use, Transportation & Circulation, Public Facilities & Services, Urban Design, Open Space, Conservation & Recreation, Sustainable Development, Housing, Noise and Safety Elements. The Housing Element has been previously adopted and certified by the California Department of Housing and Community Development. The Housing Element (last updated in 2003 with minor revision in 2004) has a set schedule for review, generally every five years, based on State law. The Housing Element is currently being updated by the City and will be included in the General Plan document after its adoption. Figure 2-4 shows the proposed 2030 Land Use and Circulation Map for the General Plan. The expansion of the urban land use designations define the limits for extending City services and infrastructure so as to accommodate new development anticipated within the 2010-2030 time-frame of the General Plan. Policies in the proposed General Plan limit leap-frog development and provide for an orderly transition from rural to urban land uses.

The Plan includes Guiding Principles, developed during Community Workshops, described below. Table ES-1 shows the acreage of General Plan land use designations for both the current and proposed General Plans (City limits and Specific Urban Development Planning Area (SUDP)).

Table ES-1
Existing & Proposed General Plan Land Use Comparison Within the City Limits and SUDP/SOI (Acres)

Land Use	City Limits	Existing SUDP	Total	Proposed SUDP/SOI	All Land in new SUDP/SOI
RR (Rural Residential)	~~15.25~~ 17.91	~~280.84~~ 261.99	~~296.09~~ 279.90	2004.91	~~2301.00~~ 2284.81
AG (Agriculture)	~~92.33~~ 138.70	~~21.51~~ 10.75	~~113.84~~ 149.45	0	~~113.84~~ 149.45
Total Ag Res	**~~107.58~~ 156.61**	**~~302.35~~ 272.74**	**~~409.93~~ 429.35**	**2004.91**	**~~2414.84~~ 2434.26**
LD (Low-Density Residential)	~~5516.28~~ 5577.39	~~2981.05~~ 2214.47	~~8497.33~~ 7791.86	274.08	~~8771.41~~ 8065.94
LMD (Low-Medium Density)	~~824.05~~ 915.37	~~305.48~~ 294.23	~~1129.53~~ 1209.60	46.96	~~1176.49~~ 1256.56
Total Single-Family Res	**~~6340.33~~ 6492.76**	**~~3286.53~~ 2508.70**	**~~9626.86~~ 9001.46**	**321.04**	**~~9947.90~~ 9322.50**

Land Use	City Limits	Existing SUDP	Total	Proposed SUDP/SOI	All Land in new SUDP/SOI
HMD (High-Medium Density)	~~745.08~~ 754.21	~~61.84~~ 20.52	~~806.92~~ 774.73	25.35	~~832.27~~ 800.08
HD (High Density Residential)	~~92.44~~ 92.10	0	~~92.44~~ 92.10	23.56	~~116.00~~ 115.66
RMH (Residential Mobile Home)	~~79.34~~ 79.51	~~0.18~~ 0.00	~~79.52~~ 79.51	0	~~79.52~~ 79.51
Total Multi-Family	**~~916.86~~ 925.82**	**~~62.02~~ 20.52**	**~~978.88~~ 946.34**	**48.91**	**~~1027.79~~ 995.25**
P/G (Public/Government)	~~533.16~~ 535.51	~~5.30~~ 0.00	~~538.46~~ 535.51	39.82	~~578.28~~ 575.99
CO (Commercial Office)	~~341.74~~ 377.50	~~132.32~~ 335.75	~~474.06~~ 713.25	0	~~474.06~~ 713.25
Total Office	**~~874.90~~ 913.01**	**~~137.62~~ 335.75**	**~~1012.52~~ 1248.76**	**39.82**	**~~1052.34~~ 1288.58**
IND (Industrial)	~~1882.22~~ 1840.68	~~994.73~~ 700.97	~~2876.95~~ 2541.65	0	~~2876.95~~ 2541.65
IND-R (Industrial Reserve)	0	~~150.40~~ 150.39	~~150.40~~ 150.39	1072.34	~~1222.74~~ 1222.73
Total Industrial	**~~1882.22~~ 1840.68**	**~~1145.13~~ 851.36**	**~~3027.35~~ 2692.04**	**1072.34**	**~~4099.69~~ 3764.38**
BP (Business Park)	~~128.59~~ 125.45	~~453.35~~ 505.91	~~581.94~~ 631.36	77.43	~~659.37~~ 708.79
BP-R (Business Park Reserve)	~~2.94~~ 0	~~85.27~~ 328.60	~~88.21~~ 328.60	0	~~88.21~~ 328.60
Total Business Park	**~~131.53~~ 125.45**	**~~538.62~~ 834.51**	**~~670.15~~ 959.96**	**77.43**	**~~747.58~~ 1037.39**
CG (General Commercial)	~~321.55~~ 322.01	~~172.04~~ 244.18	~~493.59~~ 566.19	0	~~493.59~~ 566.19
CN (Neighborhood Commercial)	~~200.75~~ 197.84	~~51.71~~ 70.59	~~252.46~~ 268.43	22.84	~~275.30~~ 291.27
CT (Thoroughfare Commercial)	~~212.89~~ 209.01	~~292.01~~ 9.46	~~504.90~~ 218.47	173.92	~~678.82~~ 392.39
RC (Regional/Community)	~~475.46~~ 475.79	~~42.37~~ 230.61	~~517.83~~ 706.40	0	~~517.83~~ 706.40
Total Commercial	**~~1210.65~~ 1204.65**	**~~558.13~~ 554.84**	**~~1768.78~~ 1759.49**	**196.76**	**~~1965.54~~ 1956.25**
OS-PK (Open Space/Park)	~~786.85~~ 681.76	~~167.24~~ 187.24	~~954.09~~ 869.00	152.91	~~1107.00~~ 1021.91
Total Open Space	**~~786.85~~ 681.76**	**~~167.24~~ 187.24**	**~~954.09~~ 869.00**	**152.91**	**~~1107.00~~ 1021.91**
Total School	**~~677.91~~ 678.86**	**~~68.32~~ 51.78**	**~~746.23~~ 730.64**	**994.18**	**~~1740.41~~ 1724.82**
Other Lands					
COM-R (Commercial Reserve)	~~7.15~~ 0	~~83.18~~ 90.32	~~90.33~~ 90.32	0	~~90.33~~ 90.32

Land Use	City Limits	Existing SUDP	Total	Proposed SUDP/SOI	All Land in new SUDP/SOI
RES-R (Residential Reserve)	0	~~360.34~~ 1360.31	~~360.34~~ 1360.31	0	~~360.34~~ 1360.31
PARK-F (Park-Future)	~~5.83~~ 17.48	~~65.18~~ 98.22	~~71.01~~ 115.70	0	~~71.01~~ 115.70
SCHOOL-F (School-Future)	~~5.83~~ 11.65	~~42.78~~ 40.79	~~48.61~~ 52.44	0	~~48.61~~ 52.44
VR (Village Residential)	~~238.67~~ 231.88	~~205.11~~ 223.64	~~443.78~~ 455.52	0	~~443.78~~ 455.52
Total Other Lands	**~~257.48~~ 261.01**	**~~756.59~~ 1813.28**	**~~1014.07~~ 2074.29**	**0**	**~~1014.07~~ 2074.29**
Total Community Plan Areas*	**0**	**389.14**	**389.14**	**7956.00**	**8345.14**
Overall Total	**~~13186.31~~ 13280.61**	**~~7411.69~~ 7430.72**	**~~20598.00~~ 20711.33**	**12864.30**	**~~33462.30~~ 33575.63**

* Shown as "Reserve" in Merced Vision 2015 General Plan.
Source: Quad Knopf, City of Merced, 2011~~2010~~

Guiding Principles:

- Expansion of the Sphere of Influence and City boundary with phasing of development to avoid premature conversion of agricultural land and to plan for cost-effective extension of municipal services.

- Foster compact and efficient development patterns.

"urban centered" concept to focus population growth in defined urban areas. The goal of the plan is *"to provide for intensive urban development and to protect agricultural and open space land from uncontrolled sprawling urban development."* The current Merced County SUDP is approximately 20,000 acres.

The County of Merced (County) applies the "urban centered" concept through the designation of Specific Urban Development Plans (SUDP), Rural Residential Centers (RRC), Highway Interchange Centers (HIC), and Agricultural Services Centers (ASC). Of these, only SUDP's and RRC's relate to Merced's planning efforts. Specific Urban Development Plans are intended to accommodate all classifications of urban land use (residential, commercial, industrial, and institutional).

> An SUDP has a boundary line which is recognized as the ultimate growth boundary of the community over the life of the Plan, and all land within the SUDP is planned for eventual development in a mixture of urban and urban-related uses. *(Merced County Year 2030 General Plan)*

Each of the County's six incorporated cities, as well as eighteen unincorporated communities, are presently designated as SUDP's. The City of Merced General Plan proposes to expand its SUDP and combine it with the Sphere of Influence (see below) to 52.4 square miles to provide sufficient developable area to accommodate future growth through the Year 2030 and beyond.

PROPOSED MERCED SPECIFIC URBAN DEVELOPMENT PLAN BOUNDARY (SUDP)/SPHERE OF INFLUENCE (SOI)

The proposed Merced SUDP would result in a coterminous Sphere of Influence (SOI) and SUDP boundary. The proposed SUDP/SOI boundary would also reduce the current SOI boundary in the northeast to reflect the revised location of the U.C. Merced campus. The proposed SUDP/SOI contains approximately 33,463 acres (52.4 square miles of land area); almost the same area as the 1997 Sphere of Influence.

1) Approximately 3,995 acres will be added in Northwest Merced. The new SUDP/SOI boundary would generally move to Franklin Road on the west, north of Old Lake Road, and south to Santa Fe Drive. This area is proposed for industrial and business park uses along Highway 59 and a large mixed-use community north of Bellevue Road. This area will be able to accommodate a significant amount of the residential growth in the City for the next 20 years.

   The business park and industrial areas along Highway 59 are included in order to provide a better "jobs-housing" balance in North Merced, as well as alleviate circulation and air quality concerns. Most existing employment opportunities in Merced are located Downtown and south of Highway 99.

The second area of expansion consists of approximately 3,824 acres. It would move the SUDP/SOI south of Highway 99 to the vicinity of McNamara Road and west to a line 1/4 mile west of Thornton Road. South of the Merced Regional Airport, a large community plan

Table ES-2
Summary of Impacts and Mitigation Measures

Impact #	Impact	Significance	Mitigation #	Mitigation Measure	Significance After Mitigation
3.1 Aesthetics					
3.1-1	Substantial adverse effect on a scenic vista	Less Than Significant		No mitigation measures are required.	Less Than Significant
3.1-2	Substantially damage scenic resources, including but not limited to trees, rock outcroppings, and historic buildings within a state scenic highway	No Impact		No mitigation measures are required.	No Impact
3.1-3	Substantially degrade the existing visual character or quality of the site and its surroundings	Less Than Significant		No mitigation measures are required.	Less Than Significant
3.1-4	Create a new source of substantial light or glare that would adversely affect day or night views in the area	Potentially Significant	3.1-4	The following guidelines and standards will be followed in selecting and designing any outdoor lighting: 1. All outdoor lights including parking lot lights, landscaping, security, path and deck lights should be fully shielded, full cutoff luminaries. 2. Complete avoidance of all outdoor up-lighting for any purpose. 3. Avoidance of tree mounted lights unless they are fully shielded and pointing down towards the ground or shining into dense foliage. Ensure compliance over time. 4. Complete avoidance of up-lighting and unshielded	Less Than Significant

Impact #	Impact	Significance	Mitigation #	Mitigation Measure	Significance After Mitigation
				• compliance with street standards, and shall be connected to any nearby existing and planned open space areas, parks, schools, residential areas, commercial areas, etc., to encourage walking and bicycling. • Projects shall encourage as many clean alternative energy features as possible to promote energy self-sufficiency. Examples include (but are not limited to): photovoltaic cells, solar thermal electricity systems, small wind turbines, etc. Rebate and incentive programs are offered for alternative energy equipment. As many energy-conserving features as possible shall be included in the individual projects. Energy conservation measures include both energy conservation through design and operational energy conservation. Examples include (but are not limited to): • Increased energy efficiency (above California Title 24 Requirements) • Energy efficient ~~widows~~ windows (double pane and/or Low-E) • Use Low and No-VOC coatings and paints • High-albedo (reflecting) roofing material • Cool Paving. "Heat islands" created by development projects contribute to the reduced air quality in the valley by heating ozone precursors	

Impact #	Impact	Significance	Mitigation #	Mitigation Measure	Significance After Mitigation
3.4 Biological Resources					
3.4-1	Result in substantial adverse impacts on candidate, special-status, or sensitive species.	Potentially Significant	3.4-1a	**Vernal Pools and Vernal Pool Associates** To protect vernal pools and species associated with vernal pools including vernal pool smallscale, succulent owl's-clover, pincushion navarretia, Colusa grass, hairy Orcutt grass, spiny-sepaled button celery, San Joaquin Orcutt grass, Greene's tuctoria, Conservancy fairy shrimp, vernal pool fairy shrimp, Midvalley fairy shrimp, vernal pool tadpole shrimp, California linderiella, and Molestan blister beetle, surveys shall be conducted to determine the presence of vernal pools prior to or concurrent with application for annexation in areas identified as having potential habitat. Surveys to detect vernal pools are most easily accomplished during the rainy season or during early spring when pools contain water, although surveys shall not be limited to a particular season or condition. If vernal pools are found to occur on a project site, the pools and a 100 foot-wide buffer around each pool or group of pools will be observed. If the vernal pools and buffer areas cannot be avoided, then the project proponent must consult with and obtain authorizations from, but not limited to, the California Department of Fish and Game, the United States Fish and Wildlife Service, the Army Corps of Engineers, and the State Water Resources Quality Control Board. Consultation and authorizations may require that additional surveys for special-status species be completed. Because there is a federal policy of no net loss of wetlands, mitigation to reduce losses and compensation to offset losses to vernal pools and associated special-status species will be required.	Less Than Significant

Impact #	Impact	Significance	Mitigation #	Mitigation Measure	Significance After Mitigation
		Potentially Significant	3.4-1b	**Special-Status Plants** To protect special-status plants, the City shall ensure that a botanical survey be conducted for projects containing habitat suitable for special-status plant species. Surveys shall be conducted by a qualified biologist or botanist during the appropriate flowering season for the plants and shall be conducted prior to issuance of a grading or building permit for the project. If special-status plants are found to occur on the project site, the population of plants shall be avoided and protected. If avoidance and protection is not possible, then a qualified biologist will prepare a mitigation and monitoring plan for the affected species. The plan shall be submitted to the CDFG and/or the USFWS for review and comment. Details of the mitigation and monitoring plan shall include, but not be limited to: • Removing and stockpiling topsoil with intact roots and seed bank in the disturbance area, and either replacing the soil in the same location after construction is complete or in a different location with suitable habitat; or • Collect plants, seeds, and other propogules from the affected area prior to disturbance. After construction is complete, then the restored habitat will be replanted with propogules or cultivated nursery stock; or • ~~These and other mitigations will only be considered successful if the populations of the affected species are sustained for a minimum of three years and are of~~	Less Than Significant

Impact #	Impact	Significance	Mitigation #	Mitigation Measure	Significance After Mitigation
				~~a similar size and quality as the original population.~~	
		Potentially Significant	3.4-1c	**Valley Elderberry Longhorn Beetle** Until such time that the Valley elderberry longhorn beetle (VELB) is delisted as a federally threatened species, ~~T~~to protect the ~~Valley elderberry longhorn beetle (VELB)~~ species, the project proponent shall ensure that a survey for elderberry bushes be conducted by a qualified biologist at each project site containing habitat suitable for VELB prior to the issuance of a grading permit or building permit. If elderberry bushes are found, the project proponent shall implement the measures recommended by the biologist, which shall contain the standardized measures adopted or otherwise authorized by the USFWS.	Less Than Significant
		Potentially Significant	3.4-1d	**Burrowing Owls** To protect burrowing owls on proposed projects where suitable habitat exists, the following shall be implemented: • To protect burrowing owls, preconstruction surveys shall be conducted by a qualified biologist at all project sites that contain grasslands, fallowed agricultural fields, or fallow fields along roadsides, railroad corridors, and other locations prior to grading. If, during a pre-construction survey, burrowing owls are found to be present, the project proponent shall implement the measures recommended by the biologist and include the standardized avoidance measures of CDFG.	Less Than Significant

Impact #	Impact	Significance	Mitigation #	Mitigation Measure	Significance After Mitigation
		Potentially Significant	3.4-1e	**Special-Status Birds** To protect raptors and other special-status birds on proposed projects where suitable habitat exists, the following measures shall be implemented: • Trees identified with occupied nests of special status birds which are scheduled to be removed because project implementation shall be removed only during the non-breeding season ~~(late September to the end of February)~~, or unless it is determined by a qualified biologist that the nest is no longer occupied. • Prior to construction, but not more than 14 days before grading, demolition, or site preparation activities, a qualified biologist shall conduct a preconstruction nesting survey to determine the presence of nesting raptors. Activities taking place outside of the breeding season (typically February 15 through August 31) do not require a survey. If active raptor nests are present ~~in~~ within the construction zone or within 250 feet of the construction zone, temporary exclusion fencing shall be erected at a distance ~~of 250 feet around the nest site~~ to be determined by a qualified raptor biologist in consultation with CDFG. Clearing and construction operations within this area shall be postponed until ~~breeding and rearing activities ceased and young~~ juveniles have fledged and there is no evidence of a second nesting attempt determined by the biologist. • If nesting Swainson's hawks are observed during field surveys, then consultation with the CDFG	Less Than Significant

Impact #	Impact	Significance	Mitigation #	Mitigation Measure	Significance After Mitigation
				regarding Swainson's hawk mitigation guidelines shall be required. The guidelines include, but are not limited to, buffers of up to one quarter mile, monitoring of the nest by a qualified biologist, and mitigation for the loss of foraging habitat. • To avoid impacts to common and special-status migratory birds pursuant to the Migratory Bird Treaty Act and CDFG codes, a nesting survey shall be conducted prior to construction activities if the work is scheduled between ~~March~~ February 15 and August 31. If migratory birds are identified nesting within the construction zone, a ~~100-foot buffer around the nest site must be designated~~ a temporary buffer around the nest site will be designated by a qualified biologist in consultation with CDFG. No construction activity may occur within this buffer until a qualified biologist has determined that the young have fledged. A qualified biologist may modify the size of the buffer based on site conditions and the bird's apparent acclimation to human activities. If the buffer is modified, the biologist would be required to monitor ~~the~~ stress levels of the nesting birds for at least one week after construction commences to ensure that project activities would not cause ~~nest~~ site abandonment or loss of eggs or young. At any time the biologist shall have the right to implement ~~the full 100-foot~~ a larger buffer if stress levels are elevated to the extent that could cause nest abandonment and/or loss of eggs or young.	

Impact #	Impact	Significance	Mitigation #	Mitigation Measure	Significance After Mitigation
		Potentially Significant	3.4-1f	**Special-Status Amphibians** To protect California tiger salamander and western spadefoot on proposed projects where suitable habitat exists, the following shall be implemented: • To protect special-status amphibians, ~~preconstruction surveys~~ a project specific site assessment report, including protocol-level surveys, when indicated, shall be ~~conducted~~ prepared by a qualified and permitted biologist at all project sites that contain appropriate habitat. If~~, during a pre-construction survey,~~ this site assessment report reveals that special status amphibians are found to be present, the project proponent shall implement the measures recommended by the biologist and standardized measures adopted by the USFWS or the CDFG.	Less Than Significant
		Potentially Significant	3.4-1g	**Special-Status Reptiles** To protect western pond turtle and giant garter snake on proposed projects where suitable habitat exists, the following shall be implemented: • To protect special-status reptiles, preconstruction surveys shall be conducted by a qualified biologist at all project sites that contain appropriate habitat. If, during a pre-construction survey, special-status reptiles are found to be present, the project proponent shall implement the measures recommended by the biologist and standardized measures adopted by the USFWS or the CDFG.	Less Than Significant

Impact #	Impact	Significance	Mitigation #	Mitigation Measure	Significance After Mitigation
		Potentially Significant	3.4-1h	**Special-Status Fish** To protect special-status fish, including hardhead, on proposed projects where suitable habitat exists, the following shall be implemented: • To protect special-status fish, a habitat assessment will ~~preconstruction surveys shall~~ be conducted to ascertain whether suitable habitat for special-status fish species is present. Should suitable habitat for special-status fish species (such as hardhead) be identified, the California Department of Fish and Game will be consulted to determine whether preconstruction surveys are warranted. ~~by a qualified fish biologist at all project sites that contain appropriate habitat. If, during a pre-construction survey, special status fish are found to be present, the project proponent shall implement the measures recommended by the biologist and standardized measures adopted by the USFWS, National Marine Fisheries Service (NMFS) or the CDFG.~~	Less Than Significant
		Potentially Significant	3.4-1i	**Special-Status Mammals** To protect Merced kangaroo rat, western mastiff bat, western red bat, hoary bat, Yuma myotis, San Joaquin pocket mouse, American badger, and San Joaquin kit fox on proposed projects where suitable habitat exists, the following shall be implemented: • To protect special-status mammals, a habitat assessment shall be conducted on each project site prior to construction to ascertain whether habitat suitable for supporting special status mammals exists	Less Than Significant

Impact #	Impact	Significance	Mitigation #	Mitigation Measure	Significance After Mitigation
				on the project site. If suitable habitat is present, preconstruction surveys shall be conducted by a qualified biologist at all project sites that contain appropriate habitat according to established standards or protocols of the CDFG or USFWS, if available for that species. If during the preconstruction survey, special-status mammals are found to be present, the project proponent shall implement the measures recommended by the biologist and measures adopted by the USFWS or the CDFG.	
3.4-2	Result in substantially adverse affect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, and regulations or by the CDFG or USFWS.	Potentially Significant	3.4-2	**Streambed Alteration Agreement** To minimize impacts to riparian habitat and other sensitive natural communities, the following the measures shall be implemented when streambed alterations are proposed: • The project proponent shall have a qualified biologist map all riparian habitat, or other sensitive natural communities. To the extent feasible and practicable, all planned construction activity shall be designed to	Less Than Significant

Impact #	Impact	Significance	Mitigation #	Mitigation Measure	Significance After Mitigation
				32. Old Lake Road "M" Street to "G" Street Future Extension 0 lanes to 4 lanes) Existing LOS= none / Future LOS=C 33. Bellevue Road from ~~Atwater/Merced Expressway~~ Franklin to Thornton (2 lanes to ~~4~~8 lane~~s~~ Divided Expressway Existing LOS=C+ / Future LOS=~~C+~~F 34. Bellevue Road (Atwater-Merced Expressway) from Thornton to SR 59 (2 lanes to ~~4~~8 lane~~s~~ (Divided Expressway) Existing LOS=C+ / Future LOS=~~-D~~F 35. Bellevue Road from Parsons/Gardner to Campus Parkway (2 lanes to 6 lanes) Existing LOS=C+ / Future LOS=D 36. Cardella Road from SR 59 to "R" Street (Future Extension 0 lanes to 4 lanes) Existing LOS= none / Future LOS=D 37. Cardella Road from "M" Street to "G" Street (2 lanes to 4 lanes) Existing LOS= C+ / Future LOS=D 38. Cardella Road from "G" Street to Parsons/Gardner (Future Extension 0 lanes to 4 lanes) Existing LOS= none / Future LOS=D 39. Cardella Road from Parsons/Gardner to Campus Parkway (Future Extension 0 lanes to 4 lanes) Existing LOS= none / Future LOS=D 40. Yosemite Avenue from Parsons/Gardner to Campus Parkway (2 lanes to 4 lanes) Existing LOS=D / Future LOS=D	

Impact #	Impact	Significance	Mitigation #	Mitigation Measure	Significance After Mitigation
				50. Dickerson Ferry/Mission Avenue from SR 99 to Coffee (Future Campus Parkway)(2 lanes to 6 lanes) Existing LOS=C+ / Future LOS=C+ 51. Dickerson Ferry/Mission Avenue from Tyler to Henry (2 lanes to 6 lanes) Existing LOS=C+ / Future LOS=D 52. Dickerson Ferry/Mission Avenue from Coffee to Tower (2 lanes to 4 lanes) Existing LOS=C+ / Future LOS=C+ 53. Thornton from Dickerson Ferry/Mission to SR 140 (2 lanes to 4 lanes) Existing LOS=C+ / Future LOS=D	
		Potentially Significant	3.15-1b	Traffic studies ~~should~~ shall be performed to satisfy the requirements of the California Environmental Quality Act (CEQA) for all proposed General Plan Amendments which intensify development, proposed specific plans, annexations, and other projects at the discretion of the Development Services Department. Future traffic studies ~~should~~ shall generally conform to any guidelines established by the City. The studies ~~should~~ shall be performed to determine, at a minimum, opening-day impacts of proposed projects and as confirmation or revision of the General Plan. The studies ~~should~~ shall address queue lengths and (at a minimum) peak-hour traffic signals warrants in addition to LOS and provide appropriate mitigations. At the discretion of the City, a complete warrant study in accordance with the most recent edition of the California Manual on Uniform Traffic Control Devices may be required to evaluate the need for traffic signals.	Significant and Unavoidable

Impact #	Impact	Significance	Mitigation #	Mitigation Measure	Significance After Mitigation
3.16-7	Will the proposed project comply with federal, state, and local statutes and regulations related to solid waste?	Less Than Significant		No mitigation measures are required.	Less Than Significant
3.17 Greenhouse Gas Emissions (Global Climate Change)					
3.17-1	Development of the Project could potentially result in a cumulatively considerable incremental contribution to the significant cumulative impact of global climate change	Significant, Cumulatively Considerable, and Unavoidable	3.17-1a	~~No mitigation measures are available.~~ Per Sustainable Development Implementing Action SD 1.1.g of the Merced Vision 2030 General Plan, the City of Merced will work closely with the SJVAPCD to develop and implement uniform standards for determining "thresholds of significance" for greenhouse gas impacts for use in the City's CEQA review process. The SJVAPCD has issued its "Guidance for Valley Land Use Agencies in Addressing GHG Impacts for New Projects Under CEQA". The City will use the recommended threshold of Best Performance Measures and/or 29 percent below Business-As-Usual for new development with the City of Merced.	Significant, Cumulatively Considerable, and Unavoidable
		Significant, Cumulatively Considerable, and Unavoidable	3.17-1b	Per Sustainable Development Implementing Action SD 1.1.g of the Merced Vision 2030 General Plan and as required by recent changes in CEQA, the City shall address the issue of Climate Change and Greenhouse Gas Emissions in environmental documents prepared by the City. Techniques and best practices for evaluation these issues are currently being developed by various government agencies and interest groups and the City will keep track of these developments and endeavor to remain up-to-date in evaluation methods.	Significant, Cumulatively Considerable, and Unavoidable

Impact #	Impact	Significance	Mitigation #	Mitigation Measure	Significance After Mitigation
		Significant, Cumulatively Considerable, and Unavoidable	3.17-1c	Per Sustainable Development Policy SD 1.7 and Implementing Action SD 1.7.a of the Merced Vision 2030 General Plan, the City will develop a Climate Action Plan (CAP) that identifies greenhouse gas emissions within the City as well as ways to reduce those emissions. The Plan will parallel the requirements adopted by the California Air Resources Board specific to this issue. The City will include the following key items in the Plan: • Inventory all known, or reasonably discoverable, sources of greenhouse gases in the City, • Inventory the greenhouse gas emissions level in 1990, the current level, and that projected for the year 2020, and • Set a target for the reduction of emissions attributable to the City's discretionary land use decisions and its own internal government operations. • Within one year of adoption of the CAP, the City should complete a review of its existing policies and ordinances in order to ensure implementation of the CAP.	Significant, Cumulatively Considerable, and Unavoidable
		Significant, Cumulatively Considerable, and Unavoidable	3.17-1d	Per Sustainable Development Implementing Action SD 1.7.c of the Merced Vision 2030 General Plan, the City shall consider the following measures for new development:	Significant, Cumulatively Considerable, and Unavoidable

Impact #	Impact	Significance	Mitigation #	Mitigation Measure	Significance After Mitigation
				• When approving new development, require truck idling to be restricted during construction. • Require new development to implement the following design features, where feasible, many of these features are included as draft Best Performance Measures established by the SJVAPCD for new development: 1. Recycling: ▪ Design locations for separate waste and recycling receptacles; ▪ Reuse and recycle construction and demolition waste; ▪ Recover by-product methane to generate electricity; and, ▪ Provide education and publicity about reducing waste and available recycling services. 2. Promote pedestrian, bicycle and transit modes of travel through informational programs and provision of amenities such as transit shelters, secure bicycle parking and attractive pedestrian pathways. 3. Large canopy trees should be carefully selected and located to protect the building(s) from energy consuming environmental conditions, and to shade 50% of paved areas within 15 years. 4. Encourage mixed-use and high-density	

Impact #	Impact	Significance	Mitigation #	Mitigation Measure	Significance After Mitigation
				development to reduce vehicle trips, promote alternatives to vehicle travel and promote efficient delivery of services and goods. 5. Impose measures to address the "urban heat island" effect by, e.g. requiring light-colored and reflective roofing materials and paint; light-colored roads and parking lots; shade trees in parking lots and shade trees on the south and west sides of new or renovated buildings. 6. Transportation and motor vehicle emission reduction: ▪ Use low or zero-emission vehicles, including construction vehicles; ▪ Create car sharing programs; ▪ Create local “light vehicle” networks, such as neighborhood electric vehicle (NEV) systems; ▪ Provide shuttle service to public transit; ▪ During construction, post signs that restrict truck idling; ▪ Set specific limits on idling time for commercial vehicles, including delivery and construction vehicles; ▪ Coordinate controlled intersections so that traffic passes more efficiently through	

Impact #	Impact	Significance	Mitigation #	Mitigation Measure	Significance After Mitigation
				congested areas. Where signals are installed, require the use of Light Emitting Diode (LED) traffic lights; and, ▪ Assess transportation impact fees on new development in order to facilitate and increase public transit service. 7. Water Use Efficiency: ▪ Use of both potable and non-potable water to the maximum extent practicable; low flow appliances (i.e., toilets, dishwashers, shower heads, washing machines, etc.); automatic shut off valves for sinks in restrooms; drought resistant landscaping; "Save Water" signs near water faucets; ▪ Create water efficient landscapes; ▪ Use gray water. (Gray water is untreated household waste water from bathtubs, showers, bathroom wash facilities, and water from washing machines); and, ▪ Provide education about water conservation and available programs and incentives. 8. Energy Efficiency: ▪ Automated control system for heating/air conditioning and energy efficient appliances;	

Impact #	Impact	Significance	Mitigation #	Mitigation Measure	Significance After Mitigation
				▪ Utilize lighting controls and energy-efficient lighting in buildings; ▪ Use light colored roof materials to reflect heat; ▪ Take advantage of shade (save healthy existing trees when feasible), prevailing winds, landscaping and sun screens to reduce energy use; ▪ Install solar panels on carports and over parking areas; ▪ Increase building energy efficiency percent beyond Title 24 requirements. In addition implement other green building design ((i.e., natural daylighting and on-site renewable, electricity generation); and ▪ Require that projects use efficient lighting	
3.17-2	Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	Less Than Significant		No mitigation measures required.	Less Than Significant
3.17-3	Climate Change could potentially result in an impact on City of Merced water resources	Less Than Significant		No mitigation measures required.	Less Than Significant

Section 15121(a) of the CEQA Guidelines defines an EIR as an informational document that will:

> ...inform public agency ~~decision-makers~~ decisionmakers and the public generally of the significant environmental effects of a project, identify possible ways to minimize the significant effects, and describe reasonable alternatives to the project.

As defined by Section 15378 of the CEQA Guidelines, a "project" is any action that "...has a potential for resulting in either a direct physical change in the environment, or a reasonably foreseeable indirect physical change in the environment..." Section 15093 of the CEQA Guidelines requires decision makers to balance the benefits of a proposed project against any unavoidable adverse environmental effects of the proposed project. If the benefits of the proposed project outweigh the unavoidable adverse environmental effects, then the decision-makers may adopt a statement of overriding considerations, finding that the environmental effects are acceptable in light of the proposed project's benefits to the public.

The CEQA process requires that the Lead Agency consider input from other interested agencies, citizen groups, and individuals. CEQA provides for a public process requiring full public disclosure of the expected environmental consequences of the proposed action. The public must be given a meaningful opportunity to comment on the environmental document. CEQA also requires monitoring of the mitigation measures to ensure that they are in fact carried out.

CEQA requires a public review period, normally 45 days, for commenting on the Draft EIR. During the review period, any agency, group, or individual may comment in writing on the Draft EIR, and the Lead Agency must respond to each comment on environmental issues in the Final EIR. According to Section 15202(a) of the CEQA Guidelines, CEQA does not require formal hearings at any stage of the environmental review process; however, it is typical to consider the EIR and its findings during public hearings required for the proposed project.

If the City finds that the Final EIR is "adequate and complete," the City may certify the Final EIR in writing in accordance with CEQA Guidelines Section 15091, and if applicable, Section 15093. CEQA Guidelines Section 15091 specifies that the lead agency shall state findings, in writing, of any environmental impacts and the changes made to lessen the impact or the reason why such mitigation is infeasible. CEQA Guidelines Section 15093 requires a statement of overriding considerations in cases where the lead agency deems the proposed project's benefits outweigh the unavoidable environmental impacts. The rule of adequacy generally holds that the EIR can be certified if:

1) The EIR shows a good faith effort at full disclosure of environmental information; and,

2) The EIR provides sufficient analysis to allow decisions to be made regarding the proposed project in contemplation of environmental considerations.

Public Resources Code Section 21081.6(a) and CEQA Guidelines Section 15097 require lead agencies to adopt a Mitigation Monitoring and Reporting Program (MMRP) to describe measures that have been adopted or made a condition of project approval in order to mitigate or

- Destroying cultural and historical resources.

2.1.2 PLAN OBJECTIVES

The *Merced Vision 2030 General Plan* contains a comprehensive set of goals and policies that establish the planning philosophy that will direct future City growth. To achieve its purpose of providing for future population growth, the plan contains land use policies that provide adequate area for housing, employment and commercial activities. The plan also contains policies and standards for the provision of public services and infrastructure necessary to support future population growth.

Beyond the physical needs of future population growth, the plan contains design and open space provisions. These provisions provide an important element to the planning process. Future growth and development are expected to contribute to the overall well being of the community while preserving and enhancing the City's present quality of life.

From the standpoint of "sustainable growth," the *Merced Vision 2030 General Plan* contains provisions to ensure that future growth and development:

- Are directed away from concentrations of "prime" agricultural soils,
- Conserve water and do not over-tax or contaminate the region's water resources,
- Preserve and protect important area wildlife habitat,
- Promote development which minimizes adverse growth related impacts on the region's air quality,
- Conserve non-renewable energy resources, and,
- Preserve important area cultural and historic resources.

2.2 Project Location

Located in the Central San Joaquin Valley, the City of Merced is the seat of the Merced County government, as well as a major retail commercial/service center for the surrounding region. The City is located at the intersection of several state highways and is one of the primary access points to Yosemite National Park. Known as the "Gateway to Yosemite," Merced is approximately 80 miles west of the valley floor of the Park, along Highway 140.

Merced is approximately ~~150~~110 miles southeast of San Francisco and is one of a chain of cities located along State Highway 99. Highway 99 is one of the two major north-south arteries passing through the San Joaquin Valley and connecting Southern California to the Pacific Northwest region. Major cities to the north along Highway 99 include Modesto (40 miles), Stockton (65 miles), and Sacramento (100 miles). To the south are Madera (20 miles), Fresno (55 miles) and

Bakersfield (165 miles). Smaller cities in the vicinity of Merced along the Hwy 99 corridor are Atwater to the immediate northwest and Chowchilla to the southeast.

The City is served by two rail lines, the Burlington Northern & Santa Fe (B.N.S.F.) and the Union Pacific Transportation Company (U.P.), which pass through the City. The Merced Regional Airport provides regional air service. To the north, Castle Air Force Base has been converted to civilian use (Castle Airport).

The City of Merced is located near the geographic center of the County of Merced. To the east of the City is the western slope of the Sierra Nevada mountain range. The County of Merced is bounded on the north by Tuolumne and Stanislaus Counties, on the east by Mariposa County, on the south by Fresno and Madera Counties, and on the west by Santa Clara and San Benito Counties.

Merced County contains about 1,031 square miles of land area. In 2010, the incorporated City of Merced included 23.1 square miles and the planning area of the City (SUDP) contained approximately 32.4 square miles. Figure 2-1 shows Merced's Regional Location and Figure 2-2 shows Merced's current City limits and Proposed Sphere of Influence (SOI). Figure 2-3 shows Merced's existing 2015 General Plan Land Use diagram.

2.3 Project Setting

The City of Merced's 2010 City limits are generally bounded on the west by State Highway 59 and the El Capitan Canal, and on the east by McKee Road. The northerly City limits include Nevada Street and Cardella Road, while the southerly city limits are generally bounded by the Merced Regional Airport, Childs Avenue and by State Highway 99 to the southeast.

The northern portion of the City is characterized by gently rolling terrain, while the southern portion is relatively flat. The area surrounding the City is largely used for agricultural production. The northern, western, and eastern portions of the City contain a number of creeks and canals including Bear Creek, Black Rascal Creek, Fahrens Creek, and Cottonwood Creek. Lake Yosemite is located approximately three miles north and east of the City center. The City of Atwater and Castle Airport is located approximately four miles northwest of the City.

2.4 Project Description

The proposed project includes an update of the City of Merced's General Plan. California state law requires each city and county to adopt a general plan "for all the physical development of the county or city, and any land outside its boundaries which bears relation to its planning" (Government Code §65300). The General Plan will include Urban Expansion, Land Use, Transportation & Circulation, Public Facilities & Services, Urban Design, Open Space, Conservation & Recreation, Sustainable Development, Housing, Noise and Safety Elements. The Housing Element has been previously adopted and certified by the California Department of Housing and Community Development and is available under separate cover. The Housing Element (last updated in 2003 with minor revision in 2004) has a set schedule for review, generally every five years, based on State law. The Housing Element is currently being updated by the City and will

be incorporated into the General Plan after its adoption. Figure 2-4 shows the proposed 2030 Land Use and Circulation Map for the proposed General Plan. The expansion of the urban land use designations define the limits for extending City services and infrastructure so as to accommodate new development anticipated within the 2010-2030 time-frame of the General Plan. Policies in the proposed General Plan limit leap-frog development and provide for an orderly transition from rural to urban land uses.

The Plan includes Guiding Principles, developed during Community Workshops, described above in Section 2.1. Table 2-1 shows the acreage of General Plan land use designations for both the current and proposed General Plans (City limits and SUDP/SOI).

Table 2-1
Existing & Proposed General Plan Land Use Comparison Within the City Limits and SUDP/SOI (Acres)

Land Use	City Limits	Existing SUDP	Total	Proposed SUDP/SOI	All Land in new SUDP/SOI
RR (Rural Residential)	~~15.25~~ 17.91	~~280.84~~ 261.99	~~296.09~~ 279.90	2004.91	~~2301.00~~ 2284.81
AG (Agriculture)	~~92.33~~ 138.70	~~21.51~~ 10.75	~~113.84~~ 149.45	0	~~113.84~~ 149.45
Total Ag Res	**~~107.58~~ 156.61**	**~~302.35~~ 272.74**	**~~409.93~~ 429.35**	**2004.91**	**~~2414.84~~ 2434.26**
LD (Low-Density Residential)	~~5516.28~~ 5577.39	~~2981.05~~ 2214.47	~~8497.33~~ 7791.86	274.08	~~8771.41~~ 8065.94
LMD (Low-Medium Density)	~~824.05~~ 915.37	~~305.48~~ 294.23	~~1129.53~~ 1209.60	46.96	~~1176.49~~ 1256.56
Total Single-Family Res	**~~6340.33~~ 6492.76**	**~~3286.53~~ 2508.70**	**~~9626.86~~ 9001.46**	**321.04**	**~~9947.90~~ 9322.50**
HMD (High-Medium Density)	~~745.08~~ 754.21	~~61.84~~ 20.52	~~806.92~~ 774.73	25.35	~~832.27~~ 800.08
HD (High Density Residential)	~~92.44~~ 92.10	0	~~92.44~~ 92.10	23.56	~~116.00~~ 115.66
RMH (Residential Mobile Home)	~~79.34~~ 79.51	~~0.18~~ 0.00	~~79.52~~ 79.51	0	~~79.52~~ 79.51
Total Multi-Family	**~~916.86~~ 925.82**	**~~62.02~~ 20.52**	**~~978.88~~ 946.34**	**48.91**	**~~1027.79~~ 995.25**
P/G (Public/Government)	~~533.16~~ 535.51	~~5.30~~ 0.00	~~538.46~~ 535.51	39.82	~~578.28~~ 575.99
CO (Commercial Office)	~~341.74~~ 377.50	~~132.32~~ 335.75	~~474.06~~ 713.25	0	~~474.06~~ 713.25
Total Office	**~~874.90~~ 913.01**	**~~137.62~~ 335.75**	**~~1012.52~~ 1248.76**	**39.82**	**~~1052.34~~ 1288.58**
IND (Industrial)	~~1882.22~~ 1840.68	~~994.73~~ 700.97	~~2876.95~~ 2541.65	0	~~2876.95~~ 2541.65
IND-R (Industrial Reserve)	0	~~150.40~~ 150.39	~~150.40~~ 150.39	1072.34	~~1222.74~~ 1222.73

Land Use	City Limits	Existing SUDP	Total	Proposed SUDP/SOI	All Land in new SUDP/SOI
Total Industrial	~~**1882.22**~~ **1840.68**	~~**1145.13**~~ **851.36**	~~**3027.35**~~ **2692.04**	**1072.34**	~~**4099.69**~~ **3764.38**
BP (Business Park)	~~128.59~~ 125.45	~~453.35~~ 505.91	~~581.94~~ 631.36	77.43	~~659.37~~ 708.79
BP-R (Business Park Reserve)	~~2.94~~ 0	~~85.27~~ 328.60	~~88.21~~ 328.60	0	~~88.21~~ 328.60
Total Business Park	~~**131.53**~~ **125.45**	~~**538.62**~~ **834.51**	~~**670.15**~~ **959.96**	**77.43**	~~**747.58**~~ **1037.39**
CG (General Commercial)	~~321.55~~ 322.01	~~172.04~~ 244.18	~~493.59~~ 566.19	0	~~493.59~~ 566.19
CN (Neighborhood Commercial)	~~200.75~~ 197.84	~~51.71~~ 70.59	~~252.46~~ 268.43	22.84	~~275.30~~ 291.27
CT (Thoroughfare Commercial)	~~212.89~~ 209.01	~~292.01~~ 9.46	~~504.90~~ 218.47	173.92	~~678.82~~ 392.39
RC (Regional/Community)	~~475.46~~ 475.79	~~42.37~~ 230.61	~~517.83~~ 706.40	0	~~517.83~~ 706.40
Total Commercial	~~**1210.65**~~ **1204.65**	~~**558.13**~~ **554.84**	~~**1768.78**~~ **1759.49**	**196.76**	~~**1965.54**~~ **1956.25**
OS-PK (Open Space/Park)	~~786.85~~ 681.76	~~167.24~~ 187.24	~~954.09~~ 869.00	152.91	~~1107.00~~ 1021.91
Total Open Space	~~**786.85**~~ **681.76**	~~**167.24**~~ **187.24**	~~**954.09**~~ **869.00**	**152.91**	~~**1107.00**~~ **1021.91**
Total School	~~**677.91**~~ **678.86**	~~**68.32**~~ **51.78**	~~**746.23**~~ **730.64**	**994.18**	~~**1740.41**~~ **1724.82**
Other Lands					
COM-R (Commercial Reserve)	~~7.15~~ 0	~~83.18~~ 90.32	~~90.33~~ 90.32	0	~~90.33~~ 90.32
RES-R (Residential Reserve)	0	~~360.34~~ 1360.31	~~360.34~~ 1360.31	0	~~360.34~~ 1360.31
PARK-F (Park-Future)	~~5.83~~ 17.48	~~65.18~~ 98.22	~~71.01~~ 115.70	0	~~71.01~~ 115.70
SCHOOL-F (School-Future)	~~5.83~~ 11.65	~~42.78~~ 40.79	~~48.61~~ 52.44	0	~~48.61~~ 52.44
VR (Village Residential)	~~238.67~~ 231.88	~~205.11~~ 223.64	~~443.78~~ 455.52	0	~~443.78~~ 455.52
Total Other Lands	~~**257.48**~~ **261.01**	~~**756.59**~~ **1813.28**	~~**1014.07**~~ **2074.29**	**0**	~~**1014.07**~~ **2074.29**
Total Community Plan Areas*	**0**	**389.14**	**389.14**	**7956.00**	**8345.14**
Overall Total	~~**13186.31**~~ **13280.61**	~~**7411.69**~~ **7430.72**	~~**20598.00**~~ **20711.33**	**12864.30**	~~**33462.30**~~ **33575.63**

* Shown as "Reserve" in Merced Vision 2015 General Plan.
Source: Quad Knopf, City of Merced, 2011~~2010~~

CURRENT MERCED SPECIFIC URBAN DEVELOPMENT PLANNING (SUDP) AREA

Merced's current SUDP (adopted in 1997 with the *Merced Vision 2015 General Plan*) is based on policies contained in the *Merced County Year 2000 General Plan*. The Plan utilizes an "urban centered" concept to focus population growth in defined urban areas. The goal of the plan is *"to provide for intensive urban development and to protect agricultural and open space land from uncontrolled sprawling urban development."* The current Merced County SUDP is approximately 20,000 acres.

The County applies the "urban centered" concept through the designation of Specific Urban Development Plans (SUDP), Rural Residential Centers (RRC), Highway Interchange Centers (HIC), and Agricultural Services Centers (ASC). Of these, only SUDP's and RRC's relate to Merced's planning efforts. Specific Urban Development Plans are intended to accommodate all classifications of urban land use (residential, commercial, industrial, and institutional).

> An SUDP has a boundary line which is recognized as the ultimate growth boundary of the community over the life of the Plan, and all land within the SUDP is planned for eventual development in a mixture of urban and urban-related uses. *(Merced County Year 2030 General Plan)*

Each of Merced County's six incorporated cities, as well as eighteen unincorporated communities, are presently designated as SUDP's. The City of Merced General Plan proposes to expand its SUDP to provide sufficient developable area to accommodate future growth through the Year 2030 and beyond.

1) The City adopted its Public Facilities Impact Fees schedule and associated Public Facilities Financing Plan in 1998. The Financing Plan and the Impact Fees program were then substantially amended in 2003 (with minor revisions in 2004), May 2006, ~~and~~ August 2009, and August 2010. ~~(with another amendment proposed for consideration in August 2010).~~ The General Plan needed to be updated to reflect the current list of public facility projects anticipated in the Financing Plan.

2) An analysis of the ability of the City's Wastewater Treatment Plant (WWTP) and associated lines to serve the expanded areas needs were included. From an environmental perspective, growth inducement analysis was needed for placement of the line outside the SUDP/SOI on the eastern and western edges of the City.

Urban Design Chapter

The Urban Design Chapter was originally adopted in April 1997 along with the rest of the *Merced Vision 2015 General Plan*. The Urban Design chapter outlines policies and guidelines for implementing the City's "Urban Village" concept. No major updates to the Urban Design Chapter were anticipated in this General Plan Update process. However, minor reformatting and minor text changes were made.

Open Space, Conservation, and Recreation Chapter

The Open Space, Conservation, and Recreation Chapter was originally adopted in April 1997 as part of the *Merced Vision 2015 General Plan*. This Chapter combines two State-mandated Elements-Open Space and Conservation. The Open Space Chapter needed substantial updating to reflect current issues and the recently adopted Parks and Open Space Master Plan (October 2004). Issues that were addressed are:

1) Much of the current General Plan language regarding park facilities is based on the 1984 City of Merced Parks and Open Space Master Plan. In 2003-04, the City of Merced was involved in a substantial update of that 1984 Plan, including significant public and stakeholder input. The result was the City of Merced Park and Open Space Master Plan, prepared by Moore Iacofano Goltsman, Inc. of Portland, Oregon, adopted in October 2004. The General Plan needs to be updated to reflect the contents of the 2004 Parks and Open Space Master Plan.

When the *Merced Vision 2015 General Plan* was adopted in 1997, information about the extent of wetlands and habitat for endangered species in the Merced SUDP and Sphere of Influence was limited. Since that time, extensive information has been obtained through the UC Merced Long Range Development Plan, Merced County University Community Plan, and the Merced County Habitat Conservation Plan (now suspended) processes regarding wetlands and habitat resources. The City's General Plan needed to be updated to reflect that new information for areas within its proposed SUDP/SOI and additional policies need to be developed to address these resources. Some overlap is possible with the Sustainable Development Chapter (see below). If the consultants findings conclude that future development in the expanded SOI/SUDP would likely result in a "take" of protected species, then the General Plan needs to include a plan or at a minimum create new General Plan

neighborhoods just south of the Merced Golf & Country Club, and the area east of McKee Road. These areas are not proposed for changes in land use, but may eventually be surrounded by higher intensity urban-type land uses. Along the north and northeast periphery lies pasture land. This area contains sensitive habitat that has been left outside the SUDP/SOI. Implementation of the General Plan will have no effect on these areas. Implementation of the proposed General Plan Land Use Element will ultimately alter the existing visual character by transforming views from the existing rural setting to urban residential, commercial and industrial vistas. Policies within the Land Use, Urban Expansion and Urban Design elements will assure that development will enhance the visual character of the site and its surroundings.

The policies listed above in the Local Regulatory Setting discussion will, together, minimize visual impacts that will result from General Plan implementation particularly within already developed, areas and areas planned for development within the City. The policies and implementing actions contained within the General Plan will result in urban development that is compact, low profile and architecturally interesting. While the visual character of the proposed SUDP/SOI will change over time, it will not be degraded. The impact will be ***less than significant***.

Mitigation Measures

No mitigation measures are required.

Impact #3.1-4: Create a new source of substantial light or glare that would adversely affect day or night views in the area

Discussion/Conclusion: Each development project within the City's SUDP/Sphere of Influence could potentially result in an incremental contribution to a cumulative light and glare impact. General Plan Policy OS-1.4 will reduce the potential impact of light and glare by improving and expanding the City's urban forest through many implementation measures that promote tree planting and explore alternate funding sources for providing long-term maintenance. Trees not only create an attractive atmosphere for residents and visitors but also reduce glare. The City does not have any standards for outdoor lighting that would reduce this impact. This is a ***potentially significant*** impact.

Mitigation Measure #3.1-4:

The following guidelines and standards will be followed in selecting and designing any outdoor lighting:

1. *All outdoor lights including parking lot lights, landscaping, security, path and deck lights should be fully shielded, full cutoff luminaries.*

2. *Complete avoidance of all outdoor up-lighting for any purpose.*

3. *Avoidance of tree mounted lights unless they are fully shielded and pointing down towards the ground or shining into dense foliage. Ensure compliance over time.*

4. *Complete avoidance of up-lighting and unshielded lighting in water features such as fountains or ponds.*

Effectiveness of Mitigation Measure:

Mitigation Measure #3.1-4 will ensure that all future lighting is directed downward and away from adjacent properties, and will not contribute additional glare. This will reduce the impact to ***less than significant***.

CUMULATIVE IMPACT ANALYSIS

Impact #3.1-5: The proposed project could have a cumulatively adverse affect on aesthetic resources including the generation of light and glare

Discussion/Conclusion: Cumulative impacts from implementation of the General Plan and within the proposed SUDP/Sphere of Influence will result from the introduction of new urban development to traditionally rural agricultural areas surrounding the City of Merced. There would be a cumulative visual impact in terms of loss of agricultural land as viewed from the City and public roadways discussed in this section of the EIR.

Nighttime illumination and daytime glare would also be increased in the project vicinity as a result of cumulative General Plan build-out over time. Although individual project developments would be responsible for incorporating mitigation to minimize their visual impacts, the net result would still be a general conversion of a large area with a rural character to an urban and developed character. Some may see the loss of the area's rural character as a negative change in visual quality. This impact is considered ***potentially significant and cumulatively considerable.***

Mitigation Measures

No mitigation measures are available that would fully mitigation this impact; therefore, this impact remains ***significant, cumulatively considerable, and unavoidable***.

3.2 Agriculture and Forest Resources

This section of the Draft EIR addresses potential impacts to agricultural resources in the plan area and its surroundings. The analysis specifically focuses on the potential productivity of the soils onsite to support agriculture and the potential impacts that the project may have on the continued use of surrounding properties for agricultural production. Comments received during the Notice of Preparation (NOP) period addressing agricultural issues included a request from a citizen representative for mitigation in the EIR requiring at least one acre preserved for each acre converted to urban development.

3.2.1 SETTING

Environmental Setting

Merced County is among the largest agriculture producing counties in California (ranked fifth), with a gross income of more than $2.4 billion in 2006. The County's leading agricultural commodities include milk, chickens, almonds, cattle and calves, tomatoes and sweet potatoes. As of 2002, Merced County encompassed 2,964 farms with a cumulative land area of 1,006,127 acres.

IMPORTANT FARMLANDS

The Farmland Mapping and Monitoring Program is a farmland classification system that is administered by the California Department of Conservation. The system classifies agricultural land according to its soil quality and irrigation status. The best quality agricultural land is called "Prime Farmland." Prime Farmland is land that has the best combination of physical and chemical characteristics for the production of crops. It has the soil quality, growing season, and moisture supply needed to produce sustained high yields of crops when treated and managed according to current farming methods. The land must have been used for the production of irrigated crops at least sometime during the two cycles prior to the mapping date. Two other categories of farmland are included as Important Farmland under the farmland classification system. "Farmland of Statewide Importance" is similar to prime farmland, except for minor shortcomings, such as greater slope or less ability to store soil moisture. Land in this classification must have been used for irrigated agricultural production sometime in the four years prior to the mapping date. "Unique Farmland" contains soils of lesser quality, and may or may not include nonirrigated orchards or vineyards. This land must have been used for agricultural purposes some time during the four years prior to the mapping date.

Important Farmland is land characterized by one or more of the following characteristics: (1) presence of prime agricultural soils; (2) presence of soils of statewide agricultural importance; and (3) active agricultural lands. The ~~2006~~ 2008 FMMP Merced County Land Use Conversion Table C-1 (~~Appendix B~~) indicates that 589,615 acres of the County are Important Farmland, 272,096 acres of which are considered Prime Farmland. Between ~~2004 and~~ 2006 and 2008, the County experienced a ~~net~~ gain of ~~289~~ 2,896 acres of Important Farmland from the conversion of other land uses to irrigated agriculture. However, the County experienced a net loss of approximately ~~709~~ 1,193 acres of Prime Farmland ~~to Urban and Built-up land~~ because of

conversion to other uses. Overall the County lost a total of ~~3,512~~ 7,895 acres of agricultural lands ~~where~~ were converted to ~~Urban and Build-up lands and another 1,800 acres was categorized as being lost to~~ other land use. These changes in land uses, according to the FMMP data, are "aside from urbanization," although a net loss of 199 acres did occur as the result of conversion of Important Farmland to Urban use.

Figure 3.2-1 shows the Prime Farmlands, unique, and Farmland of Statewide Importance located in and around the plan area. These three categories are considered Important Farmland according to the CEQA checklist.

WILLIAMSON ACT

Since 2005, Merced County participates in the State of California Williamson Act agricultural land preservation program. The purpose of the Act is to preserve agricultural and open space lands by discouraging premature and unnecessary conversion to urban uses. As of 2007, there were more than 450,000 acres in the County under Williamson Act contracts.

Figure 3.2-2 shows the Williamson Act lands located in and around the plan area.

Regulatory Setting

FEDERAL

Farmland Protection Policy Act

The Farmland Protection Policy Act was passed into federal law as part of the Agriculture and Food Act of 1981 (Public Law 97-98). The Act was passed in response to the National Agricultural Land Study of 1980-1981 which found that millions of acres of farmland were being converted in the United States each year and a related report which found that much of this conversion was the result of programs funded by the federal Government. The intent of the Act is to minimize the impact federal programs have on the unnecessary and irreversible conversion of farmland to nonagricultural uses. It assures that – to the extent possible – federal programs are administered to be compatible with state and local units of government and private programs and policies to protect farmland.

STATE

Williamson Act

The California Land Conservation Act of 1965, commonly referred to as the Williamson Act, enables local governments to enter into contracts with private landowners for the purpose of restricting specific parcels of land to agricultural or related open space use. In return, landowners receive property tax assessments which are much lower than normal because they are based upon farming and open space uses as opposed to assessed value pursuant to Proposition 13.

LOCAL

Merced County Local Agency Formation Commission (LAFCO~~e~~)

Urban growth and expansion, under California State Law, is subject to a local review body called the Merced County Local Agency Formation Commission (LAFCO~~e~~). LAFCO~~e~~, comprised of City and County elected officials, must review and approve all municipal boundary revisions (including annexations).

Merced County LAFCO~~e~~ adopted a set of Local LAFCO~~e~~ Goals, Objectives, and Policies to address local concerns and priorities regarding annexations and the preservation of agricultural-land.

Open Space, Conservation, and Recreation Policies:

OS-1.1 Identify and mitigate impacts to wildlife habitats which support rare, endangered, or threatened species.

OS-2.1 Protect agricultural areas outside the City's SUDP/SOI from urban impacts.

OS-5.2 Protect soil resources from the erosive forces of wind and water.

3.2.2 THRESHOLDS OF SIGNIFICANCE

Consistent with Appendix G of the CEQA Guidelines, the proposed project is considered to have a significant impact on the environment if it will:

- Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Department of Conservation, to non-agricultural use;
- Conflict with existing zoning for agricultural use, or a Williamson Act contract;
- Conflict with existing zoning for, or cause rezoning of, forest land (as defined by Public Resources Code section 1220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g));
- Result in the loss of forest land or conversion of forest land to non-forest use; or
- Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use.

3.2.3 IMPACTS AND MITIGATION MEASURES

Impact #3.2-1: Directly or indirectly result in conversion of Prime Farmland, Unique Farmland or Farmland of Statewide Importance (Farmland) to non-agricultural use

Discussion/Conclusion: Adoption of the *Merced Vision 2030 General Plan* will result in existing agricultural areas being re-designated for residential, commercial, and public land uses. Such re-designation will indirectly result in the conversion of Farmland to urban uses over time. According to the ~~2006~~ 2008 Farmland Mapping and Monitoring Program Map (Figure 3.2-1), the Plan Update could result in conversion of approximately ~~8,750~~ 9,286 acres of ~~undeveloped land~~ Farmland to developed land within the proposed SUDP/SOI and outside the City limits of Merced, of which ~~1,898~~ 2,313 acres are Prime Farmland, 2,774 acres are Farmland of Statewide Importance, and 4,194 acres are Unique Farmland. The remaining undeveloped land is either not farmland, or is not included in the State definition of "Important Farmland."

Effectiveness of Mitigation Measures:

While implementation of the mitigation above will help reduce the impact, the impact remains ***significant and unavoidable***.

Impact #3.2-2: Conflict with existing zoning for agricultural use, or a Williamson Act contract

Discussion/Conclusion: The proposed General Plan will directly and indirectly conflict with existing agricultural zoning and Williamson Act Contracts within the proposed SUDP/SOI. Adoption of the Plan may result in the indirect conversion of existing agricultural areas for residential, commercial and public uses over time. The proposed SUDP/SOI will affect approximately ~~8,758~~ 9,286 acres of land currently designated ~~for agricultural use~~ as Prime Farmland, Farmland of Statewide Importance, or Unique Farmland by the County of Merced, of which, approximately 71 acres are subject to Williamson Act Contracts. Upon implementation of the Plan, designation of lands under Williamson Act Contract for residential, commercial and public uses will conflict with the Contracts. All 71 acres of land under Williamson Act Contract are currently undergoing the non-renewal process. These lands will no longer be subject to Williamson Act Contracts over the course of the next ten years.

The conversion of agricultural lands to urban uses will take place over the planning period at varying times and in varying locations. This variation may result in conflicting land uses abutting one another for long periods in time. Future residents of urban development could be exposed to nuisances related to agricultural activities which include dust, odors, and elevated noise levels. The General Plan includes policies and implementing actions to reduce conflict between proposed land uses of the proposed General Plan and lands in agricultural production, including lands under Williamson Act Contract. Policy OS-2.1, calls for the City to protect agricultural areas outside the City's SUDP/SOI from urban impacts. With Implementing Action 2.1.b, the City shall establish policies and programs which minimize conflicts between urban and agricultural uses. With Implementing Action 2.1.c, the City shall minimize conflict between agricultural and urban uses by requiring buffers, such as landscape areas, roadways, or creeks, to separate these uses.

Implementation of the policies proposed in the General Plan would ensure that conflict with existing zoning for agricultural use or a Williamson Act contract would be minimized. However, there is still potential for conflict, therefore, this is a ***potentially significant*** impact.

Mitigation Measures

Implementation of the Goals, Policies, and Implementing Actions of the General Plan will reduce the conflict with existing zoning for agricultural use or a Williamson Act contract; however, this will not prevent the conversion of prime farmland to non-agricultural uses, nor will it prevent changes to existing agricultural land use designations. Therefore, the conversion of prime farmland is a ***significant and unavoidable*** impact.

State Implementation Plan

The State Implementation Plan (SIP) is the blueprint for meeting federal air quality standards by the applicable deadlines set in the Federal Clean Air Act. California's SIP is a compilation of region-specific plans that detail how each area will meet the air quality standards. The plan includes an estimate of the emission reductions needed to meet each air quality standard based on air monitoring results, data on emission sources, and complex air quality modeling. It reflects the benefits of the pollution control program adopted by air agencies at all levels, and may also include commitments to implement new strategies. Together, these elements must reduce emissions by an amount sufficient to meet the air quality standard in each region. Once the local element of the plan is adopted by the air district(s) and other responsible local agencies, it is sent to the CARB for adoption and then formally submitted to the Environmental Protection Agency for approval as a revision to the California SIP.

Assembly Bill 170

AB 170 was adopted by state lawmakers in 2003 creating Government Code Section 65302.1 which requires cities and counties in the San Joaquin Valley to amend their general plans to include data and analysis, comprehensive goals, policies and feasible implementation strategies designed to improve air quality. These amendments are due no later than one year from the due date specified for the next revisions of a jurisdiction's housing element.

As required in Section 65302.1.b, cities and counties within the San Joaquin Valley must amend the general plan to include a discussion of the status of air quality and strategies to improve air quality. The elements to be amended include, but are not limited to, those elements dealing with land use, circulation, housing, conservation, and open space. Section 65302.1.c identifies four (4) areas of air quality discussion required in these amendments. These areas include: (1) a report describing local air quality conditions, attainment status, and state and federal air quality and transportation plans; (2) a summary of local, district, state, and federal policies, programs, and regulations to improve air quality; (3) a comprehensive set of goals, policies, and objectives to improve air quality; and (4) feasible implementation measures designed to achieve these goals.

LOCAL

Air pollution does not respect political boundaries. Therefore, many air quality problems are best managed on a regional basis. This was the case for the San Joaquin Valley where until 1991, each County operated a local air pollution control district (APCD). The State Legislature than determined that management of the entire air basin by a single agency would be more effective. Air basins are geographic areas sharing a common "air-shed." Most major metropolitan areas in California now fall under unified air pollution control districts (UAPCDs), or air quality management districts (AQMDs).

San Joaquin Valley Air Pollution Control District

The SJVAPCD attains and maintains air quality conditions in Merced County through a comprehensive program of planning, regulation, enforcement, technical innovation, and promotion of the understanding of air quality issues. The clean air strategy of the SJVAPCD

- *Projects shall encourage as many clean alternative energy features as possible to promote energy self-sufficiency. Examples include (but are not limited to): photovoltaic cells, solar thermal electricity systems, small wind turbines, etc. Rebate and incentive programs are offered for alternative energy equipment.*

As many energy-conserving features as possible shall be included in the individual projects. Energy conservation measures include both energy conservation through design and operational energy conservation. Examples include (but are not limited to):

- *Increased energy efficiency (above California Title 24 Requirements)*
- *Energy efficient ~~widows~~ windows (double pane and/or Low-E)*
- *Use Low and No-VOC coatings and paints*
- *High-albedo (reflecting) roofing material*
- *Cool Paving. "Heat islands" created by development projects contribute to the reduced air quality in the valley by heating ozone precursors*
- *Radiant heat barrier*
- *Energy efficient lighting, appliances, heating and cooling systems*
- *Install solar water-heating system(s)*
- *Install photovoltaic cells*
- *Install geothermal heat pump system(s)*
- *Programmable thermostat(s) for all heating and cooling systems*
- *Awnings or other shading mechanism for windows*
- *Porch, patio and walkway overhangs*
- *Ceiling fans, whole house fans*
- *Utilize passive solar cooling and heating designs (e.g. natural convection, thermal flywheels)*
- *Utilize daylighting (natural lighting) systems such as skylights, light shelves, interior transom windows, etc.*
- *Electrical outlets around the exterior of the unit(s) to encourage use of electric landscape maintenance equipment*

aquatic breeding sites (Zeiner et al. 1988). California tiger salamanders also use logs, piles of lumber and shrink-swell cracks in the ground for cover.

California tiger salamander populations have declined primarily because of the widespread conversion of valley and foothill grassland and oak woodland habitats to agricultural and urban uses (Stebbins 2003). Residential development in the California tiger salamander's range has fragmented vernal pool complexes and reduced habitat suitability for the species. The introduction of the bullfrog and nonnative fishes has also contributed to declines in tiger salamander populations because bullfrogs and nonnative fishes prey on tiger salamander larvae and may eliminate larval populations from breeding sites (Jennings and Hayes 1994).

Occurrences have been recorded within five miles of the plan area (see Figure 3.4-10).

Western spadefoot toad *(Spea hammondii).* The western spadefoot toad is a California Species of Special Concern. The western spadefoot toad is a medium-sized toad (up to 2.5 inches long, not including legs) and one of five spadefoot toads occurring in the western United States. It is greenish gray on ~~it's~~ its dorsal side and has small, but distinctive, spade-shaped protuberances on each hind foot, which is used for digging burrows. They are highly associated with grassland ecosystems, but also occur in open chaparral, pine-oak woodlands, and even in vineyards and orchards.

Adult spadefoots spend the majority of their lives underground in burrows they construct themselves, coming out to forage at night after rains or a period of high humidity. Spadefoots feed primarily on worms and insects, especially Lepidoptera (butterflies and moths) and Coleoptera (beetles).

Breeding season typically occurs from late winter to the end of March, but breeding activities can occur earlier in mild conditions. They breed in season wetlands, vernal pools and stock ponds. Eggs hatch in less than a week and usually reach metamorphosis and disperse within four weeks of hatching (Zeiner et al. 1988, Stebbins 2003).

Western spadefoots occur from the Sacramento Valley south through the San Joaquin Valley and the adjacent foothills of the Sierra Nevada and South Coast Ranges. South of the Coast Range it is found along the South Coast and Peninsular Ranges. They are uncommon in the south and uncommon to locally common in the northern portion of its range.

Occurrences have been recorded within five miles of the plan area.

Western pond turtle *(Actinemys marmorata).* Northwestern pond turtles are medium-sized (up to 8.5 inches long) aquatic turtles with an olive brown or blackish brown carapace (dorsal shell). Plastron (belly) markings range from no markings to dark brown blotches. Being a thoroughly aquatic turtle, they are highly associated with permanent ponds, lakes, reservoirs, canals, and low-gradient streams. While adults are habitat generalists, hatchlings and first year young require shallow, warm-water habitats with emergent vegetation. They occur in a wide variety of terrestrial habitats below 6,000 feet in elevation as long as there is a permanent water source.

- Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance; or

- Conflict with the provisions of an adopted Habitat Conservation Plan, or other approved local, regional, or state habitat conservation plan.

3.4.3 IMPACTS AND MITIGATION MEASURES

Impact #3.4-1: Result in substantial adverse impacts on candidate, special-status, or sensitive species.

Discussion/Conclusion: The California Natural Diversity Database (CNDDB) search identified many documented special-status species within the study area. A reconnaissance level survey conducted by Quad Knopf biologists during February of 2008 confirmed that suitable habitat exists within the proposed SUDP/SOI area to support the species identified by the CNDDB search. The biotic habitat of the study area, like most of the remaining lands in the region, has been drastically altered from its original form. Human-caused disturbances such as agricultural activities and land conversion to urban uses within the plan area may result in loss of foraging and breeding habitat for many of these species. Land conversion within the plan area is a ***potentially significant*** impact on special-status species.

To protect special-status species and their habitats, the City shall ensure that appropriate biological surveys will be performed.

Mitigation Measures

The following survey methods, timing of surveys, and avoidance and protection measures will be implemented where appropriate habitat exists within the boundaries of proposed projects:

Mitigation Measure #3.4-1a: Vernal Pools and Vernal Pool Associates

To protect vernal pools and species associated with vernal pools including vernal pool smallscale, succulent owl's-clover, pincushion navarretia, Colusa grass, hairy Orcutt grass, spiny-sepaled button celery, San Joaquin Orcutt grass, Greene's tuctoria, Conservancy fairy shrimp, vernal pool fairy shrimp, Midvalley fairy shrimp, vernal pool tadpole shrimp, California linderiella, and Molestan blister beetle, surveys shall be conducted to determine the presence of vernal pools prior to or concurrent with application for annexation in areas identified as having potential habitat.

Surveys to detect vernal pools are most easily accomplished during the rainy season or during early spring when pools contain water, although surveys shall not be limited to a particular season or condition. If vernal pools are found to occur on a project site, the pools and a 100 foot-wide buffer around each pool or group of pools will be observed. If the vernal pools and buffer areas cannot be avoided, then the project proponent must consult with and obtain authorizations from, but not limited to, the California Department of Fish and Game, the United States Fish and Wildlife Service, the Army

Corps of Engineers, and the State Water Resources Quality Control Board. Consultation and authorizations may require that additional surveys for special-status species be completed. Because there is a federal policy of no net loss of wetlands, mitigation to reduce losses and compensation to offset losses to vernal pools and associated special-status species will be required.

Effectiveness of Mitigation Measure:

The identification of vernal pools on a project specific basis and, when present on a project site, the consultation with regulatory agencies and implementation of mitigation and compensation will ensure that impacts to vernal pools and special-status species associated with vernal pools will be ***less than significant***.

Mitigation Measure #3.4-1b: Special-Status Plants

To protect special-status plants, the City shall ensure that a botanical survey be conducted for projects containing habitat suitable for special-status plant species. Surveys shall be conducted by a qualified biologist or botanist during the appropriate flowering season for the plants and shall be conducted prior to issuance of a grading or building permit for the project. If special-status plants are found to occur on the project site, the population of plants shall be avoided and protected. If avoidance and protection is not possible, then a qualified biologist will prepare a mitigation and monitoring plan for the affected species. The plan shall be submitted to the CDFG and/or the USFWS for review and comment. Details of the mitigation and monitoring plan shall include, but not be limited to:

- *Removing and stockpiling topsoil with intact roots and seed bank in the disturbance area, and either replacing the soil in the same location after construction is complete or in a different location with suitable habitat; or*

- *Collect plants, seeds, and other propogules from the affected area prior to disturbance. After construction is complete, then the restored habitat will be replanted with propogules or cultivated nursery stock; or*

- ~~*These and other mitigations will only be considered successful if the populations of the affected species are sustained for a minimum of three years and are of a similar size and quality as the original population.*~~

Effectiveness of Mitigation Measure:

Implementation of Mitigation Measure #3.4-1b will ensure that impacts to special-status plants (Table 3.4-1) are reduced to a ***less than significant*** level.

Mitigation Measure #3.4-1c: Valley Elderberry Longhorn Beetle

Until such time that the Valley elderberry longhorn beetle (VELB) is delisted as a federally threatened species, ~~T~~to protect the ~~Valley elderberry longhorn beetle (VELB)~~ species, the project proponent shall ensure that a survey for elderberry bushes be conducted by a qualified biologist at each project site containing habitat suitable for VELB prior to the issuance of a grading permit or building permit. If elderberry bushes are found, the project proponent shall implement the measures recommended by the biologist, which shall contain the standardized measures adopted or otherwise authorized by the USFWS.

Effectiveness of Mitigation Measure:

The implementation of this measure will prevent the loss of habitat (elderberry bushes) and prevent the incidental take of VELB. Implementation of these measures will ensure that impacts to elderberry shrubs and elderberry longhorn beetles will be ***less than significant***.

Mitigation Measure #3.4-1d: Burrowing Owls

To protect burrowing owls on proposed projects where suitable habitat exists, the following shall be implemented:

- *To protect burrowing owls, preconstruction surveys shall be conducted by a qualified biologist at all project sites that contain grasslands, fallowed agricultural fields, or fallow fields along roadsides, railroad corridors, and other locations prior to grading. If, during a pre-construction survey, burrowing owls are found to be present, the project proponent shall implement the measures recommended by the biologist and include the standardized avoidance measures of CDFG.*

Effectiveness of Mitigation Measure:

The mitigation measure listed above is a standardized survey protocol and avoidance measure that has been adopted by the CDFG. Implementation of this mitigation measure will prevent disrupting nesting behaviors and ensure nesting success of burrowing owls which may nest in and adjacent to project sites. This will result in impacts from the project being ***less than significant***.

Mitigation Measure #3.4-1e: Special-Status Birds

To protect raptors and other special-status birds on proposed projects where suitable habitat exists, the following measures shall be implemented:

- *Trees identified with occupied nests of special status birds which are scheduled to be removed because project implementation shall be removed only during the non-breeding season ~~(late September to the end of February)~~, or unless it is determined by a qualified biologist that the nest is no longer occupied.*

- *Prior to construction, but not more than 14 days before grading, demolition, or site preparation activities, a qualified biologist shall conduct a preconstruction nesting survey to determine the presence of nesting raptors. Activities taking place outside of*

the breeding season (typically February 15 through August 31) do not require a survey. If active raptor nests are present ~~in~~ within the construction zone or within 250 feet of the construction zone, temporary exclusion fencing shall be erected at a distance ~~of 250 feet around the nest site~~ to be determined by a qualified raptor biologist in consultation with CDFG. Clearing and construction operations within this area shall be postponed until ~~breeding and rearing activities ceased and young~~ juveniles have fledged and there is no evidence of a second nesting attempt determined by the biologist.

- *If nesting Swainson's hawks are observed during field surveys, then consultation with the CDFG regarding Swainson's hawk mitigation guidelines shall be required. The guidelines include, but are not limited to, buffers of up to one quarter mile, monitoring of the nest by a qualified biologist, and mitigation for the loss of foraging habitat.*

- *To avoid impacts to common and special-status migratory birds pursuant to the Migratory Bird Treaty Act and CDFG codes, a nesting survey shall be conducted prior to construction activities if the work is scheduled between ~~March~~ February 15 and August 31. If migratory birds are identified nesting within the construction zone, a ~~100-foot buffer around the nest site must be designated~~ a temporary buffer around the nest site will be designated by a qualified biologist in consultation with CDFG. No construction activity may occur within this buffer until a qualified biologist has determined that the young have fledged. A qualified biologist may modify the size of the buffer based on site conditions and the bird's apparent acclimation to human activities. If the buffer is modified, the biologist would be required to monitor ~~the~~ stress levels of the nesting birds for at least one week after construction commences to ensure that project activities would not cause ~~nest~~ site abandonment or loss of eggs or young. At any time the biologist shall have the right to implement ~~the full 100-foot~~ a larger buffer if stress levels are elevated to the extent that could cause nest abandonment and/or loss of eggs or young.*

Effectiveness of Mitigation Measure:

The mitigation measure listed above is a standardized survey protocol and avoidance measure that has been adopted by the CDFG. Implementation of this mitigation measure will prevent disrupting nesting behaviors and ensure nesting success of raptors and migratory birds which may nest in and adjacent to project sites. This will result in impacts from the project being ***less than significant***.

Mitigation Measure #3.4-1f: Special-Status Amphibians

To protect California tiger salamander and western spadefoot on proposed projects where suitable habitat exists, the following shall be implemented:

- *To protect special-status amphibians, ~~preconstruction surveys~~ a project specific site assessment report, including protocol-level surveys, when indicated, shall be ~~conducted~~ prepared by a qualified and permitted biologist at all project sites that contain appropriate habitat. If~~, during a pre-construction survey,~~ this site assessment report reveals that special-status amphibians are found to be present, the project proponent shall implement the measures recommended by the biologist and standardized measures adopted by the USFWS or the CDFG.*

Effectiveness of Mitigation Measure:

Implementation of this Mitigation Measure and Mitigation Measure #3.4-1a will ensure that impacts to special-status amphibians are reduced to a ***less than significant*** level.

Mitigation Measure #3.4-1g: Special-Status Reptiles

To protect western pond turtle and giant garter snake on proposed projects where suitable habitat exists, the following shall be implemented:

- *To protect special-status reptiles, preconstruction surveys shall be conducted by a qualified biologist at all project sites that contain appropriate habitat. If, during a pre-construction survey, special-status reptiles are found to be present, the project proponent shall implement the measures recommended by the biologist and standardized measures adopted by the USFWS or the CDFG.*

Effectiveness of Mitigation Measure:

Implementation Mitigation Measure #3.4-1g will ensure that impacts to special-status reptiles are reduced to a ***less than significant*** level.

Mitigation Measure #3.4-1h: Special-Status Fish

To protect special-status fish, including hardhead on proposed projects where suitable habitat exists, the following shall be implemented:

- *To protect special-status fish, a habitat assessment will ~~preconstruction surveys shall~~ be conducted to ascertain whether suitable habitat for special-status fish species is present. Should suitable habitat for special-status fish species (such as hardhead) be identified, the California Department of Fish and Game will be consulted to determine whether preconstruction surveys are warranted.~~ by a qualified fish biologist at all project sites that contain appropriate habitat. If, during a pre-construction survey, special status fish are found to be present, the project proponent shall implement the measures recommended by the biologist and standardized measures adopted by the USFWS, National Marine Fisheries Service (NMFS) or the CDFG.~~*

Effectiveness of Mitigation Measure:

Implementation of Mitigation Measure #3.4-1h will ensure that impacts to special-status fish are reduced to a ***less than significant*** level.

Mitigation Measure #3.4-1i: Special-Status Mammals

To protect Merced kangarooo rat, western mastiff bat, western red bat, hoary bat, Yuma myotis, San Joaquin pocket mouse, American badger, and San Joaquin kit fox on proposed projects where suitable habitat exists, the following shall be implemented:

- *To protect special-status mammals, a habitat assessment shall be conducted on each project site prior to construction to ascertain whether habitat suitable for supporting special status mammals exists on the project site. If suitable habitat is present, preconstruction surveys shall be conducted by a qualified biologist at all project sites*

that contain appropriate habitat according to established standards or protocols of the CDFG or USFWS, if available for that species. If during the preconstruction survey, special-status mammals are found to be present, the project proponent shall implement the measures recommended by the biologist and measures adopted by the USFWS or the CDFG.

3.6 Geology and Soils

The potential for geologic hazards (including soil erosion, seismicity, landsliding, and liquefaction) is the focus of this section. This section also describes the existing geological setting and geologic hazards in the vicinity of the planning area, and identifies any specific geological impacts that are likely to result from implementation of the project along with feasible mitigation measures to address those impacts. A Geologic, Geohazards and Environmental Health Hazards Evaluation Report was prepared by Geocon Consultants, Inc. to evaluate geologic, geohazards, and environmental health hazards information for the areas within the City's proposed SUDP/SOI boundaries, but outside of the City's existing SUDP boundaries. Information from this report is used in the environmental setting and impact analysis sections of this EIR. The full text of the report is found in Appendix J of this EIR.

During the Notice of Preparation (NOP) period no comments were received regarding geology and soils.

3.6.1 SETTING

Environmental Setting

The City of Merced is located approximately ~~150~~110 miles southeast of San Francisco along the west side of the southern portion of the Great Valley Geomorphic Province, more commonly referred to as the San Joaquin Valley. The valley is a broad lowlands bounded by the Sierra Nevada to the east and the Coast Ranges to the west. The San Joaquin Valley has been filled with a thick sequence of sedimentary deposits of Jurassic to recent age. A review of the geologic map indicates that the area around Merced is primarily underlain by the Pleistocene Modesto and Riverbank Formations with Holocene alluvial deposits in the drainages. Miocene-Pliocene Mehrten and Pliocene Laguna Formation materials are present in outcrops on the east side of the SUDP/SOI. Modesto and Riverbank Formation deposits are characterized by sand and silt alluvium derived from weathering of rocks deposited east of the SUDP/SOI. The Laguna Formation is made up of consolidated gravel sand and silt alluvium and the Mehrten Formation is generally a well consolidated andesitic mudflow breccia conglomerate.

FAULTS AND SEISMICITY

A fault, or a fracture in the crust of the earth along which rocks on one side have moved relative to those on the other side, are an indication of past seismic activity. It is assumed that those that have been active recently are the most likely to be active in the future, although even inactive faults may not be "dead." "Potentially Active" faults are those that have been active during the past two million years or during the Quaternary Period. "Active" faults are those that have been active within the past 11,000 years. Earthquakes originate as movement or slippage occurring along an active fault. These movements generate shock waves that result in ground shaking.

Based on review of geologic maps and reports for the area, there are no known active or potentially active faults, or Alquist-Priolo Earthquake Fault Zones (formerly referred to as a Special Studies Zone) in the SUDP/SOI. In order to determine the distance of known active

Dam failures can result from a number of natural or man-made causes such as earthquakes (creating a "seiche" or an overtopping of a dam), erosion, improper siting, rapidly rising flood waters, and structural/design flaws.

There are three general types of dams: earth and rockfill, concrete arch or hydraulic fill, and concrete gravity. Each of these types of dams has different failure characteristics. Merced is presently in the inundation area of two dams, Bear Reservoir Dam and Lake Yosemite Dam. Both of these dams are earthen-fill which makes them more flexible and, therefore, more earthquake resistant. However, they are more likely to fail if over-topped.

An earthen dam will fail gradually due to erosion of the breach created during the over-topping; the flood wave will build gradually to peak and then decline until the reservoir is empty. A dam failure can cause loss of life, damage to property, and other ensuing hazards, as well as displacement of residents, the loss or partial loss of critical mass care facilities, and the destruction of bridges (evacuation routes) in the inundation path.

The effects of a possible dam failure upon the City of Merced, and the ability of the local community to respond, seem to vary greatly by which dam would fail. Lake Yosemite's inundation area covers a large portion of the City's SUDP/SOI in North Merced (reference Figure 3.8-2 in the Hydrology and Water Quality section).

The Merced Streams Group Project and Flood Control Plan authorized by Congress in 1970, but not as yet completed ~~due to lack of local matching funds~~, would divert the flood waters from the flood control canals which created problems in 1968, thus reducing the risk of Yosemite Dam failure. Castle Dam is complete, and a diversion structure, which diverts more than 1,200 cubic feet of water per second from MID's main canal is also complete. This reduces the flow in Fahrens Creek, thus reducing the likelihood of flooding within a given event.

The Bear Reservoir Dam inundation area covers a good portion of the City's SUDP/SOI east to west as shown in Figure 3.8-2. The dam, also being earthen, would fail gradually due to the erosion of the breach. The flood wave would build gradually to a peak and then decline until the reservoir is empty.

Expansive Soils

Expansive soils are those soils that shrink and swell in response to changes in moisture content potentially causing serious damage to overlying structures. Soils in the area are generally moderate to deep, silty and clayey loams. Some gravely and cobbley loams are also present, primarily concentrated in the stream drainages. The soils listed are not generally considered to be expansive, have a generally low to moderate erosion potential, and are generally considered suitable for wastewater disposal using conventional septic systems.

Subsidence

Differential settlement, resulting in the compaction of loose, less cohesive soils, may be caused by earthquakes and could occur in the City's SUDP/SOI. The most likely areas are those in

As stated above, Policy S-2.3 calls for the City to restrict urban development in all areas with potential ground failure characteristics. Implementing Action 2.3.a of this policy says that the City will investigate the feasibility of performing an inventory of areas with generally unstable ground within the SUDP/SOI area and work with the County to restrict or prohibit their development. In the Merced planning area, most of the unstable ground are in old streams beds, near embankments, and adjacent to streams with sufficient velocities to erode the bank. This policy and the other policies noted previously under Impacts #3.6-1 through #3.6-3 are designed to address public health and safety issues resulting from an unstable geologic unit, including expansive soils. Therefore, implementation of the proposed General Plan, adherence to the Alquist-Priolo Act, and enforcement of the California Building Standards Code would result in a ***less than significant*** impact.

Mitigation Measures

No mitigation measures are required.

Impact #3.6-5: Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water

According to the Geologic, Geohazards and Environmental Health Hazards Evaluation Report (Geocon Consultants, Inc.), the soils in the SUDP/SOI are not generally considered to be expansive, have a generally low to moderate erosion potential, and are generally considered suitable for wastewater disposal using conventional septic systems. Per City policy, new development within the City's boundaries will be required to connect to sanitary sewer. The impact is ***less than significant***.

Mitigation Measures

No mitigation measures are required.

CUMULATIVE IMPACT ANALYSIS

Regional development would increase the number of people and structures subject to geologic and soils-related risks. The policies contained in the proposed General Plan, along with compliance with federal, State and local regulations addressing building construction, run-off and erosion, reduce the potential project-level impact associated with geology and soils to a less than significant level. Development in other communities and unincorporated areas in Merced County would also be required to comply with federal, State and local regulations that are designed to protect increases in people and structures from hazards related to such issues as earthquakes, landslides and soil erosion. As a result, conformance with adopted California building codes, and other measures to protect people and structures from geologic hazards, would reduce this impact to a less than significant level. The project's incremental contribution to these impacts will be ***less than cumulatively considerable***.

WILLIAMSON ACT

Since 2005, Merced County participates in the State of California Williamson Act agricultural land preservation program. The purpose of the Act is to preserve agricultural and open space lands by discouraging premature and unnecessary conversion to urban uses. As of 2007, there were more than 450,000 acres in the County under Williamson Act contracts.

Figure 3.2-2 shows the Williamson Act lands located in and around the plan area.

Regulatory Setting

FEDERAL

Farmland Protection Policy Act

The Farmland Protection Policy Act was passed into federal law as part of the Agriculture and Food Act of 1981 (Public Law 97-98). The Act was passed in response to the National Agricultural Land Study of 1980-1981 which found that millions of acres of farmland were being converted in the United States each year and a related report which found that much of this conversion was the result of programs funded by the federal Government. The intent of the Act is to minimize the impact federal programs have on the unnecessary and irreversible conversion of farmland to nonagricultural uses. It assures that – to the extent possible – federal programs are administered to be compatible with state and local units of government and private programs and policies to protect farmland.

STATE

Williamson Act

The California Land Conservation Act of 1965, commonly referred to as the Williamson Act, enables local governments to enter into contracts with private landowners for the purpose of restricting specific parcels of land to agricultural or related open space use. In return, landowners receive property tax assessments which are much lower than normal because they are based upon farming and open space uses as opposed to assessed value pursuant to Proposition 13.

LOCAL

Merced County Local Agency Formation Commission (LAFCO~~e~~)

Urban growth and expansion, under California State Law, is subject to a local review body called the Merced County Local Agency Formation Commission (LAFCO~~e~~). LAFCO~~e~~, comprised of City and County elected officials, must review and approve all municipal boundary revisions (including annexations).

Merced County LAFCO~~e~~ adopted a set of Local LAFCO~~e~~ Goals, Objectives, and Policies to address local concerns and priorities regarding annexations and the preservation of agricultural-land.

EMERGENCY PREPAREDNESS

Public Protection & Disaster Planning

Hospitals, ambulance companies, and fire districts provide medical emergency services. Considerable thought and planning have gone into efforts to improve responses to day-to-day emergencies and planning for a general disaster response capability.

The City's Emergency Plan and the County Hazardous Waste Management Plan both deal with detailed emergency response procedures under various conditions for hazardous materials spills. The City also works with the State Department of Health Services to establish cleanup plans and to monitor the cleanup of known hazardous waste sites within the City.

Regulatory Setting

The use of hazardous materials and disposal of hazardous waste are subject to numerous laws and regulations at all levels of government. Below is a brief overview of federal, state and local laws and regulations.

FEDERAL

Resource Conservation and Recovery Act (RCRA)

Under the Resource Conservation and Recovery Act (RCRA) of 1976 (42 U.S.C ~~s/s~~ sections 6901 et seq.), individual states may implement their own hazardous waste programs in lieu of RCRA as long as the state program is at least as stringent as federal RCRA requirements. The EPA must approve state programs intended to implement federal regulations. In California, the California Environmental Protection Agency (Cal EPA) and the Department of Toxic Substances Control (DTSC), a department within Cal EPA, regulate the generation, transportation, treatment, storage, and disposal of hazardous waste. The EPA approved California's RCRA program, called the Hazardous Waste Control Law (HWCL), in 1992. DTSC has primary hazardous material regulatory responsibility, but can delegate enforcement responsibilities to local jurisdictions that enter into agreements with DTSC for the generation, transport, and disposal of hazardous materials under the authority of the HWCL.

The hazardous waste regulations establish criteria for identifying, packaging, and labeling hazardous wastes; prescribe the management of hazardous wastes; establish permit requirements for hazardous waste treatment, storage, disposal, and transportation; and identify hazardous wastes that cannot be disposed of in ordinary landfills. Hazardous waste generators must retain hazardous waste manifests for a minimum of three years. These manifests provide a description of the waste, its intended destination, and regulatory information about the waste. A copy of each manifest must be filed with the state. The generator must match copies of hazardous waste manifests with receipts from treatment, storage, and disposal facilities.

- Zone C: This zone is the Common Traffic Pattern zone. In this zone, educational facilities, hospitals, and libraries are prohibited. There is an 8 units/acre maximum density requirement for this zone.

- Zone D: This zone is for Other Airport Environs and is the outermost zone of the airport. There are no development restrictions for this zone, with the exception of objects over 150 feet tall.

Figure 3.7-2 shows these zones in relation to the City. Castle Airport impacts the northwest part of the proposed SUDP/SOI through the establishment of Compatibility Zones "C" and "D." The far northwest corner of the plan area is designated for a Community Plan, which will ultimately contain a mix of residential and commercial uses. Zone "C" will establish a density restriction, and a number of public uses will be prohibited. The area within Zone "D" lies along Highway 59, and is designated for a mix of residential, commercial, industrial and public uses. Occasional noise events are the primary effects within this zone. In the same manner, the Merced Regional Airport impacts the southwest part of the proposed SUDP/SOI through the establishment of Compatibility Zones "C" and "D." An area north of the airport is designated as the South Thornton (or Five Bridges) Community Plan located north of Highway 140, south of Highway 99 and east of the proposed SUDP/SOI boundary. The Community Plan for this area is currently on hold, and future discussion will include restrictions appropriate to comply with the *Merced County Airport Land Use Compatibility Plan.*

Merced County Hazardous Waste Management Plan

Merced County prepared an HWMP in 1989 in accordance with California Health and Safety Code Section 25135, et seq. The plan addresses waste reduction and on-site treatment, the siting of off-site hazardous waste facilities, transportation of hazardous wastes, cleanup of contaminated sites, and emergency response procedures. The Merced County Division of Environmental Health enforces the plan and maintains a list of known hazardous waste sites within the County that is updated continuously. The Merced City Fire Department also works with the County Division of Environmental Health to prevent the accidental release of hazardous substances by conducting inspections of hazardous materials facilities and enforcing use and storage requirements.

City of Merced Emergency Plan

The City has adopted an Emergency Plan, which is reviewed and updated annually. This plan identifies emergency evacuation routes and procedures for the City in the event that an incident occurs. The City coordinates with the Merced County Office of Emergency Services in planning for a number of potential emergency situations, such as floods, hazardous material spills, and major fires. The City also recently agreed to establish a Community Emergency Response Team (CERT) in coordination with the County OES. CERTs assist emergency responders with first aid, traffic control and clean-up.

General Plan Consistency

The *Merced Vision 2030 General Plan* contains a number of policies that apply to Hazards and Hazardous Materials impacts in conjunction with ultimate build-out of the City in accordance with the General Plan. The specific policies listed below contained in the Urban Expansion, Transportation and Circulation, Parks, Open Space, and Conservation and the Safety Elements of the General Plan are designed to ensure that hazards and hazardous materials impacts are minimized as development occurs in accordance with the *Merced Vision 2030 General Plan.*

3.8 Hydrology and Water Quality

This section of the Draft EIR addresses the potential for the Merced General Plan to affect or modify the existing hydrology and water quality of the Planning Area. Two comment letters were received on the NOP from the Merced Irrigation District (MID) in which they said that they would "Upon development of new and existing land covered within the scope of the 2030 General Plan, MID will provide a detailed response in regards to the proposed projects and their impacts upon MID facilities." The second letter received was in response to the NOP regarding hydrology and water quality. The commenter wants the City to prepare a Water Element and "perform an environmental review of the potentially positive environmental effects that could be based upon such additional elements."

3.8.1 SETTING

Environmental Setting

CLIMATE

The climate of the City of Merced is hot and dry in the summer and cool and humid in the winter. The average daily temperature ranges from 47 to 76 degrees Fahrenheit. Extreme low and high temperatures of 15°F and 111°F are also known to occur. Historical average precipitation is approximately 12" per year, with the rainy season commencing in October and running through April. On average, approximately 80% of the annual precipitation occurs between November and March. The hot and dry weather of the summer months usually results in high water demands for landscape irrigation during those months.

REGIONAL TOPOGRAPHY

The project area is located in and immediately adjacent to the City of Merced. The City of Merced is situated in the San Joaquin Valley at the base of the Sierra Nevada foothills. This area contains little topographic relief (less than 1% slopes) across the entire City. Elevation in the City ranges from approximately ~~200~~180 feet above mean sea level (MSL) along the southeastern portions to approximately ~~150~~155 feet above MSL in the southwestern extent of the City boundary.

DRAINAGE BASIN

The City of Merced and adjacent areas slated for expansion through the Specific Urban Development Plan/Sphere of Influence (SUDP/SOI) process are located within the San Joaquin/Merced River drainage basin or "watershed." A watershed is commonly defined as the area of land that drains water, sediment, and dissolved materials to a common outlet at some point along the stream channel.

The San Joaquin Valley 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 and is

approximately 110 miles long and 95 miles wide. The San Joaquin River originates in the Sierra Nevada mountains and flows southwesterly to the vicinity of Mendota. It then flows

ACOE has the authority to issue a permit for any discharge, fill, or dredge of wetlands on a case-by-case basis, or by a general permit. General permits are handled through a Nationwide Permit (NWP) process. These permits allow specific activities that generally create minimal environmental effects. Projects that qualify under the NWP program must fulfill several general and specific conditions under each applicable NWP. If a proposed project cannot meet the conditions of the applicable NWP, an individual permit would likely be required from the ACOE (EPA 2004).

Safe Drinking Water Act

The Safe Drinking Water Act (SDWA), administered by the U.S. Environmental Protection Agency in coordination with the states, is the chief federal regulatory legislation regulating drinking water quality. The 104th Congress reauthorized and made significant changes to the SDWA, which had most recently been reauthorized in 1986. Major changes included establishing a drinking water state revolving loan fund to be made available to public water systems to help them comply with national primary drinking water regulations and to upgrade water treatment systems; and requirements for EPA to establish drinking water standards based on risk assessment and cost/benefit analysis.

Federal Emergency Management Agency (FEMA)

The National Flood Insurance Program is a Federal program administered by FEMA. Participants in the NFIP must satisfy certain mandated floodplain management criteria. The National Flood Insurance Act of 1968 has adopted, as a desired level of protection, an expectation that developments should be protected from floodwater damage of the Intermediate Regional Flood (IRF). The IRF is defined as a flood that has an average frequency of occurrence on the order of once in 100 years although such a flood may occur in any give year. The County is occasionally audited by the Department of Water Resources to insure the proper implementation of FEMA floodplain management regulations.

Merced County Streams Project

The Merced County Streams Group Project was approved by Congress in 1970. The project was re-evaluated by the U.S. Corps of Engineers in 1980 and some construction has been completed~~, but the entire project currently lacks local cost-sharing commitments~~. The project, as currently defined, entails construction of two new detention dams (Castle on Canal Creek and Haystack Mountain on Black Rascal Creek), the enlargement and modification of the Bear Creek detention dam, and construction and modification of 32 miles of levees and channels on the Bear Creek Stream Group (Fahrens, Black Rascal, Cottonwood, and Bear Creeks, Black Rascal Slough, and El Capitan Canal). Castle Dam and a diversion structure from MID's main canal has been completed to date. Approximately 24 square miles in the Planning Area would be removed from the 100-year or more floodplain by this project.

Urban Water Management Planning Act

The Urban Water Management Planning Act became part of the California water code with passage of AB 797 in 1984. The act requires every urban water supplier (providing water for municipal purposes to more than 3,000 customers or supplying more than 3,000 acre-feet of water annually) to adopt and submit an urban water management plan at least once every five years to the Department of Water Resources. The most current Merced Urban Water Management Plan (UWMP) is dated December 2005, but the UWMP is in the process of being updated by the City in ~~2010~~2011.

AB 162 - Designation

In compliance with Assembly Bill 162 and Government Code §65302(g), jurisdictions are also required to utilize the FEMA flood insurance rate maps to determine flood hazards zones, and the NFIA maps when considering development in flood hazard areas.

LOCAL

Merced Municipal Code

The purpose of Chapter 17.48, Flood Damage Prevention, of the Merced Municipal Code, is to promote the public health, safety, and general welfare, and to minimize public and private losses due to flood conditions in specific areas. Methods of reducing flood losses include:

A. Restricting or prohibiting uses which are dangerous to health, safety, and property due to water or erosion hazards, or which result in damaging increases in erosion or flood heights or velocities;

B. Requiring that uses vulnerable to floods, including facilities which serve such uses, be protected against flood damage at the time of initial construction;

C. Controlling the alteration of natural floodplains, stream channels, and natural protective biers, which help accommodate or channel flood waters;

D. Controlling fill, grading, dredging, and other development which may increase flood damage; and

E. Preventing or regulating the construction of flood barriers, which will unnaturally divert flood waters or which may increase flood hazards in other areas.

Chapter 17.60, Water Efficient Landscaping and Irrigation, of the Merced Municipal Code is intended to enhance the environmental performance of development by promoting the percolation of storm water, conservation of water and preservation of water quality by requiring drought tolerant plant material in landscaping and the retention of existing natural vegetation.

Implementing Action 5.1.c requires all development to comply with the Merced Storm Drain Master Plan and any subsequent updates.

Policies S-3.1 and S-3.2 call for the City to endeavor to remove most of the existing City, and the vast majority of the SUDP/SOI, from the 100-year and 200-year floodplains and maintain essential City services in the event of flooding or dam failure. Implementing Action 3.2.a says that the City will continue to build all pump station (both sewer and water) entryways at one (1) foot above the 200-year flood elevation and consider additional standards to address flooding due to dam failure. Implementing Action 3.2.b says the City will continue the "flood-proofing" of high-value or important City infrastructure, such as lift stations and signal control functions, as required by the City's Flood Damage Prevention Ordinance.

Implementation of the General Plan itself will not alter the drainage pattern of the area. It allows for the development of future projects that could result in the changes of drainage patterns that could result in erosion, siltation or flooding. All new development as a result of the General Plan Update will have to be consistent with the City's policies noted above and also with the City's Storm Drain Master Plan, the rules and regulations of MID, and any future studies/plans as a result of General Plan adoption. Further, any development must be consistent with all federal and state regulations as well. This impact is ***less than significant***.

Mitigation Measures

No mitigation measures are required.

Impact #3.8-4: The proposed project could create or contribute runoff water which would exceed the capacity of existing stormwater drainage systems or provide substantial additional sources of polluted runoff.

Discussion/Conclusion: Flood control detention is considered the most viable option for mitigating the increase in runoff from new development areas, with the specific types and locations of these drainage facilities to be determined at the time development applications are submitted consistent with City Design Standards. Pollution associated with increased stormwater and urban runoff would affect local and regional surface and groundwater quality conditions. Unlike sewage, which is transported to a treatment facility, urban runoff flows untreated through the storm drainage system. Anything thrown, swept, or poured into the street, gutter, or a catch basin (the curbside openings that lead into the storm drainage system) flows directly into local channels and creeks. Pollutant loads can be particularly acute at the beginning of the rainy season, but can be a problem at any time due to the improper disposal of products associated with home, garden, or automotive use.

Policies included as part of the Proposed Project that would minimize this impact are summarized below. Policy P-1.1 will provide adequate public infrastructure and services to meet the needs of future development. Implementing Action 1.1.d calls for the City to construct a stormwater drainage system, water system and sewer system in accordance with master plans. Policy P-3.2 calls for the City to cooperate with the County and MID to stabilize the region's

aquifer. Implementing Action 3.2.d states that the City will cooperate with MID and the County in the development of groundwater recharge facilities as called for in the Merced Water Supply Plan.

As noted under Impact #3.8-1, Policies P-5.1 and P-5.2 will provide effective storm drainage facilities for future development and integrate drainage facilities with bike paths, sidewalks, recreation facilities, agricultural activities, groundwater recharge, and landscaping. Implementing Action 5.1a says that the City will continue to implement, along with MID and the County, the Merced Storm Water Master Plan within the Merced urban area. Implementing Action 5.1.b says that the City will work with MID and the County to update the Merced Storm Water Master Plan to account for changes in expected storm drainage runoff due to expanded land uses within the Merced area. Implementing Action 5.1.c requires all development to comply with the Merced Storm Water Master Plan and any subsequent updates.

Implementation of the General Plan Update itself will not create or contribute runoff water which would exceed capacity of existing/planned systems or provide substantial additional sources of pollutants; however it allows for the development of future projects that could result in stormwater capacity being exceeded or additional sources of pollutants. Since all new development as a result of the General Plan Update will have to be consistent with numerous regulations, including the City's policies noted above, the City's Storm Drain Master Plan, City Design Standards, the rules and regulations of MID, and any future studies/plans after General Plan adoption. In addition, federal and state regulations (such as preparing a SWPPP) regarding runoff and erosion must be followed. This impact is ***less than significant***.

Mitigation Measures

No mitigation measures are required.

Impact #3.8-5: The proposed project could place housing or other structures within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary, Flood Insurance Rate Map, or other flood hazard delineation map or place within a 100-year flood hazard area structures which could impede or redirect flood flows.

Discussion/Conclusion: A review of applicable FEMA flood maps indicates that approximately 1/2 of the City, the southern half, is located within the 100-year floodplain (see Figure 3.8-1). A good portion of the proposed SUDP/SOI is also within the 100-year floodplain and a smaller portion in the 500-year floodplain. Buildout of the proposed project could expose more people and structures to potential flooding if development occurs within or adjacent to these floodplain areas.

Policies of the General Plan Update Safety Element direct the City to limit development in hazardous areas and minimize flooding hazards. Policies S-3.1 and S-3.2 state that the City will endeavor to remove most of the existing City, and the vast majority of the SUDP/SOI, from the 100-year and 200-year floodplains and the City will maintain essential City services in the event of flooding or dam failure. Implementing Action 3.1.a states that the City will ~~work on the~~

~~development and implementation of a funding plan to provide for the City's share of the Merced Streams Project~~ continue to implement the City's Flood Damage Prevention Ordinance and other measures as needed to protect areas within the City and the SUDP/SOI that are within the 100-year and 200-year floodplains as applicable. The City will also consider basing assessments on those areas which would benefit from removal from the 200-year flood and/or Lake Yosemite's inundation area. Implementing Action 3.2.a states that the City will continue to build all pump stations (both sewer and water) entryways at one (1) foot above the 100-year flood elevation and consider additional standards to address flooding due to dam failure. Implementing Action 3.2.b states that the City will continue the "flood-proofing" of high-value or important City infrastructure, such as lift stations and signal control functions, as required by the City's Flood Damage Prevention Ordinance. There are currently two plans that should reduce the risk of flooding within the City's Planning Area.

The State of California has adopted legislation that requires jurisdictions to prepare specific floodplain regulations based on the 200-year flood event. New maps identifying the 200-year event boundaries were released by the State Dept. of Water Resources on October 15, 2008. The maps do not indicate that there are any areas within City limits, or within the SUDP/SOI, that are impacted by the 200-year floodplain. The DWR plans further studies over the next four years; any changes will need to be incorporated into affected development proposals.

New development as a result of the General Plan's adoption will have to adhere to the City's Flood Damage Prevention Ordinance, Municipal Code, General Plan policies, MID rules and regulations (when applicable), and the Merced Storm Water Master Plan where applicable. With adherence to the City's ordinances, master plans and General Plan policies and implementation of the following mitigation measures to comply with Government Code §65302(g), potential flood hazards will be reduced from potentially significant impact to ***less than significant.***

Mitigation Measures

No mitigation measures are required.

Impact #3.8-6: The proposed project could 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, or inundation by seiche, tsunami or mudflow.

Discussion/Conclusion: In addition to flood hazards associated with 100-year flood zones, flood inundation resulting from levee or dam failure due to a variety of factors is a potential hazard for the City. Merced is presently in the inundation area of two dams, Bear Reservoir Dam and Lake Yosemite Dam (see Figure 3.8-2). Bear Reservoir Dam is located on Bear Reservoir from which Bear Creek flows into, and is approximately 20 miles east of Merced. Lake Yosemite Dam is located on Lake Yosemite which is on a tributary of the Merced River, and is in the northeast corner of the Planning Area. Both of these dams are earthen-fill which makes them more flexible and, therefore, more earthquake resistant. However, they are more likely to fail if over-topped. Dam failure can result from numerous natural or human activities, such as earthquakes, erosion, improper siting, rapidly rising flood waters, and structural and design flaws.

Recent flood events, including Hurricane Katrina, and more locally, levee failures in the Sacramento-San Joaquin Delta region, have brought to the forefront a heightened awareness of the dangers of levee failure. This realization has led to increased public scrutiny of new development projects that are located in floodplain areas protected by levees. Levees typically fail in one of two ways: (1) overtopping of the levee during peak flows or (2) structural failure. Structural failure can occur as a result of a variety of factors including seismic activity, erosion, damage from vegetation and rodents. Both types of levee failure can result in deep flooding within the adjacent floodplain.

In summary, there could be a minor, major, or catastrophic failure of the levee in and around the City's stream groups and irrigation/diversion structures if appropriate protection measures are not implemented. Implementation of the proposed project would result in additional City-wide residential and non-residential land use developments that would face similar risks to those experienced by other residents in the region. Other areas of California face similar risks from natural disasters including earthquakes, mudslides, wildfires, and inundation as a result of dam failure; however, the regulatory framework developed to address these hazards and fund the necessary improvements is generally better established. Levees in Merced are owned by the Merced Irrigation District. While the City has no jurisdiction and is limited in terms of alternatives to mitigate for the identified risks, the City works closely with the district on a number of issues, including flood control, and impacts to MID facilities due to development. Levee maintenance and its associated funding mechanisms are complicated by various factors outside the City's control and beyond the scope of this project.

Policies of the General Plan Safety Element direct the City to limit development in hazardous areas and minimize flooding hazards. Policies S-3.1 and S-3.2 state that the City will endeavor to remove most of the existing City, and the vast majority of the SUDP/SOI, from the 100-year and 200-year floodplains and the City will maintain essential City services in the event of flooding or dam failure. Implementing Action 3.1.a states that the City will ~~work on the development and implementation of a funding plan to provide for the City's share of the Merced Streams Project and consider basing assessments on those areas which would benefit from removal from the 100-year flood and/or Lake Yosemite's inundation area~~ continue to implement the City's Flood Damage Prevention Ordinance and other measures as needed to protect areas within the City and the SUDP/SOI that are within the 100-year and 200-year floodplains as applicable. Implementing Action 3.2.a states that the City will continue to build all pump stations (both sewer and water) entryways at one (1) foot above the 100-year flood elevation and consider additional standards to address flooding due to dam failure. Implementing Action 3.2.b states that the City will continue the "flood-proofing" of high-value or important City infrastructure, such as lift stations and signal control functions, as required by the City's Flood Damage Prevention Ordinance.

New development as a result of the General Plan Update's adoption will have to adhere to the City's Flood Damage Prevention Ordinance, Municipal Code, General Plan policies, MID rules and regulations, and the Merced Storm Drain Master Plan where applicable. For these reasons, the implementation of the proposed General Plan would have a less than significant impact with respect to flooding.

The proposed General Plan would allow additional development to occur in areas of dam inundation risk as noted previously. In the case of dam failure, these particular areas are subject to flooding. However, the risk of dam inundation is low since the Department of Water Resources is responsible for completing annual inspections of each dam for the purpose of

3.9 Land Use and Planning

This section of the Draft EIR presents information pertaining to the land use regulations in Merced, the existing land use conditions and potential environmental impacts that the proposed General Plan would have on these uses. During the Notice of Preparation (NOP) period, comments were received regarding the City's urban expansion and existing County zoning and General Plan designations; the development assumptions from urbanization of the proposed Community Plan areas; potential annexation of the UC Merced campus into the City limits of Merced; the proposed SUDP/SOI and availability of public services and facilities; LAFCo policies regarding future SOI revisions; and the need to prepare a Municipal Service Review.

3.9.1 SETTING

Environmental Setting

The City of Merced is located approximately 104 miles southeast of Sacramento, 53 miles northwest of Fresno, and ~~112~~110 miles southeast of San Francisco, in the Central Valley of California. Incorporated in 1889, the City of Merced is situated within the eastern section of Merced County and is the largest City in the County. Principal highway access to Merced is via State Highway 99, which runs through the central portion of the City in a general north/south direction. State Highways 140 and 59 also serve the City.

The topography of the community is characterized by flat land approximately 155 - 180 feet in elevation. The local climate is typical of the Central Valley. Average daily temperatures are 48 degrees in January to 95 degrees in July. The summer months are typically dry and hot and the winter months are typically cool with occasional fog. Average annual rainfall is approximately 12 inches, with January being the wettest month of the year with two inches of precipitation.

The City contains a typical mix of residential, commercial, industrial and public land uses. The City is centered around Main Street. Older development transitions into new development as one goes farther north. Significant areas in the extreme north remain undeveloped, though they have been annexed. Less new development has occurred in the south portion of the City. The South Merced Community Plan was approved in 2008, and may spur additional development in the area.

Regulatory Setting

FEDERAL

No federal regulations critical to the assessment of this impact were noted.

STATE

California Government Code Sections 65000-66037, Title 7 Planning and Land Use

These regulations provide the foundation for the organizational and regulatory structures adopted by cities and counties in the State of California. It is through this legislation that cities and counties are required to prepare, adopt and amend General Plans.

In California, a General Plan is the foundation and central feature of the local planning process. Each city and county is required to prepare, adopt, and maintain a General Plan to govern the physical development of all of the land area under its jurisdiction. The purposes that are intended to be served by a General Plan include the following important functions:

- The identification of the community's physical development goals, and goals relating to environmental, economic, and other factors.

- Policies for maintaining or improving the character of existing developed uses and for guiding the location and nature of future development in order to ensure that the community's goals are achieved.

- The consideration of all aspects of local conditions affecting physical development and change, in order to ensure that problems and opportunities are analyzed and addressed adequately within the context of local, regional, statewide, and national goals and policies.

By their nature, general plans possess great potential for environmental impacts by providing for new growth and development.

California Community Redevelopment Law

The California Community Redevelopment Law (California ~~Government~~ Health and Safety Code 33000) outlines the form and required content for a city's redevelopment plan. In accordance with the State redevelopment law, redevelopment plans set the general activities and implementation procedures used by the redevelopment agency. These include the steps the agency may undertake in pursuing the redevelopment process in a community. The plans also include a description of activities that the redevelopment agency is required to undertake. These activities are required in the redevelopment process to conform to Community Redevelopment Law. Many of the circumstances existing in a community that influence the nature and scope of the most appropriate redevelopment activities are prescribed by the redevelopment agency on behalf of the community's members and property owners.

Cortese-Knox-Hertzberg Local Government Reorganization Act

In 1963, the Knox-Nisbet Act was enacted, and created a Local Agency Formation Commission (LAFCO) in every county in the state, with the exception of San Francisco. Each LAFCO is responsible for coordinating logical and timely changes in local governmental boundaries, conducting special studies that review ways to reorganize, simplify, and streamline governmental structure, and prepare a sphere of influence for each city and special district within its county. The Commission's efforts are directed toward seeing that services are provided efficiently and economically while agricultural and open-space lands are protected.

In 2000, the Cortese-Knox-Hertzberg Local Government Reorganization Act of 2000 was signed into law to reform local government reorganization law. Highlights of these revisions include, but are not limited to, streamlining and clarifying LAFCO policies and procedures; making LAFCOs neutral, independent, and balanced in representation for counties, cities, and special districts; strengthening LAFCO powers to prevent sprawl and ensure the orderly extension of

in response to adopted Policy to achieve a specific Goal. The major goals of the 2015 General Plan were as follows:

- Expansion of the urban limit line (SUDP area) to accommodate expected growth
- Preservation of prime agricultural land around the City
- Continuation of the predominantly north-south growth pattern
- Expansion of the "Sphere of Influence" (ultimate urban growth boundary) to include rural residential centers east of the City and the UC campus site/Smith Trust property
- A joint City/County planning effort for the area around the future University of California campus
- Economic Development: Planning well in advance for industrial/business park uses and for the infrastructure needed to support such development
- A flexible and efficient circulation system which can accommodate all modes of transportation (private cars, public transit, bicycles, pedestrians, etc.)
- Mixed-use, transit- and pedestrian-friendly "urban villages" with direct access to commercial centers from surrounding neighborhoods
- Location of higher densities along transit corridors
- A diversity of housing types and opportunities
- Housing affordability
- "Sustainable Development" = The efficient use and management of land and other natural resources in order to conserve them for the use of present and future generations

The City's General Plan Land Use Diagram presents the proposed general distribution of the uses of land within the City of Merced and its SUDP. Reference Figure 2-3 in Chapter Two, Project Description, for the existing 2015 General Plan Land Use diagram (Figure 2-4 shows the proposed 2030 General Plan Land Use diagram). Table 3.9-1 shows the 2015 General Plan Land Use acreage of each land use designation within the City limits and SUDP.

Table 3.9-1
Existing General Plan (2015) Land Use (Acreage) within the City & SUDP

Land Use	City Limits	Existing SUDP	City Limits + Existing SUDP	% of Total
RR (Rural Residential)	~~15~~ 17.91	~~281~~ 261.99	~~296~~ 279.90	1.4%
AG Agriculture	~~92~~ 138.70	~~22~~ 10.75	~~114~~ 149.45	~~0.5%~~ 0.7%

Land Use	City Limits	Existing SUDP	City Limits + Existing SUDP	% of Total
Total Ag Res	~~**108**~~ **156.61**	~~**302**~~ **272.74**	~~**410**~~ **429.35**	~~**2.0%**~~ **2.1%**
LD (Low Density Residential	~~5,545~~ 5,577.39	~~3,186~~ 2,214.47	~~8,731~~ 7,791.86	~~41.8%~~ 37.6%
LMD (Low-Med. Density Res.)	~~853~~ 915.37	~~505~~ 294.23	~~1,358~~ 1,209.60	~~6.5%~~ 5.8%
Total Single-Family Res	~~**6,398**~~ **6,492.76**	~~**3,691**~~ **2508.70**	~~**10,089**~~ **9,001.46**	~~**48.3%**~~ **43.5%**
HMD (High-Med. Density Res.	~~745~~ 754.21	~~28~~ 20.52	~~773~~ 774.73	3.7%
HD (High Density Residential	~~92~~ 92.10	0.00	92.10	0.4%
RMD (Residential Mobile Home	~~79~~ 79.51	~~0.18~~ 0.00	~~80~~ 79.51	0.4%
Total Multi-Family	~~**917**~~ **925.82**	~~**28**~~ **20.52**	~~**945**~~ **946.34**	~~**4.5%**~~ **4.6%**
P/G (Public/Government)	~~533~~ 535.51	~~5~~ 0.00	~~538~~ 535.51	2.6%
CO (Commercial Office)	~~342~~ 377.50	~~189~~ 335.75	~~531~~ 713.25	~~2.5%~~ 3.4%
Total Office	~~**875**~~ **913.01**	~~**194**~~ **335.75**	~~**1,069**~~ **1,248.76**	~~**5.1%**~~ **6.0%**
IND (Industrial)	~~1,882~~ 1,840.68	~~995~~ 700.97	~~2,877~~ 2,541.65	~~13.8%~~ 12.3%
IND-R (Industrial Reserve)	0	~~150~~ 150.39	150.39	0.7%
Total Industrial	~~**1,882**~~ **1,840.68**	~~**1,145**~~ **851.36**	~~**3,027**~~ **2,692.04**	~~**14.5%**~~ **13.0%**
BP (Business Park)	~~125~~ 125.45	~~565~~ 505.91	~~691~~ 631.36	~~3.3%~~ 3.0%
BP-R (Business Park Reserve)	~~3~~ 0	~~326~~ 328.60	~~329~~ 328.60	1.6%
Total Business Park	~~**128**~~ **125.45**	~~**891**~~ **834.51**	~~**1,019**~~ **959.96**	~~**4.9%**~~ **4.6%**
CG (Commercial General)	~~322~~ 322.01	~~258~~ 244.18	~~579~~ 566.19	~~2.8%~~ 2.7%
CN (Commercial Neighborhood)	~~190~~ 197.84	~~81~~ 70.59	~~270~~ 268.13	1.3%
CT (Thoroughfare Commercial)	~~213~~ 209.01	~~9~~ 9.46	~~222~~ 218.47	1.1%
HC (Highway Commercial)			0	0.0%
~~CC (Community Commercial)~~ RC (Regional/Community)	~~487~~ 475.79	~~42~~ 230.61	~~529~~ 706.40	~~2.5%~~ 3.4%
Total Commercial	~~**1,211**~~ **1,204.65**	~~**390**~~ **554.84**	~~**1,601**~~ **1,759.49**	~~**7.7%**~~ **8.5%**

Land Use	City Limits	Existing SUDP	City Limits + Existing SUDP	% of Total
OS-PK (Open Space-Park/Rec)	~~746~~ 681.76	~~166~~ 187.24	~~911~~ 869.00	~~4.4%~~ 4.2%
PKY (Parkway)				0.0%
Total Open Space	**~~746~~ 681.76**	**~~166~~ 187.24**	**~~911~~ 869.00**	**~~4.4%~~ 4.2%**
SCHOOL (School)	~~663~~ 678.86	~~52~~ 51.78	~~715~~ 730.64	~~3.4%~~ 3.5%
COM-R (Commercial Reserve)	~~7~~ 0	~~83~~ 90.32	90.32	0.4%
RES-R (Residential Reserve)	0	~~360~~ 1360.31	~~360~~ 1,360.31	~~1.7%~~ 6.6%
PARK-F (Future Park)	~~6~~ 17.48	~~77~~ 98.22	~~83~~ 115.70	~~0.4%~~ 0.6%
SCHOOL-F (Future School)	~~6~~ 11.65	~~49~~ 40.79	~~54~~ 52.44	0.3%
VR (Village Residential)	~~239~~ 231.88	~~286~~ 223.64	~~526~~ 455.52	~~2.5%~~ 2.2%
SPECIFIC PLAN (Specific Plan, Master Plan)				0.0%
RESERVE (Reserve)				0.0%
Total Other	**~~921~~ 939.87**	**~~907~~ 1,813.28**	**~~1,828~~ 2,804.93**	**~~8.7%~~ 13.5%**
Totals	**~~13,186~~ 13,280.61**	**~~7,714~~ 7,430.72**	**~~20,901~~ 20,711.33**	**100%**

The following Land Use Designation descriptions define the Land Use Areas depicted on the Land Use Diagram of the 2015 General Plan. These General Plan Land Use Designations describe the extent of the uses of land within the Merced Urban Planning Area including standards of population density and building intensity (see Table 3.9-2).

~~**CV (Convenience Commercial)**~~
~~To provide sites for small 1- to 5-acre centers with mini-markets, fast-food restaurants, small specialty shops, video rentals, coin laundries, beauty salons, and small professional offices, to serve convenience shopping needs of the surrounding neighborhood.~~

RC (Regional/Community Commercial)
To provide community and regional commercial centers to serve the full depth and variety of retail goods, general merchandise, apparel, and home furnishings, with one or more major department stores as key tenants.

CT (Thoroughfare Commercial)
To accommodate auto-oriented commerce and the needs of people traveling on highways. Large recreational facilities and some "heavy commercial" uses are also common. Typical uses include motels, gas stations, truck stops, restaurants, automobile sales, auto repair shops, bowling alleys, driving ranges, skating rinks, souvenir shops, carwashes, and plant nurseries.

CG (General Commercial)
To provide areas for general commercial uses which are land-intensive commercial operations, involving some light manufacturing, repair, or wholesaling of goods. Typical activities include lumber-yards, automobile wrecking yards, farm equipment or mobile home sales, and building supplies and machine shops.

INDUSTRIAL

IND (Industrial)
This designation provides for the full range of industrial activities, including but not limited to manufacturing, food processing, trucking, packing, and recycling, as well as related office and production facilities.

BP (Business Park)
To provide areas for a mix of commercial, office, and industrial uses with shared access and parking facilities. Uses could include a wide variety of light manufacturing, warehousing, office and service business activities.

RESERVE

RES-R (Residential Reserve)
To provide areas for future urban density residential expansion within the Merced SUDP/SOI. This classification, along with the other reserve classifications described below, is to be combined with an interim use classification, such as Agriculture, which maintains existing use practices in the area but establishes expected future uses based on need.

COM-R (Commercial Reserve)
To provide areas for future commercial expansion within the Merced SUDP/SOI.

IND-R (Industrial Reserve)
To provide areas for future industrial expansion within the Merced SUDP/SOI.

BP-R (Business Park Reserve)
To provide areas for future business park expansion within the Merced SUDP/SOI.

AI (Area of Interest)
In accordance with the Merced County General Plan, this designation is applied to areas located outside the City's SUDP/SOI proximate to City territory, but not currently planned for annexation or City service, whose development may impact City planning efforts.

OTHER

P/G or School (Public/Government or School)
To provide public facilities such as schools, fire stations, police stations, public buildings (libraries, courthouse, public offices, etc.) and similar types of public uses and facilities.

OS-PK (Open Space-Park/Recreation)
To provide public and private open space for outdoor recreation both passive and active. OS-PK areas may be designated in areas containing public parks, golf courses, greens, commons, playgrounds, landscape areas and similar types of public and ~~public~~ private open spaces.

Table 3.9-2
Standards of Population Density and Building Intensity (2015 and 2030 General Plan)

Land Use Designation	Zoning	Residential Density (Units/Gross Acre)	Average Permitted Floor Area Ratio (FAR)	Residential Average Persons/ Housing Unit	Population Person/ Acre (Range)
Residential					
Rural (RR)	P-D	1.0 to 3.0		3.02	3.0-9.1
Low Density (LD)	R-1-5, R-1-6, R-1-10, R-1-20	2.0 to 6.0		3.02	6.0-18.1
Low-Medium Density (LMD)	R-2	6.1 to 12.0		3.02	18.4 to 36.2
High-Medium Density (HMD)	R-3-1.5, R-3-2	12.1 to 24.0		3.02	36.5 to 72.5
High Density (HD)	R-4	24.1 to 36.0		3.02	72.8 to 108.7
Mobile Home Park (RMH)	R-MH	6.0 to 10.0		3.02	18.1 to 30.2
Village Core Residential (VR)	RP-D**	7.0 to 30.0 (Average 10.0)		3.02	21.1 to 90.6

Land Use Designation	Zoning	Residential Density (Units/Gross Acre)	Average Permitted Floor Area Ratio (FAR)	Residential Average Persons/ Housing Unit	Population Person/ Acre (Range)
Commercial					
Commercial/Professional Office (CO)	C-O		0.50		
Neighborhood (CN)	C-N		0.35		
~~Convenience (CV)~~	~~P-D~~		~~0.35~~		
Regional/Community (RC)	C-C		0.35 to 6.0		
Thoroughfare (CT)	C-T		0.35		
General (CG)	C-G		0.35		
~~Urban Village Core (UVC)~~	~~P-D~~		~~0.35~~		
Business Park	P-D**		0.40		
Industrial	I-L, I-H		0.30 to 0.50		
Reserve*					
Residential	A-1-20	2.0 to 6.0*		3.02*	6.0-18.1*
Commercial	A-1-20		0.35*		
Industrial	A-1-20		0.30 to 0.50*		
Business Park	A-1-20		0.40*		
Area of Interest	A-1-20		0.10*		
Other					
Community Plan	P-D				
Public/Government (P/G)	All				
Open Space-Park/Recreation Facility (OS-PK)	All		0.10		

*Does not apply until area is redesignated from "Reserve
** New Zoning District(s) may be created for these land uses.

Specific Plans/Master Development Plans

In 1996, the City of Merced had three adopted "Specific Plans" (Fahrens Park, Campus North, and Northeast Yosemite) and one "Master Development Plan," (Bellevue Ranch) all located in the North Merced planning area. These plans were developed as a way of master-planning large areas under consideration for development.

The Fahrens Park Specific Plan was originally adopted in 1984, includes approximately 300 acres and calls for single-family residential development, open space (including Fahrens Community Park and a flood control channel), along with a small amount of medium-density residential development. The Campus North Specific Plan was originally adopted in 1985, includes 78 acres, and, as amended, calls for single-family homes on standard and small lots, and professional office uses. The Northeast Yosemite Specific Plan was adopted in 1989, includes approximately 640 acres, and calls for mostly single- family residential development with some

duplex and multi-family development. Other uses include the new Mercy Medical Center Merced and Mercy Cancer Center, three church sites, Cruickshank Middle School, a 10-acre park site, and a small neighborhood commercial center ("The Promenade").

The Bellevue Ranch Master Development Plan was adopted in June 1995 and covers 1,365 acres. The plan calls for a great deal of single-family residential and multifamily residential development as well as a substantial amount of retail commercial and professional office development adjacent to the east-west arterials running through the site. Other uses include more elementary school sites, one high school site, nearly 200 acres of park land and open space, and two fire station sites. Several new Community Plans in addition to the above are proposed in the Merced Vision 2030 General Plan.

Existing Zoning Summary

Zoning regulations clearly indicate the extent and type of development that can occur in the incorporated areas (hence holding capacity and buildout potential). An important distinction between the General Plan and Zoning Ordinance is that the General Plan provides guidance on the location, type, density, and timing of new growth and development over the long-term, while the Zoning Ordinance regulates uses, building height, setbacks, provisions of open space, lot sizes, and other factors related to development on individual property. The discussion of future growth must first examine the current growth potential and capacity for new growth. The General Plan and Zoning Ordinance are the two most important factors used to calculate potential growth. The General Plan and Zoning Ordinance provide guidance and requirements for an area's ultimate population and size and to what extent development is possible. The purpose of this section is to summarize existing information regarding the City of Merced Zoning Ordinance.

The Zoning Ordinance establishes 11 residential classifications, seven commercial zones, two industrial zones, four reserve zones, one public/government zone, and one open space/park zone (reference Table 3.9-2). The purpose of all zones is to translate the broad General Plan land use categories into detailed land use classifications that are applied to properties with much greater precision than the General Plan.

The Zoning Ordinance has a number of Special Districts established to provide areas for special uses which are of a transitory nature, which require special consideration by the Planning Commission and the City Council.

Redevelopment Plans

The Goal of the Redevelopment Program is to stimulate economic investment by participating in real estate-based development projects and public improvements that increase economic vitality and improve physical conditions in target redevelopment project areas for the benefit of the entire City and its residents in order to eliminate physical and economic blight as defined by the California Community Redevelopment Law (CRL), which provides the framework for carrying out redevelopment activities.

- Commercial nodes in new growth areas to avoid the aesthetic and circulation issues associated with more common "strip commercial".

- Circulation: Recognition of the cost and importance of the arterial street system and protect capacity with access standards. Designs that encourage all modes of transportation.

- Build community quality. High community standards for Merced's services, infrastructure, and private development as a strategy for attracting business and industry and to benefit the City's residents.

- Planning well in advance for industrial/business park uses and for the infrastructure needed to support such development.

- A diversity of housing types and opportunities.

- Encouraging Sustainable and "Green" Development.

- Planning for the provision of infrastructure ahead of development.

- Maintaining Merced's high quality of life and keeping it a nice place to live.

- Encouraging new research parks and the use of new technologies.

- Protection of the Merced Regional Airport as an important community asset.

- Maintaining a quality educational environment for pre-school, K-12, and higher education.

- Maintaining our quality parks and recreation systems, including the bike path system.

- Encouraging a healthy community through improved medical facilities, air quality, parks & recreation opportunities, etc.

The intent of the 2030 General Plan update was not to replace the 2015 plan, but to update selected elements to reflect changes in state law, and new issues (such as the UC Merced campus and University Community) that arose since the 2015 plan was adopted. A significant amount of the 2015 plan was retained, including land use designations and development standards.

The *Merced Vision 2030 General Plan* contains a number of policies that apply to Land Use and Planning impacts in conjunction with ultimate build-out of the City in accordance with the General Plan. The specific policies listed below contained in the Urban Expansion, Land Use, Transportation and Circulation, Public Services and Facilities, Urban Design, Open Space, Conservation, and Recreation, Housing, and Safety Elements of the General Plan are designed to ensure that environmental impacts are minimized as development occurs.

Table 3.9-3
Merced Planned Land Use Summary
(2015 General Plan SUDP vs. 2030 General Plan SUDP/SOI)

Land Use Classification	2015 GP SUDP		2030 GP SUDP/SOI		Percent Change
	Acres	Percent of Total	Acres	Percent of Total	
RR (Rural Residential)	~~296~~ 279.90	~~1.44~~ 1.35	~~2301~~ 2,284.81	~~6.88~~ 6.80	~~677~~ 816
AG (Agriculture)	~~114~~ 149.45	~~0.55~~ 0.72	~~114~~ 149.45	~~0.34~~ 0.45	0
Total Agricultural Residential	*~~410~~ 429.35*	*~~1.99~~ 2.07*	*~~2,415~~ 2,434.26*	*~~7.22~~ 7.25*	*~~489~~ 566*
LD (Low-Density Residential)	~~8,497~~ 7,791.86	~~41.25~~ 37.62	~~8,771~~ 8,065.94	~~26.21~~ 24.02	3.5
LMD (Low-Medium Density)	~~1,130~~ 1,209.60	~~5.49~~ 5.84	~~1,177~~ 1,256.56	~~3.52~~ 3.74	~~4~~ 3.8
Total Single-Family Residential	*~~9,627~~ 9,001.46*	*~~46.74~~ 43.46*	*~~9,948~~ 9,322.50*	*~~29.73~~ 27.77*	*3.5*
HMD (High-Medium Density)	~~807~~ 774.73	~~3.92~~ 3.74	~~833~~ 800.08	~~2.49~~ 2.38	3.2
HD (High Density Residential)	92.10	~~0.45~~ 0.44	~~116~~ 115.66	~~0.35~~ 0.34	~~26~~ 25.5
RMH (Residential Mobile Home)	~~80~~ 79.51	~~0.39~~ 0.38	~~80~~ 79.51	0.24	0
Total Multi-Family	*~~979~~ 946.34*	*~~4.75~~ 4.57*	*~~1,029~~ 995.25*	*~~3.08~~ 2.96*	*5.1*
P/G (Public/Government)	~~538~~ 535.51	~~2.61~~ 2.59	~~578~~ 575.99	~~1.73~~ 1.71	7.5
CO (Commercial Office)	~~474~~ 713.25	~~2.30~~ 3.44	~~474~~ 713.25	~~1.42~~ 2.12	0
Total Office	*~~1,012~~ 1,248.76*	*~~4.91~~ 6.03*	*~~1,052~~ 1,288.58*	*~~3.14~~ 3.84*	*~~4~~ 3.1*
IND (Industrial)	~~2,877~~ 2,541.65	~~13.97~~ 12.27	~~2,877~~ 2,541.65	~~8.60~~ 7.57	0
IND-R (Industrial Reserve)	150.39	0.73	~~1,223~~ 1,222.73	~~3.65~~ 3.64	~~715~~ 813
Total Industrial	*~~3,027~~ 2,692.04*	*~~14.70~~ 13.00*	*~~4,100~~ 3,764.38*	*~~12.25~~ 11.21*	*~~35~~ 39.8*
BP (Business Park)	~~582~~ 631.36	~~2.83~~ 3.05	~~659~~ 708.79	~~1.97~~ 2.11	~~13~~ 12.2
BP-R (Business Park Reserve)	~~88~~ 328.60	~~0.43~~ 1.59	~~88~~ 328.60	~~0.26~~ 0.98	0
Total Business Park	*~~670~~ 959.96*	*~~3.25~~ 4.63*	*~~747~~ 1,037.39*	*~~2.23~~ 3.09*	*~~11~~ 8*

Land Use Classification	2015 GP SUDP		2030 GP SUDP/SOI		Percent Change
	Acres	Percent of Total	Acres	Percent of Total	
CG (General Commercial)	~~494~~ 566.19	~~2.40~~ 2.73	~~494~~ 566.19	~~1.48~~ 1.69	0
CN (Neighborhood Commercial)	~~252~~ 268.43	~~1.22~~ 1.30	~~275~~ 291.27	~~0.82~~ 0.87	~~9~~ 8.5
CT (Thoroughfare Commercial)	~~505~~ 218.47	~~2.45~~ 1.05	~~679~~ 392.39	~~2.03~~ 1.17	~~34~~ 79
RC (Regional/Community)	~~518~~ 706.40	~~2.51~~ 3.41	~~518~~ 706.40	~~1.55~~ 2.10	0
Total Commercial	*~~1,769~~ 1,759.49*	*~~8.59~~ 8.50*	*~~1,966~~ 1,956.25*	*~~5.88~~ 5.83*	*11*
OS-PK (Open Space/Park)	~~954~~ 869	~~4.63~~ 4.20	~~1,107~~ 1,021.91	~~3.31~~ 3.04	16
Total Open Space	*~~954~~ 869*	*~~4.63~~ 4.20*	*~~1,107~~ 1,021.91*	*~~3.31~~ 3.04*	*16*
Total School	*~~746~~ 730.64*	*~~3.62~~ 3.53*	*~~1,740~~ 1,724.82*	*~~5.20~~ 5.14*	*~~133~~ 236*
Total Other Lands	*~~1,404~~ 2,074.29*	*~~6.82~~ 10.02*	*~~1,244~~ 2,074.29*	*~~3.72~~ 6.18*	*~~-11~~ 0*
Community Plan Areas	*0*	*~~0.00~~ 1.88*	*~~8,115~~ 8,345.14*	*~~24.25~~ 24.85*	*N/A*
TOTAL SOI/SUDP AREA	**~~20,598~~ 20,711.33**	**100.00**	**~~33,462.30~~ 33,575.63**	**100.00**	**62**
Note: Open Space Inventory for the 2030 SOI/SUDP includes arterial street rights-of-way					

Source: Figures 2-3 & 2- -Land Use Diagram as calculated by Quad Knopf, Inc. & City of Merced, 2011

A number of plans and policies are related to the 2030 General Plan Update. These include, but are not limited to, the City's Zoning Ordinance, the Merced County General Plan, the Merced County Zoning Ordinance, Specific Plans/Master Development Plans, redevelopment project

areas, the Cortese-Knox-Hertzberg Local Government Reorganization Act of 2000 (LAFCO), the Merced County Regional Transportation Plan (RTP), the Regional Transportation Improvement Program (RTIP), Merced Public Facilities Financing Plan, the State Transportation Improvement Program (STIP), the Merced County Airport Land Use Compatibility Plan, the Merced Regional Airport Master Plan, the San Joaquin Valley Air Quality Attainment Plan (AQAP), and the Air Quality Guidelines for General Plans.

The 2030 General Plan includes planning for infrastructure elements (Utilities and roadways) to improve the quality of life for ~~City~~ residents within the Merced SUDP/SOI and to support an additional 74,000 residents by 2030. These elements will widen some roadways, improve existing infrastructure, and improve flood control facilities. However, no major new roads or infrastructure corridors are proposed in the developed portions of the community that would create a physical barrier or division between existing neighborhoods.

The 2030 General Plan Draft Urban Expansion Element includes the following goals: a compact urban form; preservation of agriculturally significant areas; and efficient and phased urban expansion. These goals will help prevent urban sprawl and land use conflicts, and will ensure compatibility and community continuity throughout the City. Policies and implementing actions are included as part of the proposed project to encourage development of cohesive neighborhood patterns and consequently, would minimize this impact. The 2030 General Plan provides a number of policies and implementing actions designed to protect the desired elements of the community (i.e., history, character, etc.) while also providing for future growth.

Applicable policies of the Draft Urban Expansion Element with regard to this impact include Policy UE-1.1 which states that the City is to designate areas for new urban development that recognize the physical characteristics and environmental constraints of the planning area. Policy UE-1.2 calls for the City to foster compact and efficient development patterns to maintain a compact urban form, and Policy UE-1.3 states that the City will control the annexation, timing, density, and location of new land uses within the City's urban expansion boundaries. Policy UE-1.4 calls for the City to continue joint planning efforts on the UC Merced and University Community plans. Policy L-1.9 of the Land Use Element calls for the City to ensure connectivity between existing and planned urban areas and Policy LU-3.2 calls for the City to encourage infill development and a compact urban form.

Applicable implementing actions of the policies above include encouraging development on infill sites by amending the Zoning and Subdivision Ordinances to better accommodate such requests (1.2.a). Implementing Action 1.2.c states that the City will continue to limit the expansion of City utilities to only those within an established urban expansion boundary. Implementing Action 1.2.d states that the City will promote higher residential densities within the Merced urban area. The City will continue to require that all new urban development and annexations be contiguous to existing urban areas and have reasonable access to public services and facilities (1.3.a). The City should adequately plan for public improvements/services to support designated land uses for all areas as they become suitable for development and/or proposed for annexation (Implementing Action 1.3.b). With Implementing Action 1.3.c, the City shall encourage phasing of new development.

- Map Sheet 52, Updated 2006 minor aggregate production occurs west and north of the City of Merced, but economic deposits of aggregate minerals are not mined within the immediate vicinity of the SUDP/SOI. The City of Merced will not be impacted by dust or noise based on the community's distance from mining operations. Therefore implementation of the proposed General Plan would have ***no impact*** on the availability of mineral resources or impact current of future mining operations.

Mitigation Measures

No mitigation measures are required.

Impact #3.10-2: The proposed project could adversely affect the availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan

Discussion/Conclusion: No Mineral Resource Zones or mineral resource recovery sites exist within the City of Merced or in the area designated for future expansion of the City (the SUDP/SOI). As a result the General Plan does not identify location of resource sectors, nor are policies for management of mineral resources identified. Implementation of the proposed General Plan would not adversely affect the availability of locally-important mineral resource recovery sites delineated on a local general plan, specific plan or other land use plan. Therefore, there is ***no impact***.

Mitigation Measures

No mitigation measures are required.

CUMULATIVE IMPACT ANALYSIS

Although no known mineral resources exist within the City's jurisdictional boundaries, there are mineral resources within the region. The County's mineral resources are almost all sand and gravel mining operations. Approximately 38 square miles of Merced County, in 10 aggregate resource areas, have been classified by the California Division of Mines and Geology for aggregate. Development in these areas could preclude potential future mining by rendering this resource inaccessible or by establishing urban uses incompatible with mining operations. However, there is no such development expected to occur as a result of implementation of the proposed General Plan. Further, the vast majority of the County's potential mineral deposits are expected to remain available for potential mining into the foreseeable future, should site-specific evaluations determine them to be significant and economic. For these reasons, the loss of mineral resources as a result of development in the County would be a ***less than significant cumulative impact.***

3.11 Noise

The purpose of this section is to describe the existing and the future noise environments within the City of Merced. This section provides an assessment of long term noise impacts associated with traffic, railroad operations, aircraft operations, commercial/light industrial uses and other non-transportation noise sources. Based upon the analysis, mitigation measures associated with the buildout of the proposed General Plan are provided where a potentially significant impact has been identified. The mitigation measures generally take the form of the proposed goals, policies and implementation measures.

3.11.1 SETTING

Environmental Setting

The City of Merced is located approximately 100 miles southeast of Sacramento, 55 miles northwest of Fresno, and ~~150~~110 miles southeast of San Francisco, in the Central Valley of California. Incorporated in 1889, the City of Merced is situated within the eastern section of Merced County and is the largest City in the County. Principal highway access to Merced is via State Highway 99, which runs through the central portion of the City in a general north/south direction. State Highways 140 and 59 also serve the City.

The City contains a typical mix of residential, commercial, industrial and public land uses. The City is centered around Main Street. Older development transitions into new development as one goes farther north. Significant areas in the extreme north remain undeveloped, though they have been annexed. Less new development has occurred in the south portion of the City.

ACOUSTIC TERMINOLOGY

Noise is often defined as unwanted sound, and its perception can be characterized as a subjective reaction to a physical phenomenon. Researchers have grappled for many years with the problem of translating objective measurements of sound into directly correlated measures of public reaction to noise. The descriptors of community noise in current use are the results of these efforts, and represent simplified, practical measurement tools to gauge community response. Table 3.11-1 provides examples of maximum or continuous noise levels associated with common noise sources.

Table 3.11-1
Typical A-Weighted Maximum Sound Levels of Common Noise Sources

dB (Sound Pressure Level)	Source (with distance)
130	Threshold of pain
120	Jet aircraft take-off at 100 feet
110	Riveting machine at operators position
100	Shot-gun at 200 feet
90	Bulldozer at 50 feet

City boundaries. The following descriptions are intended to be representative of the relative noise impacts of such uses and to identify individual noise sources needing consideration during the environmental review process of developments in their vicinity. Pepsi-Cola Metropolitan Bottling and Distribution Facility, Werner Corporation, McLane Pacific Grocery Distribution, and Quebecor World (now known as Quad/Graphic) have been identified as primary industrial noise generators located within the City of Merced in 2007.

Pepsi-Cola Bottling Facility

Pepsi-Cola operates a bottling, production, and distribution facility at the corner of West Avenue and Eagle Street. Noise sources associated with the facility include air compressors, cooling towers and evaporator equipment located at the north side of the facility, and on-site truck circulation along the southern and western property boundaries. Liquid carbon dioxide is delivered generally once per week, causing 15-20 minutes of elevated noise levels along the eastern portion of the facility. The facility is operated continuously year-round, 24 hours a day. Noise measurements were conducted outside the northern property line, adjacent to the facilities cooling towers. The cooling towers generated an average noise level of 69.8 dB Leq and a maximum noise level of 70.8 dB Lmax, at a distance of 50 feet. The facility closed on December 8, 2010.

Werner Corporation

The Werner Corporation is located west of the Grogan Avenue and West Avenue intersection. The facility manufactures, assembles, and distributes fiberglass, wood, and metal climbing equipment such as ladders and scaffolding. Hours of operation are 6:00 a.m. to 11:15 p.m. seven days a week. Noise sources include manufacturing equipment located inside the building, audible through bay doors at the northwestern facade, and on-site truck operations. Werner Co. receives and dispatches approximately ten semi tractor-trailers per day. j.c. brennan & associates file data indicates that slowly moving trucks may produce maximum noise levels of 71-74 dB at 100 feet, and idling trucks generate approximately 62-63 dB at 100 feet. Noise measurements of manufacturing operations ranged from 71 dB to 75 dB Lmax 110 feet north of the facility.

McLane Pacific

McLane Pacific operates a 250,000 square foot food service/grocery processing and distribution facility located at the northwest corner of Childs Ave and Kibby Rd. Hours of operation are 24 hours a day, Sunday through Saturday. Primary noise sources associated with the facility include rooftop cooling towers, refrigeration equipment, loading dock activities, and on-site truck circulation. Due to the nature of the product, the majority of trailers are outfitted with diesel powered refrigeration units and may remain idling at the facility for extended periods of time. Mclane Pacific dispatches between 30 and 35 trucks per day and receives 45 to 60 trucks per day. Noise measurements conducted east of the McLane Pacific facility ranged from 56 dB to 63 dB Leq, and 72 dB to 77 dB Lmax approximately 450 feet from the primary noise sources.

Quebecor World (now known as Quad/Graphic)

Quebecor World Incorporated (now known as Quad/Graphic) operates a 500,000 square foot digital media production, printing, and distribution facility located northwest of Cooper Avenue

3.12 Population and Housing

This section of the Draft EIR describes the existing population, housing and employment characteristics of the City of Merced and Merced County. The potential changes to population and housing characteristics that could result from the proposed plan are discussed, including impacts from new housing that would be generated by the proposed plan. Population growth, housing demand, and employment are considered in the DEIR only to the extent they would result in physical changes to the environment. During the Notice of Preparation (NOP) period, one comment was made at the scoping meeting that population projection estimates should be based on "realistic" growth projections.

3.12.1 SETTING

Environmental Setting

The City of Merced is located approximately 104 miles southeast of Sacramento, 53 miles northwest of Fresno, and ~~112~~110 miles southeast of San Francisco, in the Central Valley of California. Incorporated in 1889, the City of Merced is situated within the eastern section of Merced County and is the largest City in the County. Principal highway access to Merced is via State Highway 99, which runs through the central portion of the City in a general east/west direction although it runs through much of the State in a north/south direction. State Highways 140 and 59 also serve the City.

The topography of the community is characterized by flat land approximately 155 - 180 feet in elevation. The local climate is typical of the Central Valley. Average daily temperatures are 48 degrees in January to 95 degrees in July. The summer months are typically dry and hot and the winter months are typically cool with occasional fog. Average annual rainfall is approximately 12 inches, with January being the wettest month of the year with two inches of precipitation.

POPULATION TRENDS

Since incorporation, the City has grown to an estimated population of 80,985 in 2010, according to the Department of Finance. In 1980, the population of the City of Merced was 36,499, and by 1990 the population had increased to 56,216 (Table 3.12-1). This was an increase of approximately 54 percent, which was much higher than both Merced County's and California's increase in population for the same time period. From 1990 to 2000, the City's population increased 13.7 percent to total 63,893. Merced County and California's population increase from 1990 to 2000 was higher at 18.0 percent and 13.8 percent respectively.

Table 3.12-1
Population Growth
Merced, Merced County and California, 1980-2000

	1980 Population	1990 Population	Percent Change 1980 to 1990	2000 Population	Percent Change 1990 to 2000
Merced	36,499	56,216	54.0%	63,893	13.7%
Merced County	134,560	178,403	32.6%	210,554	18.0%
California	23,668,862	29,760,021	25.7%	33,871,648	13.8%

Source: 1980, 1990, & 2000 U.S. Census

and an inventory of resources and constraints relevant to meeting those needs. Housing elements are revised according to specific requirements of the State of California. The City's Housing Element was scheduled to be updated and submitted to the State Department of Housing and Community Development (HCD) in August 2009, which was completed. The City subsequently received comments from HCD and City staff is in the process of doing revisions. The new Housing Element should be adopted by the end of 2011~~0~~.

LOCAL

General Plan Consistency

The *Merced Vision 2030 General Plan* contains a number of policies that apply to the increase in population and new housing development that will result from the City's growth. The specific policies contained in the Urban Expansion, Land Use, Transportation and Circulation, Public Services and Facilities, Urban Design, Sustainable Development, and Housing Elements are directed at ensuring that growth occurs in an orderly, planned fashion, and that essential public services will be provided in a timely and efficient manner:

Urban Expansion Policies:

UE-1.1 Designate areas for new urban development that recognize the physical characteristics and environmental constraints of the planning area.

UE-1.2 Foster compact and efficient development patterns to maintain a compact urban form.

UE-1.3 Control the annexation, timing, density, and location of new land uses within the City's urban expansion boundaries.

UE-1.4 Continue joint planning efforts on the UC Merced and University Community plans.

UE-1.5 Promote annexation of developed areas within the City's Specific Urban Development Plan (SUDP)/Sphere of Influence (SOI) during the planning period.

UE-1.6 Consider expansion of the City's SUDP/SOI boundary for areas within the Area of Interest when certain conditions are met.

Land Use Policies:

L-1.1 Promote balanced development which provides jobs, services and housing.

L-1.2 Encourage a diversity of building types, ownership, prices, designs, and site plans for residential areas throughout the City.

L-1.3 Encourage a diversity of lot sizes in residential subdivisions.

L-1.4 Conserve residential areas that are threatened by blighting influences.

L-1.5 Protect existing neighborhoods from incompatible developments.

has approximately 187 acres of active parkland, more than 120 acres of linear parkland encompassing the stream corridors where the bike paths are located, and more than 56 acres of undeveloped parkland. The bike trail system is contained in four creek corridors, and currently totals 13 miles. Expansions to this system are planned, and funding is in place for some of them. In Merced, the inventory of recreation facilities such as sports fields used by the public is relatively low, and the City itself provides only a few facilities. The City owns one gymnasium. The~~, except the~~ McCombs Youth Center, which is operated by the Boys and Girls Club. The City relies heavily on the local school districts for athletic fields and gymnasiums. The following facilities are available for public use in Merced:

- 23 youth softball/baseball fields (3 lighted);
- 5 adult softball fields (all lighted);
- 13 soccer fields (does not include open turf areas); and
- 6 tennis courts; and
- 5,450 s.f. of pool space.

Other recreational sites in the planning area owned by public agencies include the Merced County Fairgrounds (owned by the State of California), Courthouse Park, and Flanagan Park, (the latter now owned by the City of Merced). Lake Yosemite, also owned by Merced County, is located to the northeast of the planning area and is adjacent to the U.C. Merced campus. A full list of the City of Merced Parks can be found in Table 3.13-2.

Table 3.13-2
Merced City Park Land Inventory

	Acres	Facilities						
		RB	PG	PS	S	BF	BB	RR
Regional Parks:								
Applegate Park	32.37	X	X	X			X	X
Youth Sports Complex	12.34					X		X
Community Parks:								
Fahrens Park	47.62		X				X	X
Joe Herb Park	26.74		X	X		X		X
McNamara Park	8.70	X	X		X		X	X
Neighborhood Parks:								
Ada Givens Park	10.00		X	X	X			X
Bob Carpenter Park	5.99							
Burbank Park	3.28		X					
Davenport Park	7.5							
Gilbert Macias Park	4.91			X			X	X
Rahilly Park	28.91		X	X				X
Roland D. Brooks Jr. Park	4.00							
Stephan Gray Park	2.50							
Stephen Leonard Park	2.70	X	X		X		X	X
Mini Parks:								
12th and G St.	0.19		X					
11th and H St.	0.17		X					
8th and V St.	0.89		X					

of the Merced County Sheriff's Department. The Sheriff's Department is located at 700 West 22nd Street in Merced. The Sheriff's Department presently employs approximately 80 plus sworn deputies to provide police protection for the unincorporated portions of the county, with at least six deputies and a sergeant on duty at any one time.

The Merced Sheriff's Department provides patrol and crime prevention services as well as maintaining the county jail, operation of a SWAT team, and providing identification and fingerprinting services.

Merced County Sheriff's Department operates the Merced County Correctional facilities which houses jail ~~in-mates~~ inmates living in the County. The County also provides court services (including probation, etc.), which supports the local law enforcement efforts of both the Merced County Sheriff's Department and the Merced City Police Department.

FIRE PROTECTION

The City of Merced Fire Department provides fire protection, rescue, and emergency medical services from five fire stations throughout the urban area. The City central fire station is located in the downtown area. There is a station on East 21st Street near Yosemite Park Way, a station north of the Merced Mall on Loughborough Drive, a station on Parsons, and another at the Regional Airport.

Fire Department personnel are typically assigned on a three-platoon work schedule, which provides the City coverage 24 hours a day, seven days a week. The Department equipment includes first-line engine companies (carry and pump water), ladder companies, reserve engines and ladder trucks, airport emergency vehicles and other miscellaneous vehicles.

Merced's fire protection system operates according to a central station concept. Under this concept, a central station can respond to calls from within its own service area or district, and can provide back-up response to other districts as well. From 1990 to 2010, response activity doubled.

The Fire Department provides around-the-clock coverage with a full-time staff upwards of 54 Line Personnel (15 Captains, 18 Engineers, 21 Firefighters) three Battalion Chiefs, two Division Chiefs, one Chief, and two Secretaries. The Fire Department is a paid only career department (no Volunteers, Reserves, or PCFS). Equipment includes five Frontline Engines, two Reserve Engines, Frontline Truck, Reserve Truck, Reserve Squad, Aircraft Crash / Fire Engine, California State Office of Emergency Services (OES) Engine, Rescue Trailer, Public Education Trailer, HAZMAT Decon Trailer, Rescue Boat, two Fire Prevention Vehicles, four Administrative Vehicles, and two Support Vehicles. The Fire Department also has one training tower.

The Insurance Services Office (ISO) defines fire protection services on a scale of 1 to 10, with 1 representing the best level of protection and 10 indicating no protection at all. The City of Merced's 2010 rating, Class 2, is considered to be well above average, despite manning levels

below national averages. This rating helps keep the costs of fire insurance premiums low for City businesses.

The City's Fire Department Master Facilities Plan is used in the planning of stations that will provide protection within a primary service area. The Department has a goal of maintaining a response time of four to six minutes 90 percent of the time for the first crew to arrive at a fire or medical emergency within an assigned district. This goal was chosen on the basis of proven factors affecting property damage and, more importantly, life.

The City of Merced Fire Department has a mutual aid agreement with the Atwater and County Fire Departments. This agreement enables the different jurisdictions to request aid from another when necessary.

The Merced County Fire Department (MCFD) provides fire protection, rescue, and emergency medical services to all unincorporated areas of the County. Additional fire and medical service personnel are provided through contract with the California Department of Forestry (CDF). The nearest Merced County Fire Department station at 3360 North McKee Road is responsible for the unincorporated areas surrounding the City. The McKee Road station is staffed 24-hours per day by either a fire captain or a fire apparatus engineer and augmented with 15 volunteer personnel. The McKee Road response area is approximately 150 square miles and response times vary. The goal for this area is an arrival response time of 10 minutes.

The Merced County Fire Department has an ISO rating of 5 within a 5-mile radius of the station where there are fire hydrants, and a rating of 8 in this same area where there are no hydrants. Areas farther than 5 miles from the station have an ISO rating of 9.

SCHOOLS

Public schools are operated by school districts, which are autonomous governmental agencies separate from the City. They have their own elected officials and source of funding. There has been a long tradition of support and cooperation between the school districts and the community of Merced. The City coordinates with the school districts on the locations of future school sites, the collection of developer impact fees, and joint activities and facilities (i.e. school parks).

Primary and Secondary Education

The public school system in Merced is served by four districts, which include elementary schools, middle (junior high) schools, and high schools.

1. Merced City School District (elementary and middle schools);

2. Merced Union High School District (MUHSD); and

3. Weaver Union School District (serving a small area in the southeastern part of the City with elementary schools).

4. McSwain Union Elementary School District (serving a small area in the southwestern part of the City with an elementary school).

As the City grows, new schools will need to be built to serve Merced's growing population. Student generation rates vary with each school district and are subject to change based on the latest impact fee justification studies prepared by the school districts. Examples of the most recent student generation rates from the Merced City School District and Merced Union High School District in 2010 are shown below in Table 3.14-1.

Table 3.14-1
Student Generation Rates in Merced City School District and Merced Union High School District (2010)

Unit Type	Elementary (k-6)	Middle (7-8)	High School (9-12)
Single-Family Detached	0.352	0.105	0.227
Multi-Family	0.459	0.100	0.109

In 1986, the California Legislature passed legislation (former Government Code Section 53080 and 65995) authorizing local school districts to levy fees on new development at a rate authorized by the State as a method for partially financing the expansion and construction of school facilities made necessary by new growth.

The School Facilities Law of 1986 limited the amount of any fee or other requirement imposed on a development project for the mitigation of impacts on school facilities. Although the law appeared to prohibit denial of a project on the basis of inadequacy of school facilities, three subsequent court decisions held that this prohibition applied only to administrative land use approvals (such as tentative maps, use permits, and building permits), not to legislative land use approvals (such as general plan amendments and rezoning). These court decisions became known as the Mira-Hart-Murietta trilogy. In reliance on these decisions, many cities and counties required payment of school fees in excess of the statutory limits as a condition to granting approval of general plan amendments, specific plans, rezoning, and other legislative approvals.

Proposition 1A/Senate Bill (SB) 50 (Chapter 407, Statutes of 1998) was a school construction measure that was approved by the voters on the November 3, 1998 ballot. It authorized the expenditure of State general obligation bonds totaling $9.2 billion through 2002, primarily for the modernization and rehabilitation of older school facilities and the construction of new school facilities related to new growth. Of the $9.2 billion, $2.5 billion was targeted for higher education facilities and the remaining $6.7 billion was targeted for K-12 facilities, throughout the state.

SB 50 overturned the Mira-Hart-Murietta cases by expressly prohibiting local agencies from using the inadequacy of school facilities as a basis for denying or conditioning approvals of any "legislative or adjudicative act . . . involving . . . the planning, use, or development of real property" (Government Code 65996(b)). In other words, the regulations also explicitly prohibit local agencies from imposing school impact fees in excess of those provided by the statute in connection with approval of a project. Additionally, a local agency cannot require participation in a Mello-Roos for school facilities; however, the statutory fee is reduced by the amount of any voluntary participation in a Mello-Roos.

Proposition 1A/SB 50 has resulted in full State preemption of school mitigation. Satisfaction of the statutory requirements by a developer is deemed to be "full and complete mitigation" in compliance with the California Environmental Quality Act. The law does identify certain circumstances under which the statutory fee can be exceeded. These include preparation and adoption of a "needs analysis," eligibility for State funding, and satisfaction of two of four requirements identified in the law including year-round enrollment, general obligation bond measure on the ballot over the last four years that received 50 percent plus one of the votes cast, 20 percent of the classes in portable classrooms, or specified outstanding debt.

Assuming a district can meet the test for exceeding the statutory fee, the law establishes ultimate fee caps of 50 percent of costs where the State makes a 50 percent match, or 100 percent of costs where the State match is unavailable. All fees are levied at the time the building permit is issued. District certification of payment of the applicable fee is required before the City or County can issue the building permit.

Higher Education

Merced College, a California Community College, provides Merced County residents with opportunities for educational development, cultural enrichment, and personal growth. The College's strong program of academic courses, combined with a wide variety of vocational programs, allows the College to serve the needs of a diverse student population. Two-year Associate in Arts or Sciences degrees, as well as Certificates of Completion in selected vocational areas are available along with other programs designed to transfer to four-year colleges and universities.

The main campus covers over 270 acres and is located north of Yosemite Avenue between M and G Streets. A satellite campus is located in Los Banos to serve the west side of the county. Main campus facilities include classrooms and laboratories, a theater, art gallery, gymnasium, swimming pool, football stadium, tennis courts, library, and agricultural area.

UC Merced is the 10th campus in the University of California system. UC Merced is diverse, growing, and committed to those ideals that serve the state, nation and world through education, research and public services. UC Merced is a student centered research university that opened in September 2005 alongside Lake Yosemite. As the University continues to grow the list of majors, minors and graduate programs expand. The student body is projected to consist of ~~approximately 3,500~~ 4,381 as of Fall 2010, with over 75 clubs and organizations.

LIBRARIES

Libraries in Merced County are provided by the Merced County Library System, which has one main library in Merced and 15 branch libraries throughout the County.

The main library is located next to the Merced County Courthouse at 21st and O Streets. Merced College's Lesher Library also provides library service within the City of Merced. It should be noted that non-Merced College students are prohibited from checking books out of the library, but may use the resources on-site. UC Merced Library also ~~provides~~ makes library services available to the City of Merced.

In January 1994, budget constraints resulted in the Library operations being reduced to a minimal level. Beginning that year library services in Merced County were scaled back and funding, programs, hours, and staff were reduced or terminated. In early 1997, the City and County adopted a property tax sharing agreement in which the County would receive a share of the tax increment from the City of Merced's Redevelopment Project Area 2 specifically for library purposes. While this agreement is currently in place, the County library system still lacks the funding necessary to provide adequate circulation and staffing for existing libraries. Compared to a State average library-spending rate of $20.65 per capita, Merced County's per-capita expenditure in 1998 was $4.03.

Efforts continue to fund restoration of hours and staffing. However, in September 2010, The Merced County Board of Supervisors voted to reduce library hours in each of its regional branches (Atwater, Gustine, Hilmar, Livingston, and Los Banos). The estimated savings from reduced staffing hours has allowed the Merced County Librarian to hold on to all 51 of the full-time employees and variable staff, and refrain from closing any of the branches entirely. ~~As of the fiscal year 2006-2007, the Library began implementing a five year plan to restore professional infrastructure of the County Library System and hours of Operation at the Main Library in Merced as well as the four larger branches (Atwater, Gustine, Livingston, and Los Banos).~~

HEALTH SERVICES

The citizens of Merced enjoy good health care provided by Merced's hospital, surgical and diagnostic centers, urgent care facilities, convalescent facilities, as well as many private physicians.

Mercy Medical Center—Community Campus (formerly known as Merced Community Medical Center) was located near 13th and D Streets and served the citizens of Merced County for nearly 120 years, first as a public hospital, and later operated by Catholic Healthcare West under a long-term lease with the County. This acute care facility offered a full-range of in-patient and out-patient services. This facility has been replaced as of May 2010 with the new Mercy Medical Center Merced below. Limited outpatient and urgent care services remain at the site. Outpatient services are also offered at the Mercy Medical Center—Dominican Campus at M and W. 27th Streets.

The Mercy Medical Center Merced is a new facility located in North Merced at G Street and Mercy Avenue that opened in May 2010. Construction of the project will ultimately include three phases. Phase 1, which was completed in May 2010, includes a 8-story 264,000 square foot acute care tower with 218 beds, a 4-story 80,000 square foot medical office building and central plant. The medical office building is connected to the hospital tower by a one-story circulation spine. Surface parking is provided for patients, staff and visitors.

Phase 2 will include a 6 to 7 story acute care tower, a 3-story 60,000 square foot medical office building and central plant expansion. The medical office building will be connected to the hospital by a one-story circulation spine. The area and number of floors of the tower will be determined after a detailed capacity analysis. Surface parking will be provided for patients, staff

and visitors. This phase will increase capacity to approximately 362 beds. Phase 2 estimated date of completion is 2018.

Phase 3 will include a 5 to 6 story acute care tower, a 3 story 60,000 square foot medical office building, central plant expansion and a 4 story parking structure for approximately 370 cars.

The proposed General Plan includes Policy P-2.1, which will maintain sufficient public protection facilities, equipment, and personnel to the maximum extent feasible within the resource constraints of the City to serve the City's needs. Applicable Implementing Actions of this policy include 2.1.a which states that the City will periodically review existing and potential station facilities, equipment and manpower in light of protection service needs, and 2.1.b in which the City will determine that new development is adequately served by fire and police protection services.

Policies S-6.1 and S-6.2 of the proposed Safety Element call for the City to provide superior community-based police services within the resource constraints of the City and provide services and personnel necessary to maintain community order and public safety. Implementing Action 6.1.c of Policy S-6.1 states that the City will locate future police facilities to enhance the "community policing" concept through the expansion of existing or the addition of new police service districts as the City grows. Implementing Actions 6.2.a and 6.2.b of Policy S-6.2 call for the City to maintain a police force sufficiently staffed and deployed to ensure quick response times to emergency calls and encourage approaches to crime prevention to be designed into new buildings and subdivisions.

As stated above, the City will continue to implement a variety of policies and implementation actions designed to ensure that new development projects plan and finance future required protection services, and that the City maintains sufficient public protection facilities, equipment, and personnel to serve the City's needs. Therefore, implementation of the proposed General Plan would result in a ***less than significant*** impact.

Mitigation Measures

No mitigation measures are required.

Impact #3.14-2: Result in a substantial adverse physical impact to the continued provision of fire protection services in the City

Discussion/Conclusion: The City has a Fire Department Master Facilities Plan used in the planning of stations. The Department has a goal of maintaining a response time of four to six minutes 90 percent of the time for the first crew to arrive at a fire or medical emergency within an assigned district. This goal was chosen on the basis of proven factors affecting property damage and, more importantly, life. As the City continues to grow in population and area, the fire protection system will have to change if it is to maintain this response time standard. This would require two existing stations to be relocated and five new facilities with personnel and equipment to be added to the system.

If new development occurs pursuant to the proposed General Plan, there would be increased demand for fire and emergency medical protection. Additional staff, equipment and facilities would be required to ensure adequate levels of service and maintain, or exceed, current response times. The actual location of new and expanded facilities will depend on the pattern of growth that occurs in the City limits and proposed SUDP/SOI, which is not known at this time.

development and redevelopment proposals. Policy P-8.2 states that the City shall promote consolidation of complimentary or support services to avoid duplication of programs. Implementing Actions 8.1.a and 8.1.c encourage a range of health related facilities in Merced to meet the needs of the growing and aging population including rehabilitation centers, walk-in medical centers, and full service hospitals; and examining the needs for developing youth services programs and facilities. Implementing Action 8.1.b encouraged the continued operation of a multi-cultural and performing arts program and facilities..

Population growth will increase the demand on governmental and medical services and facilities in Merced throughout the planning period. Implementation of the policies noted in this section from the Draft General Plan will result in a ***less than significant*** impact to these public facilities.

Mitigation Measures

No mitigation measures are required.

CUMULATIVE IMPACT ANALYSIS

Future regional growth would result in increased demand for police and fire services and facilities throughout the County; however, since Merced would provide for additional police and fire services and facilities within its own boundaries to address the potential impacts of development within ~~it's~~ its boundaries, implementation of the proposed General Plan would not contribute to a countywide cumulative impact related to police and fire services.

Future regional growth would result in increased demand for additional school facilities within the Merced school districts. While the majority of the demand for schools would result from growth within the City of Merced, as is addressed above, there will be demand for new school facilities outside of the Merced City limits. However, as with the proposed General Plan program-level analysis, it is unknown exactly where these school facility expansions would occur to support the cumulative increase in population, though they would occur within urbanized areas where there is a concentration of population. As specific school expansion or improvement projects are identified, additional project-specific, second-tier environmental analysis would be completed. As a result, a significant cumulative impact associated with schools would not occur. Payment of fees for construction of new facilities under SB50 is deemed to be full and complete mitigation of development-related impacts on schools.

Future regional growth would result in increased demand for library facilities throughout the County. As a result, the Merced County Library system would probably need to expand library facilities to meet the increased demand. It is unknown exactly where these library facility expansions would occur to support the cumulative increase in population, though they would most likely occur within urbanized areas where there is a concentration of population. As specific library expansion or improvement projects are identified, additional project-specific, second-tier environmental analysis would be completed.

Future regional growth would result in increased demand for other public services and facilities throughout the County. As a result, the County of Merced would probably need to expand these

transportation, including private bus lines and taxi-cabs, as well as the central transfer point for public bus service.

High Speed Rail

An additional regional issue is proposed high speed rail service between San Diego and San Francisco, passing through the Central Valley. In 1996, the California Intercity High Speed Rail Commission selected a Highway 99 route rather than an Interstate 5 route due to the larger number of people and communities which could be served along Highway 99. The preferred route has been selected and would locate a station in Downtown Merced. Stops are anticipated in Bakersfield, Tulare, Fresno, and Merced before the trains continue over SR 152 into the Bay Area. A 2nd line to Sacramento will be added in future phases.

The project was approved by California voters on November 4, 2008 with the passage of Proposition 1A authorizing $9.95 billion for the project. The California High-Speed Rail Authority (CHSRA) is currently tasked with completing final planning, design, and environmental efforts. Construction efforts are anticipated to begin as early as ~~2011~~2012 or 2013.

BICYCLE/TRAIL SYSTEM

Bicycles

Bicycles are an important mode of transportation in the community. Merced has both a favorable climate and terrain to encourage the use of bicycles for both recreation and transportation functions. As bicycle use increases, adequate facilities should be provided to furnish direct routes of access between destinations while minimizing conflicts with automobiles.

Bicycle routes are categorized by the degree in which they separate bicycle movement from vehicular movement. There are two major types of bikeways: (1) off-street bikeways, and (2) on-street bikeways.

Based on the State Department of Transportation classification system, off-street bikeways should be Class I (Bike Paths or Bike Trails) whenever possible. Class I bike paths provide a completely separated right-of-way designated for the exclusive use of bicycles and pedestrians, with cross flows by motorists minimized. In Merced, Class I bike paths generally take advantage of creekside locations and other non-street facilities, such as canals or railroad corridors. Although the off-street bikeways provide extensive recreational opportunities, another primary focus is on safe and efficient transportation linking major land uses and connecting with on-street bikeways at strategic locations.

On-street bikeways are intended to be Class II (Bike Lanes) whenever possible. Class II bike lanes provide a restricted right-of-way on the street for the exclusive or semi-exclusive use of bicycles. Through travel by motor vehicles or pedestrians is prohibited, but cross flows by pedestrians and motorists are permitted. The on-street bikeway system may use Class III (Bike Route) designations occasionally where Class II bike lanes are not feasible.

is approximately 5,900 feet, capable of handling jet aircraft. Available hangar space in 2010 was approximately 100,000 square feet.

In 2009, Great Lakes Aviation (in conjunction with United Airlines) provided two daily flights to Ontario airport in Southern California. In 2010, the Ontario service was discontinued and three daily flights to Las Vegas, Nevada were added. Connections are available from Las Vegas to other areas. ~~The airport is the only "regionally significant" airport in the County according to criteria used by the Civil Aeronautics Board.~~ The airport is the only "General Aviation Airport" in the County according to criteria used by the Federal Aviation Administration. A "General Aviation Airport" is one used for both private and commercial air transport.

The Great Lakes Aviation service as well as its predecessors is subsidized by the federal government under the Essential Air Service (EAS) Program. EAS was designed to provide smaller communities access to the national air transportation system by subsidizing airline service should it be necessary.

~~EAS was established after air service was deregulated in the late 1970's. It was originally approved through 1988. The subsidy would expire on August 31, 2010 and at this time it is not known whether EAS would be renewed. If not, Merced would need to obtain alternative funding or seek other solutions in order to maintain this air service. The City's current intent is to keep its regional airport operating.~~

Castle Airport

The closure of Castle Air Force Base (CAFB) was completed in 1995. The closure impacted the surrounding economy, including reductions in population and employment in Merced. The County of Merced now operates the renamed Castle Airport.

In recent years, Castle Airport has served businesses specializing in training foreign pilots. Activity related to these schools makes up the majority of the air traffic at Castle. In early 2007, the control tower was reopened to handle increased training traffic.

EXISTING TRAFFIC VOLUME

The Merced County Association of Governments employs the *Florida Department of Transportation Quality/Level of Service Handbook*, 2002, in defining level of service (LOS) as a qualitative measure describing operational characteristics within a traffic stream, based on service measures such as speed and travel time, freedom to maneuver, traffic interruptions, comfort, and convenience. Table 3.15-1 presents daily roadway segment level of service thresholds by roadway type and LOS characteristics for unsignalized and signalized intersections. Based on the Transportation Research Board *Highway Capacity Manual*, 2000, (HCM), Level of Service Characteristics for Unsignalized Intersections and Level of Service Characteristics for Signalized Intersections are presented in Tables 3.15-2 and 3.15-3, respectively.

Transportation Research Board *Highway Capacity Manual*, 2000, (HCM), are presented in Tables 3.15-2 and 3.15-3, respectively.

Level of Service	Description	Average Vehicle Delay (seconds)
E	Poor progression. Individual cycle failures are frequent. Queues frequently do not clear.	>55-80
F	Poor progression. Oversaturation. Many individual cycle failures and queues not cleared.	>80

Reference: *Highway Capacity Manual*, Transportation Research Board

Traffic volumes and LOS on key roadway segments are shown in Table 3.15-4 for existing, no project and General Plan Buildout conditions.

Table 3.15-4
Merced SUDP/SOI Arterial Street System
Traffic Volume & Level of Service – Existing, No Project, and 2030

Roadway/Segment	Existing Conditions			No Project Conditions			General Plan Buildout Conditions		
	Number of Lanes	Traffic Volume[1]	LOS[2]	Planned Number of Lanes[3]	Traffic Volume[1]	LOS[2]	Planned Number of Lanes[3]	Traffic Volume[1]	LOS[2]
NORTH/SOUTH ARTERIALS:									
Thornton Avenue									
Mission to SR 140	2	3,800	C+	4	18,490	C+	4	33,140	D
Belcher to Bellevue	2	--	C+	2	5,750	C+	2	14,190	D
North SR 59									
16th to Olive	2	21,740	**F**	4	42,100	**F**	6	44,040	D
Olive to Yosemite	2	19,300	**F**	4	26,060	C+	6	48,030	D
Yosemite to Cardella	2	8,100	C+	2	10,440	C+	4	30,030	D
Cardella to Bellevue	2	6,000	C+	2	10,450	C+	4	33,690	D
Bellevue to Old Lake	2	5,090	C+	2	12,920	D	6	40,790	C
Old Lake to Castle Farms	2	5,090	C+	2	15,980	D	6	44,990	D
Castle Farms to Oakdale Road	2	5,090	C+	2	15,980	D	6	38,520	**C**
"R" Street									
Mission to Childs	2	500	C+	2	1,220	C+	2	10,850	**E**
Childs to SR 99	2	10,750	**E**	2	12,410	**E**	2	17,260	**F**
SR 99 to Bear Creek	4	19,100	C+	4	24,140	C+	4	25,800	C+
Bear Creek to Olive	4	23,370	C+	4	29,990	D	4	34,380	**E**
Olive to Yosemite	4	18,380	C+	4	40,610	**F**	4	43,480	**F**
Yosemite to Cardella	n/a	n/a	n/a	4	32,910	D	6	34,900	C+
Cardella to Bellevue	n/a	n/a	n/a	4	27,940	D	6	35,290	C+
Bellevue to Old Lake	n/a	n/a	n/a	4	26,630	C+	6	34,740	C+
Old Lake to Area of Influence boundary	n/a	n/a	n/a	2	600	C+	2	9,990	C+
"M" Street									
Mission to Childs	2	4,500	C+	2	7,130	D	2	12,890	**E**
Childs to SR 99	2	8,600	D	2	11,440	**E**	2	15,190	**F**
SR 99 to Bear Creek	4	20,440	C+	4	25,580	C+	4	25,560	C+
Bear Creek to Olive	4	21,140	C+	4	28,080	D	4	30,250	D
Olive to Yosemite	4	20,710	C+	4	38,490	**F**	4	41,350	**F**

Roadway/Segment	Existing Conditions			No Project Conditions			General Plan Buildout Conditions		
	Number of Lanes	Traffic Volume[1]	LOS[2]	Planned Number of Lanes[3]	Traffic Volume[1]	LOS[2]	Planned Number of Lanes[3]	Traffic Volume[1]	LOS[2]
Yosemite to Cardella	4	9,600	C+	4	31,640	D	4	35,710	**E**
Cardella to Bellevue	n/a	n/a	n/a	2	11,660	**E**	4	12,920	C+
Bellevue to Old Lake	n/a	n/a	n/a	2	10,020	D	4	11,910	C+
Martin Luther King Jr. Way/South SR 59									
Roduner to Mission	2	8,900	C+	4	24,850	C+	4	30,160	D
Mission to Gerard	2	9,800	C+	4	24,770	C+	4	28,970	D
Gerard to Childs	2	15,430	D	4	32,640	D	4	38,100	**F**
Childs to SR 99	4	16,300	C+	4	22,180	C+	4	29,260	D
SR 99 to 16th	4	17,200	C+	4	19,360	C+	4	24,740	C+
"G" Street									
Mission to Childs	2	6,500	D	2	8,400	D	2	12,110	**E**
Childs to SR 99	2	21,300	**F**	2	26,560	**F**	2	33,890	**F**
SR 99 to Bear Creek	4	22,060	C+	4	27,840	D	4	32,520	D
Bear Creek to Olive	4	25,950	C+	4	30,860	D	4	33,990	**E**
Olive to Yosemite	4	22,182	C+	4	28,840	D	4	32,330	D
Yosemite to Cardella	2	6,650	C+	4	23,310	C+	4	26,680	C+
Cardella to Bellevue	2	6,350	C+	4	26,690	C+	4	30,380	D
Bellevue to Old Lake	2	3,020	C+	4	24,090	C+	6	36,750	C+
Old Lake to Snelling	2	3,020	C+	2	14,130	D	4	26,020	C
Parsons Avenue/Gardner Road									
Campus Parkway/Coffee to Gerard	2	620	C+	2	1,020	C+	2	14,390	**F**
Gerard to Childs	2	6,240	D	2	7,450	D	2	16,760	**F**
Childs to SR 140	2	9,600	D	4	31,260	D	4	32,420	D
SR 140 to Bear Creek (part of this segment is incomplete)	2	11,300	**E**	4	32,450	D	4	35,320	**E**
Bear Creek to Olive	2	4,330	C+	4	26,730	C+	4	29,380	D
Olive to Yosemite	2	5,600	D	4	25,750	C+	6	34,590	C+
Yosemite to Cardella	2	1,580	C+	4	19,070	C+	4	33,410	D
Cardella to Bellevue	n/a	n/a	n/a	4	6,410	C+	4	30,580	D
Bellevue to Old Lake	n/a	n/a	n/a	2	3,180	C+	4	17,350	C+
Old Lake to Golf Club	n/a	n/a	n/a	n/a	n/a	n/a	2	9,670	D
McKee Road (Collector)									
Hwy 140/Santa Fe to Bear Creek	2	5,700	D	2	9,580	D	2	13,840	**F**
Bear Creek to Olive	2	8,250	D	2	13,000	**E**	2	16,130	**F**
Olive to Yosemite	2	5,250	D	2	10,590	**E**	2	13,200	**E**
Campus Parkway									
SR 99/Mission to Childs	n/a	n/a	n/a	4	20,840	C+	6	46,200	D
Childs to SR 140	n/a	n/a	n/a	4	25,170	C+	4	35,110	D
SR 140 to Olive	n/a	n/a	n/a	4	28,910	D	4	32,060	D
Olive to Yosemite	n/a	n/a	n/a	4	28,400	D	4	33,950	D

Roadway/Segment	Existing Conditions			No Project Conditions			General Plan Buildout Conditions		
	Number of Lanes	Traffic Volume[1]	LOS[2]	Planned Number of Lanes[3]	Traffic Volume[1]	LOS[2]	Planned Number of Lanes[3]	Traffic Volume[1]	LOS[2]
Yosemite to Cardella	n/a	n/a	n/a	4	32,080	D	4	35,720	D
Cardella to Bellevue	n/a	n/a	n/a	4	30,850	D	4	34,350	D
Tyler Road									
Childs to Mission	n/a	n/a	n/a	2	1,600	C+	2	9,830	D
EAST/WEST ARTERIALS									
Old Lake Road									
SR 59 to "R" St.	n/a	n/a	n/a	2	9,320	C+	4	20,840	C+
"R" St. to "M" St.	n/a	n/a	n/a	2	6,280	C+	4	17,890	C
"M" St. to "G" St.	n/a	n/a	n/a	2	7,220	C+	4	17,040	C
"G" St. to Parsons/ Gardner	2	1,700	C+	2	1,700	C+	2	8,630	D
Parsons/Gardner to Lake	2	340	C+	2	340	C+	2	3,830	C+
Bellevue Road									
Franklin ~~Atwater/Merced Expy~~ to Thornton	2	3,800	C+				4~~8~~	55,380	F~~C+~~
Thornton to SR 59	2	3,800	C+				4~~8~~	74,340	F~~D~~
SR 59 to "R" St.	2	5,630	D	6	29,980	C+	6	58,400	**F**
"R" St. to "M" St.	2	5,460	D	6	32,350	C+	6	55,310	**F**
"M" St. to "G" St.	2	5,460	D	6	33,760	C+	6	57,470	**F**
"G" St. to Parsons/Gardner	2	6,620	D	6	39,360	C+	6	52,950	**E**
Parsons/Gardner to Campus Pkwy	2	3,700	C+	6	27,610	C+	6	50,120	D
Cardella Road									
SR 59 to "R" St.	n/a	n/a	n/a	4	23,360	C+	4	31,840	D
"R" St. to "M" St.	2	5,000	C+	4	28,710	D	6	35,340	C+
"M" St. to "G" St.	2	6,800	C+	4	25,370	C+	4	33,520	D
"G" St. to Parsons/Gardner	n/a	n/a	n/a	4	26,950	D	4	33,430	D
Parsons/Gardner to Campus Pkwy	n/a	n/a	n/a	4	28,590	D	4	32,590	D
Yosemite Avenue									
SR 59 to "R" St.	4	12,160	C+	4	11,670	C+	4	26,130	C+
"R" St. to "M" St.	4	15,940	C+	4	27,170	D	4	38,430	**F**
"M" St. to "G" St.	4	19,720	C+	4	28,600	D	4	38,770	**F**
"G" St. to Parsons/ Gardner	2	15,100	D	4	24,710	C+	4	38,990	**F**
Parsons/Gardner to Campus Pkwy	2	7,550	D	4	20,280	C+	4	29,600	D

Roadway/Segment	Existing Conditions			No Project Conditions			General Plan Buildout Conditions		
	Number of Lanes	Traffic Volume[1]	LOS[2]	Planned Number of Lanes[3]	Traffic Volume[1]	LOS[2]	Planned Number of Lanes[3]	Traffic Volume[1]	LOS[2]
Olive Avenue									
West of Hwy 59 (Santa Fe Ave)	4	22,800	C+	4	27,620	D	6	33,880	C
SR 59 to "R" St.	6	32,250	C+	6	40,650	C+	6	45,830	D
"R" St. to "M" St.	6	30,560	C+	6	36,780	C+	6	41,060	C+
"M" St. to "G" St.	6	28,210	C+	6	38,100	C+	6	45,030	D
"G" St. to Parsons/Gardner	4	18,500	C+	4	29,880	D	4	34,970	**E**
Parsons/Gardner to Lake	2	7,460	C+	2	14,110	D	2	16,770	**E**
North Bear Creek Drive									
SR 59 to "R" St.	2	4,490	C+	2	10,200	D	2	14,620	**F**
"R" St. to "M" St.	2	6,480	D	2	10,710	**E**	2	14,530	**F**
"M" St. to "G" St.	2	8,360	D	2	11,280	**E**	2	14,840	**F**
"G" St. to Parsons/ Gardner	2	8,780	D	2	12,960	**E**	2	15,510	**F**
Parsons/Gardner to Lake	2	2,400	C+	2	3,990	C+	2	6,400	D
SR 140									
Tina to Thornton	2	10,900	C+	2	13,800	C+	2	19,240	D
Thornton to "V" St.	2	10,200	C+	2	12,920	C+	4	18,020	C+
"G" St. to Parsons	4	10,400	C+	4	19,120	C+	4	34,720	**E**
Parsons to Campus Pkwy	2	7,550	C+	2	9,560	C+	2	13,330	D
16th Street									
SR 99 to "V" St.	4	20,210	C+	4	25,830	C+	4	28,590	D
"V" St. to "R" St.	4	23,200	C+	4	27,430	D	4	28,830	D
"R" St. to "M" St.	4	19,140	C+	4	19,760	C+	4	24,340	C+
"M" St. to "G" St.	4	11,950	C+	4	19,250	C+	4	26,250	C+
"G" St. to SR 99	4	8,630	C+	4	20,420	C+	4	22,840	C+
SR 99									
Atwater/Merced Expy to Franklin	4	66,000	D	4	71,050	**E**	6	96,210	D
Franklin to 16th	4	66,000	D	4	71,690	**E**	6	97,920	D
16th to "V" St.	4	53,000	C+	4	64,190	D	6	87,770	C+
"V" St. to "R" St.	4	53,000	C+	4	63,360	D	6	93,930	D
"R" St. to Martin Luther King	4	42,500	C+	4	61,490	D	6	66,820	C+
Martin Luther King to "G" St.	4	55,000	C+	4	65,440	D	6	83,050	C+
"G" St. to SR 140	4	55,000	C+	4	63,560	D	6	89,060	C+
SR 140 to Childs	4	42,500	C+	4	65,490	D	6	76,980	C+
Childs to Gerard	4	42,500	C+	4	60,890	D	6	66,820	C+
Gerard to Mission	4	66,000	D	4	53,890	D	6	97,920	D
Mission to Mariposa	4	55,000	C+	4	58,080	D	6	84,680	C+

Roadway/Segment	Existing Conditions			No Project Conditions			General Plan Buildout Conditions		
	Number of Lanes	Traffic Volume[1]	LOS[2]	Planned Number of Lanes[3]	Traffic Volume[1]	LOS[2]	Planned Number of Lanes[3]	Traffic Volume[1]	LOS[2]
14th Street									
"V" St. to "R" St.	3	6,550	C+	3	9,110	C+	3	10,600	C+
"R" St. to "M" St.	2	4,900	D	2	10,530	C+	2	14,490	D
"M" St. to Martin Luther King	2	700	C+	2	9,570	C+	2	15,220	D
13th Street									
"V" St. to "R" St.	3	6,680	C+	3	11,850	C+	3	11,930	C+
"R" St. to "M" St.	2	4,070	C+	2	8,870	C+	2	9,360	C+
"M" St. to Martin Luther King	2	6,900	D	2	13,460	D	2	15,400	D
Martin Luther King to "G" St.	2	7,400	D	2	7,940	D	2	9,100	D
"G" St. to "B" St.	2	5,000	D	2	8,790	D	2	13,150	**E**
Childs Avenue									
West Ave to SR 59	2	6,260	D	2	7,700	D	2	10,090	D
SR 59 to Tyler	2	4,700	C+	4	13,750	C+	4	27,520	D
Tyler to SR 99	2	6,610	C+	4	29,730	D	4	46,600	**F**
SR 99 to Parsons/Gardner	2	11,770	**E**	4	32,660	D	4	41,870	**F**
Parsons/Gardner to Coffee	2	6,600	D	4	8,640	C+	4	24,590	C+
Coffee to Campus Pkwy	2	4,420	D	4	11,530	C+	4	32,120	D
Campus Pkwy to Tower	2	3,300	D	2	6,370	C+	4	19,390	C+
Gerard Avenue (Collector)									
M to SR 59	2	1,400	C+	2	2,750	C+	2	12,580	**E**
SR 59 to Tyler	2	1,300	C+	2	4,200	C+	2	8,810	D
Tyler to Henry	2	850	C+	2	2,100	C+	2	4,600	C+
Parsons/Gardner to Coffee	2	2,720	C+	2	13,430	**F**	2	18,650	**F**
Coffee to Campus Pkwy	2	2,480	C+	2	6,230	C+	2	35,230	**F**
Campus Pkwy to Tower	2	1,000	C+	2	3,480	C+	2	7,640	D
Dickenson Ferry/Mission Avenue									
Gove to Thornton	2	1,900	C+	2	6,340	C+	2	13,200	D
Thornton to West Ave	2	1,900	C+	4	17,340	C+	4	29,980	D
West Ave to SR 59	2	1,900	C+	4	17,770	C+	6	35,950	C+
SR 59 to Tyler	2	1,800	C+	4	16,150	C+	6	34,870	C+
Tyler to Henry	2	1,250	C+	4	14,350	C+	6	33,800	C+
Henry to SR 99	4	2,020	C+	4	15,630	C+	6	63,350	**F**
SR 99 to Coffee (Future Campus Parkway)	2	890	C+	4	20,840	C+	6	46,200	**D**
Coffee to Tower	2	600	C+	2	640	C+	4	1,890	C+

Roadway/Segment	Existing Conditions			No Project Conditions			General Plan Buildout Conditions		
	Number of Lanes	Traffic Volume[1]	LOS[2]	Planned Number of Lanes[3]	Traffic Volume[1]	LOS[2]	Planned Number of Lanes[3]	Traffic Volume[1]	LOS[2]

NOTES: *(1) Traffic Volume is measured in ADT's (Average Daily Trips).*
(2) "C+" indicates Level-of-Service (LOS) "C+" or better, including LOS A and B.
(3) The number of lanes shown is the number of lanes planned in the Circulation Element; additional travel lanes, or provision of additional turn lanes at intersections may be needed to provide acceptable roadway operations with the planned level of development.

EXISTING ROADWAY OPERATIONS DEFICIENCIES

Existing Conditions Road Segment Analyses

The results of the existing-conditions road segment analyses are summarized above in Table 3.15-4. As indicated in the table, the following road segments currently operate at substandard levels of service (LOS shown in bold type):

- North SR 59 - 16th to Olive
- North SR 59 – Olive to Yosemite
- "R" Street - Childs to SR 99
- "G" Street - Childs to SR 99
- Parsons Avenue/Gardner Road - SR 140 to Bear Creek (This roadway is incomplete with gaps remaining to be constructed)
- Childs Avenue - SR 99 to Parsons

The Land Use and Circulation Map designates roadways as state highways (including freeways), expressways, major arterials, divided arterials, minor arterials, transitways or collectors. Streets not designated on the map would be considered minor collectors or local roads. The various City street cross sections are illustrated in Figure 3.15-8 through 3.15-13.

The proposed Circulation Map generally maintains the existing grid layout of roadways with alternating arterials and collectors at quarter-mile and half-mile spacing.

Table 3.15-4 presents the planned number of lanes, and the existing number of lanes for the City of Merced arterial street system. It should be noted that in some cases where the existing number of lanes equals the planned number of lanes, or the planned number of lanes to be added results in Level of Service E or F at General Plan buildout, physical constraints exist that preclude road widening to achieve Level of Service D or better in accordance with General Plan policy. Although additional travel lanes may not be possible along these corridors, additional improvements such as constructing sidewalks, curb and gutter, or bicycle facilities may be possible.

Table 3.15-4 presents the planned number of lanes, and the existing number of lanes for the City of Merced arterial street system.

ANALYSIS OF PROPOSED MERCED 2030 GENERAL PLAN CONDITIONS

The study area includes the proposed planning area presented in the Circulation Plan Diagram (Figure 3.15-1). The study locations for purposes of this traffic analysis are the roadways listed in Table 3.15-4.

Daily roadway operations were analyzed for the following scenarios:

- Existing Conditions;
- No Project; and
- Year 2030 Conditions with Plan Update.

The Merced County Association of Governments (MCAG) regional travel demand model was modified to use as the tool to evaluate the impacts of the proposed General Plan on the local and regional transportation system. The MCAG model forecasts average weekday daily traffic volumes on the freeways, arterials, and major collector roads in the Merced region. Modifications were made to the model to better replicate the proposed circulation and land use plan. The General Plan buildout analysis considers roadway improvements contained in the 2007 MCAG Regional Transportation Plan (Tier 1), and roadway improvements that would be constructed to support development of the proposed land use plan (Table 3.15-5). It should be noted that although major street improvements are planned, such projects are subject to funding availability.

Table 3.15-5
Major Street Improvement Projects

Project #	Project Type	Location/Improvement Summary
1	Upgrade Arterial	Thornton from SR 140 to Mission and Yosemite to Bellevue
2	Upgrade Arterial	SR 59 from 16th to Oakdale Road
3	Upgrade Arterial	SR 59 from Childs to Roduner
4	Extend/Upgrade Arterial/Collector	R St. from Gerard to Area of Influence Boundary
5	Upgrade Arterial/Extend Transitway	M St. from Yosemite to Old Lake
6	Upgrade Arterial	M.L.K. Jr. Way from Roduner to Gerard
7	Upgrade Arterial	G St. from Yosemite to Snelling Hwy.
8	Upgrade Arterial	Parsons/Gardner from Coffee to Golf Club
9	Extend Expressway	Campus Parkway from Mission to Yosemite Avenue
10	Extend/Upgrade Arterial	Old Lake from SR 59 to Lake
11	Upgrade Arterial/Expressway	Bellevue from Campus Parkway to Atwater/ Merced Expressway
12	Extend Arterial	Tyler Road from Childs to Mission
13	Extend Arterial	Cardella from Thornton to Campus Parkway
14	Upgrade Arterial	Yosemite from Thornton to Campus Parkway
15	Upgrade Arterial	Olive Ave. West of SR 59 (Santa Fe Ave.)
16	Upgrade Arterial	SR 140 from Parsons Avenue to Tower Road

Mitigation Measures

Implementation of the following mitigation measures and the Goals, Policies, and Implementing Actions of the *Merced Vision 2030 General Plan* will reduce the impact of increased traffic on area roadways as the 2030 General Plan is implemented; however, absent funding guarantees for many of the roadway improvement projects identified in the traffic conditions analysis, and referenced in the mitigation measures below, the traffic impacts associated with build-out of the proposed *Merced Vision 2030 General Plan* are considered ***significant and unavoidable***.

Mitigation Measure #3.15-1a:

Table 3.15-4 indicates the recommended number of travel lanes for several of the road segments analyzed to keep traffic levels-of-service at the City's preferred LOS "D" at General Plan buildout. Implementation of the following projects will permit the City to manage its traffic volumes at Level of Service "D", or better:

1. *SR 59 from 16th to Olive (2 lanes to 6 lanes) Existing LOS=F / Future LOS=D*
2. *SR 59 from Olive to Yosemite (2 lanes to 6 lanes) Existing LOS=C+ / Future LOS=D*
3. *SR 59 from Yosemite to Cardella (2 lanes to 4 lanes) Existing LOS=C+ / Future LOS=D*
4. *SR 59 from Cardella to Bellevue (2 lanes to 4 lanes) Existing LOS=C+ / Future LOS=D*
5. *SR 59 from Bellevue to Old Lake (2 lanes to 6 lanes) Existing LOS=C+ / Future LOS=C*
6. *SR 59 from Old Lake to Castle Farms (2 lanes to 6 lanes) Existing LOS=C+ / Future LOS=D*
7. *"R" Street from Old Lake to Area of Influence Boundary (Future Extension 0 lanes to 2 lanes) Existing LOS= none / Future LOS=C+*
8. *"M" Street from Cardella to Bellevue (Future Extension 0 lanes to 4 lanes) Existing LOS=none / Future LOS = C+*
9. *"M" Street from Bellevue to Old Lake (Future Extension 0 lanes to 4 lanes) Existing LOS=none / Future LOS = C+*
10. *Martin Luther King Jr. Way/South SR 59 from Roduner to Mission (2 lanes to 4 lanes) Existing LOS=C+ / Future LOS=D*
11. *Martin Luther King Jr. Way/South SR 59 from Mission to Gerard (2 lanes to 4 lanes) Existing LOS=C+ / Future LOS=D*

12. *"G" Street from Yosemite to Cardella (2 lanes to 4 lanes) Existing LOS=C+ / Future LOS=C+*

13. *"G" Street from Cardella to Bellevue (2 lanes to 4 lanes) Existing LOS=C+ / Future LOS=D*

14. *"G" Street from Bellevue to Old Lake (2 lanes to 6 lanes) Existing LOS=C+ / Future LOS=D*

15. *"G" Street from Old Lake to Snelling (2 lanes to 4 lanes) Existing LOS=C+ / Future LOS=C*

16. *Parsons/Gardner from Childs to SR 140 (2 lanes to 4 lanes) Exiting LOS=D / Future LOS=D*

17. *Parsons/Gardner from Bear Creek to Olive (2 lanes to 4 lanes) Exiting LOS=C+ / Future LOS=D*

18. *Parsons/Gardner from Olive to Yosemite (2 lanes to 6 lanes) Exiting LOS=D / Future LOS=D*

19. *Parsons/Gardner from Yosemite to Cardella (2 lanes to 4 lanes) Exiting LOS=C+ / Future LOS=D*

20. *Parsons/Gardner from Cardella to Bellevue (Future Extension 0 lanes to 4 lanes) Existing LOS= none / Future LOS=D*

21. *Parsons/Gardner from Bellevue to Old Lake (Future Extension 0 lanes to 4 lanes) Existing LOS= none / Future LOS=C+*

22. *Parsons/Gardner from Old Lake to Golf Club (Future Extension 0 lanes to 2 lanes) Existing LOS= none / Future LOS=D*

23. *Campus Parkway SR 99/Mission to Childs (Future Extension 0 lanes to 6 lanes) Existing LOS= none / Future LOS=D*

24. *Campus Parkway from Childs to SR 140 (Future Extension 0 lanes to 4 lanes) Existing LOS= none / Future LOS=D*

25. *Campus Parkway from SR 140 to Olive (Future Extension 0 lanes to 4 lanes) Existing LOS= none / Future LOS=D*

26. *Campus Parkway from Olive to Yosemite (Future Extension 0 lanes to 4 lanes) Existing LOS= none / Future LOS=D*

27. *Campus Parkway from Yosemite to Cardella (Future Extension 0 lanes to 4 lanes) Existing LOS= none / Future LOS=D*

28. *Campus Parkway from Cardella to Bellevue (Future Extension 0 lanes to 4 lanes) Existing LOS= none / Future LOS=D*

29. *Tyler Road from Childs to Mission (Future Extension 0 lanes to 2 lanes) Existing LOS= none / Future LOS=D*

30. *Old Lake Road SR 59 to "R" Street (Future Extension 0 lanes to 4 lanes) Existing LOS= none / Future LOS=C+*

31. *Old Lake Road "R" Street to "M" Street (Future Extension 0 lanes to 4 lanes) Existing LOS= none / Future LOS=C*

32. *Old Lake Road "M" Street to "G" Street Future Extension 0 lanes to 4 lanes) Existing LOS= none / Future LOS=C*

33. *Bellevue Road from ~~Atwater/Merced Expressway~~ Franklin to Thornton (2 lanes to 4~~8~~ lane~~s~~ Divided Expressway Existing LOS=C+ / Future LOS=~~C+~~F*

34. *Bellevue Road (Atwater-Merced Expressway) from Thornton to SR 59 (2 lanes to 4~~8~~ lane~~s~~ (Divided Expressway) Existing LOS=C+ / Future LOS=~~D~~F*

33. *Bellevue Road from Parsons/Gardner to Campus Parkway (2 lanes to 6 lanes) Exiting LOS=C+ / Future LOS=D*

34. *Cardella Road from SR 59 to "R" Street (Future Extension 0 lanes to 4 lanes) Existing LOS= none / Future LOS=D*

35. *Cardella Road from "M" Street to "G" Street (2 lanes to 4 lanes) Existing LOS= C+ / Future LOS=D*

36. *Cardella Road from "G" Street to Parsons/Gardner (Future Extension 0 lanes to 4 lanes) Existing LOS= none / Future LOS=D*

37. *Cardella Road from Parsons/Gardner to Campus Parkway (Future Extension 0 lanes to 4 lanes) Existing LOS= none / Future LOS=D*

38. *Yosemite Avenue from Parsons/Gardner to Campus Parkway (2 lanes to 4 lanes) Existing LOS=D / Future LOS=D*

39. *Olive Avenue West of Hwy 59 (Santa Fe Avenue) (4 lanes to 6 lanes) Existing LOS=C+ / Future LOS=C*

40. *SR 99 from Atwater/Merced Expressway to Mariposa (4 lanes to 6 lanes through Merced) Existing LOS=C+ and D / Future LOS=C+ and D*

41. *Childs Avenue from SR 59 to Tyler (2 lanes to 4 lanes) Existing LOS=C+ / Future LOS=D*

42. *Childs Avenue from Parsons/Gardner to Coffee (2 lanes to 4 lanes) Existing LOS=C+ / Future LOS=D*

43. *Childs Avenue from Coffee to Campus Parkway (2 lanes to 4 lanes) Existing LOS=D / Future LOS=D*

44. *Childs Avenue from Campus Parkway to Tower (Future Extension 0 lanes to 4 lanes) Existing LOS= none / Future LOS=C+*

45. *Dickerson Ferry/Mission Avenue from Thornton to West Avenue (2 lanes to 4 lanes) Existing LOS=C+ / Future LOS=D*

46. *Dickerson Ferry/Mission Avenue from West Avenue to SR 59 (2 lanes to 6 lanes) Existing LOS=C+ / Future LOS=C+*

47. *Dickerson Ferry/Mission Avenue from SR 50 to Tyler (2 lanes to 6 lanes) Existing LOS=C+ / Future LOS=C+*

48. *Dickerson Ferry/Mission Avenue from SR 99 to Coffee (Future Campus Parkway)(2 lanes to 6 lanes) Existing LOS=C+ / Future LOS=C+*

49. *Dickerson Ferry/Mission Avenue from Tyler to Henry (2 lanes to 6 lanes) Existing LOS=C+ / Future LOS=D*

50. *Dickerson Ferry/Mission Avenue from Coffee to Tower (2 lanes to 4 lanes) Existing LOS=C+ / Future LOS=C+*

51. *Thornton from Dickerson Ferry/Mission to SR 140 (2 lanes to 4 lanes) Existing LOS=C+ / Future LOS=D*

Mitigation Measure #3.15-1b:

Traffic studies ~~should~~ shall be performed to satisfy the requirements of the California Environmental Quality Act (CEQA) for all proposed General Plan Amendments which intensify development, proposed specific plans, annexations, and other projects at the discretion of the Development Services Department. Future traffic studies ~~should~~ shall generally conform to any guidelines established by the City. The studies ~~should~~ shall be performed to determine, at a minimum, opening-day impacts of proposed projects and as confirmation or revision of the General Plan. The studies ~~should~~ shall address queue lengths and (at a minimum) peak-hour traffic signals warrants in addition to LOS and provide appropriate mitigations. At the discretion of the City, a complete warrant study in accordance with the most recent edition of the California Manual on Uniform Traffic Control Devices may be required to evaluate the need for traffic signals.

a greenhouse gas emission 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 greenhouse gas emission 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.

No air district in California has identified a significance threshold for GHG emissions or a methodology for analyzing air quality impacts related to greenhouse gas emissions. The state has identified 1990 emission levels as a goal through adoption of AB 32. To meet this goal, California would need to generate lower levels of GHG emissions than current levels; however, no standards have yet been adopted quantifying 1990 emission targets. It is recognized that for most projects there is no simple metric available to determine if a single project would help or hinder meeting the AB 32 emission goals. In addition, at this time AB 32 only applies to stationary source emissions. Consumption of fossil fuels in the transportation sector accounted for over 40% of the total GHG emissions in California in 2004. Current standards for reducing vehicle emissions considered under AB 1493 call for "the maximum feasible reduction of greenhouse gases emitted by passenger vehicles and light-duty trucks and other vehicles," and do not provide a quantified target for GHG emissions reductions for vehicles.

Senate Bill 97

SB 97 (Chapter 185, Statutes 2007) was signed by Governor Schwarzenegger on August 24, 2007. The legislation provides partial guidance on how greenhouse gases should be addressed in certain CEQA documents. SB 97 requires the Governors Office of Planning and Research (OPR) to prepare CEQA guidelines for the mitigation of GHG emissions, including but not limited to, effects associated with transportation or energy consumption. OPR must prepare these guidelines and transmit them to the Resources Agency by July 1, 2009. The Resources Agency must then certify and adopt the guidelines by January 1, 2010. OPR and the Resources Agency are required to periodically review the guidelines to incorporate new information or criteria adopted by CARB pursuant to the Global Warming Solutions Act, scheduled for 2012.

In June 2008, OPR released a technical advisory on CEQA and Climate Change: Addressing Climate Change Through California Environmental Quality Act (CEQA) Review as interim recommendations while the official OPR CEQA Guidelines were under development. In January 2009, OPR released its draft CEQA Guideline amendments and additions, which include suggested thresholds of significance and mitigation measures to address global climate change. The Amendments became effective on March 18, 2010.

Assembly Bill 170

AB 170 was adopted by state lawmakers in 2003 creating Government Code Section 65302.1 which requires cities and counties in the San Joaquin Valley to amend their general plans to include data and analysis, comprehensive goals, policies and feasible implementation strategies designed to improve air quality. These amendments are due no later than one year from the due date specified for the next revisions of a jurisdiction's housing element.

to the magnitude of development resulting in a substantial increase in GHG emissions over time relative to present conditions.

3.17.3 IMPACTS AND MITIGATION MEASURES

Emissions of Greenhouse Gases from the Plan

GHG emissions associated with the Project were estimated using CO_2 emissions as a proxy for all GHG emissions. This is consistent with the current reporting protocol of the California Climate Action Registry (CCAR). Calculations of GHG emissions typically focus on CO_2 because it is the most commonly produced GHG in terms of both number of sources and volume generated, and because it is among the easiest GHGs to measure; however, it is important to note that other GHGs have a higher global warming potential than CO_2. For example, as stated previously, 1 lb of methane has an equivalent global warming potential of 21 lb of CO_2 (CalEPA. *Climate Action Team Report.* March 2006. http://www.climatechange.ca.gov/climate_action_team/reports/2006report/2006-04-03_FINAL_CAT_REPORT.PDF). Nonetheless, emissions of other GHGs from the Project (and from almost all GHG emissions sources) would be low relative to emissions of CO_2 and would not contribute significantly to the overall generation of GHGs from the project.

Although the CCAR provides a methodology for calculating GHG emissions, the process is designed to be applied to a single or limited number of entities or operations where detailed information on emissions sources is available (e.g., usage of electricity and natural gas, numbers and types of vehicles and equipment in a fleet, type and usage of heating and cooling systems, emissions from manufacturing processes). Information at this level of detail is not available for the Project area. For example, the ultimate GHG emissions from the approximately 486 acres of additional commercial uses in the proposed General Plan could vary substantially depending on the type and amount of office and commercial uses that are developed, the density of employees in each facility, the hours of operation for each facility, and other factors. Similarly, GHG emissions from the proposed residences could vary substantially based on numerous factors, such as the sizes of homes, the type and extent of energy efficiency measures that might be incorporated into each home's design, the type and size of appliances installed in the home, and whether solar energy facilities are included on any of the residences. Given the lack of detailed design and operational information available at this time for facilities in the Project area, the CCAR emissions inventory methodology is not appropriate for estimating GHG emissions from the project.

Additionally, it should also be noted that the emissions described above do not take into account reductions in GHG emissions resulting from implementation of AB 32. Stationary emissions sources on the project site resulting from energy usage and stationary sources that serve the project site's energy needs will be subject to emissions reductions requirements of AB 32. The extent of these reductions has not yet been quantified by CARB. At the time of project buildout, overall CO_2 emissions attributable to the Project could be substantially less than current emission assumptions might indicate. Similarly, if GHG emissions reductions for vehicles are enacted, through either the requirements of AB 1493 or AB 32 or a federal regulation, CO_2 emissions from the Project would be further reduced. If regulations proposed to comply with AB 1493

meaningless unless viewed in the light of those presuppositions. For these reasons, a range of models must be examined when trying to assess the potential effects of climate change and the resulting analysis is most appropriately qualitative (See Intergovernmental Panel on Climate Change (IPCC) 2001). This section, therefore, provides a qualitative analysis of the impacts of global climate change as they affect water resources in California and in the project area.

When discussing global climate impacts in industrialized nations, such impacts are significantly driven by population / demand (e.g. demand for residential and commercial building arises from society's demand for the additional housing and provider of basic services). Therefore, society's increasing population is the underlying trigger to any greenhouse gas emission associated with housing construction.

In the majority of studies on greenhouse gas emissions, traffic associated with development of residential and commercial buildings due to increasing populations is considered the primary contributor to operational greenhouse gas emissions. Additionally, an increase in stationary source emissions from commercial buildings and residential homes (natural gas use, landscape maintenance equipment, etc.) is anticipated from buildout under the General Plan.

Even if it were assumed that the proposed plan's contribution to global climate change was a significant environmental impact, the impact would be considered unavoidable. Because global climate change is a global issue that can only be addressed through regional, state, national, and international cooperation, plan specific impacts are extremely difficult to determine. Until the SJVAPCD modifies regulations to address the emission of greenhouse gases, specific mitigations that would address climate change locally are speculative. As the SJVAPCD modifies its plans and policies to address global warming considerations, CEQA documents will have to consider those plans and policies when assessing projects. The air quality impact analysis in Section 3.3 and in this section include mitigation measures at the local level to reduce atmospheric greenhouse gas emissions in accordance with existing plans and policies to address global climate change. However; development under the proposed General Plan in combination with growth and development at the regional level, would result in a ***significant, cumulatively considerable and unavoidable*** impact.

Mitigation Measures

Mitigation Measures #3.3-1a through #3.3-2 will serve to reduce global climate change impacts. However, ~~E~~even with the proposed policies and implementation actions in the proposed General Plan, the impact will remain ***significant, cumulatively considerable and unavoidable***. ~~No additional mitigation measures are available.~~

Mitigation Measure #3.17-1a:

Per Sustainable Development Implementing Action SD 1.1.g of the Merced Vision 2030 General Plan, the City of Merced will work closely with the SJVAPCD to develop and implement uniform standards for determining "thresholds of significance" for greenhouse gas impacts for use in the City's CEQA review process. The SJVAPCD has issued its "Guidance for Valley Land Use Agencies in Addressing GHG Impacts for New

Projects Under CEQA". The City will use the recommended threshold of Best Performance Measures and/or 29 percent below Business-As-Usual for new development with the City of Merced.

Mitigation Measure #3.17-1b:

Per Sustainable Development Implementing Action SD 1.1.g of the Merced Vision 2030 General Plan and as required by recent changes in CEQA, the City shall address the issue of Climate Change and Greenhouse Gas Emissions in environmental documents prepared by the City. Techniques and best practices for evaluation these issues are currently being developed by various government agencies and interest groups and the City will keep track of these developments and endeavor to remain up-to-date in evaluation methods.

Mitigation Measure #3.17-1c:

Per Sustainable Development Policy SD 1.7 and Implementing Action SD 1.7.a of the Merced Vision 2030 General Plan, the City will develop a Climate Action Plan (CAP) that identifies greenhouse gas emissions within the City as well as ways to reduce those emissions. The Plan will parallel the requirements adopted by the California Air Resources Board specific to this issue. The City will include the following key items in the Plan:

- *Inventory all known, or reasonably discoverable, sources of greenhouse gases in the City,*
- *Inventory the greenhouse gas emissions level in 1990, the current level, and that projected for the year 2020, and*
- *Set a target for the reduction of emissions attributable to the City's discretionary land use decisions and its own internal government operations.*
- *Within one year of adoption of the CAP, the City should complete a review of its existing policies and ordinances in order to ensure implementation of the CAP.*

Mitigation Measure #3.17-1d:

Per Sustainable Development Implementing Action SD 1.7.c of the Merced Vision 2030 General Plan, the City shall consider the following measures for new development:

- *When approving new development, require truck idling to be restricted during construction.*
- *Require new development to implement the following design features, where feasible, many of these features are included as draft Best Performance Measures established by the SJVAPCD for new development:*

1. *Recycling:*

    - *Design locations for separate waste and recycling receptacles;*
    - *Reuse and recycle construction and demolition waste;*
    - *Recover by-product methane to generate electricity; and,*
    - *Provide education and publicity about reducing waste and available recycling services.*

2. *Promote pedestrian, bicycle and transit modes of travel through informational programs and provision of amenities such as transit shelters, secure bicycle parking and attractive pedestrian pathways.*

3. *Large canopy trees should be carefully selected and located to protect the building(s) from energy consuming environmental conditions, and to shade 50% of paved areas within 15 years.*

4. *Encourage mixed-use and high-density development to reduce vehicle trips, promote alternatives to vehicle travel and promote efficient delivery of services and goods.*

5. *Impose measures to address the "urban heat island" effect by, e.g. requiring light-colored and reflective roofing materials and paint; light-colored roads and parking lots; shade trees in parking lots and shade trees on the south and west sides of new or renovated buildings.*

6. *Transportation and motor vehicle emission reduction:*

    - *Use low or zero-emission vehicles, including construction vehicles;*
    - *Create car sharing programs;*
    - *Create local "light vehicle" networks, such as neighborhood electric vehicle (NEV) systems;*
    - *Provide shuttle service to public transit;*
    - *During construction, post signs that restrict truck idling;*
    - *Set specific limits on idling time for commercial vehicles, including delivery and construction vehicles;*
    - *Coordinate controlled intersections so that traffic passes more efficiently through congested areas. Where signals are installed, require the use of Light Emitting Diode (LED) traffic lights; and,*
    - *Assess transportation impact fees on new development in order to facilitate and increase public transit service.*

7. *Water Use Efficiency:*

   - *Use of both potable and non-potable water to the maximum extent practicable; low flow appliances (i.e., toilets, dishwashers, shower heads, washing machines, etc.); automatic shut off valves for sinks in restrooms; drought resistant landscaping; "Save Water" signs near water faucets;*
   - *Create water efficient landscapes;*
   - *Use gray water. (Gray water is untreated household waste water from bathtubs, showers, bathroom wash facilities, and water from washing machines); and,*
   - *Provide education about water conservation and available programs and incentives.*

8. *Energy Efficiency:*

   - *Automated control system for heating/air conditioning and energy efficient appliances;*
   - *Utilize lighting controls and energy-efficient lighting in buildings;*
   - *Use light colored roof materials to reflect heat;*
   - *Take advantage of shade (save healthy existing trees when feasible), prevailing winds, landscaping and sun screens to reduce energy use;*
   - *Install solar panels on carports and over parking areas;*
   - *Increase building energy efficiency percent beyond Title 24 requirements. In addition implement other green building design ((i.e., natural daylighting and on-site renewable, electricity generation); and*
   - *Require that projects use efficient lighting*

Effectiveness of Mitigation Measures:

Mitigation Measures #3.17-1a through #3.17-1d will ensure that global climate change impacts are minimized as development occurs in accordance with the General Plan. However, even with the proposed policies and implementation actions in the proposed General Plan, the impact will remain ***significant, cumulatively considerable and unavoidable***.

Impact #3.17-2: Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

Discussion/Conclusion: Implementation of General Plan policies designed to reduce greenhouse gas emissions to the extent practicable will ensure City of Merced General Plan consistency with

applicable plans, policies or regulations adopted for the purpose of reducing the emissions of greenhouse gases. This impact is ***less than significant.***