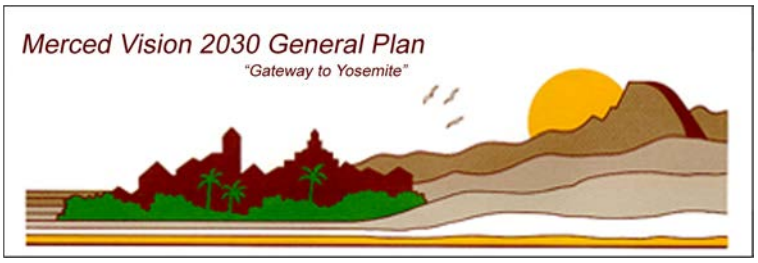
Chapter 7-- Open Space, Conservation, and Recreation



Chapter 7
Open Space, Conservation, and Recreation

7.1 INTRODUCTION AND AUTHORITY

As set forth in state law, the Open Space, Conservation, and Recreation Chapter of the *Merced Vision 2030 General Plan* establishes goals, policies and actions that relate to the preservation of open space and the conservation of resources. There is also a close relationship between the legal requirements for the Open Space/ Conservation Chapter and the City's *Parks and Open Space Master Plan* adopted by the City Council in 2004, which is incorporated here by reference.

The broad nature of topics required to be addressed in an open space/conservation element results in overlap with other chapters of the general plan. The *Merced Vision 2030 General Plan* has been organized in such a fashion so as to integrate open space and conservation policies into related chapters, such as Safety, Transportation and Circulation, Public Services and Facilities, Urban Expansion, Sustainable Development, and Land Use. Policies and standards contained in these and other chapters of the General Plan provide additional direction and policy for open space and conservation.

In an effort to minimize documentation, such as inventory data, setting descriptions, etc., the data contained in the Program Environmental Impact Report for *the Merced Vision 2030 General Plan* is to be considered as a supplement to this chapter.

Government Code Section 65302(d) requires that the general plan include a "...Conservation Element for the conservation, development and utilization of natural resources including water and its hydraulic force, forests, soil, rivers and other waters, harbors, fisheries, wildlife, mineral and other natural resources."

The legislative intent of the law, as set forth in Section 65562 of the Government Code, is to assure that cities and counties recognize that open space land is a valuable limited resource which must be conserved whenever possible. Additionally, the open space element must accomplish the objectives of a comprehensive open space program along with state and regional open space plans.

Open space is to be preserved for the purpose of conserving natural resources, for managing the production of resources, providing outdoor recreation, and promoting public health and safety. The open space element is required to contain an "action program" which the City intends to pursue in implementing its Open Space Plan.

There is no requirement in state law for a local jurisdiction to prepare and adopt a park and recreation element. The open space/conservation element is required to address the provision of open space for outdoor recreation. This requirement, coupled with the obvious need to use open space in a manner that enhances the urban environment of the City of Merced, results in the need for development of a park and recreation master plan for the City, which was first completed in 1994 and then updated in 2004.

Additionally, state law requires that a *Park and Recreation Master Plan* be used as the basis for establishing standards of park land dedication and imposition of park and recreation fees under the Quimby Act. The City's *Park and Open Space Master Plan* was updated in 2004. New information from a number of reports provided much information regarding the natural resources in and around Merced. Further, the new Master Plan includes design recommendations, and standards for determining the need for recreation facilities.

7.2 SETTING

The City of Merced was originally established along the banks of Bear Creek on rich alluvial soils. The community's agricultural setting has a pronounced influence on its economy and the lifestyle of its residents. Surrounding farm lands are intensely managed for agriculture and planted with various crops and orchards. However, as the City has grown, the natural drainage courses have been preserved and protected to create large tracts of open space which meander through the built-up community.

The surface water resources of the region have been the primary factor defining the City's open space. Many of the City's parks are oriented around the regional surface water drainage system. In recent years, these natural greenways have been supplemented with open space easements along power line corridors. The Merced Irrigation District (MID) irrigation canal system has also become an important open space feature in the area as has Lake Yosemite.

7.2.1 Agriculture

The historic City center of Merced was established on the alluvial fan and historic flood plain of Bear and Black Rascal Creeks. This soil association, known as the *Wyman-Yokohl-Marguerite Association*, tends to follow an east-west course along the normal stream flow directions in the area and is composed of soils which are mostly considered "Prime." These prime soils are typically intensely farmed and planted with orchards and row crops.

To the northeast of the existing City center, soils tend to be of poorer quality and mostly used for livestock pasture and grazing. These soils belonging to the *Redding-Pentz-Peters Association* are found on the high terraces trending eastward to the foothills of the Sierra Mountains.

South of the City, in the vicinity of Mission Avenue, soils tend to be characterized as poorly drained saline-alkali soils belonging to the *Lewis-Landlow-Burchell Association.*

The agricultural soil resources and crop production characteristics of the planning area are inventoried in the *Merced Vision 2030 General Plan Program EIR.* Agricultural soil characteristics are also evaluated in the Sustainable Development Chapter of this Plan. This inventory data and background information is incorporated in this Chapter by reference.

7.2.2 Recreation and Park Facilities

The City of Merced has a well developed network of parks and recreation facilities. From its beginning until the 1960's, the City's park system grew at a moderate rate. During the 1970's, however, it grew by leaps and bounds. In 1970, there were 47 acres of developed park land as compared to 133 acres in 1980. During the 1980's and early 1990's, park development slowed but picked up in the late 1990's. By 2004, there were 310.65 acres of developed parkland in the City.

A general formula used by many parks and recreation experts, as well as by the City of Merced, is to have five acres of City park land for every thousand residents. In addition to the five acres of City park land per thousand people, the parks and open space system is supplemented by school grounds, church grounds, Lake Yosemite and such. These supplemental recreation opportunities are not included in the standard.

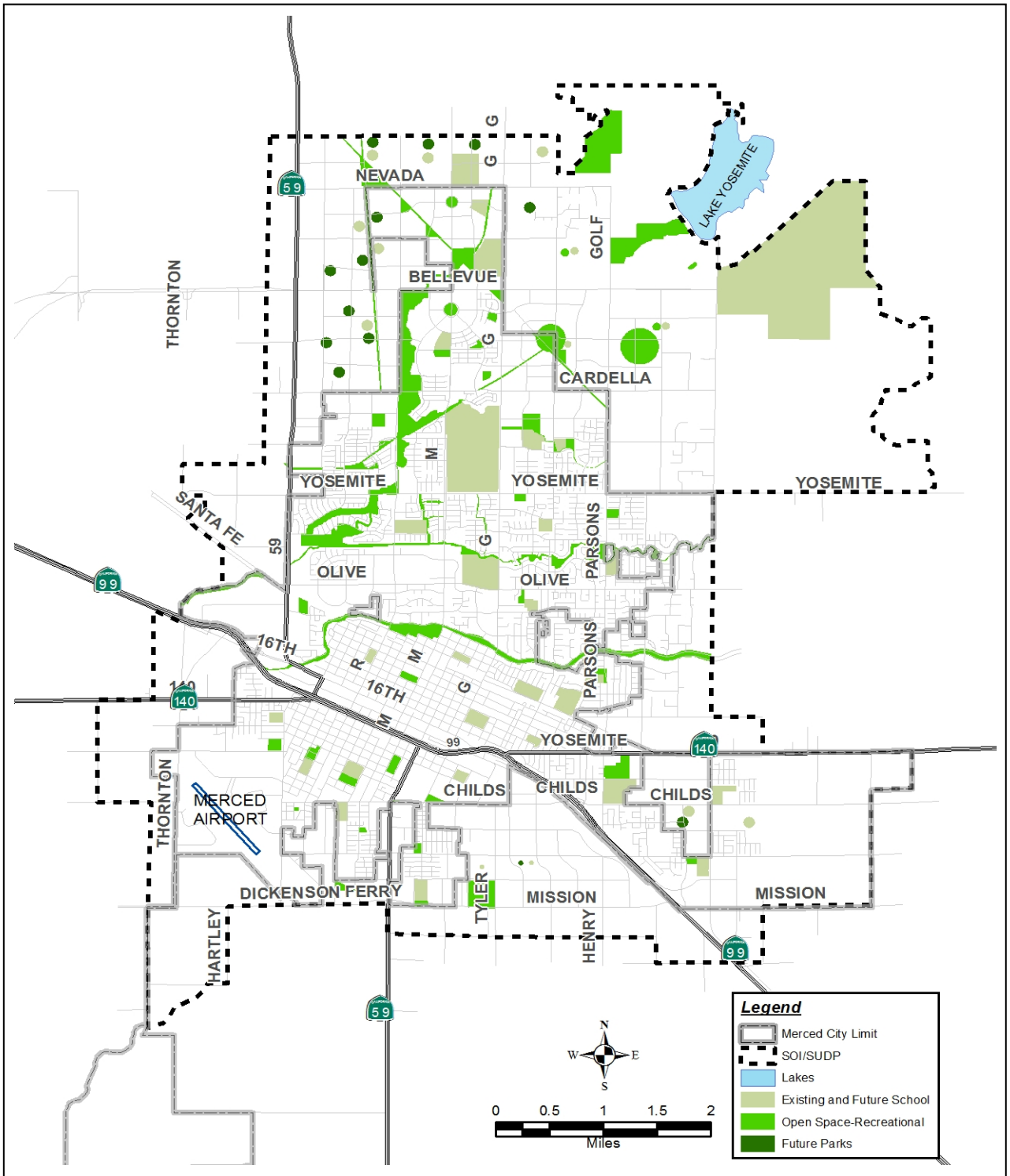
According to the 2004 Master Plan, the City has acquired park land, as well as providing other recreational opportunities, using the 5 acres per 1,000 population standard for almost 30 years. In 2004, the overall ratio was 4.98 acres per 1,000 population.

In terms of developed parks, approximately 328 +/- acres have been developed into usable parks and open space in 2010, up from 311 acres in 2004. (The City also owns approximately 67 acres in yet undeveloped park land.) See ***Table 7.1*** for an inventory of City park land and ***Figure 7.1*** for a map of parks in the Merced area.

Table 7.1
2010 Merced City Park
Land Inventory by Type

Summary	***No.***	***Improved Acres***
Total Community Parks	3	83.6
Total Neighborhood Parks	7	63.8
Total Mini-Parks	10	4.2
Total Linear Parks	4	120.4
Total other park/rec. sites	5	56.6
Total	**24**	**328.6**

It is important to keep in mind that the adequacy of Merced's park system should not merely be judged on the ratio of park acreage to total population. Location, facilities and user demand are equally important.



MERCED PARKS AND OPEN SPACE MASTER PLAN

Figure 7.1

Park Facilities

The most effective and efficient park system to manage is one made up of different types of parks, each designed to provide a specific type of recreation experience or opportunity. When classified and used properly, they are easier to maintain, create less conflicts between user groups and have less impact on adjoining neighbors. According to the 2004 *Park and Open Space Master Plan*, the parks in Merced have been classified as follows.

Mini-Parks, tot lots and children's playgrounds are all small, single purpose play lots designed primarily for small children usage. Due to their size, the facilities are usually limited to a small open grass area, a children's playground and a small picnic area. (The Park Master Plan has recommended that the City dispose of several mini-parks that get very little use, and are in need of maintenance. These resources would be better utilized on other park sites.)

Neighborhood Parks are a combination playground and park, designed primarily for non-supervised, non-organized recreation activities. They are generally small in size (about 5 acres) and serve an area of approximately one-half mile radius. Typically, facilities found in a neighborhood park include a children's playground, picnic areas, trails, open grass areas for passive use, outdoor basketball courts and multi-use sport fields for soccer, softball, and baseball. Optimum size is between 3 and 7 acres.

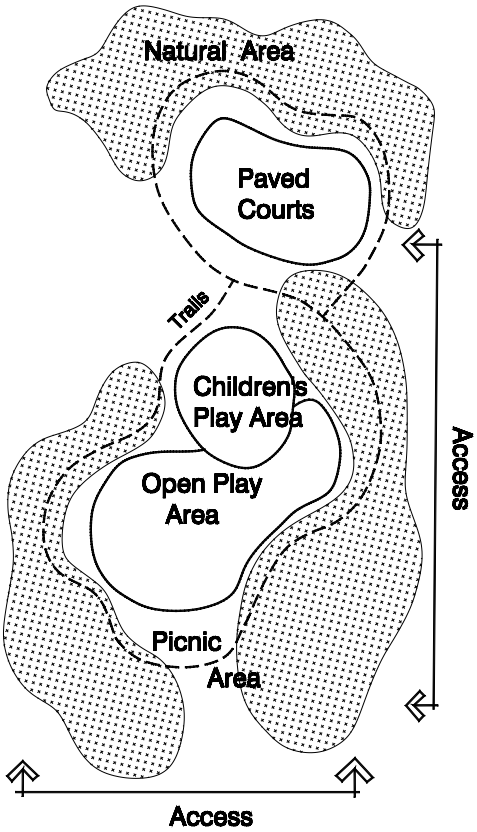


Figure 7.2

A Typical Neighborhood Park

School Parks are park facilities, usually neighborhood park facilities that are developed adjacent to or on school grounds.

Community Parks are planned primarily to provide active and structured recreation opportunities. In general, community park facilities are designed for organized activities and sports, although individual and family activities are also encouraged. Community parks serve a much larger area and offer more facilities. As a result, they

require more in terms of support facilities such as parking, restrooms, and covered play areas. Community parks usually have sport fields or similar facilities as the central focus of the park. Their service area is roughly a 1-2 mile radius. Optimum size is between 15 and 20 acres.

Large Urban Parks are parks designed to serve the entire community. Generally, they provide a wide variety of specialized facilities such as sports fields, indoor recreation areas, and large picnic areas. Due to their size and facilities offered, they require more in terms of support facilities such as parking, restrooms, and play areas. They often exceed 50 acres in size and should be designed to accommodate large numbers of people.

Special Use Areas are miscellaneous public recreation areas or land occupied by a specialized facility. Some of the uses falling into this classification include community centers, skate parks, community gardens, or sites occupied by buildings.

Urban Plazas are small parks, usually passive, that provide an opportunity for the public to gather in urban locations. Size varies, but urban plazas are typically small and primarily hard surfaces.

Athletic Parks are sites where sports fields are the central focus. Facilities may consist of baseball, softball and soccer fields. Supplemental activities may include tennis, volleyball, playgrounds, and picnic areas.

Linear Parks are open spaces or developed landscaped areas that follow linear corridors such as creek corridors, canals, trail corridors, abandoned railroad right-of-ways, canals, and other elongated features. This type of park usually contains trails, landscaped areas, viewpoints and seating areas. Neighborhood park facilities may be incorporated when space is available.

The *2004 Merced Park and Open Space Master Plan* contains an assessment of park, open space, and facility needs; recommendations and policies for the acquisition and development of future park sites as well as improvements to existing parks and facilities; recommendations on organization, operations, and maintenance to manage the park and recreation programs in the City; and a list of projects and actions necessary to implement the Plan, identifies project priorities, and potential funding sources.

7.2.3 Biological Resources

The Merced planning area contains several important habitats which could house species of plant and animal life considered "sensitive." Several creeks, including Fahrens, Cottonwood, Black Rascal, Bear, and Miles along with the Hartley Slough, provide habitat for native plants and animals. These waterways also contain many introduced or non-native species. See Section 8.2.3 and ***Figure 8.2*** in the Sustainable Development chapter for further discussion and a map of biological resources in the planning area.

The northern portions of the planning area contain seasonal wetlands and vernal pools in scattered locations. These seasonal wetlands and vernal pools provide potential habitat for several species of wildlife which are listed as threatened and endangered.

Throughout the planning area, the Merced Irrigation District irrigation canal system also provides important wildlife and open space habitat.

Table 7.2 contains a list of Special Status plant and animal species which are likely to be found in the City's planning area. In general, the City of Merced and its surrounding area provide habitat for many species of resident and transient terrestrial wildlife. Many species use the region's varied riparian habitats and eucalyptus woodlots. Agricultural fields provide habitat for many species of wildlife as well.

The City's open space areas have provided an important habitat for the region's native plant and animal species over the years. Policies and programs, such as the City's stream channel development setback standards, have been implemented in the City to preserve and protect these natural riparian areas. These programs, in conjunction with the City's park system, have been effective in preserving and protecting many of the native plant and animal species of the region.

Table 7.2
Merced Area Potential Special Status Plant & Animal Species

*Species**	*Habitat Associations*	*Status*	*Potential for Occurrence*
Plants			
Henderson's bent grass (*Agrostis hendersonii*)	Valley and foothill grassland (mesic); vernal pools	List 3.2	**High**. Occurrence has been recorded within the proposed plan area.
Alkali milk-vetch (*Astragalus tener* var. *tener*)	Playas; valley and foothill grassland on adobe clay soil; vernal pools habitats. Grows on alkaline soil.	List 1B.2	**Moderate**. Potential habitat within the plan area. Nearest recorded occurrence within 10 miles.
Heartscale (*Atriplex cordulata*)	Chenopod scrub; meadows and seeps; valley and foothill grassland (sandy). Saline or alkaline soil.	List 1B.2	**Absent**. No longer present in the plan area.
Brittlescale (*Atriplex depressa*)	Chenopod scrub; meadows and seeps; playas; valley and foothill grassland; vernal pools. Alkaline, clay soil.	List 1B.2	**Absent.** No longer present in the plan area.
San Joaquin spearscale (*Atriplex joaquiniana*)	Chenopod scrub; meadows and seeps; playas; valley and foothill grassland. Alkaline soil	List 1B.2	**Moderate**. Potential habitat within the plan area. Nearest recorded occurrence within 10 miles.
Lesser saltscale (*Atriplex minuscula*)	Chenopod scrub; meadows and seeps; playas; valley and foothill grassland; vernal pools. Alkaline, sandy soil.	List 1B.1	**Moderate**. Potential habitat within the plan area. Nearest recorded occurrence within 10 miles.
Vernal pool smallscale (*Atriplex persistens*)	Vernal pools. Alkaline soil.	List 1B.2	**High**. Occurrence has been recorded within the proposed plan area.
Subtle orache (*Atriplex subtilis*)	Valley and foothill grassland.	List 1B.2	**Moderate**. Potential habitat within the plan area. Nearest recorded occurrence within 10 miles.
Hoover's calycadenia (*Calycadenia hooveri*)	Cismontane woodland; valley and foothill grassland. Rocky soil.	List 1B.3	**Moderate**. Potential habitat within the plan area. Nearest recorded occurrence within 10 miles.
Succulent owl's-clover (*Castilleja campestris* ssp. *succulenta*)	Vernal pools. Often acidic soil.	List 1B.3 FE, CE	**High**. Occurrence has been recorded within the proposed plan area.
Beaked clarkia (*Clarkia rostrata*)	Cismontane woodland; valley and foothill grassland.	List 1B.3	**Moderate**. Potential habitat within the plan area. Nearest recorded occurrence within 10 miles.
Recurved larkspur (*Delphinium recurvatum*)	Chenopod scrub, cismontane woodland, valley and foothill grasslands. Alkaline soil.	List 1B.2	**Moderate**. Potential habitat within the plan area. Nearest recorded occurrence within 10 miles.
Dwarf downingia (*Downingis pusilla*)	Valley and foothill grasslands (mesic); vernal pools. Alklaline soil.	List 2.2	**High**. Occurrence has been recorded within the proposed plan area.
Delta button-celery (*Eryngium racemosum*)	Riparian scrub (vernally mesic clay depressions)	List 1B.1	**Moderate**. Potential habitat within the plan area. Nearest recorded occurrence within 10 miles.

Species*	***Habitat Associations***	***Status***	***Potential for Occurrence***
Spiny-sepaled button-celery (*Eryngium spinosepalum*)	Valley and foothill grasslands; vernal pools	List 1B.2	**High**. Occurrence has been recorded within one mile of the proposed plan area.
Boggs Lake hedge-hypssop (*Gratiola heterosepala)*	Marshes and swamps (lake margins); vernal pools. Clay soil.	CE, List 1B.2	**Moderate**. Potential habitat within the plan area. Nearest recorded occurrence within 10 miles.
Pincushion navarretia (*Navarretia myersii* ssp. *myersii*)	Vernal pools. Often acidic soil	1B.1	**Low**. Potential habitat within the plan area. Nearest recorded occurrence within 10 miles. Known from less than 20 occurrences.
Shining navarretia (*Navarretia nigelliformis* ssp. *radians*)	Cismontane woodlands; valley and foothill grasslands; vernal pools	List 1B.2	**High**. Occurrence has been recorded within the proposed plan area
Prostrate navarretia (*Navarretia prostrata*)	Coastal scrub; meadows and seeps; valley and foothill grassland; and vernal pools	List 1B.1	**Moderate**. Moderate. Potential habitat within the plan area. Nearest recorded occurrence within 10 miles.
Colusa grass (*Neostapfia colusana*)	Vernal pools. Large pools with adobe soil.	List 1B.2	**High**. Occurrence has been recorded within the proposed plan area.
San Joaquin Valley Orcutt grass (*Orcuttia inaequalis*)	Vernal pools	List 1B.1	**High**. Occurrence has been recorded within 5 miles of the proposed plan area.
Hairy Orcutt grass (*Orcuttia pilosa*)	Vernal pools	List 1B.1	**High**. Occurrence has been recorded within the proposed plan area
Merced phacelia (*Phacelia ciliate* var. *opaca*)	Valley and foothill grassland. Clay soil, sometimes alkaline.	List 1B.2	**High**. Occurrence has been recorded within the proposed plan area
Sanford's arrowhead (*Sagittaria sanfordii*)	Marshes and swamps (assorted shallow freshwater)	List 1B.2	**High**. Occurrence has been recorded within the proposed area
Keck's checkerbloom (*Sidalcea keckii*)	Cismontane woodlands; valley and foothill grasslands. Serpentinite, clay soil.	List 1B.1	**High**. Occurrence has been recorded within the proposed plan area
Greene's tuctoria (*Tuctoria greenei*)	Vernal pools	List 1B.1	**Moderate**. Potential habitat within the plan area. Nearest recorded occurrence within 10 miles.
Invertebrates			
Conservancy fairy shrimp (*Branchinecta conservatio*)	Seasonal pools and ponds	FE	**Moderate—**Suitable habitat on site. Occurs in the area.
Vernal pool fairy shrimp (*Branchinecta lynchi*)	Seasonal pools and ponds	FT	**High.** Occurrence has been recorded in the proposed plan area.
Midvalley fairy shrimp (*Branchinecta mesovallensis*)	Seasonal pools and ponds	None	**High.** Occurrence has been recorded in the proposed plan area.
Valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*)	Elderberry shrubs	FT	**Moderate.** Elderberry shrubs within the plan area. Nearest recorded occurrence within 10 miles.

*Species**	*Habitat Associations*	*Status*	*Potential for Occurrence*
Vernal pool tadpole shrimp (*Lepidurus packardi*)	Seasonal pools and ponds	FE	**Moderate.** Suitable habitat on site. Nearest recorded occurrence within 5 miles.
California linderiella (*Linderiella occidentalis*)	Seasonal pools and ponds	None	**High.** Occurrence has been recorded in the proposed plan area.
Molestan blister beetle (*Lytta molesta*)	The Molestan blister beetle occurs in vegetation surrounding vernal pools.	None	**High.** Occurrence has been recorded in the proposed plan area.
Fish			
Hardhead (*Mylopharodon conocephalus*)	Sacramento and San Joaquin river drainages.	CSC	**Moderate.** Suitable habitat on site. Nearest recorded occurrence within 10 miles.
Amphibians			
California tiger salamander (*Ambystoma californiense*)	Seasonal pools and ponds	FE, CSC	**High.** Occurrence has been recorded in the proposed plan area.
Western spadefoot toad (*Spea hammondii*)	Seasonal pools and ponds	CSC	**Moderate.** Suitable habitat on site. Nearest recorded occurrence within 5 miles.
Reptiles			
Western pond turtle (*Actinemys marmorata*)	Riverine environments, seasonal pools, and ponds	CSC	**Moderate.** Suitable habitat on site. Nearest recorded occurrence within 5 miles.
Blunt-nosed leopard lizard (*Gambelia sila*)	Sparsely vegetated alkali and desert scrub habitats	FE, CE	**Absent.** No longer present in the plan area...
Coast horned lizard (*Phrynosoma coronatum*)	Grasslands, scrublands, and woodlands. Highly associated with sandy soil and ant colonies.	CSC	**Absent.** No longer present in the plan area.
Giant garter snake (*Thamnophis gigas*)	Streams, marshes, and irrigation ditches with open basking sites	FT, CT	**Low.** Occurrence has been recorded in the proposed plan area.
Birds			
Tricolored blackbird (*Agelaius tricolor*)	Freshwater marshes and grasslands	CSC, MBTA	**Moderate.** Suitable habitat on site. Nearest recorded occurrence within 5 miles.
Burrowing owl (*Athene cunicularia*)	Open, dry grasslands	CSC, MBTA	**High.** Occurrence has been recorded in the proposed plan area.
Ferruginous hawk (*Buteo regalis*)	Wintering range	WL, MBTA	**Low.** Suitable wintering foraging habitat on site. Nearest recorded occurrence within 5 miles.
Swainson's hawk (*Buteo swainsoni*)	Grasslands and riparian areas	CE, MBTA	**High.** Occurrence has been recorded in the proposed plan area.
Mountain plover (*Charadrius montanus*)	Wintering range	CSC, MBTA	**High.** Occurrence has been recorded in the proposed plan area.
Northern harrier (*Circus cyaneus*)	Grasslands, open country, and marshes	CSC, MBTA	**High**. Observed on site during field surveys.
White-tailed kite (*Elanus leucurus*)	Open grasslands, marshes, and riparian areas	FP	**High.** Observed on site during field surveys.

Species*	***Habitat Associations***	***Status***	***Potential for Occurrence***
Merlin (*Falco columbarius*)	Winter range.	WL, MBTA	**Low.** Uncommon winter visitor to the area.
Bald eagle (*Haliaeetus leucocephalus*)	Riverine and lake habitats	CE, MBTA	**High.** Within wintering range. Species observed during field survey.
Loggerhead shrike (*Lanius ludovicianus*)	Open grasslands	CSC, MBTA	**High.** Species observed on site during survey.
Osprey (*Pandion haliaetus*)	Wintering range	CSC, MBTA	**High.** Occurrence has been recorded in the proposed plan area.
Mammals			
Merced kangaroo rat (*Dipodomys heermanni dixoni*)	Grasslands and oak savannah habitats.	None	**High.** Occurrence has been recorded in the proposed plan area.
Western mastiff bat (*Eumops perotis californicus*)	Associated with riparian woodlands and rocky chaparral. Roosts on cliffs.	CSC	**High.** Occurrence has been recorded in the plan area.
Western red bat (*Lasiurus blossevillii*)	Highly associated with deciduous woodlands and riparian zones. Forages over open areas and along forest edges. Solitary roosting bat. Roosts mainly in trees.	CSC	**Moderate.** Suitable habitat on site. Nearest recorded occurrence within 10 miles.
Hoary bat (*Lasiurus cinereus*)	Highly associated with both deciduous and coniferous forests. Forages over aquatic features such as streams and ponds. Roosts in caves, trees, and buildings.	None	**Moderate.** Suitable habitat on site. Nearest recorded occurrence within 5 miles.
Yuma myotis (*Myotis yumanensis*)	Primarily an inhabitant of desert regions where it is most commonly encountered in lowland habitats near open water, where it prefers to forage. It roosts in caves, abandoned mine tunnels, and buildings	None	**Moderate.** Suitable habitat on site. Nearest recorded occurrence within 10 miles.
San Joaquin pocket mouse (*Perognathus inornatus inornatus*)	Dry grasslands and desert scrub, usually in sandy soils.	None	**Moderate.** Suitable habitat on site. Nearest recorded occurrence within 10 miles.
American badger (*Taxidea taxus*)	Dry, open grasslands and the edges of pastures and farmlands.	CSC	**Moderate.** Suitable habitat on site. Nearest recorded occurrence within 10 miles.
San Joaquin kit fox (*Vulpes macrotis mutica*)	The San Joaquin kit fox occurs in open, dry, grassland, shrub, and open forest habitats on the floor of the San Joaquin Valley and surrounding foothills	FE, CT	**Moderate.** Suitable habitat on site. Nearest recorded occurrence within 10 miles.

Abbreviations:

Federal

FE	Federal Endangered Species
FT	Federal Threatened Species
MBTA	Species Protected under the auspices of the Migratory Bird Treaty Act

State

CE	California Endangered Species
CT	California Threatened Species
CSC	California Department of Fish and Game Species of Special Concern
WL	California Department of Fish and Game Watch List
FP	California Department of Fish and Game Fully Protected Species

CNPS

List 1B	Species-Plants Categorized as Rare, Threatened, or Endangered in California and Elsewhere
List 2	Plants Rare, Threatened or Endangered in California, but more common Elsewhere
List 3	Plants about which we need more information – Review List

- 0.1 - Seriously threatened in California (high degree/immediacy of threat)
- 0.2 - Fairly threatened in California (moderate degree/immediacy of threat)
- 0.3 - Not very threatened in California (low degree/immediacy of threats or no current threats known)

Source: CNDDB (2008), USFWS Endangered & Threatened Species List (2008), CNPS Inventory of Rare and Endangered Plants (2008)
* Nomenclature follows Hickman (1993)

7.2.4 Water Resources

The water resources of the Merced area are derived from two sources: local rainfall and runoff from the Sierra to the east. Sierra runoff impacts both groundwater and surface water resources of the area. The Merced Irrigation District's (MID) principal water source is the Merced River which originates in Yosemite National Park and flows westerly toward the San Joaquin River in the valley.

The District's principal storage reservoir is Lake McClure, located in Mariposa County to the east of the City's planning area. Lake McClure contains about one million acre-feet of storage capacity which is roughly equivalent to the average annual flow of the Merced River.

As noted under *Section 7.2.3, Biological Resources*, the City of Merced contains a rich and varied surface water system which includes a natural creek and drainage system, the MID irrigation canal system and Lake Yosemite in the northeastern portion of the City's planning area.

The surface water system of the region is vulnerable to discharge containing contaminates. Pollution of the region's surface water system mostly results from direct storm water and irrigation water discharges into the system. The primary impact of this pollution is on wildlife which

relies on riparian habitats in the region. Overall, however, as a result of federal and state regulations of surface water discharge, regional surface water resources are relatively free from pollution.

The Merced region is situated over a large underground aquifer with ground water depths ranging from within five feet of the surface to over 1,200 feet deep.

Merced's water supply quality is generally good within the Merced planning area. However tests have found elevated levels of nitrate-nitrogen in some wells in the Livingston/Atwater area north of the City's planning area and in shallow aquifer areas within the planning area.

Two other sites of groundwater contamination are located on the former Castle Air Force Base property northwest of the City and the GE Kendall plant in the southeast portion of the City's planning area. The Castle site has a large TCE plume and a number of other solvents have been found in the groundwater. Contamination from the Castle site is not likely to have any significant effect on the ground water resources found in the Merced area. High levels of TCE and other Chlorination solvents have been found at the Kendall plant site. Contamination remediation programs have been in effect on this site since 1986 and are expected to continue for many years until the problems are eliminated.

Shallow groundwater resources are the most vulnerable to contamination; it is these same shallow groundwater sources where many private domestic wells draw from the region's groundwater pools. Municipal or public water supplies are usually drawn from depths reaching 300 to 800 feet and are much less susceptible to contamination by man's activities.

On a much smaller scale, several scattered sites containing pockets of groundwater contamination have been found around and within the City. These sites are generally thought to be attributable to local dry cleaning establishments or motorized vehicle service establishments. The State and County also maintain a list of underground petroleum storage tanks that have contaminated soils as a result of leakage. Cleanup efforts are on-going on all of these sites.

7.2.5 Mineral Resources

The City of Merced does not contain any mineral resources that require managed production, according to the State Mining and Geology Board. The state legislature adopted the Surface Mining and Reclamation Act (SMARA) in 1975, which designated Mineral Resource Zones (MRZ) for areas possessing minerals which are of state-wide or regional significance.

No Mineral Resource Zones exist within the City of Merced or in the area designated for future expansion of the City. As a result, the General Plan does not need to identify locations of resource sectors, nor are policies

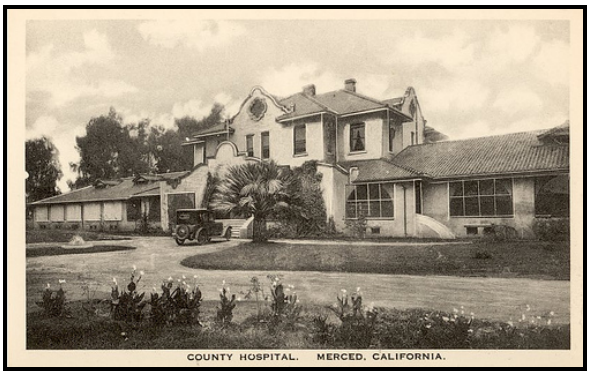
for the management of mineral resources required.

7.2.6 Cultural Resources

Archaeological sites are defined as locations containing significant levels of resources which identify human activity. Very little archaeological survey work has been conducted within the City or its surrounding areas. Creeks, drainage and sloughs exist in the northern expansion area of the City, and Bear Creek passes through the developed area. Archaeological sites in the Central Valley are commonly located adjacent to waterways and represent potential for significant archaeological resources.

Paleontological sites are those that show evidence of pre-human existence. Quite frequently, they are small outcroppings visible on the earth's surface. While the surface outcroppings are important indications of paleontological resources, it is the geologic formations that are the most important. There are no known sectors within the project area known to contain sites of paleontological significance.

The National Register of Historic Places, the California Historical Landmarks List and the California Inventory of Historic Resources identify several sites within the City of Merced. These sites are listed on the Merced Historical Site Survey and maintained by the Merced Historical Society. The City of Merced also maintains a list of local historic resources, which contains approximately 22 local landmarks, including the Hotel Tioga, Merced County Courthouse, the N Street Palm Trees, the Merced Theatre, and the Mondo Building.



A discussion of these resources, and the General Plan policies governing the preservation of historical resources in the City of Merced, are contained within the Sustainable Development Chapter (8) of this document.

7.3 ISSUES & INTENT

Open space is one of the essential elements contributing to the high quality of life in the City of Merced. It provides a multitude of functions that are beneficial to the community. Open space provides parks and recreation areas, preserves natural resources, provides an avoidance mechanism for development near hazardous areas and provides buffers between non-compatible uses.

Of the total land area within the Merced Specific Urban Development Plan (SUDP)/Sphere of Influence (SOI) area, over 1,100 acres has been inventoried as "open," including areas preserved for permanent open space, parks, water basins,

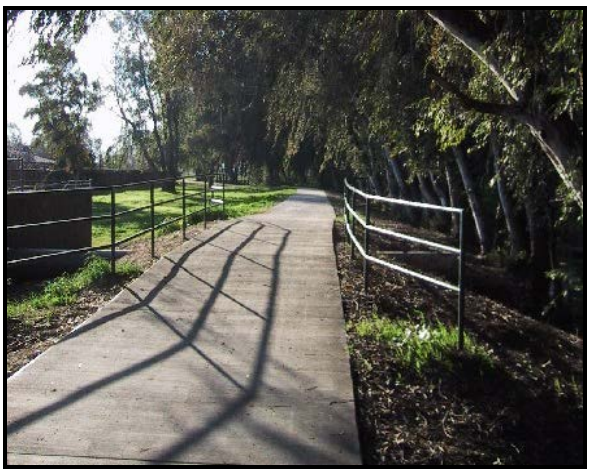
etc. Additional area will be preserved for open space for recreation, wildlife habitat conservation or agricultural use through the site development review process. Significant land outside the Merced SUDP/SOI boundary is also designated for agricultural use.

The purpose of the Open Space, Conservation, & Recreation Chapter is:

- To assure the continued availability of open land for the enjoyment of beauty, for recreation, and for preservation of natural resources;
- To guide development in order to make discerning use of the City's natural, environmental and cultural resources;
- To maintain any valuable resource areas necessary for the continued survival of significant wildlife and vegetation;
- To provide the foundation for a comprehensive open space management system as delineated on the Open Space, Conservation and Recreation Plan;
- To establish the basis for City collaboration with adjacent jurisdictions involving broader open space and environmental resource management, including linkages with adjoining open spaces and trail systems;
- To work toward balancing the preservation of agricultural pursuits and the pastoral lifestyle, protection and conservation of natural resource lands and the increasing development pressures throughout the Merced urban area.

The General Plan recognizes that the urban form of the City of Merced will be shaped through the retention of open space and agricultural lands. The Land Use Plan proposes the interim agricultural use of open space (see Section 7.4.3) by channeling future development onto lands with lesser overall agricultural and natural land values. Future City expansion will be clustered around mixed-use activity centers along major transit corridors.

The General Plan takes advantage of the open space opportunities afforded by utility rights-of-way, using them as trails, landscaped environmental corridors, or parks. Canals and streams are also used as multi-purpose trailways and/or linear parks. Landscape corridors within the expressway system provide open space relief and add to the open space character of the Merced community. The intent is to maintain and enhance landscaped parkway corridors through sensitive design and appropriate regulation.



7.4 TYPES OF OPEN SPACE

The following is a brief description of the types of open space which are subject to the policies and standards contained in the Open Space, Conservation and Recreation Chapter. An explanation of permitted and required land uses within the Open Space category is contained in the General Plan Land Use Element.

Merced is fortunate to have two types of facilities, parks and open space, for active and passive recreation and visual attractiveness. These open space areas integrate a wide variety of open space needs including resource conservation, public health and safety, wildlife protection and recreation.

7.4.1 Parks

The purpose of a park is to provide space and facilities for recreation. Recreation primarily is thought of as active play space (tennis courts, baseball fields, or jogging trails) and facilities (swimming pools, playground equipment, recreation halls, or community centers). Parks also include areas for passive recreation, such as open lawn for picnicking and relaxation.

7.4.2 Open Space

Open space, on the other hand, is generally thought of as an area, small or large, preserved in and for its natural beauty. Open space areas may be part of a larger park, such as the lagoon at Rahilly Park, or stand alone as refreshing vistas, such as the Eucalyptus trees on "M" Street, Bear Creek, or the agricultural land surrounding the City.

These open space areas are also often part of areas set aside for wildlife conservation, resource protection and other open space needs.

Open space areas generally are not used as often or as intensely as parks, but they are equally important, even to people who never actively use them but only pass by or look out on them.

Whether used for active or passive recreation, parks and open space have a positive impact on the total community's quality of life by providing variety and breathing spaces within the urban environment.

Certain open space areas are developed around necessary public infrastructure such as ground water recharge areas and storm water drainage retention ponds. Some types of ponding basins are a requirement of the City *of Merced Storm Drain Master Plan* (2002). This drainage plan requires retention of storm drainage in specified locations or ponds to regulate flow into drainage channels.

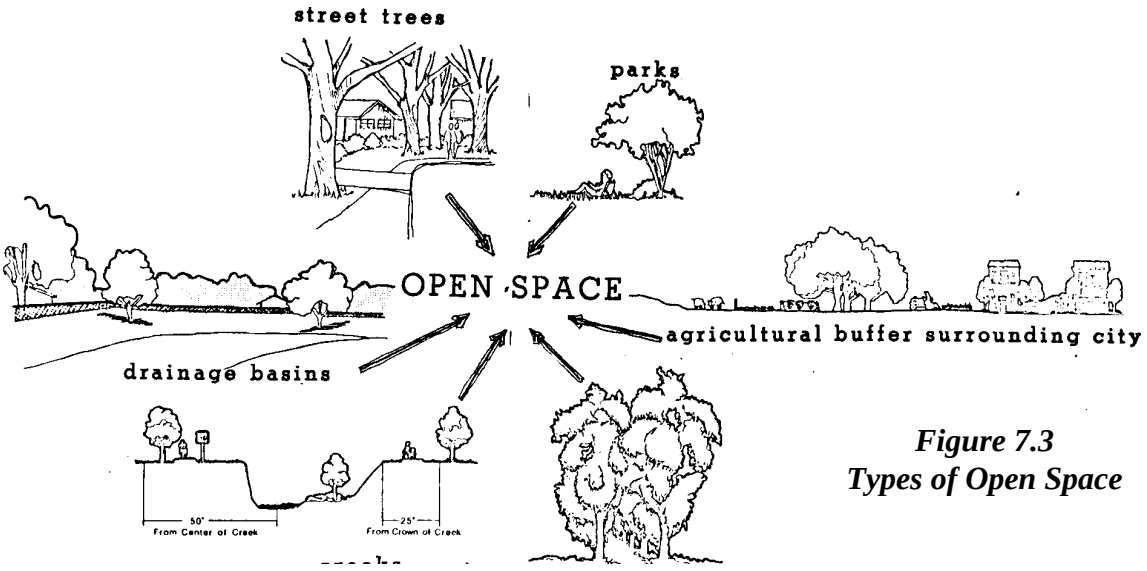


Figure 7.3
Types of Open Space

Storm water retention and/or detention basins are primarily used for flood control with a secondary purpose of providing ground water recharge where soil conditions allow. These basins are intended to be utilized for open space and limited recreational uses where practical.

In other communities, such basins are often designed as deep pits containing drainage water. However, City policy requires that they be designed as open space or park-like features. This is particularly important in residential areas. Shallow, broad depressions with turf, trees, and perhaps some recreation equipment are preferred design characteristics. Such shallow basins, however, require the use of more land.

To maximize the use of land, consideration is to be given to combining the need for future parks and future drainage basins in the same location. The appropriate design of such combined facilities can provide for open space and recreation activities while accommodating flood control and storm drainage needs.

According to standards established in the *2004 Park and Open Space Master Plan*, for joint-use neighborhood parks, at least 2 usable acres should be provided outside the basin. For community parks, at least 8 acres should be provided outside the basin. In addition, basin acreage should not count for 100% of park dedication requirements. Finally, the storm basins should be designed with recreation in mind. They should not be rectangular depressions with a little fringe of park amenities. For example, the shape of the basins could be varied to provide additional space for recreation.

For open turf areas contained within the basin, a typical approach to park design in Merced, grading should be carefully considered so that some usable area remains after smaller storm events. If playing fields are established within basins in community parks, policies should be established on when to close the fields to playing to reduce wear and tear on the turf when the ground is saturated.

7.4.3 Agriculture

Merced is located within a valuable agricultural area. Interim agricultural use is also encouraged within designated "Areas of Interest" around the City (see Section 2.6.3). Agriculture serves the purpose of limiting low density suburban type development. Low-density development could preclude future urban type densities and uses from being developed as needed. Thus, agricultural open space use is seen as an intermediate use until such areas are needed for urban expansion.

7.4.4 Schools & Parks

School facilities act as a supplement to the park system in Merced. They provide virtually the same active recreation facilities and opportunities as a typical City park. Passive recreation facilities are usually limited, however, at school recreation sites. The City of Merced and local school districts have worked closely in the past to share facilities and programs.

The City and school districts have promoted development and design of combined facilities, incorporating active and passive recreation opportunities ***(Figure 7.4)***. Ada Givens and Burbank School/Parks are examples of combined facility planning. These efforts should continue when new school sites are considered in all school districts within the City. In addition, potential still exists to redevelop existing school sites into more park-like settings.

7.4.5 Other Open Space Features

Merced is fortunate to have open space features scattered throughout and surrounding the City. Many are valued in and of themselves while others are a portion of larger facilities.

A number of recent studies and reports have provided critical information on the nature and extent of the variety of sensitive habitats and species in and around the City. Policies in the Open Space element, as well as the Land Use, Urban Expansion and Sustainability elements have been strengthened, in order to ensure that these areas, and the plants and animals found in them, are adequately considered and managed to reduce any adverse effects due to development.

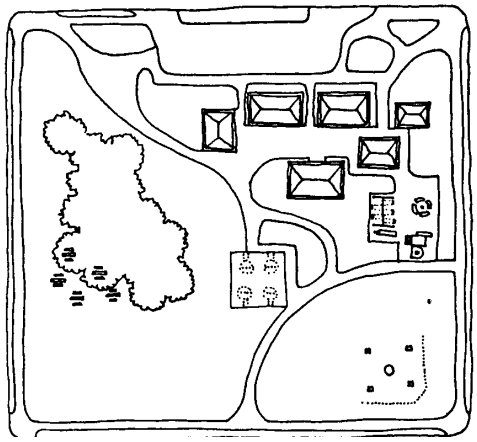


Figure 7.4
Joint Use School and Park Design

Continuing emphasis should be placed on locating new park sites in areas where open space features currently exist. Such features as wetlands, riparian areas, or important cultural resource sites could be incorporated into parks. This not only preserves the features but also creates a unique and often more mature park at the initial development stage.

Stands of mature trees, creek or irrigation channels, power-line easements, and wildlife habitat areas are all elements which could be incorporated into parks, thereby achieving a joint goal: preservation and enhancement of Merced's parks and open space.

Arbor Day--2002

7.5 OPEN SPACE, CONSERVATION, & RECREATION GOALS, POLICIES, AND ACTIONS

One of the overall purposes of the City of Merced's General Plan is to preserve and enhance the natural and man-made environmental resources of the City. The goals, policies and actions of this Open Space, Conservation, and Recreation chapter are designed to achieve this purpose while permitting the long-term growth and development of the City.

The General Plan Land Use Diagram identifies areas proposed for open space uses as "Open Space for Parks and Recreation." This land use classification is discussed in the Land Use Element of this Plan (Section 3.9).

The Open Space, Conservation, & Recreation chapter contains policies for open space lands and for conservation of natural and man-made resources within the City's SUDP/SOI. This section also contains policies for the development of recreation resources in the community and the use of open space lands for recreation purposes.

In addition to the General Plan Land Use Diagram, several figures depict natural resources in the Merced City SUDP/SOI. This functions as the inventory of open space lands required by state law. Additional information on existing natural and man-made resources is also included in the *Merced Vision 2030 General Plan Environmental Impact Report*.

The goals of this chapter are grouped into five areas as follows:

- ***Goal Area OS-1:*** Open Space for the Preservation of Natural Resources;
- ***Goal Area OS-2:*** Open Space for the Managed Production of Resources;
- ***Goal Area OS-3:*** Open Space for Outdoor Recreation;
- ***Goal Area OS-4:*** Open Space for Public Health and Safety; and,
- ***Goal Area OS-5:*** Conservation of Resources.

In addition to the goals, policies and actions contained in this chapter, open space and conservation objectives are supported by goals, policies and actions contained in other chapters of this General Plan (Land Use, Urban Expansion, Sustainable Development).

Goal Area OS-1: Open Space for the Preservation of Natural Resources

GOALS

- **Maintenance of Merced's Biological Resources**
- **A High-Quality, Expanding Urban Forest**
- **Preservation of Scenic Corridors and Resources**
- **Improvement and Enhancement of Water Quality**

POLICIES

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

OS-1.2 Preserve and enhance creeks in their natural state throughout the planning area.

OS-1.3 Promote the protection and enhancement of designated scenic routes.

OS-1.4 Improve and expand the City's urban forest.

OS-1.5 Preserve and enhance water quality.

(Notes: The preservation and protection of important soil resources is addressed under Conservation [erosion], Open Space for the Managed Production of Resources [agricultural preservation policies], and the Urban Expansion Chapter of this General Plan, where the issue of growth impacts on prime soils is addressed.)

Policy OS-1.1
Identify and Preserve Wildlife Habitats Which Support Rare, Endangered, or Threatened Species.

The Merced SUDP/SOI is known to contain potential habitat for several sensitive wildlife species. Much of this potential habitat is located along riparian corridors of the community's creek system in vernal pools found in the northern part of the City's SUDP/SOI area, and on some agricultural lands throughout the planning area. As a matter of law, the City is required to review development proposals that threaten to impact known sensitive species. As a matter of policy, the City is committed to integrating potential wildlife habitat into the regional park and recreation system to enhance community awareness of the region's wildlife resources and to provide shelter for native plant and animal life of the area.

Implementing Actions:

1.1.a Identify, and recognize as significant wetlands and critical habitat areas which meet the appropriate legal definition under Federal and State law.

Wetlands, as defined by statute, have special regulations which must be followed as opposed to other riparian or "water" areas of the community. This policy provides for the identification of those lands subject to special Federal and State rules and standards and those which are solely subject to local policies and standards. Development applications will be reviewed to determine if potential wetland habitats exist on-site, and wetland delineation may be required in accordance with current U.S. Army Corps of Engineers guidelines.

"Wetlands" containing sensitive plant and/or animal species should be protected according to law. Specific protection policies should include:

a) protection of wetland watershed areas;

b) establishment of minimum setback areas around "wetlands" in accordance with the recommendations of California Department of Fish and Game, U.S. Fish and Wildlife Service, or a qualified wildlife biologist.

c) Provision of compensation or wildlife mitigation banks if a site is not protected.

The City, in cooperation with the County, may consider establishing a mitigation "banking" program in accordance with state and federal guidelines for vernal pools and other types of wetland habitats. Vernal pool preserves may be incorporated into other open space preserves (i.e. parks and trails) that would not be directly impacted by urban development.

1.1.b Urban development should occur away from identified sensitive species critical habitats areas unless specific provisions to ensure adequate protection and monitoring exist.

When, as a result of specific site studies, it is determined that "potential" habitats actually contain sensitive or endangered species, development rules, policies and standards should be applied to assure that further degradation of these species does not occur. These policies should emphasize "avoidance" as a desirable mitigation alternative. In instances where open space areas are established to protect a sensitive wildlife species, those areas shall be subject to appropriate management principles as approved by the City upon recommendation of the California Department of Fish & Game or the U. S. Fish and Wildlife Service.

1.1.c Establish development review procedures which minimize impact on sensitive species and their habitat.

Maintain an inventory of potential wetlands, vernal pools, threatened and endangered plant and wildlife species sightings, and wildlife habitat areas. Require detailed biological assessments of these areas, including mitigation plans if necessary, prior to development. To permit contiguous development with sufficient density, it may be necessary to develop some areas containing vernal pools and marshes; on-site mitigation areas for these wetlands should be contiguous with existing wetlands or the open space network of parks and trails.

1.1.d Design parks and open space corridors to provide linkages between potential habitat areas.

It is important to develop linkages between open space areas to facilitate wildlife movement between designated habitat areas. This can be accomplished by connecting the east-west trending urban stream corridors with a north-south corridor provided by power lines, railroad rights-of-way and the regional irrigation canal network. Whenever possible, park open space areas should be connected to one or more of these designated open space corridors.

1.1.e Manage Open Space areas to reduce the risk of injuring wildlife species with harmful chemicals, insecticides, herbicides, etc.

Within the City's open space network containing protected wildlife species, specific management practices may be required under Federal and/or State regulations. In other open space areas, care should be taken to assure that management practices do not cause an unnecessary threat to area native plant and animal life.

1.1.f Design improvements within parks, open space areas and open space corridors to facilitate animal life movement.

Creek road crossings should utilize culvert or bridge designs which provide adequate areas for wildlife to travel along the creek corridor without being forced into a motor vehicle pathway. Fences and other barriers should be designed to allow passage of native wildlife species throughout the open space area.

1.1.g Implement the Memorandum of Understanding (MOU) between the City of Merced and the U.S. Fish and Wildlife Service (USFWS), dated June 16, 2008, regarding the processing of development applications to ensure compliance with the Federal Endangered Species Act relating to Projects to be Served by the Wastewater Treatment Plant Water Quality Upgrade and Expansion Project.

The MOU specifies the kinds of development projects affected by the MOU (generally all those properties north of Cardella Road and all projects beyond the existing 10 mgd capacity of the City's Wastewater Treatment Plant). The MOU also outlines the procedures and comment period for notifying the U.S.F.W.S. of qualifying development projects and requires that applications for development projects shall demonstrate compliance with the Endangered Species Act (ESA) as a pre-condition to having their application scheduled for public hearing.

Policy OS-1.2
Preserve and Enhance Creeks in Their Natural State Throughout the Planning Area.

The urban creek system of Merced provides an important open space element within the City and provides important wildlife habitat. This creek system is also an integral part of the City's drainage system. The City is committed to a policy of preserving and protecting these important open space resources and assuring their continued viability as open space and drainage corridors.

Implementing Actions:

1.2.a Designate major creeks, streams, woodlands, and other appropriate areas in the City's SUDP/SOI as Open Space corridors.

Major creeks, riparian habitat, significant woodlands, and other sensitive environmental features should be conserved as open space amenities, when feasible. Significant stands of trees and knolls should also be preserved. Fencing and piping of creeks should be avoided. Open Merced Irrigation District channels should not be considered as Open Space corridors, but where MID canals have been undergrounded, MID is open to working with the City on establishing open space corridors (with limited landscaping).

Channelization of non-MID improvements should be naturalized. Whenever possible, in keeping with City standards and CEQA required mitigation measures, major creeks, riparian habitat, significant woodlands and other environmental features should be incorporated into the design of development.

1.2.b Continue to acquire a minimum 50-foot dedication from the centerline (or 25 feet from the crown, whichever is greater) of all creeks within the planning area in order to maintain these open space areas as natural riparian preserves and recreation areas.

Public access should be permitted, while important natural features and sensitive habitats are preserved. Corridor width shall be dictated by site specific circumstances of the creek, however, at least the established minimum setback shall be maintained as Open Space.

1.2.c Encourage alternatives to concrete channeling of existing creeks and streams as part of any flood control project and support more natural flood control methods.

There is an inherent conflict between flood control and drainage needs of the community and the value of natural drainage course as open space and wildlife habitat areas. While meandering streams and vegetation have the best wildlife values, they are least efficient in terms of removing flood waters from the community. Stream improvement plans must attempt to strike a compromise between drainage needs and open space needs on a case by case basis.

1.2.d Recognize Bear, Black Rascal, Cottonwood, and Fahrens Creeks as important open space resources and promote their protection and enhancement through the use of natural plant materials.

Use of natural or native plant landscape material instead of turf along creek banks whenever possible may result in improvement of the habitat value of the channel and reduce maintenance costs to the City.

Policy OS-1.3
Promote the Protection and Enhancement of Designated Scenic Routes.

Historically, the City of Merced has developed along routes and corridors which have come to be part of the City's identity. The City has designated many of these scenic routes for special development review regulation in the past. This practice has served the City well and will be continued into the future.

Implementing Actions:

1.3.a Identify, and where appropriate, designate additional scenic routes within the City's SUDP/Sphere of Influence.

Use the following criteria to identify scenic routes:

a) The scenic area through which the corridor passes should possess important scenic, historic, or aesthetic value.

b) As appropriate, the scenic corridor should contain a variety of vegetation or landscape types.

c) Routes of historic significance which connect places of interest should be considered even though the route is of marginal scenic value.

d) Routes which incorporate significant views or vistas should be considered.

1.3.b Preserve the designated Scenic Corridors

The Scenic Corridors are as follows:

a) North and South Bear Creek Drive within the City limits.
b) N Street from 16th Street to the Merced County Courthouse.
c) 21st Street from the Merced County Courthouse to Glen Avenue.

d) M Street from Black Rascal Creek to Bellevue Road.
e) West 28th Street from M Street to G Street.
f) Lake Road from Yosemite Avenue to Lake Yosemite.
g) R Street (extended) from Black Rascal Creek to Bellevue Road.
h) Olive Avenue East of McKee Road.
i) M Street from 18th Street to Bear Creek.
j) Campus Parkway.
k) Bellevue Road from Lake Road to "G" Street.

1.3.c Utilize established guidelines for the review of projects proposed within a designated Scenic Corridor.

The following guidelines apply to the review of applications for development in vicinity of a designated Scenic Corridor:

a) Utility lines should be placed underground whenever feasible.

b) Signing should be carefully controlled to insure that it does not detract from the scenic beauty of the corridor. Specific guidelines for signing along these corridors should be established.

c) Limit the intrusion of future land uses which may detract from the scenic quality of the corridor.

d) Unsightly mechanical and utility structures shall be screened from view by use of planting, grading, and fencing.

e) Heights and setbacks of buildings should be regulated to avoid obstructing important scenic views.

f) Every effort should be made to preserve and properly maintain existing stands of trees and other plant materials of outstanding value.

g) Structures on private and public properties visible from the corridor should be maintained in good condition (free of trash, weeds, etc.).

h) Architectural and landscape design should result in an attractive appearance and a harmonious relationship with the surrounding environment.

1.3.d Explore the feasibility of creating some scenic corridors in South Merced through the use of special standards.

Continue to implement the Gateway Road policy of the *South Merced Community Plan*, which states: "Require design treatments along Childs Avenue (between SR 99 and SR 59), Mission Avenue (between SR 99 and SR 59), Tyler Road, and SR 59 that will enhance the aesthetic qualities of the roadways," notably:

- encourage and/or provide programs to businesses on SR 59 that will enable building facade and site landscaping improvements;
- install a landscaped median in Tyler Road; and,
- utilize the established design guidelines (Policy OS-1.3.c of the *Merced Vision 2030 General Plan*) for projects proposed alongside these roads.

Policy OS-1.4
Improve and Expand the City's Urban Forest.

Early in the development of Merced, trees were planted to provide shelter from wind and summer heat. As a result, the City has a large number of mature trees along its streets, in public places and in private yards and has been designated a "Tree City USA" for over 30 years. The City's urban forest provides valuable wildlife habitat and creates an attractive atmosphere for residents and visitors alike. Additionally, the City's trees have substantially reduced summer heat and glare around paved areas, thereby helping the City maintain a cooler summer average temperature and reduce energy usage. In continuing this tradition, the City of Merced has established policies and programs to protect, maintain and expand its urban forests.

Implementing Actions:

1.4.a Continue the City's Street Tree program (Merced Municipal Code 14.12) and explore alternative funding sources for providing long-term maintenance.

The City needs to explore new and innovative ways of maintaining trees in public spaces. This could include establishment of landscape maintenance service areas within new developments and other programs such as an "Adopt-A-Tree" program within the City where a business or individual would assume the responsibility for the long-term care and maintenance of a significant urban tree or stand of trees.

1.4.b Continue to require new development to plant street trees approximately 40 feet apart, at a maximum, along City streets.

Tree planting policies have been established by the City for new development projects. These practices are to be continued. Exceptions to the spacing requirements are granted in selected areas where trees may interfere with other public facilities, such as street lights, traffic signals, etc.

1.4.c Work with local non-profit agencies, service clubs, and other voluntary organizations to plant trees and shrubs in appropriate areas throughout the City.

As part of an overall City beautification effort, local residents and service clubs, along with non-profit groups and businesses, can assist in expanding the City's urban forest programs into areas which are already developed with less than a full complement of tree plantings.

1.4.d Continue to promote Merced's "Tree City USA" designation with Arbor Day and other public events.

These programs serve to generate public awareness of the City's urban forest and the need to protect and enhance this urban amenity.

Policy OS-1.5
Preserve and Enhance Water Quality.

Water has become one of the most important resources for determining a region's ability to grow and prosper. California has enacted several major laws which require local communities to address the complicated issue of resources. The City of Merced has adopted policies addressing the conservation of urban water use and a development strategy to meet future water needs (see Section 5.2.3). The final element in the City's comprehensive water strategy is the preservation of water quality. It should be noted that these policies are directed towards enhancing or implementing the many existing water quality regulations which affect the City and its residents.

Implementing Actions:

1.5.a Utilize storm water retention basins and other "Best Management Practices" to improve the quality of storm water discharged into the region's natural surface water system.

Working in cooperation with the Merced Irrigation District and Central Valley Regional Water Quality Control Board, study alternative means of implementing cost effective "Best Management Practices" for the treatment of storm water discharges into the regional surface water system. ("Best Management Practices" are defined as the most up-to-date methods of dealing with a problem as determined by experts in the field. These practices change over time as new techniques and methodologies are developed.) A program may be developed which integrates the use of storm water retention ponds, groundwater recharge basins, swails, or other techniques which could improve the quality of storm water run-off. Additionally, design guidelines for new development may be prepared to address storm water treatment prior to its entry into the City's storm water drainage system.

1.5.b Monitor known sources of groundwater contamination within the City and its future expansion area.

In cooperation with the State Department of Health Services, the Central Valley Regional Water Quality Control Board and the Merced County Environmental Health Department, the City will maintain an inventory of known sources of groundwater contamination in the City's planning area. When appropriate, the City may implement policies and/or programs which minimize the threat of aggravating existing problems and eliminate potential future problems of ground water contamination. In some instances, the City may consider extending municipal water service to suburban areas on the City's urban fringe experiencing problems from polluted ground water or to prevent future problems.

1.5.c Monitor ground water in areas in and around the City using septic system wastewater disposal systems.

In cooperation with the Merced County Environmental Health Department, monitor developed areas within the City's planning area for nitrate concentrations exceeding state standards. Where problem areas are identified, study potential resolutions to the problem, including annexation and the extension of City sewer service to the area.

(Notes: Additional policies regarding water supply can be found in Chapter 5, Public Facilities (Goal Area P-3), and policies regarding water conservation can be found later in this Open Space Chapter (Goal Area OS-5).

Goal Area OS-2: Open Space for the Managed Production of Resources

GOAL

- **Protection of Regional Agricultural Resources**

POLICIES

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

OS-2.2 Relieve pressures on converting areas containing large concentrations of "prime" agricultural soils to urban uses by providing adequate urban development land within the Merced City SUDP/SOI.

Policy OS-2.1
Protect Agricultural Areas Outside the City's SUDP/SOI From Urban Impacts.

Regional agricultural cropland provides an economic base for the City of Merced, and the long term economic health of the City is directly linked to conserving the productive capacity of regional farmland. To this degree, the City has established urban expansion policies directing urban growth away from "prime" agricultural soils. Policies are also needed to protect farmland along the urban perimeter and to promote open space policies which protect farmland and the farming industry.

Implementing Actions:

2.1.a Continue to explore the use of Farmland Trusts, exclusive agricultural zoning, the transfer of development rights, and other methods to protect prime agricultural areas.

The City, in cooperation with the County of Merced and the City of Atwater, can explore various agricultural preservation programs in proximity to the City. The policies should limit present tendencies towards suburbanization of farmlands into large lot Rural Residential developments which have a long term adverse impact on the productive capacity of the region's agricultural production capacity. The possibility of establishing a land bank should be investigated further.

2.1.b Establish policies and programs which minimize conflicts between urban and agricultural uses.

Consider adoption of a "right-to-farm" ordinance to inform residents of continued agricultural production and the lawful use of agricultural chemicals, including pesticides and fertilizers, in proximity to urban areas. Also, to assert that no pre-existing or future agricultural operation would be considered a nuisance solely due to a change in adjacent land use or adjoining residential development.

2.1.c Minimize conflict between agricultural and urban uses by requiring buffers, such as landscape areas, roadways, or creeks, to separate these uses.

The City should periodically review its urban boundary policies to assure that adjacent farm lands are adequately buffered from urban uses.

2.1.d Work with Merced County and the other cities in the County to develop a Countywide agricultural preservation policy as defined in Urban Expansion Implementing Action UE-1.1.f.

Please refer to the Urban Expansion Chapter for details regarding this Implementing Action.

(Notes: This policy is supported by other policies and implementing actions found in the Land Use and Urban Expansion Chapters of this Plan.)

Policy OS-2.2
Relieve Pressures on Converting Areas Containing Large Concentrations of "Prime" Agricultural Soils to Urban Uses by Providing Adequate Urban Development Land Within the Merced City SUDP/SOI.

Generally, overly restrictive growth and development policies within a city can translate into increased development pressure on rural areas. The City of Merced is committed to providing adequate and economically competitive development land within its urban growth area in order to reduce rural development pressures on the valuable agricultural lands outside the City's SUDP/SOI and in the surrounding region.

Implementing Actions:

This important policy will be carried out through several implementing actions found in the Land Use, Public Services and Facilities, and Urban Expansion Chapters of the *Merced Vision 2030 General Plan*. These programs are not duplicated here under this policy heading.

Goal Area OS-3: Open Space for Outdoor Recreation

GOALS

- **High-Quality Recreational Open Space**
- **Adequate Public Recreation Facilities**
- **Comprehensive Urban Trail and Bike Path System**

POLICIES

OS-3.1 Provide high-quality park and open space facilities to serve the needs of a growing population.

OS-3.2 Maintain and expand the City's Bikeway and Trail System.

OS-3.3 Maintain the City's existing high-quality open space facilities.

OS-3.4 Develop a diverse and integrated system of park facilities throughout Merced.

Policy OS-3.1
Provide High-Quality Park and Open Space Facilities to Serve the Needs of a Growing Population.

The City of Merced has benefited from the foresight of early leaders in the City's development with respect to parks and open space. The City's growth has historically incorporated its natural open space resources along Bear Creek and other lesser drainage courses into an overall open space network which has become a major source of civic pride. The City is committed to continuing this high standard of park and open space development in the expansion areas of the existing City.

Implementing Actions:

3.1.a Continue efforts to acquire new park sites within future growth areas in advance of development to meet the recreation open space needs of an expanding population.

Overall, a total of five (5) acres of parkland should be provided per 1,000 residents in the City, of which 1.5 acres should be in community park and 3.5 acres should be in various forms of neighborhood parks, including village greens, school parks and other neighborhood parks. "Greenway" trails should provide bicycle and pedestrian access throughout the City and its growth areas.

3.1.b Consider density bonuses for development proposals which offer extra park land dedications where needed.

Density bonuses on new development should be linked to park land needs for the area and exclude areas which must be set aside as wildlife preserves or left undeveloped for other environmental concerns. Land dedication for planned trails and bikeways are appropriate, but areas used for drainage facilities to serve a development would not be considered for parkland except those areas to be improved for park and open space use by the developer.

3.1.c Continue to implement the City's 2004 Parks and Open Space Master Plan and any subsequent updates.

The City's Parks and Open Space Master Plan (2004) provides specific system design and implementation standards for the development of the City's park system. This plan serves as a basis for requiring development recreation dedications as well as a guide for public facilities expenditures in the parks and recreation category. The 2004 Master Plan provides a road map for the acquisition and maintenance of the City's park and open space resources. The implementation measures and design and development policies contained within the Master Plan should be followed. This plan requires periodic update and will need to be revised to reflect the City's proposed SUDP/SOI and the parks and open space opportunities and needs resulting from development.

3.1.d Continue to encourage joint use agreements between the City and local school districts to combine the design and use of park and school facilities when feasible.

This policy supports and complements other joint use facility policies of the Public Facilities chapter of this General Plan. A 5- to 10-acre neighborhood park should be associated with each elementary and junior high school. These schools and school parks should be centrally located, placed at the edge of a Village or neighborhood center and along greenways when possible. By designing both facilities at the same time, the functionality can be significantly improved.

3.1.e Use the City's Park Dedication Ordinance to develop the City's park system.

A strong effort should be made to use the following criteria to locate parks:

a) No household should have to walk more than approximately one-half to three-quarters of a mile to a park site.

b) Parks should be located adjacent to schools as much as feasible.

c) Provide visual, pedestrian and vehicular access to all parks by requiring them to front on public streets on as many sides as possible and not be surrounded by privately owned property. Adequate parking facilities should be provided where needed.

d) Neighborhood park sites should front on at least one side on a collector street with the remaining sides on local streets. Community or Regional parks may front on arterials.

e) Park sites should be located so as to incorporate naturally-occurring open space features, such as significant stands of trees, riparian and wildlife habitat, scenic vistas, and creeks and drainage canals.

f) Park sites should be located adjacent to bikeway facilities.

g) Park sites should be located near higher-density residential areas as much as possible.

h) Parks should have access to nearby subdivision and greenways by means of cul-de-sacs, access easements, etc.

3.1.f Design and develop parks which are compatible with adjacent land uses through the establishment of a park planning process that is responsive to community and neighborhood input.

Existing parks should be evaluated periodically by the Recreation and Parks Commission to ensure that they are meeting the needs of the neighborhoods in which they are located, and programs for expansion/ relocation/reconfiguration should be established when needed.

3.1.g Ensure that if park sites are also used for storm water detention, that there is sufficient land made available so that storm water detention does not interfere with the park and recreation function of the park.

According to the 2004 Park and Open Space Master Plan, if storm drainage basins are included in a neighborhood park, at least 2 contiguous, usable acres should be provided in addition to the acreage contained in the basin. At least 50 percent of the site should be flat and open. For community parks, at least 8 acres should be provided outside the basin.

Policy OS-3.2
Maintain and Expand the City's Bikeway and Trail System.

Merced's bikeway and urban trail system has become a model for the region and an important element of the character of Merced. The system's use of the natural open space resources of the community has benefited the public and helped to preserve important open space lands in addition to providing recreation and all transportation to residents. Bikeways and urban trails are an important element of the greenway system and provide linkages between other elements of the park system, public transportation, and residential and commercial areas throughout the City. The City is committed to building upon this system and expanding it into the growth areas within the resource constraints of the City. The 2004 Park and Open Space Master Plan provides a detailed needs assessment, along with policies and design standards for the acquisition, development and maintenance of new park and recreation facilities. The City's Bicycle Master Plan also addresses bikeway and trail systems.

Implementing Actions:

3.2.a Utilize the urban stream system in the planning and design of bikeways and trails.

It is the City's policy to acquire a minimum 50-foot dedication from the centerline (or 25 feet from the crown, whichever is greater) of all creeks within the planning area in order to maintain these open space areas as natural riparian preserves and recreation areas. Development of bikeways and trails in these open space areas can enhance the open space value of the urban stream system provided that the trails do not unnecessarily interfere with other open space goals and policies.

3.2.b Make use of creekside areas, utility line easements, abandoned railroad rights-of-way, and canal easements for bikeway purposes.

These areas are generally set aside as open space areas, and their use for bikeway and trail systems would enhance the public value of open space in addition to providing an important amenity to neighborhood residents.

3.2.c Provide links between parks, schools, and open space areas via the bikeway system.

The bikeway system can also be part of a greenway linking parks, schools, and other important open space areas.

3.2.d Provide a link between the City and County bikeway systems by establishing a connector to the Lake Road Bikeway Corridor out to Lake Yosemite.

This area will become an important bikeway link to the new U.C. Campus area and its surrounding development. Plans may be integrated with future development of the Campus Parkway and linear open space plans along drainage courses and irrigation canals.

3.2.e Develop an off-street bikeway and trail system in South Merced.

As part of the South Merced Community Plan process, an inventory of potential off-street routes was reviewed by neighborhood groups. A system was developed to link existing and planned future park areas and provide links to other open space and school areas as well as being integrated into the rest of the City's bikeway system (see Figure 4.9), and this plan's Policy T-2.4.b. The City should explore using existing drainage facility easements to accommodate such a system. The planned system should be implemented within the resource constraints of the City.

3.2.f Expand the existing bikeway system to all new growth areas as development occurs.

As part of the development review process, bikeway dedications should be required, when appropriate, as a condition of permit approval.

3.2.g Explore the possibility of providing unpaved trails for equestrian and mountain bike use as part of the overall trail system.

These types of trail systems may be appropriate along the eastern fringe of the City where lower density Rural Residential development permits the keeping of horses and other livestock on large lots.

3.2.h Bike path designs should reflect security and other needs of the surrounding community.

When locating bike paths and trails, the design should be sensitive to the need for privacy and security of neighboring residents. If feasible, bikeways should be designed with multiple access points from surrounding neighborhoods so there is sufficient visibility from public roadways to facilitate surveillance by residents and police patrols. Where feasible, bike paths should be designed so that at least one side is open to a public street. Situations where bike paths are located along the back sides of homes with limited visibility should be avoided as much as possible. Open fencing along bike paths should be considered, especially adjacent to multi-family developments.

Policy OS-3.3
Maintain the City's Existing High-Quality Open Space Facilities.

Resources for parks and recreation programs and facilities are derived from the same sources which provide essential public services such as public protection. Within the municipal finance structure of the City, it can be expected that other municipal needs may limit the resources which can be dedicated to maintaining and improving existing park and recreation facilities. At present, park and open space expansion is funded largely though exactions and dedications resulting from growth and development. These resources cannot necessarily be applied to the maintenance and upgrading of existing facilities. For these reasons, the City is committed to exploring new alternatives for meeting the park and open space maintenance obligations for existing facilities.

Implementing Actions:

3.3.a Design park facilities so that a high quality of maintenance can occur with minimum effort.

This should include the use of sturdy, low-maintenance plant materials, equipment, and surfaces. Where practical, existing facilities should be upgraded utilizing low maintenance materials and design techniques.

3.3.b Encourage community participation in park maintenance and improvement programs.

Community and neighborhood groups should be encouraged to "adopt-a-park" or playground and become involved in the planning, upgrading and maintenance of the park and its facilities. Monthly or semi-annual neighborhood park special events or programs can be planned involving park users, neighborhood residents and local service organizations in park clean-up and maintenance efforts. These events could also be used as fund raising events for needed park improvements.

3.3.c Explore park concession opportunities as a revenue source for park improvements and maintenance.

In appropriate park locations, the City may consider establishment of concession stands or vending machine locations which could be leased to concessionaires; revenues would be deposited into a park maintenance and improvement fund. Concession operators may include local youth service, neighborhood, or community groups, which could operate the concessions to raise money for charitable purposes.

3.3.d Encourage neighborhood participation in policing and park security efforts.

In cooperation with the Police Department, involve community and neighborhood associations or similar groups in providing park security to discourage vandalism.

Policy OS-3.4
Develop a Diverse and Integrated System of Park Facilities Throughout Merced.

Throughout the City, a system of park and open space facilities should exist which include neighborhood parks, community parks, and greenways. This park system should be developed to serve all age, social, and economic groups in every geographic area of the City. Refer to the City's 2004 Park and Open Space Master Plan for design and development policies for new parks.

Implementing Actions:

3.4.a Community parks should be distributed throughout the City.

There should be at least 1.5 acres of community park provided per 1,000 residents. Community parks are usually 15 acres in size or greater. Community parks are major recreation facilities and contain many ball fields, play lots, picnic opportunities and other facilities. They must be located along a greenway and should be at the junction of two greenways when possible. Greenways, streets and landscaping should be used to minimize and buffer residences from the noise and nighttime lighting associated with ball fields. Development of the Community Park at the northwest corner of Tyler and Mission in South Merced as described in the City's Park and Open Space Master Plan, should be a top priority.

3.4.b Neighborhood parks and village greens are to be located within Villages.

Neighborhood parks should be distributed so most areas are less than one-mile from any park. Within any square-mile quadrant bounded by arterial roads, a total of 3.5 acres of neighborhood parks should be provided for each 1,000 residents. "Village greens," which are a special form of "Neighborhood Park," should be located between Core Commercial areas and Village Core Residential areas, and may be used to meet village park acreage requirements. Parks should be situated away from arterial streets. Public facilities, such as day care, libraries, community centers and post offices, may be developed within or immediately across from village greens when possible.

In the location, design, and maintenance of neighborhood parks, it should be kept in mind that they are fundamental features of livable and enjoyable higher-density neighborhoods. Neighborhood park sites should reinforce retail and residential areas by creating "town squares" suitable for informal gatherings, public events, and recreation. Neighborhood parks should create a formal focus within villages.

3.4.c Greenways should be designed to connect various park sites, schools and other public places with paths exclusively for pedestrians and bicyclists.

Greenways weave through the residential neighborhoods connecting larger public uses (schools, open space, commercial uses, etc.) and provide many points of physical and visual access to the park sites. Some greenways may also act as mini-parks because of play and exercise equipment placed along the paths. Greenways act as valuable greenbelts of open space through a neighborhood. Greenways should be designed in association with bike paths, trails, and pedestrian ways to follow creeks, canals, power line easements, etc.

Greenway design should emphasize access. Access has a major effect on whether a greenway is used. If a greenway is hidden, tucked away in a neighborhood, enclosed by high fences, and/or unmaintained, the public may avoid using them and they may become unsafe.

3.4.d In cooperation with Merced County and the Merced Irrigation District, evaluate the Lake Yosemite regional park to identify how it might adequately meet the needs of the City of Merced and the new growth areas in the region including the U.C. Merced campus.

Regional parks can serve many cities and are sometimes used as resting stops for travelers. Often their focal points are lakes, rivers or other natural resources. Typically, they are provided by counties and the state. Because of their distance from a city, their accessibility is generally limited to those who can drive there. Lake Yosemite Park is a regional park located in the northern expansion area of the City and operated by the County of Merced. Lake Yosemite Park is of special interest to Merced because of its water recreation opportunities and open space qualities in addition to the fact that it is within bicycle commute range for many residents.

Lake Yosemite will likely become more heavily used by City residents as Merced grows and the U.C. Merced campus expands and grows. As the City expands to the north and public transportation becomes more available in the area, Lake Yosemite Park will become even more accessible to local residents. As a result, additional space and facilities may be required to accommodate future growth. Some of the area around the park contains potential wildlife habitat which limits development options for land owners. The City and County might cooperate in developing a wildlife mitigation banking program for this area which would allow landowners to transfer development rights to other lands upon dedicating habitat and potential park land for public use. Consideration should be given to providing expanded public access and additional roadway entrances into the Lake Yosemite Regional Park.

Goal Area OS-4: Open Space for Public Health and Safety

GOAL

- **A Safe Environment For Merced's Citizens**

POLICY

OS-4.1 Preserve open space areas which are necessary to maintaining public health and safety.

Policy OS-4.1
Preserve Open Space Areas Which Are Necessary to Maintaining Public Health and Safety.

Areas within the City which may represent a substantial risk to public health and safety have historically been designated for open space uses which may permit limited public or private use but generally reduce potential exposure of the public to potential health hazards. The City is committed to continuing to protect public health, where practical, by limiting the potential for public exposure through the sound application of open space practices and policies.

Implementing Actions:

4.1.a Continue enforcement of the City's Flood Damage Prevention Ordinance (MMC 17.48) to discourage construction in high-risk areas.

Areas that are known to represent a flood hazard to people and property are subject to land use standards which would limit exposure. These policies could allow limited development with special development standards to accommodate periodic flooding or exclusive use of the area for parks and open space. Agricultural uses are appropriate in some areas which exhibit 200-year flood risk potential. The State of California now requires that floodplain regulations be applied to the 200-year floodplain.

4.1.b Utilize areas along railroad rights-of-way and under high-voltage power transmission lines as open space.

These areas could be used as greenways and open space areas which would provide scenic buffers from potential health hazards in addition to providing visual (and noise in the case of railroads) buffers to surrounding areas. These areas could also be developed with storm water retention basins, groundwater recharge basin or used as part of the municipal water or other utility systems where the risk of public exposure to health hazards could be minimized.

4.1.c Continue enforcement of the City's weed abatement program to ensure undeveloped areas do not become fire hazards.

Weed abatement programs are an important management concept in open space areas to minimize the risk of fire. In all cases, open space areas are best used with planned plantings of native trees, brush and other plants in a park type setting. When possible, unused plots of land may be appropriately used for community garden uses for neighboring residents. This use would be most appropriate in areas where there is a large number of multi-family dwellings and few public parks are available.

4.1.d Continue to discourage residential uses in Merced Regional Airport Clear Zones.

Airport clear-zones and approach and landing corridors represent potential hazard areas to residential development. The areas are subject to noise nuisances as well. These areas are best used for open space purposes such as agriculture, golf courses and other types of uses that do not involve large populations.

[Notes: Other Open Space for Public Health & Safety policies are contained under Goal Area OS-1.5, where the issue of water quality is addressed, and in the Safety Element (Chapter 11.)]

Goal Area OS-5: Conservation of Resources

GOALS

- **Conservation of Water Resources**
- **Preservation and Protection of Soil Resources**

POLICIES

OS-5.1 Promote water conservation throughout the planning area.

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

Policy OS-5.1
Promote Water Conservation Throughout the Planning Area.

Water is a finite resource in the Central San Joaquin Valley and is an essential ingredient to the region's continued agricultural production capacity as well as a vital element in the continued growth of the Merced Metropolitan Area. The City, in conjunction with the Merced Irrigation District, has studied the long-term needs for water and concluded that water conservation must be part of any successful long term water development strategy. For this reason, the City is committed to continue its water conservation efforts and expand on those efforts where necessary.

Implementing Actions:

5.1.a Continue implementation and enforcement of the City's Water Shortage Regulations (MMC 15.42.010-100).

The City's emergency water shortage regulations have been in effect for many years to ensure an adequate water supply into the future.

5.1.b Continue implementation of the Water Efficient Landscaping and Irrigation Ordinance (MMC 17.60.010-070) and subsequent updates.

Promote the conservation of water and the preservation of water quality by requiring drought tolerant plant material in landscaping and the retention of existing natural vegetation on new development projects. The City will also consider alternatives to turf and other water-intensive landscaping, including artificial turf.

5.1.c Provide leadership in conserving urban water resources.

City buildings and facilities should be equipped with water saving devices whenever practical. Municipal parks and playgrounds should employ water conservation techniques such as mulching, drip irrigation and other appropriate technologies.

5.1.d Encourage public water conservation efforts.

Through established public information systems in the community, the City should promote water conservation by providing information on water savings from low-flow fixtures and the value of insulating hot water lines in water recirculating systems. Other conservation techniques can be addressed such as the use of non-potable water for landscape irrigation purposes (water re-use, MID water, etc.).

[Notes: Water conservation policies are supported by other policies in this General Plan to protect regional water resources (Public Facilities Goal Area P-3) and water quality (Open Space Policy 1.5).]

Policy OS-5.2
Protect Soil Resources From the Erosive Forces of Wind and Water.

Merced is situated on some of the finest soil resources found in the Central San Joaquin Valley. Some of these soils are of a silty-loam texture and highly vulnerable to erosion from wind and water. Wind erosion contributes to the region's PM10 and PM 2.5 air quality problems, as discussed in the Sustainable Development Chapter(8) of this General Plan, and water erosion can contribute to sedimentation of the region's surface water drainage system. In all cases, the loss of soil through erosive forces of nature degrades the productive capacity of the land and contributes to regional environmental problems.

Implementing Actions:

5.2.a Reduce soil erosion potential of new development.

During the development review process for projects which involve grading and excavation, apply permit conditions which reduce or prevent erosion, siltation and contamination of storm water during construction. Techniques such as mulching of exposed surfaces, restricting major excavation projects during peak storm periods, or watering exposed surfaces during summer dry periods, can be successfully employed to reduce construction-caused erosion.

5.2.b Encourage the planting of trees as windbreaks in agricultural areas of the community.

Historically, trees have been successfully used as windbreaks in the region. Stands of wind-break trees can be established as part of an open space corridor, along roadways and bike paths, or at appropriate locations along the urban perimeter adjacent to agricultural land.

5.2.c Maintain adequate vegetation along the banks of urban streams and storm water drainage channels.

The erosive force of storm water can cause damage to stream channel banks that have been cleared of their vegetative cover. Where it is necessary to remove natural vegetation along stream channels to improve storm water flows, "rip-rap" (rocks, concrete, etc.) should be applied to reduce erosion and sedimentation hazards.

(Notes: These policies are proposed in support of Air Quality PM_{10} $PM_{2.5}$ policies contained in the Sustainable Development Chapter of this Plan--Chapter 8.)

7.6 ISSUES FOR FUTURE STUDY

There are several major issues which will require future study and evaluation. The issue areas that have been identified below may be expanded from time to time as new information becomes available or new open space resource problems are identified.

7.6.1 Lake Yosemite Regional Park

The Lake Yosemite Regional Park will be increasingly affected by local growth and development, which could severely impact its available land and facility area. The lake is owned by the Merced Irrigation District and the park is owned and operated by Merced County.

Additionally, the region surrounding the Lake contains several isolated but important biological resource sites which could be adversely impacted by certain types of development.

With the development of the U.C. Merced campus southeast of the Lake, and potential private developments being planned on the northwest and southwest sides of the Lake, discussions regarding the future of the park need to begin. Future planning efforts need to address the expansion needs of this regional park facility, which are necessarily

going to be limited, given the existing and potential development around the park.

This planning effort will need to involve U.C. campus planners and the County of Merced. Planning efforts will also need to address other open space resource issues in this area, such as protected wildlife habitat, water quality, etc.

7.6.2 Greenbelts & Urban Limit Lines

Suburban development on the agricultural lands surrounding the City are of critical concern. This type of development not only depletes the limited supply of "prime" agricultural soils in the area, but also causes impacts on the City's infrastructure.

With the location of U.C. Merced campus and adjacent University Community, growth pressures can be expected to increase in the prime agricultural areas east and west of Kibby and along the Highway 140 corridor. Additional pressure will come with the construction of the Campus Parkway, a portion of which will run through the agricultural land between Yosemite Avenue and Highway 140.

This development primarily occurs on lands that are outside the land use jurisdiction of the City of Merced, but within the Area of Interest. Policies and programs addressing urban growth are contained in the Urban Expansion Chapter of this General Plan.

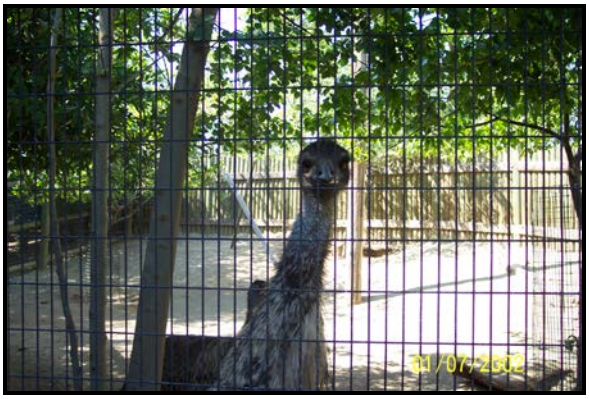
Development to the north of the City's SUDP/SOI will be constrained due to habitat concerns. Similarly, development to the west will have a practical limit as airport land use restrictions around Castle Airport becomes increasingly onerous.

7.6.3 Future Park Sites and Facilities

In 2004, the City of Merced adopted a new Park and Open Space Master Plan. The Master Plan analyzed existing resources and facilities, and projected future needs.

The Master Plan provides standards for the minimum size for the various categories of parks and other recreation facilities, typical designs and amenities, and approximate locations where additional facilities will be needed. Standards identified in the Master Plan indicate that the City will need approximately 470 acres of additional parkland for the projected 2030 population of 150,000. The City park system will need to provide for other types of recreational facilities, such as gymnasiums and swimming pools, as part of its development.

Additional park facilities will be needed in the proposed SUDP/SOI and the Master Plan will need to be updated to identify new park facilities within those areas not covered by the existing Plan.



A new community park is proposed for South Merced, which is intended to be a major community focal point. A 40 acre site had been acquired at the northwest corner of Tyler Road and Mission Avenue. This park is proposed to be the site of a new community park with group picnic areas,

extensive sports fields for soccer and youth baseball/softball, very high quality and interesting children's play areas, basketball courts, and pathways. It is also recommended that a new indoor recreation center be sited in this park to accommodate the indoor recreation needs of the area. A master plan will guide the development of this park.

7.6.4 Park & Open Space Resources

Acquisition, development, maintenance and operation resources for the City's park and open space system must compete with many other vital City services. Historically, the system's expansion and development has been driven largely by new development.

Growth and development has resulted in a well developed park and open space system in the newer sections of the community; however, in the older portions of the City, resources have been scarce.

Long-term maintenance and operation resources are extremely vulnerable to the limited City budget resources. A long-term strategy needs to be developed to assure continued development and adequate maintenance of the system in future years.

Potential future park sites have been designated on the Land Use Diagram. The sites are given a "general" designation to identify areas of potential future needs. Service area criteria has been provided in the Park and Open Space Master Plan. Specific site locations, however, will require more specific planning.

7.6.5 Highway 59 Landfill Site

The County's main landfill facility is located along Highway 59. Present plans and policies are adequate to assure the long-term viability of this site; however, continued monitoring of growth and development trends in the region will be necessary.

Planning efforts for the years 2030 and beyond must contemplate the maintenance of adequate open space buffers around this important public facility.

7.6.6 Ground Water Recharge

It has been determined that ground water is the most practical long-term source of water for meeting the future water needs of the City of Merced. Groundwater recharge is, therefore, critical to supporting the City's future growth. Agricultural water demands are expected to continue to utilize surface water supplies.

In order to maintain adequate municipal water needs into the future, programs have been established that encourage development of ground water recharge basins within the vicinity of the Merced urban area and utilized surface water supplies and recycled water for landscape irrigation. Some of the recharge basins may be developed in conjunction with the City's storm water retention pond system and included in the City's open space resources. Additional acres of recharge basins are expected to be required, however, and these basins will most likely need to be developed outside the City's SUDP/SOI.

In the design and development of this system of recharge basins, care must be taken to minimize the loss of agricultural land in the region as well as minimizing the impact of storm water contaminants on ground water resources. Planning should contemplate integration of this system into the regional open space network.

Existing creeks (Bear Creek, Fahrens Creek, Cottonwood Creek, and Black Rascal Creek) and associated floodways and floodplains may accommodate multiple uses including the provision of riparian habitat, stormwater management and groundwater recharge.

7.7 IMPLEMENTATION

Numerous Open Space, Conservation, and Recreation implementation measures have been detailed in the Goals, Policies and Actions section of this Chapter (Section 7.5). These implementing actions make up the "Action Program" required by Government Code Section 65564. Implementation is also achieved through the Open Space designations on the Land Use Diagram.

The acquisition of additional park land and open space will continue as development occurs through use of the City's Park Dedication Ordinance, the required dedication of creekside open space, the payment of Park In-Lieu fees, and the Public Facilities Financing Plan.

By means of establishing development standards for lands designated as "Open Space," the objectives of this chapter can be obtained. Through policies and standards for identifying new open space areas through the development review process, provisions have been made for the preservation of open space resource lands which may be needed at some future point in time.

7.8 CONCLUSION

The open space, conservation and recreation resources of Merced have played an important part in the quality of life for which the City is known. The City has chartered a solid course for the preservation and enhancement of those resources.

It is expected that, as a result of past and present efforts, decision makers contemplating the City's future beyond the year 2030 will continue to have a broad array of open space resources with which to enrich the lives of the City's residents.