

5.0 COMMUNITY FACILITIES

The purpose of this element is to provide direction for the development of community facilities to serve the future residents of the Crossroads Community. These community facilities include the provision of schools, parks, police and fire protection services. Community facilities also include the provision of public utilities including sanitary sewer, water, irrigation, solid waste, storm drainage, electricity, natural gas, telephone, and cable television services. Section 7.0 describes the provision of public utilities.

Context

Throughout the history, growth and development of American towns and cities, community facilities have been the foundation around which communities grew and established a sense of place and identity. Town centers and squares have traditionally supported at least one central, prominent civic structure such as the town hall, a community auditorium, or a simple town square with a green space and gazebo where the residents of the community could gather or assemble for events. These places often became a foundation around which the community was designed and built. With the advent and growing use of the automobile, less emphasis was placed on an accessible, central location of public facilities within the community. Cities throughout the United States have also faced escalating land costs and shrinking government coffers and, as a result, civic places have been located where structures or land could be easily obtained, without regard to the overall organization of the community or pedestrian accessibility.

The appropriate location of community facilities can enhance the character, vitality, and ultimately the long-term viability of the community. Community facilities such as schools, parks, and community centers provide a forum for public life and neighbor interaction, and ultimately establish a sense of community and a sense of place.

5.1 Community Facility Needs

Community facility needs for the Crossroads Community were determined through a series of steps, the first of which was the *Crossroads Community Specific Plan Municipal Space Needs Analysis* (EMC Planning Group Inc. 1991). This analysis used the existing Space Needs Assessment, prepared by the City of Riverbank in 1986, to project the municipal space needs of the City Hall and the police department. This needs analysis assumed that build-out of the Crossroads Community would increase the City's population by 12,000 (based on a maximum build-out scenario), to a cumulative population of approximately 25,000 by the year 2005. However, since that time, the most recent projections estimate a total population increase of 7,543.

The City prepared a parks needs analysis for the Crossroads Community Area (Riverbank Village Specific Plan Parks Needs Analysis, EMC Planning Group Inc.

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1991). This analysis was used to determine the need for parks in this area of the city and the facility needs.

Based on the information outlined above, community facilities within the Crossroads Community will consist of the following:

One Elementary School

The Crossroads Community falls within the Sylvan Elementary School District, with the exception of a small area east of Roselle Avenue which is served by the Riverbank Elementary School District. The expected school-age population for the Crossroads Community will be approximately 737 K-5 (kindergarten through grade 5) students, with virtually all the students generated in the Sylvan District. A standard elementary school is typically designed to serve 500 to 600 students on a traditional schedule, or 625 to 800 students on a multi-track, year-round schedule.

A full elementary school is required to be located within the planning area to serve the K-5 students within the planning area. The middle school (grades 6 through 8) and high school (grades 9 through 12) students generated from the Crossroads Community will be accommodated in school facilities located outside of the planning area.

An elementary school site of 10 acres has been located in the northeastern portion of the planning area and was designed to be located adjacent to a neighborhood park (approximately three acres). It is desirable for the City to work with the school district to design the school/park facility. Shared school/park facilities can create a mutual gain for both the school and community through reduced land costs, shared maintenance costs, and a well-designed school/park relationship.

The school site has been located to minimize the need for students to be transported to school and to maximize the opportunities for students to walk or ride bicycles. To that end, the elementary school is located with direct walkable and bikeable roadway linkages to the surrounding neighborhoods.

Parks

The need for park facilities within the Crossroads Community was determined in the *Riverbank Village Specific Plan Parks Needs Analysis* (EMC Planning Group Inc. 1991). This needs analysis utilized the National Recreation and Parks Association guidelines of three acres per 1,000 population, and an assessment of local park use characteristics and trends in order to determine the park and recreation needs of the City. The study determined approximately 20 acres of park is required for the projected buildout population of 7,543. However, the City General Plan has a standard of five acres per 1,000 population, split between community and neighborhood parks. Based

on this requirement, approximately 33 acres of park is required for buildout of the Crossroads Community.

Four parks, for a total of 17.4 acres, are proposed within the plan for the Crossroads Community: one 8.2-acre community park; three neighborhood parks totaling approximately 9.2 acres. All of the parks are designed to be linked and accessible to the neighborhoods and the other major activity areas within the community. Recreational paths provide an additional 4.3 acres of recreational facilities.

Community Park

Based on the findings of the parks needs analysis, it was determined that the community park contain the following minimum facilities:

- 4,000 square foot community center
- 50-parking spaces
- Cover gazebo 20'0" radius
- Passive uses
- Basketball courts
- Multi-use game court – lighted
- Soccer/football adult – lighted
- Adult softball field – lighted
- 0-12 year age group playground
- Detention basin
- Maintenance structure for equipment

Figure 8 provides a conceptual illustration of the community park plan.

Neighborhood Parks

Three neighborhood parks are planned for the Crossroads Community. One of them (a 3.1 acre park) will be designed in conjunction with the elementary school for enhanced City and school recreational programs and overall efficient management and use of recreational facilities. The second neighborhood park/basin (four acres) is proposed adjacent to the M.I.D Lateral and a third neighborhood park / basin is located adjacent to the regional commercial business park area (approximately 2.1 ac)

Three-acre School/Park and four-acre Neighborhood Park

- Passive uses
- Covered gazebo 20'0" radius
- Non-lighted multi-purpose/use field (practice)
- Playground
- 20 parking spaces
- Detention basin

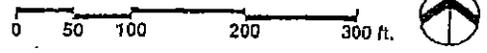
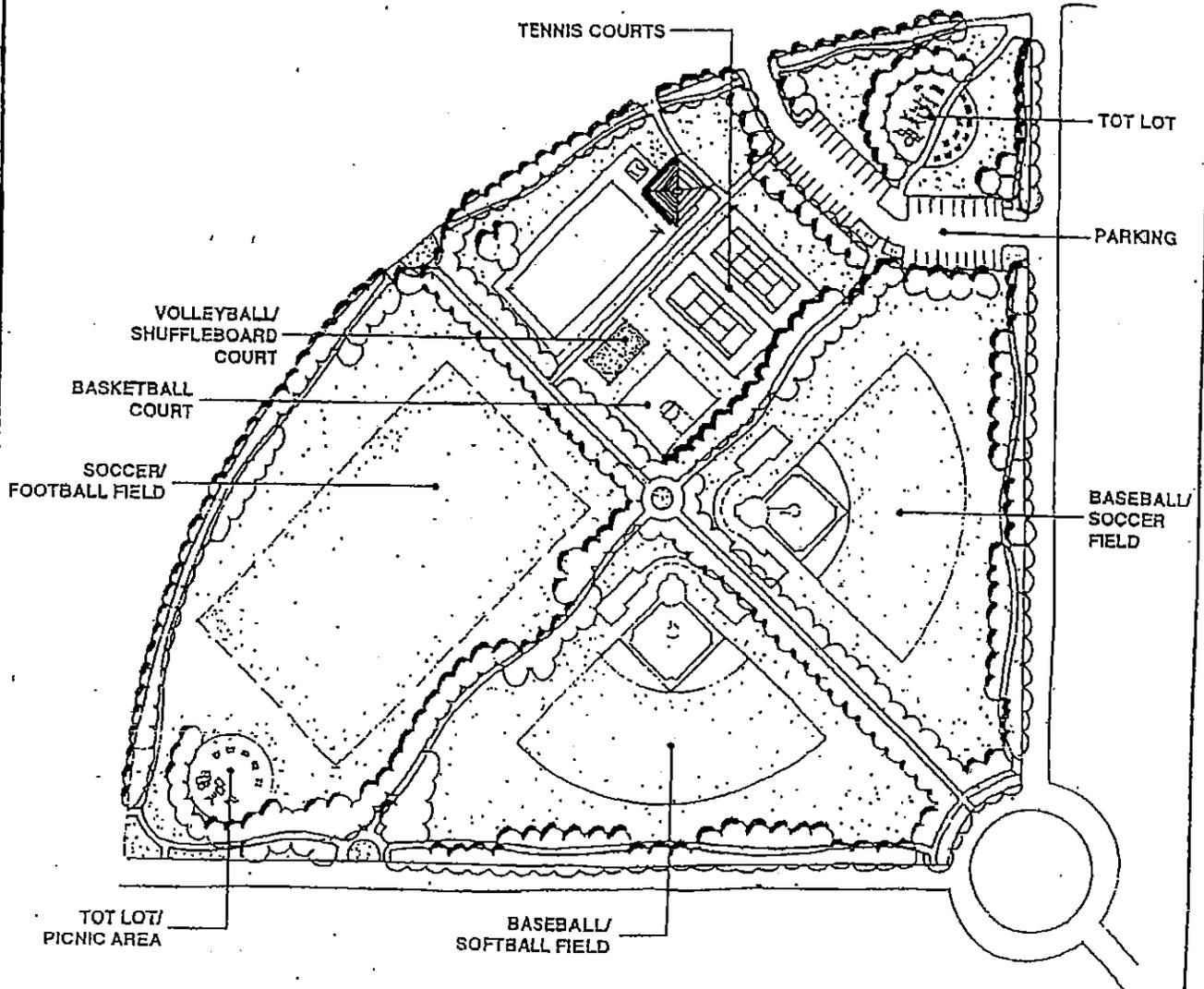
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Eight-acre Park to be Designated

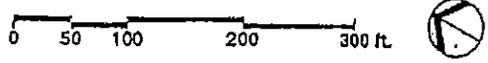
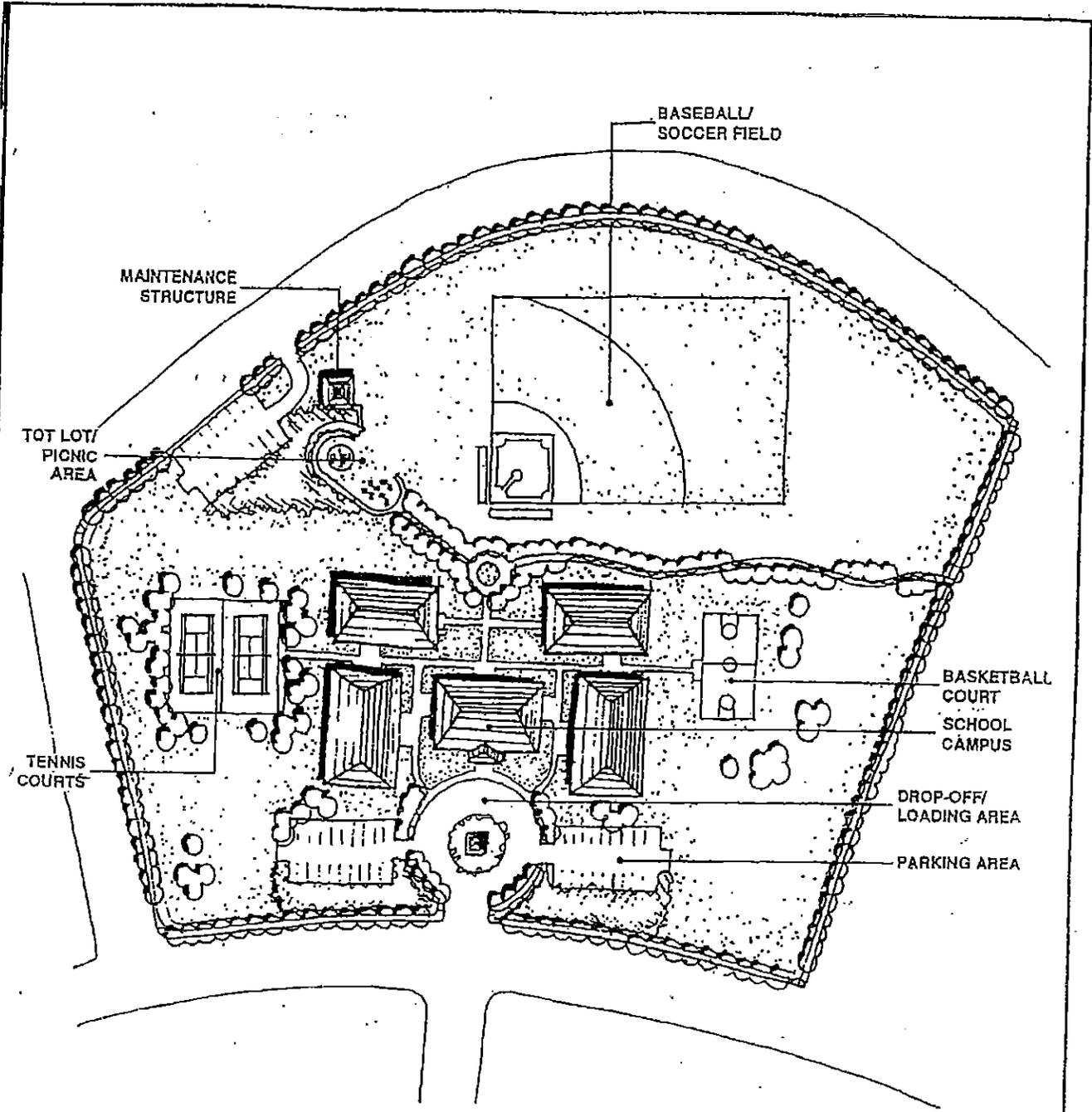
- Youth basketball – lighted
- Lighted multi-purpose field
- Picnic shelters
- One (1) large – 50-75 persons
- One (1) small – 25-40 persons
- Water fountain park
- Basketball courts (2)
- Passive uses
- Playground
- Restrooms
- 25-100 parking spaces
- Detention basin

Mini Parks (Up to 1 acre)

- Passive areas – lighted (street)
- Picnic areas
- Access to neighborhood by bicycle or pedestrian



Source: EMC Planning Group, Inc.



Source: EMC Planning Group, Inc.

EMC Planning Group Inc.
A Land Use Planning and Design Firm

City of Riverbank
Crossroads Community Specific Plan
Neighborhood School/Park Concept

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Figure 9

Police Sub-Station

Although not currently anticipated, build-out of the Crossroads Community may require the development of a police sub-station on-site. If the City determines the need for a sub-station on-site, this station may be accommodated within the highway commercial area and capital expenditures for the construction of the sub-station will be from existing development fees.

Fire Sub-Station

The Stanislaus County Consolidated Fire Protection District has indicated that at a trigger point of 500 residential units and 200,000 square feet of commercial/industrial development (or some other comparable combination equaling this level of development) a fire sub-station would need to be located within the Crossroads Community. The sub-station could be located along with the police facility, if needed, within the highway commercial area. This location provides for accessibility to Roselle Avenue and Claribel Road. Roselle Avenue is anticipated to be a major arterial and Claribel Road is anticipated to be a future expressway. Funding for the construction of a fire sub-station will be from existing development fees and the fire district will determine the need and appropriate timing for a sub-station.

Community Facilities

Significant demographic trends indicate that the fastest growing household types include senior citizens, two-income families, and single-parent families. Therefore, an increased demand for senior-serving facilities and child care facilities could be met within the Crossroads Community. Determination of the ultimate need, design, financing and construction of these community facilities is the responsibility of the City of Riverbank and/or the property owners/developers.

Transit

The City of Modesto currently has plans for the development of light rail along Roselle Avenue. Therefore, the City of Riverbank should consider extending service to Riverbank to connect the two cities. A 25-foot area has been designated along Roselle Avenue within the 114-foot existing right-of-way for light rail or express bus service.

5.2 Community Facilities Goals, Objectives, and Policies

Community Facilities Goal

Provide pedestrian-accessible community facilities to adequately serve the future population of the Crossroads Community, and to lend structure to the layout of the community, provide community identity, and establish a sense of place.

Community Facilities Objective 1 (Schools)

Provide one elementary school within walking distance from the residential neighborhoods of the Crossroads Community .

Based on population projections for the build-out of the Crossroads Community (see Table 3, Section 3), one new K-5 elementary school is required to serve the needs of the Crossroads Community. The location of the proposed school provides an activity focal point and a means to help structure the layout of the community.

Community Facilities Objective 2 (Schools)

Provide funding to assist in the housing of students from the Crossroads Community in elementary, middle and high school facilities.

Based on population projections for the build-out of the Crossroads Community (see Table 3, Section 3), approximately one elementary school, 25 to 38 percent of a middle school and 14 to 18 percent of a high school are required to serve the needs of the Crossroads Community.

Community Facilities Policy 1 (Schools)

Provide for the development of one 10-acre elementary school within the Crossroads Community adjacent to a neighborhood park.

In accordance with the facilities requirements of the Sylvan Union School District, ten acres have been designated for development of the school. A 3-acre neighborhood park site is proposed adjacent to the school site, which will allow for a shared use of recreational facilities. The school site is located to allow direct linkage to the neighborhoods.

Community Facilities Policy 2 (Schools)

Provide a funding mechanism to assist in the housing of students from the Crossroads Community in school facilities as stated in the General Plan.

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This provision is intended to provide full funding for school facilities needed to accommodate additional students generated by development of the Crossroads Community for the Modesto High School and Sylvan Union School Districts.

Community Facilities Objective 2 (Parks)

Develop a variety of park facilities to serve the future population of the Crossroads Community and to help structure the layout of the community.

Based on a Parks Needs Analysis, it was determined that the buildout of the Crossroads Community will create a need for several new parks of varying sizes and facilities and totaling 33 acres.

Community Facilities Policy 2.1 (Parks)

Provide for one 8.2 acres community park with access to the neighborhoods of the Crossroads Community, the major activity areas within the community and the existing City of Riverbank. This can be provided by a fair share payment of fees or dedication of land with meted reimbursements returned to the property owners as development occurs.

The land use plan provides for a 8.2-acre community park located near the intersection of Oakdale Road and Morrill Road, at the terminus of one of the neighborhood collectors. This provides a visual linkage from the center of the community to the park, as well as an efficient means of circulating to the park from the surrounding neighborhoods. The community park is located near the periphery of the planning area to provide for access by all residents of Riverbank. The park will include facilities as described above, in Section 5.1, and provide the opportunity for intra-city league play.

Community Facilities Policy 2.2 (Parks)

Provide three neighborhood parks which are easily accessible to the surrounding neighborhood.

The land use plan provides for three neighborhood parks totaling approximately 9.2 acres. The parks are located along the neighborhood collectors to provide a visual linkage, as well as an efficient means of accessing the parks. It is intended that the parks would serve the neighborhood recreation needs.

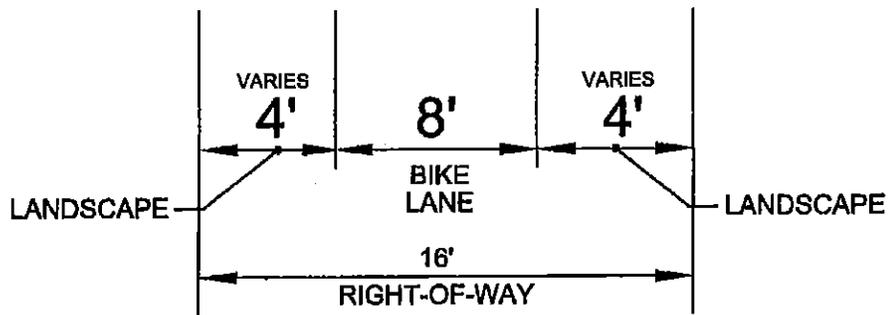
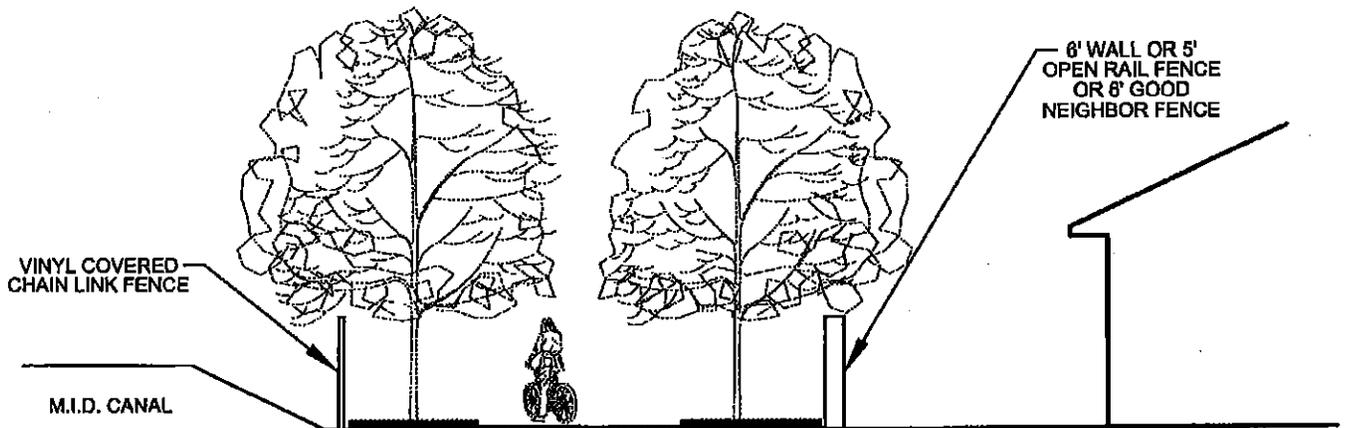
Community Facilities Policy 2.3 (Parks)

Provide for an additional 11.3 acres of parks.

To meet City standards for parks, an additional 11.3 acres of parkland, in addition to the four parks described above, are required. This requirement could be met

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through options including adding acreage to the community serving and/or neighborhood parks described above, an additional neighborhood park(s) in the Southwest quadrant of the City of Riverbank, linear parks and recreation paths or through payment of in-lieu fees. To be considered for City park dedication credit, linear parks would need to be at least 25 feet in width and be sited in a manner which provides for connection between major land uses within the Crossroads Community, such as between the elementary school and community serving park. Provision of additional park acreage to meet City requirements will be subject to the review and approval of the Planning Department. Any linear parks should be designed in a manner consistent with Figure 10. In addition, connections from residential areas to linear parks are to be encouraged by open-end cul-de-sacs. The bike trail along the MID canal from Rosalie Ave to Oakdale Road shall be 16'-0". A 50% credit from Quimby Fees for the bike trail shall be permitted.



RECREATION PATH CROSS SECTION



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CITY OF RIVERBANK
CROSSROADS COMMUNITY SPECIFIC PLAN
**RECREATION PATH
CROSS SECTION**

FIGURE 10

Community Facilities Policy 2.4 (Parks)

Ensure that parks are designed per the criteria of the stormwater management system.

All parks within the Crossroads Community shall be designed in a manner consistent with the criteria of the storm drainage system described in Section 7.0 of this Plan and the required Public Works Master Plan. The storm drain/park facilities shall be designed in accordance with the approved Crossroads Infrastructure Plan dated January 2001 and any amendments thereto to the satisfaction of the City. Fenced basins shall be landscaped on the outer side of the fence.

Community Facilities Objective 3 (Police and Fire)

Provide for the development of a police and/or fire protection sub-station to ensure community safety.

This provision serves two functions: first, it helps to fulfill the need for additional facilities currently lacking within the overall City of Riverbank, as identified in the municipal space needs analysis; and second, it will help provide public safety services for the Crossroads Community. Fire fees are collected through an established county-wide fee. Sheriff Department fees are collected through an established city fee. The need for a sub-station should be determined by the City of Riverbank and the fire district.

Community Facilities Policy 3 (Police and Fire)

Designate a site for the development of a fire and/or police sub-station located within the area designated as Highway Commercial.

A one-acre site is designated within the highway commercial area of the Crossroads Community for the location of a fire/police substation. This site will provide direct access to the community via Roselle Avenue and will allow ease of access to areas on the periphery of the City of Riverbank.

Community Facilities Objective 4

Provide for public facilities.

Significant demographic trends indicate that the fastest growing household types include senior citizens, two income families and single parent families. Therefore, and increased demand for senior serving facilities and child care facilities could be met within the Crossroads Community. Determination of the ultimate need, design, financing and construction of community facilities is the responsibility of the City of Riverbank and/or the property owners/developers.

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Community Facilities Policy 4 (Community Center)

Encourage the development of a community center with opportunities for a day care facility, senior recreation facilities, city administrative offices, a library, or a small performing arts/cultural facility

Public facilities could provide an opportunity for recreation and community service facilities which would serve the future residents of the Crossroads Community. Determination of the need, design, financing, and construction of these facilities is the responsibility of the City of Riverbank and / or the property owners / developers.

Community Facilities Objective 5 (Transit)

Provide for future transit opportunities by setting aside land for bus stops

Right-of-way is reserved within the Roselle Avenue right-of-way for the potential future installation of a light rail system or express bus service. The City of Modesto currently has plans for the development of light rail along Roselle Avenue. Therefore, efforts should be made to provide for opportunities to extend and connect the light rail service to Riverbank in the future. In the interim, this right-of-way could be used for express bus service and as part of the landscape buffer.

Community Facilities Policy 5.1 (Transit)

Locate bus stops throughout the Crossroads Community neighborhoods.

Bus service will be provided to the Crossroads Community by Stanislaus County Transit (SCT). Provisions of adequate bus stops throughout the community will ensure that the bus becomes a viable transportation alternative.

5.3 Implementation Measures

The following measures are required to implement the Community Facilities Element.

1. The property owners/developers offer to dedicate a 10-acre elementary school site to the Sylvan Union School District in order to provide a site for elementary (K-5) educational service within the Crossroads Community. This offer to dedicate, if accepted, shall be subject to school fee off-set.
2. Prior to recordation of a final map for development of any residential project within the Crossroads Community, the developer shall enter into the School Infrastructure Financing Agency (SFIA) Schools Mello Roos District ("Mello

Roos") or may develop another similar mechanism subject to the review and approval of the affected Districts and the City of Riverbank. A copy of the terms of the Mello Roos are attached to this document as Appendix D for reference only. This Mello Roos provides full funding for school facilities for the Modesto High School and Sylvan Union School District. If the terms of the Mello Roos alter materially from those contained in the Mello Roos contained in Appendix D, or if state legislation preempts the level of school facility financing, then the City Council of the City of Riverbank shall determine whether the Mello Roos, or some other funding mechanism is appropriate and in compliance with state law. The City Council of the City of Riverbank shall be the final arbiter of any dispute regarding school fees and may, after hearing, establish a school fee if a dispute arises between the parties. Any increases in fees shall be reviewed and accepted by the City Council (except state fees).

3. The City shall coordinate with the appropriate school districts to develop a school access safety program to instruct students on proper bicycle and pedestrian safety.
4. The property owners/developers and/or the City shall be responsible for the land purchase, final design, precise cost estimate, financing mechanism and construction of the community park. Responsibility for this park shall be worked out between the property owners and the City. However, in either case, property owner/developer contribution shall be off-set against required city park fees. The City, with the assistance of consultants, is preparing a financing plan for the Crossroads Specific Plan Area. The City shall process tentative maps if the subdivider executes a statement acknowledging that the subdivision map is subject to the financing plan as defined in that certain Consulting Agreement between the City and Goodwin Consulting Group for Crossroad Development, dated September 17, 2001, whether or not that plan is in effect at the time the tentative map application is deemed complete. This applies to all types of parcel and tentative map applications. The statement shall also contain an acknowledgment by the subdivider that in order for the City to approve a tentative map the map must be consistent with the approved specific plan and the pending map cannot be consistent with the specific plan unless this statement is executed and enforceable.
5. Crossroads Community developers, property owners and future residents shall be responsible for the land purchase, final design, precise cost estimates, and funding mechanism for the neighborhood parks and the construction of neighborhood park improvements subject to park fee offset. Final designs shall be subject to City approval.
6. Crossroads Community developers, property owners and future residents shall be responsible for provision of an additional 11.3 acres of parks. This requirement may be met through provision of additional acreage to the community serving and neighborhood parks, provision of an additional neighborhood park, provision of linear parks and recreational paths, or by payment of in-lieu fees.

Any linear parks, recreation trails, or open space areas developed within the Crossroads Community shall be dedicated, designed, and constructed, subject to City approval, as part of the in-tract subdivision costs. Linear park/recreation trails along the canals shall be fenced from access to the canal.

7. A long-term lease or rental program shall be established by and between the City and the County of San Francisco for the use of the Hetch-Hetchy Water and Power Company easement as a landscaped open space/recreational corridor.
8. The City shall be responsible for the final design, precise cost estimate, and financing plan for landscaping and public amenity improvements within the Hetch-Hetchy Water and Power Company easement. The Crossroads Community developers, property owners and future residents shall be financially responsible for their pro-rata share of these costs via an appropriate landscape, lighting and maintenance district.
9. The City shall establish a landscape, lighting and maintenance district for all dedicated public areas within the Crossroads Community, including but not limited to community and neighborhood parks, any linear parks, open space, buffer zones, recreation trails, and roadways.
10. The City shall create and adopt a Parks Program, including design standards and criteria, for all dedicated public areas within the Crossroads Community in order to achieve consistency, efficiency of space utilization, and the required linkages between public spaces. This Program shall include, but not be limited to the community park, neighborhood parks, any linear parkways, open space and buffer areas. Section 5.0, Community Facilities, illustrates and identifies desired recreational facilities.
11. Crossroads Community developers and/or property owners shall pay the standard fire facilities fees for construction of a fire substation to be located at a place deemed appropriate and feasible by the Consolidated Fire Protection District. The financing for this substation will be derived from these fees.
12. When and if a transit station is established, it will be the City's or some other agency's responsibility to design and fund construction of these facilities. The Crossroads Community will be responsible to pay its fair and proportional share of the transit station through a benefits assessment on future homes.
13. The City shall adopt official plan lines for Roselle Avenue between Claribel Road and Glow Road to incorporate future transit facilities.
14. The property owners shall be responsible to prepare a bus route/stop plan in cooperation with the City and Transit District for the planning area. This plan shall include bus stop locations that include, at a minimum, bus stops at the following locations:

6.0 COMMUNITY DESIGN

The purpose of the Community Design Element is to define the character, image, and identity of the Crossroads Community through design goals, policies, and guidelines. These goals, policies and design guidelines are provided to ensure that the planning area will be an attractive, livable community which will maintain its value over time. The approach to the community design for the Crossroads Community involves the definition of an overall design plan framework comprised of several basic urban design components and refinement of that framework through policies and design guidelines. The overall urban design framework defines the way in which the community is organized and the spatial relationships among different uses. The framework is comprised of several key urban design components:

- Secondary focal areas-focal areas to include parks, school, traffic circles, and the regional commercial/business park;
- Residential neighborhoods-single-family and multi-family residential which surround the focal areas;
- Linkages-a hierarchical network of streets which focus on the residential neighborhoods.

Each of the key organizing components can be thought of as pieces of a puzzle which lend structure and identity to the community. The design policies and guidelines which follow take each of the organizing components and expand on them, in an effort to ensure long-term community quality. To encourage creativity and allow for variety, the policies and guidelines are structured to define the overall character and streetscape continuity while allowing sufficient flexibility for individual commercial and residential builders. The design guidelines contained in this element are organized into a discussion of the urban design components.

6.1 Community Design Goals, Objectives, Policies and Guidelines

Goal

Create a well-organized, highly aesthetic community, a variety of residential neighborhoods with interconnected parks, an opportunity for region-serving commercial or business development and a pedestrian-scaled circulation system.

Single-Family Residential Design Objective

Develop attractive single-family residential neighborhoods that build and sustain a sense of community and value over time

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Single-Family Residential Design Policy 1

Allow for a variety of residential types and densities within the single-family residential areas.

Single-Family Residential Design Policy 2

Provide pedestrian-oriented neighborhood streets with landscaping and walkways to encourage residents to walk throughout the community.

Single-Family Residential Design Policy 3

Encourage front yard and residential design techniques which promote neighbor interaction such as garage setbacks from the house and front porches or courtyards.

Single-Family Residential Design Policy 4

Provide usable private open space in the backyards of single-family residences.

Single-Family Residential Design Policy 5

Encourage energy saving design techniques within residential design.

Single-Family Residential Design Policy 6

Allow the use of "granny flats" at the rear of single-family residential lots.

Design Guidelines for Single-Family Residential Neighborhoods

Site Design of Residential Neighborhoods

- Gated subdivisions should be discouraged, free-standing or monument entry signage for individual subdivisions shall be permitted, subject to City approval.
- The minimum single-family residential parcel within the Crossroads Community should be 3,500 square feet for low/medium density residential.
- The minimum rear yard setback should be 10 feet and a minimum front yard setback should be 10 feet to porch and 10 feet to habitable space or "swing-in" garage. In addition, the setback for the side yard fences (street side) along a corner lot shall be 10 feet.
- A minimum 40-foot lot width should be required within the single-family residential neighborhoods.
- The minimum garage setback from the front yard should be 20 feet typical and 10 feet for "swing-in" garages. Garages in the rear half of the lot shall

have a minimum 5 feet rear and side-yard setback and detached garages shall have a minimum 3 feet rear and side-yard setback when there are no structures located next to it.

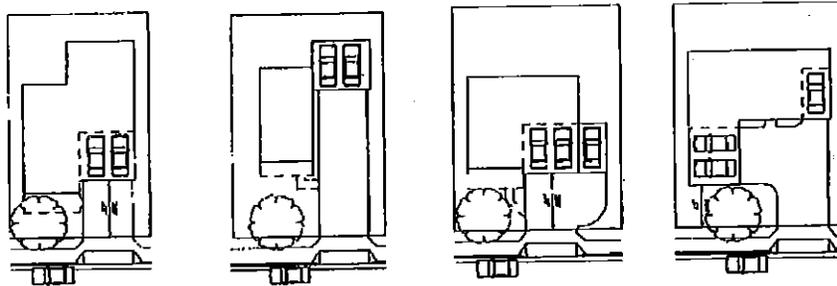
- Sufficient backyard space should be provided within single-family residential lots for private open space.
- A variety of lot sizes and housing unit types should be provided within each single-family residential neighborhood.
- Vehicles such as boats, campers, trailers, etc. should not be allowed to be permanently stored on driveways or in the front yards of residential lots.

Landscaping

- The use of walls along roadways or to separate uses is discouraged. Privacy walls at the rear of residential parcels may be utilized if no greater than six feet in height.
- Fencing within front yard setbacks should not be higher than three feet.
- Detached walkways and landscape strips should be provided on all collector streets. The walkways should be detached from the street by a minimum of four feet, with a landscape strip of a minimum of four feet located between the walkway and the street. Maintenance of these areas will be provided by a Landscape, Lighting and Maintenance District to be established through the collection of developer fees.
- Pedestrian-scale lighting should be provided throughout the individual neighborhoods, using vandal-proof materials.
- Front yard landscaping and drip irrigation should be provided by the individual builders, subject to review by the City staff. A high level of landscaping is encouraged for all front yard areas.
- Drought resistant and/or native plant materials should be encouraged and low flow or drip irrigation systems are required.

Residential Architecture

- The garage should be, set back a minimum of 20 feet from the front property line, at a minimum of every three dwelling units. Designs which maximize usable open space, as is illustrated on Figure 12 should be encouraged.



Examples of Lots with Garages Setback

- Porches or front entry courts or recessed entries should occur on 1/3 of all units per neighborhood to help establish a streetscape environment and encourage neighbor interaction.
- Colors of residential units should be subtle and compatible throughout the community.
- Architectural designs should incorporate variations of the styles indigenous to the region .
- The Community Development Director shall review all preliminary development plans of overall subdivisions and make a determination on consistency and application of policies and guidelines provided herein. Appendix "B", Architectural Checklist, shall be a basis for determining consistency to policies and guidelines.

Multi-Family Residential Objective

Provide a variety of high quality multi-family residential units located throughout the Crossroads Community.

Multi-Family Residential Design Policy 1

Provide a range of multi-family residential opportunities including townhomes, condominiums, apartment buildings and granny flats.

Multi-Family Residential Design Policy 2

Allow the multi-family residential units to be built adjacent to and between single-family residential units to provide a fine grain mix of units throughout the community.

Multi-Family Residential Design Policy 3

Require strict compliance with design and maintenance standards for the multi-family residential units.

Design Guidelines for Multi -Family Residential Neighborhoods

Multi-Family Development Parcels

- Setbacks from public streets should be minimized to bring structures close to the street.
- Screening and landscaping should be utilized for refuse collection at large multi-family developments.
- On-street parking should be provided on all adjacent roadways.
- A courtyard should be provided within the senior residential area, offering a variety of landscape and recreation amenities.
- At a minimum, transit stops should provide shelter for pedestrians, convenient passenger loading zones and secure bike storage.

Building Architecture

- The structures should not cover more than 60 percent of the parcel.
- Buildings should not exceed three stories or 35 feet in height.
- Building entries should be oriented toward streets or landscaped courts. Encourage parking in the rear of the buildings and dedicate a greater portion of the lot to private backyards.
- Fire sprinklers and a centralized security system should be encouraged and shall be installed where required by applicable building codes.
- Building colors should be subtle with accents of bolder color; emphasis should be placed on compatibility of adjacent structures.
- All roof mounted equipment of large-structure multi-family developments should be screened from view of adjacent properties and residential streets.

Parking

- Two parking spaces should be provided per each multi-family unit with one of the two spaces covered.
- One covered parking space shall be provided for each senior residential unit, with one half of the overall spaces being covered.
- Parking facilities should be located behind buildings or in the interior of a block, whenever possible.
- Parking facilities should not dominate the frontage of pedestrian-oriented streets or interrupt pedestrian routes.
- Surface parking facilities should not occupy more than 25 percent of the frontage of a pedestrian-oriented street.
- Shared parking between adjacent land uses should be encouraged.
- Parking facilities should be heavily landscaped, including the use of street trees planted every five parking spaces.
- Street lighting should be provided at every six parking stalls, avoiding conflicts with trees.
- Raised pedestrian crossings should be provided between the multi-family residential development and the adjacent commercial uses in order to slow traffic and accent the pedestrian crossing.

Landscaping

- On-site landscaping should be provided by the developer, with long-term maintenance provided by homeowners associations.
- One tree should be planted for every five parking spaces in the interior of parking areas.
- Berming and landscaping is encouraged in all common buffer and open space areas.
- Native, drought-resistant plants should be used whenever possible.
- Low-flow and drip irrigation systems which minimize the use of water should be encouraged.

Regional Commercial/Business Park Objective

Develop an attractive regional commercial or industrial business park that is accessible from, and compatible with, adjacent neighborhoods.

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This dual designation allows for build-out dependent upon the future market. As a dual designation, design guidelines must be versatile to respond to a commercial setting or a business park setting.

Commercial/Business Park Design Policy 1

Provide well defined, pedestrian accessible roadway linkages between the business park and the surrounding residential areas.

Commercial/Business Park Design Policy 2

Develop a functional campus-like setting with usable courtyard spaces and a high degree of landscaping.

Commercial/Business Park Design Policy 3

Establish well defined/highly landscaped entry ways to the business park.

Regional Commercial/Business Park Design Guidelines

Business Park Parcels

- To establish a cohesive sense of identity, development of this portion of the Crossroads Community should proceed as part of an overall master planned development.
- All parcels should be designed to orient well to a pedestrian-scaled entry corridor.
- All parcels should contain a minimum of 25 percent landscaping.
- Service areas for outdoor refuse collection and large deliveries should be located away from building entries and screened from view.
- All structured parking entries should be located away from planning area entry.

Business Park Architecture

- Outdoor lighting should be downcast so as not to intrude on neighboring uses or adjacent streets.
- Building height should be limited to two stories and/or 35 feet above existing grade.

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- Exterior building materials should not be high-contrast in nature, such as bright aluminum, high-reflective glass, etc.
- All support and service collection and entry features should be screened from view from surrounding public areas.

Parking

- Parking areas should be located away or heavily screened from adjacent residential neighborhoods.
- Parking should be provided in an amount consistent with the Riverbank Zoning Ordinance.
- Parking facilities should be screened from view from Oakdale Road and Claribel Road through berming and landscaping within the 50-foot setback along Oakdale Road and the 50-foot setback along Claribel Road.
- Surface parking lots should be limited to 2.5 acres unless divided by a building or a public street.
- Lighting facilities should be capable of providing sufficient illumination at every point of the parking area.
- Parking area illumination, including security lighting, should be so arranged as to reflect away from adjoining properties and rights-of-way.
- One tree should be planted for every five parking spaces in the interior of parking areas. For a parking area with only one aisle, the trees may be planted along the periphery at the ratio of one tree for every five spaces.

Landscaping

- Landscaping should be provided by the developer.
- Landscaping and berming should be provided throughout the development to frame entries and buffer differing land uses.
- Extensive landscaping should be encouraged in the 50-foot buffer area, along with accommodations for a recreation trail and other amenities, as deemed appropriate by the City.
- To minimize land use conflicts with adjacent residential neighborhoods, a 10-foot wide landscaped area should be located at the perimeter of the development bordering residential neighborhoods.
- Street trees should be planted no greater than 30 feet on center, with a base planting of drought-tolerant ground covers.

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- Provide a massing of plant material for a substantial appearance.
- Low-flow and drip irrigation systems which minimize the use of water are required.
- A comprehensive signage program should be prepared for the entire development that provides clear criteria for size, location, material type, illumination quality and information content.

Parks Objective

Develop a cohesive parks and parkway system which is linked together and maintains quality over time.

Parks Design Policy 1

Provide for an overall coherent character and concept that is in keeping with a family oriented, small town lifestyle.

Parks Design Policy 2

Provide for safety, ease of maintenance, and long-term cost effectiveness in the design and development of the parks.

Parks Design Policy 3

Design parks in an open, pastoral context that is in keeping with the agricultural heritage of the area. This can be accomplished through the use of turf, tree plantings with rows or groupings of flowering trees that is reminiscent of orchards, and agricultural windrows.

Parks Design Policy 4

Provide an aesthetic approach to the design of the parks that is simple and elegant, appears substantial, and will blend with many architectural styles.

Overall Parks Design Guidelines

- Parks design plans should be completed by a registered landscape architect, or another individual acceptable to the city with experience in park design.
- Signature groupings of flowering trees should be established at focal points in the parks throughout the community in keeping with an orchard theme.
- A massing of plant material should be provided for a substantial appearance.

- Both the community park and the neighborhood parks should be owned and maintained by the City.
- Active uses such as play fields, tennis and basketball courts should be located away from surrounding residential units or should be surrounded by berming and landscaping to avoid land use conflicts such as noise, light, and glare.
- School facilities should be separated from the adjacent neighborhood parks by active play fields.
- Lighting facilities should provide sufficient illumination acceptable to the city.
- Park area illumination should be arranged to reflect away from adjoining properties and rights-of-way.
- Facilities should be developed according to the recreational interests of prospective homeowners and should be maintained through a landscape, lighting and maintenance district to be established by the City.
- Drought tolerant plant materials should be used along with low-flow and drip irrigation systems to minimize the use of water.
- Site elements and materials should be selected to be sturdy and of simple construction to withstand abuse and minimize maintenance.
- Open lawn areas should be sited for ease of mowing, and groundcover/shrub planting areas sited and designed for ease of access and maintenance.

Hetch-Hetchy Easement Design Objective

Create a linear greenbelt corridor as a part of the village-wide recreation trail/bikeway system.

Hetch-Hetchy Easement Design Policy 1

Encourage extensive landscaping along this linear corridor with vegetation of low height, consistent with the Hetch-Hetchy design standards.

Hetch-Hetchy Easement Design Policy 2

If the developer decides to meet park requirements through provision of linear parkways, provide a recreation trail within the easement that is connected to the village-wide recreation trail/bikeway system and is accessible from, and compatible with, all surrounding residential neighborhoods.

Hetch-Hetchy Easement Design Guidelines

Landscaping

- Landscaping should be established according to the recreational interests of surrounding prospective homeowners and the City. The corridor should be maintained through a landscape, lighting and maintenance district to be established by the City.
- Large trees should be prohibited within the easement to avoid tree branch and root system interference with overhead power lines and existing underground utility infrastructure.
- Berming is encouraged along those portions of the trail that are adjacent to residential neighborhoods.
- Drought tolerant plant materials should be used along with low-flow and drip irrigation systems to minimize the use of water.

Facilities

If the developer decides to meet park requirements through provision of linear parkways in the Hetch-Hetchy right-of-way, the following provisions would apply.

- An eight-foot wide, Class 1 recreation trail should be provided along the length of the easement. The trail should be designed and constructed to connect with the village-wide Class 1 recreation trail.
- Access points should be provided to all streets in the adjacent residential neighborhoods between Roselle Avenue and Claribel Road.

6.2 Implementation Measures

The following measures are required to implement the Community Design Element:

1. The City shall develop sign criteria and guidelines for the Crossroads Community and amend its current sign ordinance to incorporate the criteria and guidelines adopted.
2. The City shall establish a design review process to establish and maintain the design objectives and guidelines contained herein.

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3. The Crossroads Community development is required to be consistent within the framework of the design guidelines presented herein, subject to City review and approval.
4. Implementation of the goals, objectives, policies and design guidelines established in this element will occur in two phases. During Phase I, specific development plans for particular sectors of the Crossroads Community will be reviewed by the City staff and the Planning Commission to ensure that the plans fit into the overall design concept established in this Specific Plan. During Phase II (after the specific development plan is adopted), design development drawings and construction documentation will be reviewed by the City staff for consistency with the design guidelines contained in this element.

7.0 PUBLIC UTILITIES

The purpose of this section is to describe the provision of public utilities for the Crossroads Community, including sanitary sewer, water, storm drainage, solid waste, electricity, natural gas, telephone, and cable television services.

7.1 Public Utilities Needs

The extent of public utilities needs for the planning area was addressed in *The Crossroads Community Plan for Services* (EMC Planning Group Inc. 1994), *The Riverbank Village Specific Plan Infrastructure Report* (Thompson-Hysell Inc. 1991), and *The City of Riverbank Wastewater Treatment Plant Master Plan* (Nolte and Associates 1991). These reports were used to determine the need for specific utility requirements for the Crossroads Community.

Sanitary Sewer

Refer to the City of Riverbank Crossroads Infrastructure Plan dated January 2001, as may be amended, and Sewer System Master Plan dated November 2001, as may be amended.

Domestic Water

Refer to the Crossroads Infrastructure Plan dated January 2001, as may be amended, and Water Master Plan as may be adopted.

Storm Drainage

Refer to the Crossroads Infrastructure Plan dated January 2001, as may be amended and Storm Drainage Master Plan as may be adopted.

Solid Waste

The current service provider for solid waste services is Gilton Solid Waste of Modesto. The contract to serve the City of Riverbank is periodically re-bid. Service to the planning area will be available as development occurs, paid for by fees charged to individual customers.

Electricity and Natural Gas

Electrical service will be provided by the Modesto Irrigation District (M.I.D.). The M.I.D. northern service boundary is the M.I.D. main canal. The electrical service area is south of the main canal and includes the planning area. Existing overhead facilities include 12 kilovolt (kv) distribution lines, along with overhead transformers, secondary services and other related distribution facilities. The M.I.D. prefers that the existing overhead

facilities be utilized to the greatest extent possible, due to economic concerns. Costs for under-grounding and/or relocation of facilities would be borne by the requesting party.

M.I.D. owns land (approximately 12 acres) within the planning area. It is anticipated that a future substation will be needed in the general vicinity of the planning area, in a yet to be determined location. Preliminary planning by M.I.D. has indicated that a new substation built in this area would most likely be constructed on existing M.I.D. properties. An alternative location would be a dedicated parcel of at least two acres in the vicinity of Oakdale Road and Crawford Road.

Facilities must be installed as development occurs within the planning area. Application for electrical service from M.I.D. is routine, and service will be available as development occurs.

Natural gas service will be provided by Pacific Gas and Electric (PG&E). The planning area is within PG&E's service area. Facilities must be installed as development occurs within the planning area. Application for service is routine, and service will be available as development occurs.

Telephone

Telephone service in the Crossroads Community will be provided by Pacific Bell Telephone Company. The planning area is located in the Pacific Bell service area. Facilities must be installed as development occurs within the planning area. Application for service is routine and service will be available as development occurs. It is recommended that development include fiber optic cable as a part of underground utilities. This will allow for advanced technology to both residential and business land uses.

Cable Television

Cable television service will be provided by Sonic Cablevision. The planning area is within the Sonic Cablevision service area. Facilities must be installed as development occurs within the planning area. Applications for service is routine, and service will be available as development occurs. Service is paid for by individual customers through cable service initiation and monthly billing fees.

7.2 Public Utilities Goals, Objectives, and Policies

Public Utilities Goal

Provide the necessary utilities and public services to serve the future population of the Crossroads Community

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Public Utilities Objective

Develop the necessary public utilities infrastructure with an emphasis on integration with existing systems and resource conservation.

It is important that infrastructure improvements within the Crossroads Community integrate with existing city systems, as well as adhere to the City's adopted infrastructure standards. Current trends and innovations in utilities technology allow for an opportunity to design and maintain the utilities infrastructure for the Crossroads Community with an emphasis on sustainability and resource conservation.

Public Utilities Policy 1

Provide the sanitary sewer infrastructure needed to meet the demands of the Crossroads Community. Implement Sewer Service Master Plan Collection and Treatment Facilities.

Public Utilities Policy 2

Provide for an adequate amount of water to meet the domestic and fire flow requirements of the Crossroads Community.

Water for the Crossroads Community will be provided through the installation of four to five water wells and/or additional storage and a 12-inch grid distribution system. It is recommended that major lines be placed at one-half mile intervals. Past water use within the City indicates that four wells will provide an adequate amount of domestic supply and fire flow. However, the City Engineer has indicated that five wells may be necessary, or the addition of City storage capabilities. Further, the City Engineer has recommended that a water system computer model be developed for the southwest area of the City to determine the most economical water system design.

Public Utilities Policy 3

Develop water conservation measures to ensure an adequate supply of water.

Water conservation measures should be adopted by the City to make most efficient use of City's water supply. Low-flow showerheads, toilets, and faucets should be required in all new construction, as well as the use of drought-resistant plants and xeriscape landscaping principals where appropriate. Alternative, non-potable water sources should be utilized, if feasible, to irrigate common open space areas and water meters should be installed on all new connections to monitor water use.

Public Utilities Policy 4

Provide for adequate storm drainage capabilities.

The Crossroads Community will have a storm water detention requirement of approximately 64 acre feet for a 50-year storm. This requirement will be met by a series

of park/detention basins and standard detention basins throughout the Crossroads Community. The storm water detention basins will require a pumping system that will direct water to the City's existing pump station located to the north of the Crossroads Community. Final storm drainage design must adhere to the City's design criteria.

It should be noted that the park/detention basins will serve a dual purpose by providing ballfields the majority of the time, while serving as a detention basin for storm water run-off when needed. The baseball diamond and soccer field located in the community park will be depressed to accommodate the stormwater detention requirement. It may be possible to utilize the M.I.D. canals for disposal of storm drainage as a short- or long-term option. This option should be explored further with the M.I.D.

Public Utilities Policy 5

Recycling measures shall be implemented throughout the Crossroads Community.

As mandated by Assembly Bill (AB) 939, the Integrated Waste Management Act of 1989, solid waste recycling measures shall be adopted including, but not limited to, curbside pickup of separated trash and on-site recycling centers. Additional recycling efforts should include user-friendly recycling bins located in the neighborhood and community parks.

Public Utilities Policy 6

Require that all extensions of utility lines to the Crossroads Community be underground.

All utility lines to and throughout the Crossroads Community should be routed underground in an effort to improve the overall visual quality of the area.

7.3 Implementation Measures

1. The Crossroads Community property owners shall provide dedicated easements within the planning area for sewer, water, and storm water drainage infrastructure facilities as generally described in this plan and as indicated in the infrastructure studies for the Crossroads Community (contained in the Plan for Services).
2. Crossroads Community developers and/or property owners shall prepare a Public Works Master Plan and Infrastructure Phasing Program for circulation, sewer, water, storm drainage and electrical facilities for any specific development project within the planning area. This plan shall be reviewed and approved by the City Engineer prior to approval by the City of any tentative subdivision map within the planning area.
3. Crossroads Community developers shall design, finance, and construct appropriate infrastructure in accordance with the Infrastructure Phasing Program. Final sanitary sewer, water, and storm drainage infrastructure design must adhere to the City's design criteria and be approved by the City Engineer.

Creation and implementation of reimbursement agreements for these improvements may be appropriate.

4. The capital improvement program for the Crossroads Community shall be prepared as a part of the Master Plan addressed above, and shall include, but not be limited to, fair share payments for the existing sewage treatment and collection system - major trunk line extension and additional aerators to increase treatment plant capacity.
5. The City shall be responsible for establishing water conservation standards for residential, commercial, industrial, parks and open space uses within the Crossroads Community.
6. The City shall coordinate with Gilton Solid Waste Management, Inc. for the creation and implementation of recycling measures within the Crossroads Community.
7. Crossroads Community developers shall coordinate with the Gilton Solid Waste Management, Inc., Modesto Irrigation District, Pacific Gas and Electric Company, Pacific Bell and Charter Communications to locate and design all necessary project specific facilities and shall provide dedicated easements to said facilities.
8. The City, with the assistance of consultants, is preparing a financing plan for the Crossroads Specific Plan Area. The City shall process tentative maps if the subdivider executes a statement acknowledging that the subdivision map is subject to the financing plan as defined in that certain Consulting Agreement between the City and Goodwin Consulting Group for Crossroad Development, dated September 17, 2001, whether or not that plan is in effect at the time the tentative map application is deemed complete. This applies to all types of parcel and tentative map applications. The statement shall also contain an acknowledgment by the subdivider that in order for the City to approve a tentative map the map must be consistent with the approved specific plan and the pending map cannot be consistent with the specific plan unless this statement is executed and enforceable.

8.0 ENVIRONMENTAL MANAGEMENT

The purpose of this element is to identify and understand the planning area's environmental characteristics and constraints as well as the potential environmental impacts of development of the Crossroads Community. This element presents policies to conserve and protect the natural environment and mitigate potential impacts.

A number of preliminary environmental investigations were conducted for the Crossroads Community, leading to identification of the following areas of potential environmental concern:

- Agriculturally productive land
- Air quality
- Biological resources
- Geology and soils
- Waterways and hydrology
- Archaeological/historical resources
- Energy conservation

Developed in conjunction with the environmental impact report (EIR) for this Specific Plan, the Environmental Management Element incorporates many of the mitigation measures identified in the EIR as policy and/or implementation resources. The EIR focuses on specific environmental impacts and presents mitigation measures to reduce significant impacts to a level of insignificance. These mitigation measures, in turn, provide plan policy and/or implementation measures to further reduce the potential environmental impacts to a level of insignificance. The intent of the Environmental Management Element is to identify known areas of potential environmental concern in the Specific Plan and to present policy and/or implementing language to mitigate these potential concerns.

This section begins with a discussion of the setting for each potential area of environmental concern, with an indication of potential impacts, followed by goals, objectives, policies and implementation measures to reduce the significant impacts to a level of insignificance.

8.1 Potential Areas of Environmental Concern

The Riverbank General Plan and the Final EIR for the original expansion request on the planning area identified the following potential environmental impacts upon buildout of the Crossroads Community.

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8.1.1 Agriculturally Productive Land

According to the Stanislaus Area Association of Governments report, *Stanislaus Area Soils Element*, the Plan Area is located within an area of San Joaquin_Madera (Si_Mb) soil association. According to the report, this association lies on both older alluvial fans and terraces. The soils are derived mostly from sierran granitic alluvium. They are shallow, well-drained, very slowly permeable and are characterized by a hardpan layer at a depth of 18 to 30 inches that neither roots nor water can penetrate.

There are three strata of soils classification used to determine the planning areas' soil suitability for farming. The three strata consist of federal (U.S. Natural Resources Conservation Service, formerly the USDA Soil Conservation Service), state (Department of Conservation) and local (LAFCo) entities.

Federal - U.S. Natural Resources Conservation Service

Specific soils within the Plan Area have been classified by the U.S. Natural Resources Conservation Service (NRCS). According to the NRCS, the following five soils are present within the Plan Area:

- HdA= Hanford sandy loam, 0 to 3 percent slopes
- GvA= Greenfield sandy loam, deep over hardpan, 0 to 3 percent slopes
- MdA= Madera sandy loam, 0 to 2 percent slopes
- OaA= Oakdale sandy loam, 0 to 3 percent slopes
- SaA= San Joaquin sandy loam, 0 to 3 percent slopes

To determine which soils are most beneficial for agricultural use, the National Resources Conservation Service assigned "capability classes" to individual soil types in all areas within Stanislaus County. Additionally, "Storie index" ratings have been developed for individual soil types. This rating numerically expresses the relative degree of suitability of a soil for general intensive farming.

Capability classes illustrate, in a general way, the suitability of soils for crop production. The SCS has developed eight such classes ranging from Class I, which represents the best soils, to Class VIII, which represents soils that have little value for crop production.

The Storie index numerically expresses the relative degree of suitability, or value, of a soil for general intensive farming. There are six grades in this system that range from one to 100, where 100 is the highest rating. The rating is based on soils characteristics only. Soils are placed in grades according to their suitability for farm crops, as shown by their Storie index ratings.

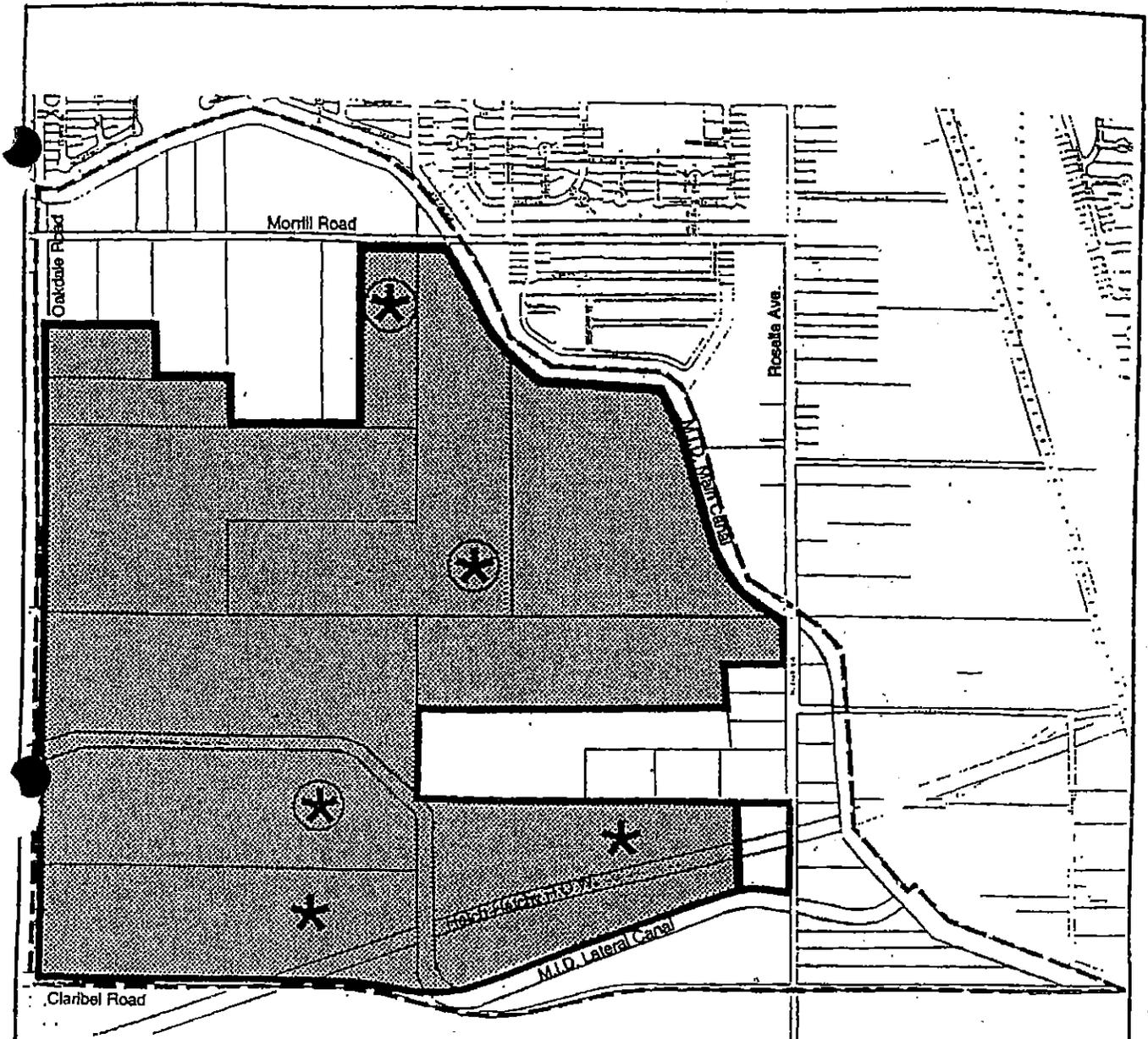
Approximately 30 percent of the soils in the planning area fall within capability class I or II with Storie index ratings from 68 to 95, while about 70 percent fall within capability class IV, with a Storie index rating of 33.

Williamson Act Lands

As illustrated in Figure 16, approximately 75 percent of the Plan Area is located within Williamson Act (California Land Conservation Act) land. The Williamson Act allows landowners to enter into contracts with local governments to preserve agricultural land in exchange for lower property tax rates. An environmental review report prepared for LAFCO for the Riverbank sphere of influence change request described the Williamson Act as follows:

The Act allows local governments to assess agricultural landowners based upon the income-producing value of their property, rather than the "highest and best use" value which had previously been the rule. The initial term of a contract is 10 years. Contracts are automatically renewed each year, unless either the landowner or the local government has notified the other of its intention not to renew the contract. Following notice of non-renewal, taxes gradually return to the level charged on equivalent, nonrestricted property, although the land uses remain restricted until the contract expires. Immediate cancellation of a contract carries a penalty equal to 12.5 percent of the property's fair market value (Normoyle and Newman 1994).

The report provided a discussion of the analysis of the economic impact of agriculture within the development areas of the preliminary neighborhoods. According to its calculations, the amount of agricultural land to be converted is one-tenth of one percent of the County total, representing a corresponding one-tenth of one percent of the County's total gross crop value.



-  Williamson Act Parcels
-  Protested
-  Protested & Upheld by LAFCO

Source: State of California, Department of Conservation



8.1.2 Air Quality Regulatory Background

Federal Policies. Transportation-related impacts on air quality are regulated by various federal statutes, including the Clean Air Act of 1970, the Federal Aid Highway Act of 1970, and the Federal Clean Air Act Amendments of 1990. As required by the Federal Clean Air Act, the United States Environmental Protection Agency (U.S. EPA) has established National Ambient Air Quality Standards (NAAQS) for harmful pollutants determined to be injurious to public health or welfare. There are both primary and secondary ambient air quality standards. Primary standards are designed to protect public health, with a margin of safety. Secondary standards are designed to protect public welfare, in addition to health, and are therefore more stringent than primary standards. These standards define emission levels that have been shown to be acceptable for all segments of the public and which will have no long-term undesirable effects on health, aesthetic values, or property.

The U.S. Clean Air Act of 1970 requires each state to identify areas within its borders that do not meet federal primary standards as non-attainment areas. The Federal Clean Air Act required the preparation of an attainment plan showing how the federal standards were to be met by 1987. Stanislaus County was one of many non-attainment areas in California that failed to meet the federal ambient air quality standards by 1987.

The Federal Clean Air Act Amendments of 1990 require that new non-attainment plans be prepared and submitted to the U. S. Environmental Protection Agency. The San Joaquin Valley Unified Air Pollution Control District (APCD) has recently adopted federal non-attainment plans for suspended particulates of 10 microns or less (PM10) and ozone. The APCD is the local agency empowered to regulate air quality in the Stanislaus County Area.

The air basin is a "non-attainment" area for the federal ambient air quality standards for ozone and PM10. By virtue of the state ambient air quality standards being more stringent than the federal standards, the air basin is also a "non-attainment" area relative to state standards. "Non-attainment" means that the federal and/or California ambient air quality standards concentration for a specified criterion air pollutant was exceeded at least once per year averaged over the last three years and is a designation of a geographic area assigned by the U.S. EPA or the California Air Resources Board (CARB) (APCD 1994).

In response to the federal non-attainment status of the APCD, the APCD has developed the *Ozone Attainment Demonstration Plan* (APCD 1994) and the *1994 Serious Area PM10 Plan* (APCD 1994). These plans outline how the APCD will reach conformance with the federal standards.

State Policies. The California Clean Air Act (CCAA) of 1988, and state legislation requiring the preparation of congestion management plans, provide further regulation for the State of California. Additionally, the California Ambient Air Quality Standards (CAAQS), as mandated by the CARB, are more stringent than those of the NAAQS.

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Applicable to the APCD is the 1991 Air Quality Management Plan, which mandates a Rate of Progress that a non-attainment area must implement. The Rate of Progress refers to the annual emission reductions necessary to attain the federal and California ambient air quality standards. The CCAA requires air pollution control district to achieve a reduction of five percent per year for each air pollutant or precursor for which the district has been designated with non-attainment status, until attainment is achieved.

The CCAA also requires local air pollution control districts to prepare air quality attainment plans for ozone and carbon monoxide. Generally, these plans must provide for district-wide emission reductions of five percent per year averaged over consecutive three-year periods. The CCAA also grants air districts explicit statutory authority to adopt indirect source regulations and transportation control measures, including measures to encourage or require the use of ridesharing, flexible work hours, or other measures which reduce the number or length of vehicle trips.

CARB coordinates and oversees both the state and federal air pollution control programs in California. As part of this responsibility, CARB monitors existing air quality, establishes state standards, and limits allowable emissions from vehicular sources. CARB has divided California into 14 single- and multi-county air basins. Authority for air quality management within these basins has been given to local air pollution control districts, which develop non-attainment plans within their jurisdictions.

Under the CCAA, Stanislaus County is considered non-attainment for ozone and PM10. The County is either in attainment or is unclassified for other pollutants.

The *1991 Air Quality Attainment Plan* for the San Joaquin Valley Air Basin identifies 11 Transportation Control Measures (TCMs) as "reasonably available" in the San Joaquin Valley Air Basin. The following TCMs are included in the plan:

- Traffic Flow Improvements;
- Public Transit;
- Passenger Rail Support/Facilities;
- Rideshare Program;
- Suburban Park and Ride Lots;
- Bicycling Program;
- Trip Reduction Programs;
- Telecommunications; and,
- Alternative Work Schedules.

The plan also proposes an indirect source program consisting of three elements:

- Enhanced District CEQA Participation;
- Air Quality Element for General Plans; and,
- New and Modified Indirect Source Review.

Regional Policies. The APCD, the CARB and the federal government are all charged with responsibilities for planning and attaining federal and California ambient air standards in the APCD and the San Joaquin Valley air basin which the APCD is

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mandated to administer. The APCD coordinates its efforts in the Valley with the CARB. Management of air quality is a regional issue, except for carbon monoxide, which tends to be a localized summer problem (APCD 1994).

The APCD, while having permit authority over stationary emission source projects such as power plants and factories, has no such permit authority with regard to mobile-source emission projects such as the implementation of commercial or residential projects which lead to an increase in automobile emissions. However, the APCD provides guidelines for determination of air quality impacts for mobile-source emission projects and suggests mitigation measures which can be implemented at the local government level to offset potentially significant air quality impacts. The APCD suggests that reductions in air emissions due to the implementation of mitigation measures be quantified whenever possible.

Stanislaus County Policies. The Stanislaus Area Association of Governments (SAAG) is the local Congestion Management Agency (CMA) and adopted the Stanislaus County 1992-93 Congestion Management Plan (CMP). The City general plan is subject to provisions of the CMP implemented by SAAG. By resolution and incorporation by reference, the Trip Reduction and Travel Demand Element of the CMP makes local and regional agencies responsible for implementing the Transportation Control Measure requirements of the APCD.

Ambient Air Standards. Federal and state standards have been established for ozone, carbon monoxide, nitrogen dioxide, sulfur dioxide, PM10 and lead. California has also set standards for pollutants not covered by national standards (sulfates, hydrogen sulfide, vinyl chloride, and visibility reducing particles). Table 7 illustrates the federal and state ambient air quality standards for major pollutants.

TABLE 7
FEDERAL AND STATE AMBIENT AIR QUALITY STANDARDS

Pollutant	Averaging Time	Federal Standard	California Standard
Ozone	1 hour	0.12 ppm	0.09 ppm
Carbon Monoxide	1 hour	35.00 ppm	20.00 ppm
	8 hours	9.00 ppm	9.00 ppm
Nitrogen Dioxide	1 hour	---	0.25 ppm
	annual	0.05 ppm	---
Sulfur Dioxide	1 hour	---	0.25 ppm
	24 hour	0.14 ppm	0.05 ppm
	annual	0.03 ppm	---
Particulates (PM10)	24 hours	150 mg/m ³	50 mg/m ³
	annual	50 mg/m ³	50 mg/m ³

ppm = parts per million; mg/m³ = microns per cubic meter

Source: California Air Resources Board

Air Basin Characteristics

The climate of the Plan Area is typical of inland valleys in California, with hot, dry summers and cool, mild winters. Daytime temperatures in the summer often exceed 100 degrees, with lows in the 60s. In winter daytime temperatures are usually in the 50s, with lows around 35 degrees. Radiation fog is common in the winter, and may persist for days. Winds are predominantly up-valley (from the north) in all seasons, but more so in the summer and spring months. Winds in the fall and winter are generally lighter and more variable in direction (CARB 1974).

The pollution potential of the San Joaquin Valley is very high. Surrounding elevated terrain in conjunction with temperature inversions frequently restrict lateral and vertical dilution of pollutants. Abundant sunshine and warm temperatures in summer are ideal conditions for the formation of photochemical oxidants and the Valley is a frequent scene of photochemical pollution.

Health Effects of Pollutants

The primary air quality problems in Stanislaus County are ozone and PM10. In Stanislaus County, carbon monoxide is a problem only in the Modesto-Ceres urbanized area. The following is a detailed discussion of the health effects of these important pollutants.

Ozone. Ozone is produced by chemical reactions, involving nitrogen oxides (NOx) and reactive organic gases (ROG), that are triggered by sunlight. Nitrogen oxides are created during combustion of fuels, while reactive organic gases are emitted during combustion and evaporation of organic solvents. Since ozone is not directly emitted to the atmosphere, but is formed as a result of photochemical reactions, it is considered a secondary pollutant. In the San Joaquin Valley Air Basin, ozone is a seasonal problem, occurring roughly from April through October.

Ozone is a strong irritant that attacks the respiratory system, leading to the damage of lung tissue. Asthma, bronchitis and other respiratory ailments as well as cardiovascular diseases are aggravated by exposure to ozone. A healthy person exposed to high concentrations may become nauseated or dizzy, may develop headache or cough, or may experience a burning sensation in the chest.

Research has shown that exposure to ozone damages the alveoli (the individual air sacs in the lung where the exchange of oxygen and carbon dioxide between the air and blood takes place). Research has shown that ozone also damages vegetation.

PM10. PM10 is small suspended particulate matter, 10 microns or less in diameter, which can enter the lungs. The major components of PM10 are dust particles, nitrates, and sulfates. PM10 is directly emitted to the atmosphere as a by-product of fuel combustion, wind erosion of soil, and unpaved roads. Small particles are also created in the atmosphere through chemical reactions.

Particles greater than 10 microns in diameter can cause irritation in the nose, throat, and bronchial tubes. Natural mechanisms remove much of these particles, but particles less than 10 microns in diameter are able to pass through the body's natural defenses and the mucous membranes of the upper respiratory tract and enter into the lungs. The particles can damage the alveoli in the lungs. The particles may also carry carcinogens and other toxic compounds, which adhere to the particle surfaces and can also enter the lungs.

Carbon Monoxide. Carbon monoxide, a colorless, odorless, poisonous gas, is considered a local pollutant in that high concentrations are found only very near the source. The major source of carbon monoxide is automobile traffic. Elevated concentrations, therefore, are usually only found near areas of high traffic volumes.

Carbon monoxide's health effects are related to its affinity for hemoglobin in the blood. At high concentrations, carbon monoxide reduces the amount of oxygen in the blood, causing heart difficulties in people with chronic diseases, reduced lung capacity and impaired mental abilities.

Carbon monoxide is a wintertime problem in the San Joaquin Valley. This is partly due to the fact that automobiles create more carbon monoxide in colder weather, and partly due to the very stable atmospheric conditions that exist on cold winter evenings when winds are calm. Concentrations typically are highest during stagnant air periods within the months of November through January.

Current Air Quality

The APCD and California Air Resources Board maintain air quality monitoring sites in Stanislaus County. The most current data from Stanislaus County monitoring sites nearest the planning area are shown in Table 8.

**TABLE 8
AIR QUALITY DATA FOR STANISLAUS COUNTY MONITORING SITES
1991-1993**

Pollutant	Standard	Site	Days Above Standard		
			1991	1992	1993
Ozone	State 1-Hour	Turlock	22	24	15
		Modesto	23	10	13
		Crows Landing	1	--	--
		Westley	0	--	--
Ozone	Federal 1-Hour	Turlock	0	0	2
		Modesto	0	0	0
		Crows Landing	0	--	--
		Westley	0	--	--
PM 10	State 24-Hour	Modesto	24	26	16
		Crows Landing	2	--	--
		Westley	5	--	--
PM 10	Federal 24-Hour	Modesto	1	3	1
		Crows Landing	0	--	--
		Westley	0	--	--

Source: San Joaquin Valley Unified Air Pollution Control District

Air quality in Stanislaus County generally meets the state and federal ambient air quality standards except for ozone and PM10. Also, violations of the 8-hour ambient air quality standards for carbon monoxide have been recorded, but only within downtown Modesto.