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## Public Facilities

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### Introduction

Public places provide a shared sense of belonging for all citizens of City of Gustine. They foster a humane and caring community and promote pride and mutual respect. Children develop much of their sense of community and well being from their schools, neighborhood parks, and other public places. These do more than provide public services; they are symbols of Gustine and a necessary part of the collective self-esteem of the community.

The Land Use Element of the General Plan is required to address the general location and distribution of "recreation facilities, educational facilities, and public buildings and grounds" [*Government Code Section 65302(a)*], but a separate "public facilities element" is not required under State law. The City of Gustine has chosen to prepare a "Public Facilities Element" because of the challenge of providing public services and facilities to a growing community.

The goals and policies contained in this chapter address the provision of public services and facilities necessary to meet the demands of the residents of the City of Gustine now and into the future. The General Plan postulates what facilities may be needed or desired in the future. This includes looking for the most cost-effective and efficient ways of providing services as well as searching for alternative means of financing capital improvements.

A wide variety of public services and facilities are addressed in this chapter, including services provided by other public agencies that affect citizens within the City of Gustine and thus require coordination with the City. These services include:

- Water,
- Wastewater,
- Schools,
- Fire and Police Protection,
- Parks and Recreation,
- Storm Drainage/Flood Control,
- Library and Cultural Services, and
- General Public Facilities

Transportation and transit services are addressed in the Transportation and Circulation Element. This Chapter does not address Private Sector and Quasi-Public utility services such as electrical service, telephone/telecommunications services, private sector utility gas providers and similar private or quasi-public services. Parks and Recreation Policies and Standards are included in the Open Space Chapter.

This element's purpose is to assess the current status of these services in terms of system capacity and demand and to evaluate future capacity in relation to projected growth. This element is further intended to clarify service availability and to identify the costs of public service improvements associated with land use decisions. This element is designed to assure that public services are available when needed.



**Public Facilities Goals**

**Goal 5.1: Adequate Public Facilities**

**Policy 5.1**

- 5.1.a Maintain level of service standards for each type of public facility and provide capital improvements needed to achieve and maintain the standards for existing and future populations.
- 5.1.b Ensure that those public facilities and services necessary to support development shall be adequate to serve the development at the time the development is available for occupancy or use, or within a reasonable time as approved by the City, without decreasing current service levels below locally established minimum standards.
- 5.1.c Development shall be approved only if adequate public facilities or services needed to serve the development are available at the time the demand for the facility or service is created or within a reasonable time as approved by the City.
- 5.1.d Continue to develop and maintain City services that ensure optimum service levels at reasonable costs to both existing and newly annexed areas.
- 5.1.e Through long-range planning, anticipate utility and other public service needs of possible future annexation areas, and when feasible develop utility capacities to meet these needs.
- 5.1.f Growth and development throughout the urban area should be regulated, stimulated, and otherwise guided toward the development of compact concentrated areas to discourage sprawl, facilitate economical and efficient provision of utilities, public facilities and services, and expand transportation options to the public.
- 5.1.g Pursue advanced telecommunications technology improvements throughout the City in both public and private sector infrastructure.
- 5.1.h Work with telecommunications companies to establish high speed telecommunications links in Gustine.
- 5.1.i Develop a Master Plan for the City's storm water drainage system, sewer collection system and water system and ensure new development complies with those plans.

**Goal 5.2: Adequate Funding for Capital Facilities**

**Policy 5.2**

- 5.2.a Pursue all available funding sources for the development of capital improvement projects in order to optimally use limited City resources.
- 5.2.b Increase the tax base by encouraging and supporting the rehabilitation and improvement of the dilapidated and deteriorated areas of the City.
- 5.2.c Establish a growth impact fee program that adequately supports the costs of providing municipal services to new residents, businesses and industry.
- 5.2.d Research the potential to apply redevelopment Tax Increment Financing techniques for the improvement/replacement of infrastructure in older portions of the City.



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### Goal 5.3: Timely Programming for Capital Facilities

#### Policy 5.3

- 5.3.a Annually evaluate existing public facilities and community needs to determine necessary public improvements
- 5.3.b Ensure that the *Capital Improvement Program*, and all associated capital facility documents are compatible with the City's General Plan
- 5.3.c Coordinate and cooperate with federal, state, regional and local jurisdictions, private industry, businesses and citizens in the planning and development of facilities affecting the community.
- 5.3.d Coordinate with the State, the Merced County Council of Governments (MCAG), Merced County and other adjacent local government agencies in an effort to provide a set of standardized codes and regulations relating to capital facilities and community improvement.
- 5.3.e Support and encourage efforts for the cooperative planning, design and development of public facilities with other government jurisdictions and with the private sector to maximize efficiency, reduce costs and minimize impacts on the environment.

### Goal 5.4: Adequate Maintenance of Capital Facilities

#### Policy 5.4

- 5.4.a Encourage the development of capital improvement projects that improve the City's operational efficiency or reduce costs by increasing the capacity, use, and/or life expectancy of existing facilities.
- 5.4.b Carefully evaluate potential benefits to be gained by the development of proposed capital facilities with the City's ability to operate and maintain such facilities.
- 5.4.c Develop and use programs to improve and maintain the physical infrastructure of the City.
- 5.4.d Encourage the maintenance, rehabilitation and renovation of existing community facilities in order to maintain a high level of quality service and to prevent the deterioration of facilities.
- 5.4.e Encourage the adaptive reuse of existing buildings as community facilities in recognition of scarce resources.

**Goal 5.5: Vital Economy and Revitalized Neighborhoods****Policy 5.5**

- 5.5.a Stress projects that stimulate the economy by expanding employment opportunities, by strengthening the tax base or by encouraging private investment opportunities.
- 5.5.b Stress the development of capital improvement projects that promote tourism and convention trade.
- 5.5.c Encourage capital improvements in areas in need of neighborhood revitalization.
- 5.5.d Emphasize capital improvement projects which promote the conservation, preservation or revitalization of commercial, industrial, and residential areas of the city
- 5.5.e Initiate and encourage initiation of programs to improve and maintain the physical environment of the business community.
- 5.5.f Improve opportunities for new businesses and commercial developments to locate in a well-balanced system of competitive centers.
- 5.5.g Recognize that the needs for public safety services may vary with the characteristics of the different neighborhoods and their residents, and provide services to each of the neighborhoods at a level commensurate with the needs of each.

**Goal 5.6: Efficient Capital Facilities Location and Design****Policy 5.6**

- 5.6.a Consider land use compatibility, capital facility needs and financial costs when siting essential public facilities.
- 5.6.b Encourage the acquisition of building sites for public and quasi-public purposes to be of sufficient size to meet future as well as present needs.
- 5.6.c Encourage community facilities to be located and designed to obtain maximum flexibility, utility and multiple use.
- 5.6.d Locate community facilities so as to be convenient, safe, and close to the areas they serve, with access to arterial streets and public transportation.
- 5.6.e Encourage the design of new and the improvement of existing community facility sites and structures in a manner which permits their intended functions to be performed safely, efficiently and effectively and which minimizes ongoing maintenance costs.
- 5.6.f Permit expansion of established community facilities, where appropriate, to allow for their continued usefulness provided the neighborhood and area are not detrimentally affected.
- 5.6.g Stress projects that are energy efficient or enhance energy conservation efforts by the City and its residents.

**Public Services & Facilities****General**

This chapter does not prioritize or offer a method of prioritizing specific projects. Where more detailed information is needed for specific projects or types of services, the policies contained in this chapter should be used as guidelines for requiring the preparation of various master plans or studies to clearly define the need, priority, or method of providing services and facilities. In addition, use of the City's Capital Improvements Program (CIP) can establish the means of



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correlating public projects with the needs of the community and available funding sources. This section describes the current status of the public services.

### **Water**

#### ***Brief Background***

Sufficient water supplies, treatment systems, and distribution facilities are basic necessities for serving urban areas. According to population projections to the year 2010, water demands could be as high as 3.19 million gallons per day. The addition of a 12" water line around the city (the loop system) would meet future domestic and fire flow needs.

### **Wastewater**

#### ***Brief Background***

The Wastewater Treatment Plant expansion plan when complete, will provide capacity to support planned residential growth through the year 2010. Additional demands for waste water capacity over the next twenty years, for industrial and non-industrial uses are projected to be 2.9 million gallons per day, bringing the total capacity needed to 3.9 million gallons per day.

Industrial users need to be monitored through a permit system, so that plant capacity will be recorded, and additional capacity will be paid for on a fair share basis. Portions of the Linden Avenue 8" main (643 linear feet) between Lucerne Avenue and State Highway 33 may possibly need to be replaced with a larger diameter pipe to accommodate development. Additional major East/West trunk lines are needed along State Highway 140 and Sullivan Road (extended). These trunk lines will provide service to accommodate future growth to the north and south.

### **Schools**

#### ***Brief Background***

Public schools are operated by school districts, which are autonomous governmental agencies separate from the City. The development and funding of school facilities is beyond the jurisdiction of the City but locational decisions regarding school facilities must, by law, involve City review. They have their own elected officials and source of funding. The City of Gustine is fortunate to have access to several high quality institutions of higher education. These institutions include:

#### ***Merced College***

Merced College offers a two-year college curriculum in a variety of subject areas.

#### ***CSU-Stanislaus***

California State University Stanislaus is located in Turlock, west of the City of Gustine. The University offers advance degrees and undergraduate degrees in a variety of career fields. Classes are offered on and off campus through out the University service area.

#### ***UC Merced***

The 1995 decision of the Regents of the University of California to locate its tenth campus at Lake Yosemite will create tremendous higher educational opportunities for students throughout the San Joaquin Valley and Sierra Foothill Region.

**Adult Education**

Modern education services have an expanded mission with respect to providing adult education services. These services focus on advancement of an adults educational level and provide career advancement opportunities to adults of all age groups. Another important aspect of adult education is meeting the on-going need for professional development and the updating of working individuals with respect to advances in their fields of endeavor. Adult education services provided by the local school district and the regional institutions of higher education play an important role in the community of Gustine. These adult education services are a critical link to modern technological advancement and the area's labor force. As such, the region's adult education resources become an important element in the City's economic development efforts.

**K-12 Local Schools*****Service Standard***

Service standards for school facilities are administered by the State Office of Education.

***Location Standard***

The City has limited jurisdiction with respect to the location decisions of the local school districts. The City, however, is committed to supporting the School Districts in their efforts to expand facilities to meet growth demands. For this reason, this chapter contains guidelines for the location of school facilities. School facilities should be sited according to the following criteria. While it is unlikely that every site can meet all criteria, every site should meet most of these criteria. The ideal site should be:

- At least ten (10) usable acres for an elementary school, twenty-five (25) usable acres for a middle/junior high school, and fifty (50) usable acres for a senior high school, to adequately accommodate the loading and unloading of students, future expansion of facilities and offer design flexibility.
- Centrally located to residential development to reduce bussing requirements, reduce walking distances for young children, encourage after-hours use of facilities by the public and discourage vandalism.
- Adjacent to a street or road which can safely accommodate bike, foot and vehicular traffic. Sites should have no more than two sides with street frontage. Urban high schools are best located adjacent to collectors that can handle the increased traffic volume of student drivers and the entrance to the school should be signaled.
- Topographically and environmentally safe and suitable to reduce site preparation costs and permit maximum use of the site for physical activities.
- Of sufficient usable acreage on one level and configured to not limit the design of buildings and provide field and parking space.
- Surrounded by land uses that produce a minimum of noise and traffic, often associated with commercial and heavy industrial areas.
- Located adjacent to parks to enable joint field and recreation facility uses.
- Vacant and undeveloped to reduce financial and political costs of site acquisition.
- Located such that utilities and services (e.g., cable television, fire protection, emergency medical services) are or will be readily available, to reduce site development costs.
- Near imminent development of adjacent properties to insure road and other necessary off-site improvements are available in a timely manner.
  - A safe distance, i.e., as required by law, from contaminants or toxins in the soil or ground water from landfills, fuel tanks, agricultural areas, power lines, utility easements, et. al.



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- Outside of floodplains, on stable soils; away from fault lines.
- Integrated into the system of alternative transportation corridors, i.e., bike lanes, riding and hiking trails, and mass transit, where appropriate.

### **Fire and Police Protection**

#### ***Location Standard***

The location of fire facilities is a critical factor in providing adequate fire protection to the citizens of Gustine. The time and distance that must be traveled to the scene of an emergency can determine whether fire suppression efforts will be successful. The goals, policies, and actions in this chapter address locational criteria and distribution goals for new fire facilities. Additional goals, policies, and actions relating to fire prevention methods, disaster preparedness, and hazardous materials safety can be found in the Safety Element.

#### **The following guidelines should be considered when siting new firehouse facilities:**

- Fire stations should be located on streets close to and leading into major or secondary thoroughfares.
- Fire stations should be so located as to minimize delays caused by incomplete street patterns.
- A fire station should be near the center of its primary service area, measured in terms of driving time to the periphery of this area.
- Fire stations should be convenient to high value areas of commercial or industrial districts, but not located in them unless such a location is necessary to maintain the required service radius.
- Fire stations should be located, as much as feasible, away from other uses that may be sensitive to the noise impacts of frequent alarms.
- Fire stations and their sites should be designed to fit in with their surroundings, including consideration of open spaces, off-street parking, landscaping, and general appearances, especially when located in residential districts.
- In residential service areas, fire stations should be located in or near those sections which have the highest density.

### **Parks and Recreation**

#### ***Brief Background***

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 systems 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. Specific site locations, however, will require more specific planning and may be included in the City's Parks and Recreation Master Plan.

#### ***Service Standard***



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Overall, a total of 5 acres of parkland should be provided per 1000 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. 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 and such. These supplemental recreation opportunities are not included in the standard.

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

Generally, city parks are divided into four types: mini, neighborhood, community, and greenways. The concept of four types, or hierarchy, provides for park and recreation needs at varying levels; however, there is some overlap among the various types of parks and their uses. Translated into physical form, they create a system of parks.

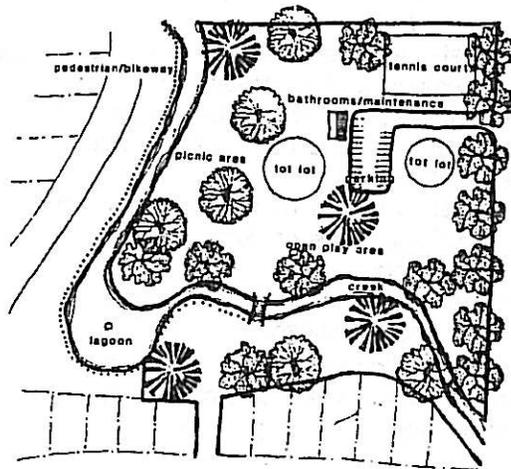
The first three types provide active play space. Greenways connect various sites with exclusive paths for pedestrians and bicyclists, helping to link the parks into a system and the park system into the lives of City residents. Beyond the city parks are regional parks serving many communities, which are generally provided for by the County of Merced or are part of the State Park system.

### ***Mini-Parks***

Mini-parks accommodate casual, spur of the moment recreational needs and function more as an extension of the front yards of adjoining residents. Facilities within mini-parks should be flexible but meet the needs of a changing neighborhood population. At the same time they can be tailored to the characteristics of the neighborhood. For instance, tot-lots could be provided in neighborhoods heavily populated by children. Elderly residents may desire meeting places or garden areas. Teen-agers may prefer surfaced courts for ball games, roller-blading and skate-boarding.

### ***Neighborhood Parks***

Neighborhood parks serve a larger area than a mini-park and have a wider variety of facilities to serve a larger and more diverse population. Facilities within neighborhood parks vary depending on the recreational resources available in the neighborhood. Some neighborhoods may have school facilities which supplement the City's park facilities resources. In some instances, neighborhood park facilities approach community park standards (i.e., swimming pool, lighted baseball diamonds and community meeting hall). Although there is a hierarchy to parks, there also exists certain overlap among the different levels of parks and their uses.



**Figure 5-1**

*A typical Neighborhood Park provides a variety of recreation and open space elements for all age groups.*

### **Community Parks**

Community parks serve significant portions of urban area based on size and type of facilities. As a minimum, a Community Park serves several neighborhoods. A community park is the nucleus of the park system and is usually the location where members of the community congregate for city-wide functions or programs.

The community park is usually over 15 acres in size and includes neighborhood playground facilities as well as appropriate facilities for city-wide use. Or, it may be more open space oriented providing the community a break within the urban environment or contact with nature and pleasant surroundings in which to engage in a variety of active and passive recreational activities.

Features of a community park may include large picnic areas, swimming pool, baseball diamonds, nature trails, soccer fields, playgrounds, community building or other city-wide activity areas.

### **Greenways**

Greenways connect the various park sites with paths exclusively for pedestrians and bicyclists. Greenways weave through the residential neighborhoods connecting larger public uses (schools, open space, commercial uses) 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. Other greenways act as valuable open space greenbelts through a neighborhood.

### **Private Recreation Facilities**

In addition to public park facilities and programs, there are a number of private or commercial recreational facilities serving the community. These extend the recreation opportunities for City residents. Included are racquet ball courts, bowling lanes, swimming pools, various church-operated facilities, local gyms and fitness clubs, and nearby golf courses. Private and commercial facilities are a valued supplement to the recreation programs offered in the City of Gustine.

### **Location Standard**

When feasible, use the following criteria to locate parks:



- No household should have to walk more than approximately one-half to three-quarters of a mile to a park site.
- Parks should be located adjacent to schools as much as feasible.
- 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.
- 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.
- 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.
- Park sites should be located adjacent to bikeway facilities.
- Park sites should be located near higher-density residential areas as much as possible.
- Parks should have access to nearby subdivision and Greenways by means of cul-de-sacs, access easements, etc.

### ***Park and School Facilities:***

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 neighborhood center and along greenways when possible.

### ***Greenways:***

Greenways weave through the residential neighborhoods connecting larger public uses (schools, open space, commercial uses) 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 and 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 non-maintained, the public may avoid using them and they may become unsafe.

### **Neighborhood Parks**

Neighborhood parks should be distributed so most areas are less than one-mile from any park. Within any square mile quadrant bound by arterial roads, a total of 3.5 acres of neighborhood parks should be provided per 1000 residents.

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, as well as recreation. Neighborhood parks should create a formal focus in a neighborhood area.

### **Community Parks**

*Standard:* There should be at least 1.5 acres of Community Park provided per 1,000 residents. Community parks usually 15 acres in size or greater.

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Community parks are major recreation facilities and contain many ball fields, playlots, picnic opportunities and other facilities.

### **Storm Drainage/Flood Control**

#### ***Brief Background***

The city's storm drainage system is generally linked to the natural drainage system in the region. Culverts and other types of facilities have been constructed over the years to facilitate the movement of flood waters to the natural drainage system of creeks. The City recognizes that it needs to complete a Storm Drain Master Plan and begin to provide drainage facilities. Before development can occur, drainage zones need to be identified for the entire planning area.

#### ***Service Standard***

As the future peak flows increase with proposed new development, it is recommended storm water detention facilities be provided to detain these excess flows so that peak runoffs and velocities in the main channels do not exceed the existing storm conditions. This will eliminate additional flooding due to increased discharge as a result of urbanization. The criteria to attenuate storm water discharges from new development to pre-developed quantities, however, is based on the assumption that the channels and crossing structures downstream can handle the existing storm runoffs. New discharge standards are expected to be implemented by the Environmental Protection Agency that will require municipalities to implement some sort of treatment program for stormwater before it is directly discharged into the surface water system.

#### ***Location Standard***

General governmental facilities, including the City Hall, should be located to facilitate access with adequate parking for the convenience of the public.

#### ***Other Infrastructure***

The issues affecting the placement and/or relocation of additional transmission lines are aesthetics, the possible reduction of usable land, and the safety of surrounding residents. In order to reduce visual impacts, transmission lines rated below 45 KV should be undergrounded when possible; this also reduces maintenance costs.

The placement of distribution and transmission lines, whether under-ground or above, affects the use of land by restricting the placement of most structures within utility easements. The use of large amounts of land for public utility easements also removes land from the tax roles. The safe placement of transmission lines and towers reduces and/or eliminates hazards between structures, crop dusting activities and airport approach zones.

Demand for additional electric service will occur with the residential, commercial and industrial growth projected in the Land Use Element. P.G.& E. has indicated that electricity and gas are readily available to accommodate growth throughout the entire San Joaquin Valley through the year 2020 and beyond. Future development will necessitate the rerouting of some transmission lines and may require an additional P.G.& E. substation.

There is no immediate need to abandon any of the canals as a result of development of agricultural parcels within the Gustine SOI. However, many cities do require the undergrounding of drains and canals as urban development replaces agricultural land. This reduces safety hazards, minimizes any disruption to local road networks and increases canal efficiency. This solution is costly however, and unless the CCID changes its policy, development adjacent to



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canals will only be required to fence off their areas. Where the decision is left to the City, it will encourage pipelining canals. It is also in the best interest of the City to pipeline canals at roads where bridges are in need of repair or expansion. The City will work with CCID on this matter to arrive at a satisfactory solution.

### Public Services and Facilities Plan

#### Purpose

The purpose of this the Public Facilities Chapter of the City of Gustine General Plan can be stated as follows:

To give guidance to City officials on the provision of high quality, well-maintained physical systems and facilities that serve the social, economic, cultural, safety, and other needs of the community, that are equitably distributed and are available at the time of development to serve new growth.

This Chapter contains six main policy areas:

- adequate public facilities and services,
- funding for capital facilities,
- programming for capital facilities,
- maintenance of capital facilities,
- economic development and neighborhood revitalization, and
- capital facilities location and design.

These six major policy areas have been approached from several directions. They must address the necessary state, regional and county coordination, the capital facilities requirements of the City, and they must relate to other planning areas such as land use, transportation and utilities.

#### Adequate Public Facilities and Services

It is the intent of the City to provide adequate public facilities and services for both existing and new development. Such facilities and services will be designed to meet the capital facility needs of the community and to support the City of Gustine land use growth and development concept.

The City recognizes that the provision of facilities and services is necessary in a community to provide for the health, safety and welfare of the community.

They are, potable water, sanitary sewer, storm water management, law enforcement, fire, emergency medical service, schools, parks, libraries and City administrative facilities (City Hall, the City Council Chambers, etc.). The City of Gustine intends to provide these facilities and services concurrent with development impact or within a reasonable time. The City intends to monitor the level of service provided for such facilities and services on a regular basis to ensure they are adequate and that appropriate levels of capital resources are expended.

Certain types of the above-mentioned facilities are difficult to site because of their nature, but are still essential to the city, county, region or state. Many of these facilities are ones that serve an area or population larger than the city itself. The City of Gustine intends to encourage such facilities to locate within the city as appropriate. In siting such facilities, the surrounding land uses, land use compatibility, the capital facility needs of the community and region, and financial considerations should all be reviewed.



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When designating level of service standards, the City of Gustine will consider the public health and safety, community goals and desires, funding resources available and possible phasing of standards to achieve the desired level of service. Because adopted level of service standards affect the amount of growth and development, the quality of public facilities and services, and the amount of taxes and impact fees; the City will establish reasonable standards that allow orderly growth and development and that are within the City's financial capacity.

### **Funding for Capital Facilities**

Finding money for capital improvements has become increasingly difficult. The cost for new projects and for rehabilitation of old facilities is increasing beyond what cities can afford. Also, the citizens are becoming reluctant to tax themselves further via general obligation bonds to pay for expensive facilities unless there are compelling reasons for the improvements.

Besides bonds, other common sources of money are state and federal grant programs. These funds are usually restricted to specific types of improvements and are often one-time funds for unique purposes. Therefore, such grants limit the local facilities and programs for which they are available.

The City will review its entire financial picture on a regular basis to ensure knowledgeable and appropriate expenditures are made to meet the capital facility needs of the community. The City of Gustine will review existing revenue sources and develop potential new sources to fund capital facilities needed for new growth, community revitalization and economic development and for the maintenance of existing facilities.

### **Programming for Capital Facilities**

A Capital Improvement Program shall be prepared, adopted and maintained by the City. The City intends to coordinate the selecting and budgeting of all capital projects and to review, update and modify capital projects on a regular basis in order to ensure the provision of adequate public facilities and services. The community's capital facility needs and the financial capacity will be reviewed systematically and regularly to facilitate appropriate and informed decisions regarding capital facility projects and expenditures. In reviewing capital facility needs, the needs of the county and region will also be considered. This systematic review must be consistent and contain all identified funded and unfunded capital projects.

The City has limited resources to allocate among the several capital facility planning areas. By establishing the level of service standards for each of the capital facility planning areas and adjusting the available revenues, the City establishes the relative priorities among the types of facilities. Priorities also need to be considered and set for different capital improvements or projects within any given type of facility or service. These decisions will be made each time the City performs its capital facility programming. In making such decisions, revenues generally should be allocated in accordance with the following priority listing:

1. Repair, remodeling, renovation or replacement of obsolete or worn out facilities that contribute to achieving or maintaining standards for established levels of service.
2. New or expanded facilities that reduce or eliminate deficiencies in levels of service for existing demand.
3. New facilities and improvements to existing facilities that eliminate public hazards not otherwise eliminated by facility improvements prioritized under 1 or 2 above.



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4. New or expanded facilities that provide the adopted levels of service for new development and redevelopment during the next six fiscal years. If the planned capacity of facilities is insufficient to serve all applicants for development permits, the projects should be scheduled to serve development in the following priority:
  - previously approved permits for redevelopment,
  - previously approved permits for new development,
  - new permits for redevelopment, and
  - new permits for new development.
5. New facilities and improvements to existing facilities that significantly reduce the operating cost of providing a service or facility or otherwise mitigate impacts of facilities on future operating budgets.
6. New facilities that exceed the adopted level of service standards for new growth during the next six years by either providing excess capacity that is needed beyond the next six years or by providing higher quality facilities than usual City design specifications for the facility.
7. Facilities not described by 1 through 6 above, but which the City is obligated to complete by a written agreement executed prior to the adoption of this plan.

Improvements that provide level of service standards beyond the adopted level may be constructed. However, such improvements must not make improvements needed to achieve or maintain the adopted level of service standard financially infeasible and must be consistent with the goals and policies of the *City of Gustine General Plan*.

This review of capital projects and their funding should be performed at least biennially as part of the City's budget process for two reasons. The first reason is to ensure an ongoing review of capital needs. The second reason is so the capital and operating budgets can be considered together. Traditionally, in times of fiscal restraint, allocations for capital improvements are reduced or eliminated because of operating costs. However, because of the City of Gustine's intent to provide adequate public facilities and services to serve existing and new development capital improvements can no longer be put on the back burner.

Actual revenue does not always match projected revenue. In cases where revenue falls short of the projection, the City will review the capital facilities programming effort and reassess its overall growth strategy. These will be adjusted to ensure that funding and needs are balanced by reducing the level of service standard; increasing the use of another revenue source; decreasing the cost, and therefore the quality, of the facility; decreasing the demand for the facility or a combination of these actions. Occasionally, unexpected money becomes available through donations or new grant programs. In some instances, the City may use such funds for capital improvements.

The selecting and budgeting process will also require coordination among the City departments and other agencies that provide capital facilities and services as well as coordination with other jurisdictions and on the regional level. Coordination will also be required between the various elements of the *City of Gustine General Plan*. It is especially important for the capital facilities program to be consistent with the land use, transportation and other elements.

Another issue concerning the selecting and budgeting of capital projects is the fiscal impact of major public projects or projects involving the expansion of capacity or service areas. The City of Gustine intends to consider the fiscal impacts of such projects, when deciding what projects to develop and budget.



### **Maintenance of Capital Facilities**

Maintenance of existing capital facilities is important to protect the public's investment in them. The City intends to maintain its capital facilities. One way to ensure such maintenance is through a comprehensive maintenance program. Any comprehensive maintenance program should contain an inventory of existing facilities including their age, condition, extent of use, remaining useful life and maintenance history. This complete assessment of existing capital items helps in determining future major maintenance, repair and replacement needs and is necessary to make good investment decisions. In order to choose between maintenance, repair, replacement or abandonment of an existing capital facility, it is necessary to know the condition and the rate of deterioration and compare this with the costs and needs for a new facility. Other advantages of routine preventative maintenance include the possible reduction or postponement of replacement costs and the avoidance of unexpected costs and emergency repairs.

The maintenance and replacement of existing capital improvements must be considered first before planning for major investments in new facilities. The expected use, demand and future growth of the city needs to be compared to see if the current capital facilities can meet the needs of the future. The City of Gustine intends to consider the maintenance, rehabilitation or reuse of existing facilities as one way to meet the capital needs of the population.

The City will consider requests for maintenance and repair of capital investments and requests for new capital facilities concurrently, because maintenance or possible upgrade of existing facilities may be a viable method of meeting the community's needs. Evaluating maintenance needs at the same time as requests for new facilities gives the City the entire capital needs picture. All the necessary information to make selection and expenditure decisions will be available and the decision makers can determine whether existing facilities can meet the community's capital needs or whether new facilities will be necessary.

Finally, the City intends to consider the future maintenance and repair costs of new capital items when making selection and expenditure decisions on new capital facilities. It may well be that a change in design or materials could result in future maintenance savings. If the City cannot pay for subsequent operating and maintenance costs of a facility, that facility should not be provided.

### **Economic Development and Neighborhood Revitalization**

Economic development and neighborhood revitalization are two very important concerns of the City of Gustine. They are both vital to a community's health and well-being and they are directly related to the quality of life of the community's citizens. Capital improvements are one of the most direct ways that officials can influence the development of their city and neighborhoods. It is perhaps the best method of transforming plans into reality. Therefore, linking economic development with capital facilities planning is essential. Providing quality infrastructure is also crucial to a community's economic development and its neighborhood quality.

As funds for capital expenditures become increasingly scarce, the City will be trying to achieve maximum leverage from its public investment. It is the City's intent to strategically use public funds to assist and encourage private investment and development that will foster economic diversity and viability and preserve quality neighborhoods. The City intends to allocate resources to strengthen the economic base, diversify industrial and commercial enterprises, increase



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employment opportunities, increase the income level of residents, and enhance and revitalize its neighborhoods.

Because capital needs often exceed the ability to pay for them, choices must be made and the potential return to be gained from different capital improvements takes on a significantly greater importance. Therefore, the City of Gustine intends to use its limited resources to its best advantage by strengthening the link between economic development planning and capital facilities planning, and emphasizing the support role that infrastructure and capital improvements provide to development and neighborhoods.

In the past, a link between economic development and capital facilities planning has existed, but it needs to be strengthened. Economic development planning in the city has tended to focus on responding to specific needs and requirements of specific firms and industries. It is a flexible process that is able to respond to changing demands and needs. Capital improvement planning is longer term and hence is difficult to use to foresee economic development needs and opportunities. More closely linking these two types of planning will provide great benefits and will improve both economic and capital facilities planning. The long-range nature of capital facilities planning will force economic planning to look farther into the future and to analyze the entire economic community rather than focusing on individual businesses. This will allow the City of Gustine economic needs to be identified and goals to be established. Once economic goals are developed, the City can begin to identify what public investments are needed to support these objectives. Enlistment of the private sector in identifying needs, developing goals and setting objectives will be beneficial.

Historically, infrastructure and capital improvements were used extensively to attract development to a community. The relationship between public infrastructure and private investment was one of the most critical incentives to allocate funds for improving and building capital facilities. The building of infrastructure was considered an investment that was paid off by private economic activity.

Today, most of the city's infrastructure is in place and its capacities established. The economic advantage of having infrastructure and capital facilities is less clear because most other cities also have such facilities. However, the quality and type of infrastructure available is an important factor in a business's decision on where to locate originally and on whether to expand at an existing location or to move. It is also important to residents and potential residents. Because a deteriorating infrastructure may well be an economic deterrent, it is desirable for the city to maintain its facilities to both attract and retain private enterprise and residents. Therefore, the City of Gustine intends to emphasize the role that infrastructure and capital facilities play in the development of the city and the quality of its neighborhoods.

### **Capital Facilities Location and Design**

The location and design of capital facilities are important to a community and have become one of many issues which cause citizen concern. The siting of facilities must complement the needs of the public, environment and ensure compatibility with surrounding land uses. The City of Gustine intends to meet the needs of the community:

- By providing public facilities and services that are equitably distributed throughout the community,
- That are located and designed to be safe and convenient to the people they serve,



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- That provide flexibility of use and maximum efficiency, and
- That are compatible with adjacent uses and the environment.

Siting of future facilities will become increasingly difficult as the available supply of land diminishes and because, in some cases, public reaction to siting choices may be negative. Also, siting of capital facilities is not always considered prior to providing service to new development; this can leave poor choices for placing facilities. Some facilities are more difficult to site than others.

The City realizes that all capital facilities, including those that are difficult to site, provide needed public services. The City of Gustine will coordinate with other jurisdictions in the region to site capital facilities and will not exclude such facilities from its jurisdiction. The City will also work with surrounding jurisdictions to identify lands useful for public purposes, some of which would be appropriate for capital facilities.

Because capital facilities may serve the community for long periods and become a part of the community, their design is important. The City intends to consider aesthetics in the design of all public facilities subject to public view. Facilities should be located and designed to create a minimum disturbance of the aesthetics, social interactions and urban design of the community. Public projects should provide for public access and should include elements for public use and enjoyment such as landscaping, furniture, art and lighting, where appropriate. Landscaping should be provided to beautify and screen areas and to improve compatibility with adjacent development. Landscaping should be designed to provide variety similar to that observed in the neighborhood with special consideration for drought tolerant plants to conserve water and help ensure plant survival. Naturally occurring land forms and ecosystems should be protected and enhanced where possible. Parking lots for public facilities should be limited in area and visual impact.

### Implementation

This section identifies implementation strategies for making decisions concerning the financing and provision of capital facilities and services. It also identifies the activities necessary to carry out those decisions. The *Public Facilities Chapter* is unique in that it not only contains strategies for implementation but is in itself a necessary step for implementing other elements of the *City of Gustine General Plan*. Successful implementation of the seven major policy areas involves coordinating all the elements of *City of Gustine General Plan* and all the components of the capital facilities planning effort.

In order for the plan to be a meaningful tool in capital facility planning, the policies need to be implemented through a variety of methods including the development of procedures and programs, the adoption of regulations and the study of potential revenue sources. The plan not only expresses a philosophy, but states specific actions in the form of strategies to assure that the philosophy gets transformed into action in administrative, legislative and programmatic activities.

By accomplishing the recommended strategies, the City Council can be assured that actions at the staff level are consistent and compatible with their expressed intent. Both the local government officials and agency service providers can use this plan as a base for continued joint planning of capital facilities and services.

### Implementation Strategies



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The objectives concerning the provision of capital facilities and services that are outlined in this Chapter cannot be achieved through goals and policies alone. Goals and policies provide ongoing guidance, but action to achieve objectives can only be addressed through strategies.

The "Strategies" carry out the intents of the policies and may contain activities that are specific tasks required to accomplish the strategy. The strategies range from general to specific and respond to both immediate and long-term needs. Some recommended strategies may require an expenditure of money from either public or private sources, or both, while others may require a change in administrative procedures or municipal regulations. Strategies do not lend themselves to a listing by order of priority. They are all important enough to be implemented concurrently, although emphasis may be placed on one or more specific recommendations at a particular time. The *Public Facilities Chapter* gives more specific direction regarding implementation. Over time, individual strategies or activities will be implemented through the six-year program. At that time, the specific strategy or activity will be developed into an objective and further detail in the form of tasks will be provided.

The strategies are directed toward the seven policy areas: Adequate Public Facilities and Services; Funding for Capital Facilities; Programming for Capital Facilities; Maintenance of Capital Facilities; Economic Development and Neighborhood Revitalization; and Capital Facilities Location and Design. They are set forth below with any accompanying activities.

### **Adequate Public Facilities and Services**

*Strategy:* Develop, implement and administer a concurrency management system to ensure provision of adequate public facilities and services.

*Activities:*

- Maintain and update an inventory of all facilities, including the condition and capacity of the facilities.
- Review and update level of service standards.
- Regularly review capital facility needs and adjust the concurrency management system as necessary.

### **Funding for Capital Facilities**

*Strategy:* Continue to research and update available options to finance capital facility projects, improvements and maintenance and seek additional revenue sources.

*Activities:*

- Review existing sources of revenue available for funding of capital facilities
- Identify potential new sources of revenue for funding of capital facilities. Include such sources in the *Capital Improvement Program*.
- Establish an interdepartmental finance team to develop and explore different financial options to be used in capital facilities management and development.
- Support efforts of the California League of Cities development potential amendments to state law to provide additional or greater sources of revenue for capital facilities and work to achieve such amendments.
- Identify ways to reduce the costs of capital facilities and improvements by utilizing new materials and technologies.
- Review option of implementing a Redevelopment program in the City.

*Strategy:* Establish a process to determine priorities for capital investment. Use the interdepartmental finance team to assist in establishing such a process.

- Define the scope and range of capital investments.



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- Review potential factors to use for determining priorities.
- Establish capital facilities investment priorities.

### Programming for Capital Facilities

*Strategy:* Establish and use a process to review and determine the selection and budgeting of all capital projects.

*Activities:*

- Review and update all components of such process at least biennially including facility inventory, level of service standards, capital facility needs and financial capacity analysis.
- Develop a project tracking system to monitor capital project development and expenditure of funds on individual capital projects.
- Develop a financial management system to monitor the expenditure of all capital facility resources. Use the interdepartmental finance team to assist in development of such system.
- Develop procedures concerning analysis of fiscal impact of projects meeting the threshold as defined in this *Public Facilities Chapter* and the *City's Capital Improvement Program* including the detail of analysis required and when it is required.
- Maintain and use the Capital Facilities Technical Team to coordinate planning between City departments, outside agencies and special districts.
- Monitor the effect of capital expenditures on the *City of Gustine General Plan* growth and development concept.

*Strategy:* Evaluate various methods of balancing proposed capital projects and funding including lowering level of service standards, increasing revenue, reducing demand and creating service areas.

### Maintenance of Capital Facilities

*Strategy:* Research and prioritize various maintenance approaches.

*Activities:*

- Identify maintenance options.
- Prepare a cost/benefit analysis of the maintenance approaches.
- Identify the consequences of deferred maintenance.

*Strategy:* Develop a comprehensive schedule for the maintenance of all capital facilities including funding for such maintenance.

*Activities:*

- Develop and maintain a comprehensive inventory of existing facilities that includes age, condition, intent of use, useful life, maintenance history and maintenance requirements.
- Identify a schedule for the major renovation and replacement of capital facilities that are deteriorated, inefficient, obsolete or of insufficient capacity.
- Establish a maintenance program for each new facility upon construction.

### Economic Development and Neighborhood Revitalization

*Strategy:* Strengthen the link between capital facilities and services planning and economic development planning.

*Activities:*

- Address capital facility and infrastructure needs in an economic development plan.



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- Develop a process to identify and fund the infrastructure improvements needed to meet the economic development goals of the City. Involve the business community in these efforts.
- Explore options to maximize the economic development and neighborhood revitalization impacts of capital facility improvements and expenditures.

### **Capital Facilities Location and Design**

*Strategy:* Incorporate into the urban design plan capital facilities location and design measures.

*Strategy:* Review the *City Zoning Code* special use permit requirements to ensure adequate provisions to site essential public facilities and county-wide and statewide facilities are included. Amend as necessary.

### **Public Facilities Financing**

Since the passage of Proposition 13 in 1978, California cities have been faced with unprecedented challenges in financing capital improvements necessary to community growth. No longer can cities simply adjust property tax rates to raise needed money. Instead, cities have turned to a variety of other means to finance critically needed facilities.

The City of Gustine is no exception to this problem. Because the city has grown rapidly since 1980, the community is having problems keeping up on capital facilities such as roads, bridges, and parks.

The City has traditionally financed needed capital facilities from its General Fund, grants from State and federal governments, developer contributions, sewer and water funds accumulated from user fees, and some miscellaneous sources. The City's General Fund, however, is under increasing pressure just to pay for City operations. State and federal grants are decreasing. Other sources of revenue are basically driven by development, but are small in comparison to the size of the overall need. A gap continues to widen between the existing base of revenues and the needs for funding.

### **Urban Services Financing**

At present, municipalities in California are relatively limited in the number of options they have for raising revenue to meet capital facilities needs. Most available mechanisms are tied directly to growth, or to an increased cost of an "enterprise" service (e.g., water and sewer service), or for new or increased services within a defined sub area or special district.

### **Allocation of Public Services and Facilities Financial Burden**

Public services and facility costs are typically allocated between three "need" categories: 1) existing, 2) growth, and 3) regional. Various types of services and facilities have different ratios of assigned costs between the three need categories.

### **Existing Public Service and Facility Needs**

Typically, existing public service and facility needs are addressed through the normal municipal budget process and can include funding from various funding sources including, but not limited to taxes, fees, intergovernmental transfers, interest income on deposited funds, etc. To fund shortfalls in existing facility and service need, there are several approaches that can be examined.



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**User Fees.** User fees are one of the City's funding mechanisms that is not tied to development. Typically, some park and community facilities are subject to user fees as are water and wastewater services.

**Inter-Governmental Transfers.** State and federal funds, in the form of grants or some other form of ear-marked fund may become available to meet special community needs. The funds, however, are often earmarked for a specific service population (poor, elderly, etc.) or a specific purpose such as streets and highways, water/wastewater improvements, law enforcement, etc. Most of the time these funds are limited to facility development and/or improvement and cannot be used for operating or maintenance costs.

**Redevelopment.** Under state law, local governments can use the "tax increment" of a redevelopment area to assist in financing necessary public improvements and provide some types of governmental services. The funds can only be applied, however, within a "Redevelopment" area or to projects that primarily benefit the "Redevelopment" area.

**Taxes.** Municipalities have the ability to impose new taxes (sales and property) subject to a super-majority voter approval (2/3rds).

**General Fund.** Existing "general" municipal revenues can be allocated to address deficiencies in public service for facility levels. Allocating the limited funds between competing demands is always one of the most difficult aspects of the local government budgetary process.

### **Growth Induced Public Service and Facility Needs**

Growth in population creates new facility and service needs in a community. Typically, this growth is directly related to new development. Not all new growth can be directly linked to new development, however. In the case of increased family size, new growth can occur within the existing built environment. Some types of new development do not directly translate into new population growth such as industrial or commercial development. This is particularly true of industries or businesses that serve a regional population or draw from a regional labor force.

"Growth" impact fees must reflect the regional economic setting and affect all types of growth. Growth occurs from both people moving to a community (immigration) and from people being born in a community (natural increase). If "growth" impact fees do not match the local or regional economic setting with respect to employment and income, a community can experience dislocation; older residents or families may be forced out of the local housing market and/or the local housing market may only be affordable to people moving into the area.

Typical sources of funding that can be used to address "growth" related public service and facility needs include:

**Impact Fees.** The development impact fee is the standard mechanism in California for recapturing development-related facility costs. Whether all costs are indeed recovered with impact fees or with a combination of mechanisms, the fee is a useful tool for measuring the estimated cost of development on a standardized basis (typically the dwelling unit or dwelling unit equivalent or DUE). Advantages of impact fees include their (1) straightforward benefit/burden structure, and (2) relative ease and low cost of administration. Potential drawbacks, however, include:



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- Short-term volatility of fee income linked to development/construction/economic cycles,
- Lack of creditworthiness (fee revenues cannot be used to secure debt), and
- Lack of sensitivity to inflation (although they can be indexed to a CPI).

Another important limitation of impact fees is that they cannot be used to fund on-going costs of service operations and facility maintenance. Operations and maintenance typically need be linked to some sort of special district financing mechanism.

***Dedications.*** Development can be conditioned to dedicate land and/or improvements as part of the development approval process. Dedications can include roadways, parks, open space, and major public facilities such as firehouses, libraries, schools, etc. Like impact fees, dedications do not address long-term service provision costs or the maintenance and operations of facilities.

***Special Districts.*** The use of special districts is common on large development projects and a means of both financing public infrastructure and paying the ongoing maintenance and operation costs of providing a public service. Special financing districts can be useful tools for addressing development-related costs through the issuance of debt, particularly when funding is needed for costly facilities before development has commenced or sales have reached significant levels. Debt financing also permits the encumbrance of private property, something that is not possible with other development financing mechanisms. While special districts can be an important tool in meeting the service and facility needs of growth, there are some limitations and drawbacks such as:

- The long-term administrative implications to a local government,
- The complexity of administering special districts, and
- The vulnerability of special district finance techniques to the political climate.

### **Regional Growth Impacts on Public Services and Facilities**

Regional impacts of public services and facilities are fairly straightforward like highway traffic. Other regional impacts are not as clear-cut such as the local impacts of regional industrial or commercial development.

***Inter-governmental transfers.*** Regional facility and service demands are typically met through regional service and facility providers such as the State of California or the County of Merced. Streets and highways are the most common types of facilities that provide regional services in the City.



**Appendix:  
Best Management Practices-Storm Water  
Drainage.**





**Table 5-A1  
Comparative Pollutant Removal of Urban BMP Designs**

<i>BMP/Design</i>	Percent Removal						Overall Removal Capability
	Suspended Sediment	Total Phosphorus	Total Nitrogen	Oxygen Demand	Trace Metals	Bacteria	
<b>Extended Detention Pond</b>							
Design No. 1	60-80%	20-40%	20-40%	20-40%	40-60%	N/A	Moderate
Design No. 2	80-100%	40-60%	20-40%	40-60%	60-80%	N/A	Moderate
Design No. 3	80-100%	60-80%	40-60%	40-60%	60-80%	N/A	High
<b>Wet Pond</b>							
Design No. 4	60-80%	40-60%	20-40%	20-40%	20-40%	N/A	Moderate
Design No. 5	60-80%	40-60%	20-40%	20-40%	60-80%	N/A	Moderate
Design No. 6	80-100%	60-80%	40-60%	40-60%	60-80%	N/A	High
<b>Infiltration-Trench</b>							
Design No. 7	60-80%	40-60%	40-60%	60-80%	60-80%	60-80%	Moderate
Design No. 8	80-100%	40-60%	40-60%	60-80%	80-100%	60-80%	High
Design No. 9	80-100%	60-80%	60-80%	80-100%	80-100%	80-100%	High
<b>Infiltration Basin</b>							
Design No. 7	60-80%	40-60%	40-60%	60-80%	40-60%	60-80%	Moderate
Design No. 8	80-100%	40-60%	40-60%	60-80%	80-100%	60-80%	High
Design No. 9	80-100%	60-80%	60-80%	80-100%	80-100%	80-100%	High
<b>Porous Pavement</b>							
Design No. 7	40-60%	60-80%	40-60%	60-80%	40-60%	60-80%	Moderate
Design No. 8	80-100%	60-80%	60-80%	60-80%	80-100%	80-100%	High
Design No. 9	80-100%	60-80%	60-80%	80-100%	80-100%	80-100%	High
<b>Water Quality Inlet</b>							
Design No. 10	0-20%	N/A	N/A	N/A	N/A	N/A	Low
<b>Filter Strip</b>							
Design No. 11	20-40%	0-20%	0-20%	0-20%	20-40%	N/A	Low
Design No. 12	80-100%	40-60%	40-60%	60-80%	80-100%	N/A	Moderate
<b>Grassed Swale</b>							
Design No. 13	0-20%	0-20%	0-20%	0-20%	0-20%	N/A	Low
Design No. 14	20-40%	20-40%	20-40%	20-40%	0-20%	N/A	Low

- Design No. 1 First-Flush runoff volume detained for 6-12 hours.
- Design No. 2 Runoff volume produced by 1.0 inch, detained 24 hours.
- Design No. 3 As in Design No. 2, but with shallow marsh in bottom stage.
- Design No. 4 Permanent pool equal to 0.5 inch storage per impervious acre.
- Design No. 5 Permanent pool equal to 2.5 (Vr); where Vr=mean storm runoff.
- Design No. 6 Permanent pool equal to 4.0 (Vr); approximately 2-weeks retention.
- Design No. 7 Facility exfiltrates first-flush; 0.5 inch runoff/impervious acre.
- Design No. 8 Facility exfiltrates one inch runoff volume per impervious acre.
- Design No. 9 Facility exfiltrates all runoff, up to the 2-year design storm.
- Design No. 10 400 cubic feet wet storage per impervious acre.
- Design No. 11 20-foot wide turf strip.
- Design No. 12 100-foot wide forested strip, with level spreader.
- Design No. 13 High slope swales, with no check dams.
- Design No. 14 Low gradient swales with check dams.

Source: Controlling Urban Runoff: A Practical Manual for Planning & Designing Urban BMPs. 1987.

