
Existing Conditions



Introduction

This section contains information for the framework of the Gustine General Plan. This section identifies existing conditions for each of the required General Plan Elements and trends within Gustine.

Determinants of Change

Table 1-1 shows population changes since 1970 to the present. From 1990 until 1998, the City of Gustine experienced a 5% increase in growth.

Table 1-1: Historic Growth Changes

Year	Population	% Change	Growth Rates
1970	2793	-	-
1980	3142	11%	1.18%
1990	3931	20%	2.27%
1995	4135	5%	1.02%
1998	4140	0%	0.04%

The City Council has assumed a growth rate of 2.5% which will be used in all population projections.

Location and Boundaries

The *existing* city boundaries of Gustine cover an area of 1003.06 acres. Located on the western side of Merced County in California's San Joaquin Valley, Gustine is situated at the crossroads of State Highways 140 and 33. Gustine's regional location is shown on Map 1-1

Land Use

Land use is the principal focus of the General Plan. This section identifies existing land uses within Gustine's city limits and proposed Sphere of Influence (SOI).

Map 1-2 illustrates existing land uses within Gustine's city limits, SUDP, and proposed SOI. It is important to note that the land uses are existing, versus what is in the 1992 General Plan planned uses.

The corporate area of the City of Gustine comprises approximately one square mile (640 acres).

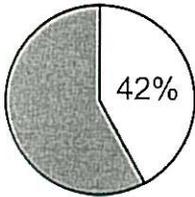
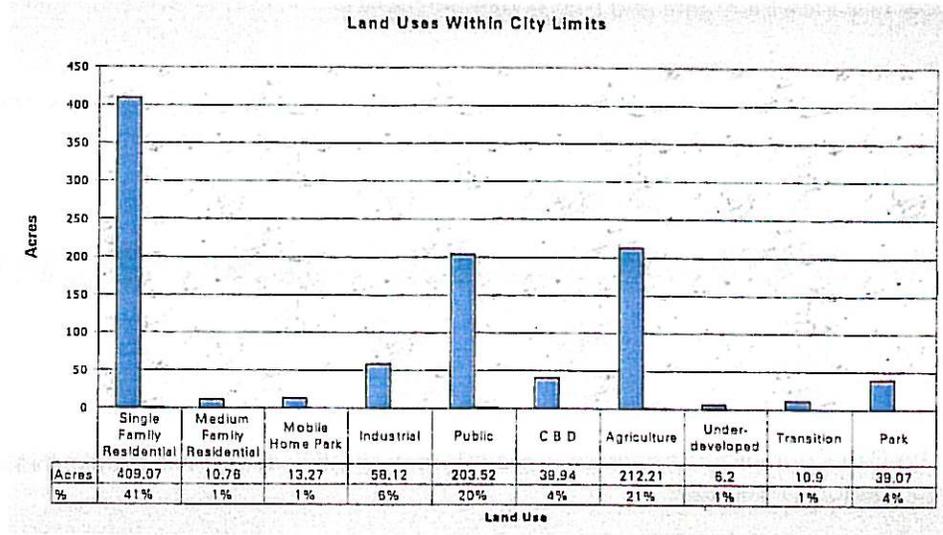




Existing Conditions

Figure 1-2 illustrates the percentage of land uses within Gustine's city limits.

Figure 1-2: Land Uses Within City Limits



Residential Uses

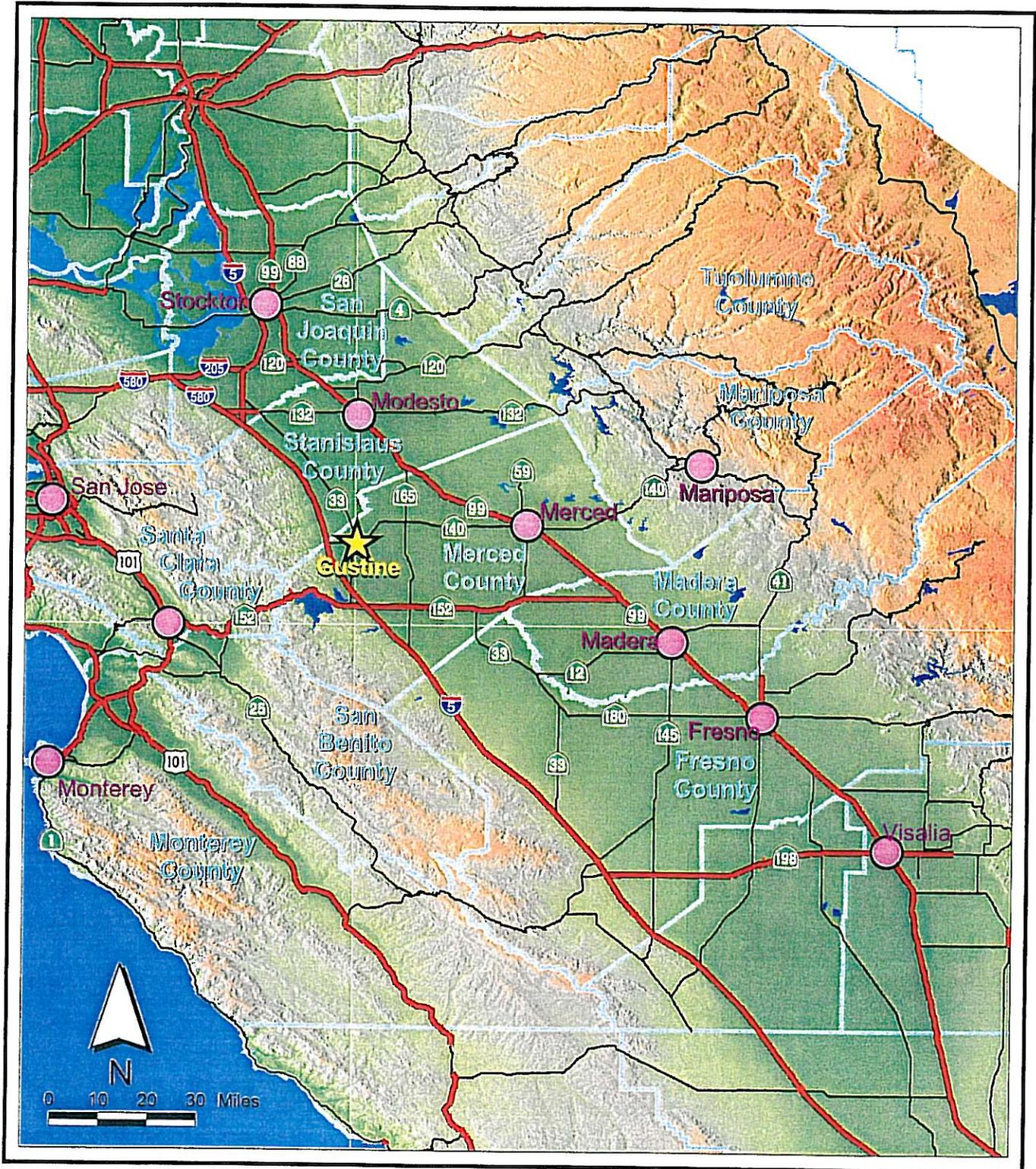
Residential

Approximately 42% of the City is devoted to residential uses, predominantly single family dwellings (41%). There are approximately 6.2 acres of vacant or undeveloped residential land in the City.

Existing Conditions



Map 1-1: Regional Location



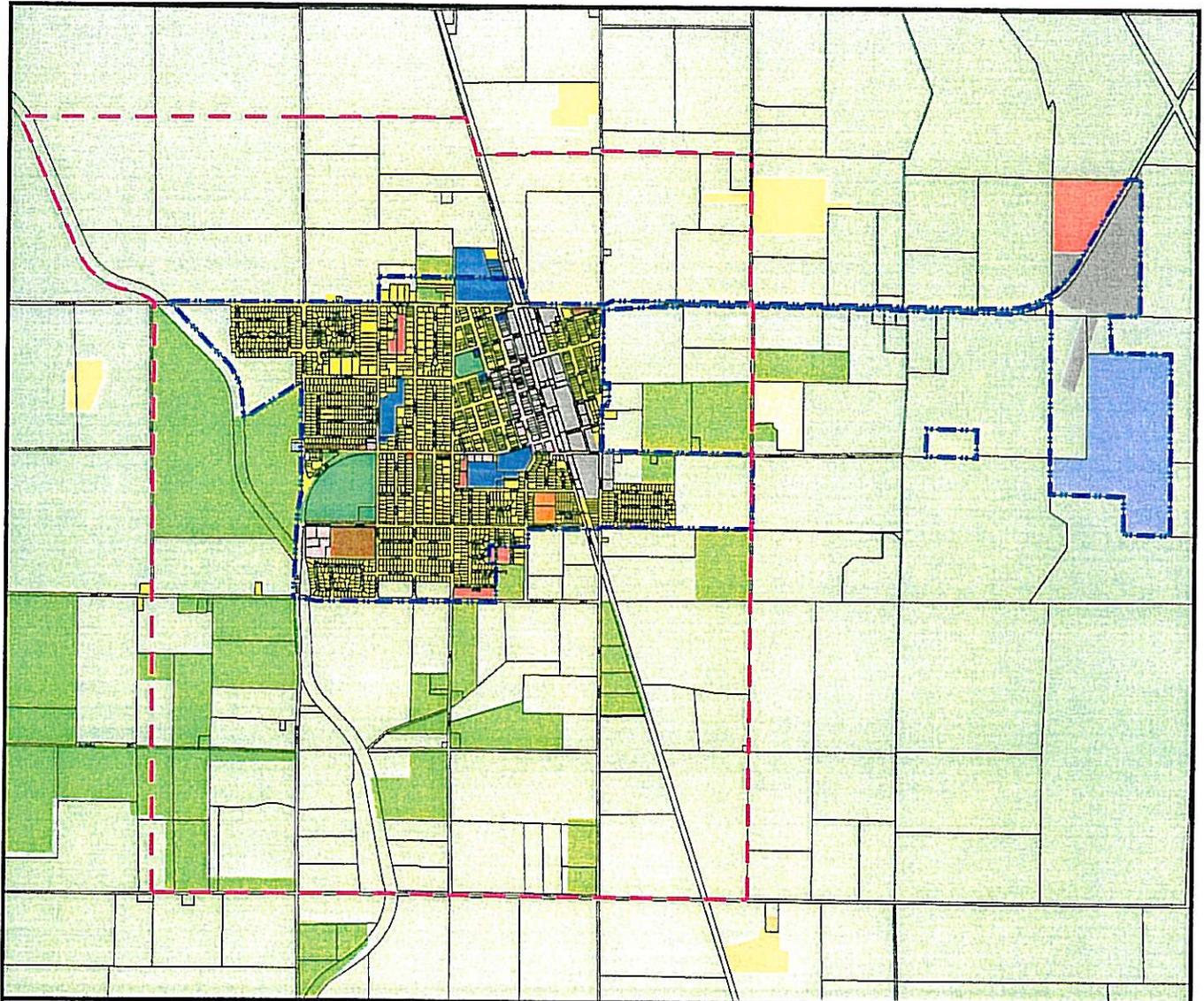


Existing Conditions

Existing Conditions



Map 1-2: Existing Land Uses



Single Family Residential	Grain, Seed, Row Crops
Multi-Family Residential	Orchards, Vineyards
Mobile Home Parks	Dairy and Livestock
Industrial	Poultry
Utilities	Rangeland
Commercial	Land in Transition
Park	Sphere of Influence
Public Use	City Limits
School	

Scale in Feet
March 16, 2001



Existing Conditions

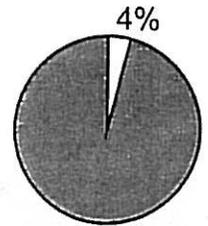
Existing Conditions



Commercial

The City's major retail commercial area is its Retail Business District (RBD) along Fifth Street between Second and Sixth Avenues. Existing commercial land accounts for about 39.94 acres or 4% of the corporate area.

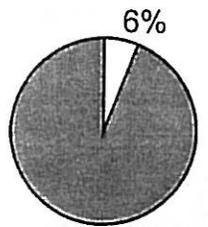
The existing commercial land use designations include Retail Business District, Neighborhood Commercial District, General Service Commercial District, and Highway Commercial District.



Commercial Uses

Industrial

Industrial land accounts for over 58 acres or 6% of the corporate land area. There are two Industrial land use designations. The Controlled Industrial District is designated for restricted non-intensive uses and the Manufacturing District provides for a full range of manufacturing activities



Industrial Uses

Other Land Uses

The existing General Plan designates land for Public Use, Open Space, and Planned Community Development. Public land means land designated for schools, public utilities, parks, wastewater treatment plants, airports and similar uses.

Open space uses include agricultural land and outdoor recreation. Planned community designations may be assigned to residential, commercial or industrial land uses and are intended to give the City flexibility and control in specific site planning and development.

Gustine formerly used a solid waste disposal site located approximately 1/2 mile east of Kniebes Road on Carnation Road. The site consists of about 10 acres and has been abandoned; the city's solid waste is now disposed of at Merced County's Billy Wright landfill.

Circulation

The Circulation Element identifies conditions that provide for the circulation of people, goods, energy, water, sewage, storm drainage, and communications to serve the anticipated land use activities throughout the City. Circulation issues have a direct relationship to other chapters of the General Plan including Land Use, Housing, Open Space, Noise and Safety.

The Circulation Element is divided into three sections that discuss vehicular transportation and roads, alternative modes of transportation (public transit, rail, air, and bicycle routes), and other infrastructure issues (water, sewer, power, irrigation and storm drainage facilities).

Circulation Element

- Vehicular
- Alternative
- Other Infrastructure



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Streets and Roads

Automobile and truck transportation are the primary sources for moving people and commodities in and through the City of Gustine. The roads in the Gustine Planning Area serve different purposes for various land uses.

Local roads in residential neighborhoods provide low volume routes for residents to gain access to retail shopping centers and other activities whereas major streets are used to distribute products (truck traffic), and to provide high volume routes for employees to access industrial and commercial areas.

The City of Gustine uses a functional road classification system together with its General Plan land uses to make up its Circulation Plan. The design characteristic of different roads and their relationship to one another is based upon their capacity to serve the functions of access and movement. Map EC-3 illustrates the circulation system in terms of functional classification, level of service, and current traffic count data.

The City of Gustine supports and participates in the development of the Merced County Regional Transportation Plan (RTP) and its policies and programs. The RTP is divided into two areas. One identifies local projects the City will undertake during the next seven years provided money is made available through Local Transportation Funds (SB380) or other local funding options. The second is a long-range plan that identifies road maintenance and repair over the next twenty years.

Gustine's current traffic volumes are within the carrying capacity of the City's streets. However the maintenance condition of many streets is less than adequate; and, funding for paving has been an issue in Gustine.

Alternative Transportation Modes

Alternative Transportation Modes available to residents in Gustine include inter-city transit, airplane, bicycle, and pedestrian uses.

Transit in Merced County is a regional service providing access from each of the cities in Merced County as well as service in rural areas.

Currently there are two fixed routes and four dial-a-ride (DAR) vehicles providing service to the west side of Merced County.

Route 10 Leaves the City of Merced at 7:00 am on its way to Los Banos, and arrives at 7:50 a.m. At 7:55 am. The Bus starts back from Los Banos to Merced and arrives in the City of Merced at 9:30 am. There are only two runs a day with the second service leaving the City of Merced at 3:30 p.m. and arriving in Los Banos at 5:00 p.m. The bus returns to Merced at 5:50 p.m.



Fifth Avenue,
Gustine's Retail Business District

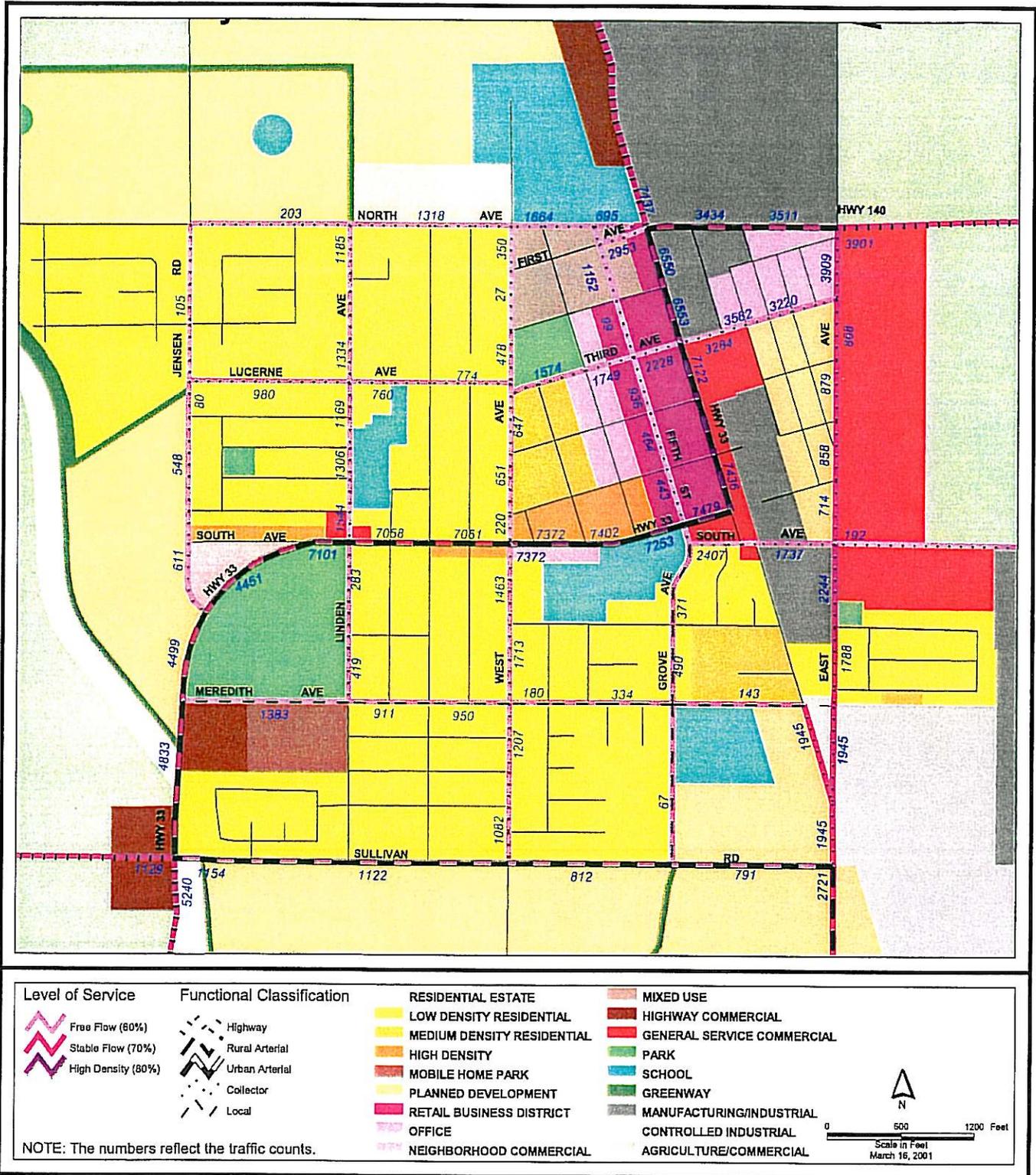


Highway 33/140

Existing Conditions



MAP 1-3: Circulation System





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improvement and where new lines will be required for future development has been done. Currently, the WWTP is being expanded and is expected to be completed in December of 1999. Once complete, the system will be able to handle 1.5 million gallons/day.

The relatively flat topography of Gustine inhibits storm drainage, which subsequently constrains community growth. The philosophy of the design was to grade streets to drain toward the lowlands to the east through pipelines and canals. To the north of North Avenue there is an absence of an adequate drainage system. The community ditch in use to transport drainage runoff to the east was designed for irrigation purposes and grows smaller to the east. This is a limiting factor in its adequacy for drainage use.

Housing

Local governments are required to adopt and periodically update the Housing Element of their General Plan as stated in California Government Code Section 65302(c). The guidelines and requirements for Housing Elements are outlined by the California Department of Housing and Community Development (HCD).

The Housing Element is integrated with the General Plan and recommends land use and development controls consistent with the Land Use and Circulation elements.

The Gustine Housing Element has considered the city's fiscal and environmental characteristics in determining the extent to which it is able to participate in the regional housing need. Given the financing available, price of land and cost of construction, this element endeavors to plan cooperatively with other local governments.

Households

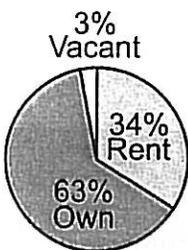
Like many smaller communities throughout California, Gustine lacks the resources to continuously keep an inventory of its existing housing stock. Furthermore, the only available date is from the most recent Census, unless an inventory, paid for by the City, has been completed.

At the time of the 1990 Census, there were 3,931 people living within the Gustine City limits. There were also 1,523 occupied housing units (households) and 60 vacant houses. Gustine is comprised of approximately 63% owner occupied units, 34% renter occupied units and has a 3% vacancy rate. The summer rental vacancy rate is generally less than 1% because of the migrant farm worker influx to Gustine.

Cost of Housing vs. Ability to Pay

In 1990, the City's median home value was \$94,500. The median contract rent was \$303 per month. According to the 1990 Census, over 266 (49%) of the renter households in Gustine paid 25% or more of their gross income for rent and of those, 258 (49%) had household incomes of less than \$20,000. There were 263 (30%) owner households that had selected monthly payments greater than 25% of their income and of these, 93 (11%) earned less than \$20,000.

In June 1991 the sale price of homes ranged from \$60,000 to \$160,000. The median sale price for a 1,500 square foot three bedroom, two bath home was



Households



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The DAR service is strictly a demand-response system that provides rides to the general public, but with priority give to senior citizens and the physically challenged. There is one bus in Dos Palos, 2 buses in Los Banos, and one Bus for Newman, Gustine, and Santa Nella. Both buses from Dos Palos and Gustine go into Los Banos; it should be noted that the Stanislaus Area Regional Transit system (START) also provides service to the Gustine, Newman, and Patterson areas.

Transit providers in Merced County have developed a typical transit user profile which consists of elderly and handicapped, individuals on income assistance, students, and individuals without automobiles. The largest percentage of these are students (29%), elderly (9%) and income assisted (4%).

Bicycling and walking continue to grow in popularity due to their health benefits and recreational value. For some, these sources are their only mode of transportation. Currently there are a little over 200 bicycles registered with the Gustine Police Department. There are no predominant bike routes identified in Gustine.

The Gustine Airport is located approximately 1.5 miles east of the main city area, adjacent to Highway 140. The airport is classified as a General Aviation, Basic Utility Airport by the Federal Aviation Administration. The runway length is 3,200 feet and its width is 50 feet.

Agricultural spraying operators are permitted to use the facility and account for much of the traffic. The nearest commercial aviation service is in Merced.

The Gustine Airport is served by the Gustine Airport Commission which makes recommendations to the City Council on Airport matters. Land use regulation around airports in the County is regulated by the City and the Merced County Airport Land Use Commission.

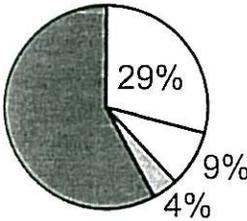
Other Infrastructure

There is an electric substation in Gustine, major (60 KV) electric transmission lines, and a natural gas mainline running through the planning area. These transmission and pipelines run parallel with existing transportation corridors minimizing the effects on land use activities.

Gustine has one major Central California Irrigation District canal just west of the City Limits; the CCID Main Canal. There are also two smaller canals; a community ditch which runs parallel to North Avenue and the CCID pipeline which runs parallel to Meredith Avenue. Both are used for irrigation during summer months and drainage during the wet season. Portions of the community ditch are also pipelined.

Groundwater is treated with a small amount of chloride at the well head and water quality has remained good with the exception of nitrates. Well number three, in the northern part of the city, was shut down because nitrate levels were approaching the minimum State standards. Well number two has also experienced increasing nitrate levels. Well number four was rendered virtually inoperable with the collapse of its clay walls.

Modeling which segments of the existing water distribution system need



- Students
- Elderly
- Income Assisted

Transit User Profile





Permit Activity

From 1990 to the present, the largest number of new residential permits were issued on the south side of the city off of Sullivan Road. Other new permits were obtained throughout the city, but are not concentrated in one particular location. Map 1-4 shows permit activity for 1998.

Rental Activity

Rents within the city vary depending upon the type, age, location, and amenities of the units. Rents range from under \$100 a month to more than \$750 a month, the median being \$303 a month (1990 Census). Rents for one and two bedroom duplexes and apartments now range from \$275 to \$365 per month. The typical two bedroom apartment rents for \$360 per month. Rents for two and three bedroom houses range from \$500 to \$800 per month. Meredith Manor, built in 1985, is a 40-unit complex with subsidized rents for low income families.

According to the California Housing Partnership Corporation's 1991 "Inventory of Federally Subsidized Low-Income Rental Units at Risk of Conversion", the City had no "at risk" units during the 1992 planning period. There are also no locally-subsidized units at-risk, as the City has not issued mortgage revenue bonds, has not approved any density bonuses with financial assistance, does not have an in-lieu fee program, and has not assisted multifamily housing with redevelopment or CDBG funds.

It appears, however, that Gustine Gardens will be at risk of conversion in the year 2000 and Meredith Manor in the year 2008, when their twenty year agreements with Farmer's Home expire. In order to retain these units as low income, the City will pursue a cooperative agreement with the Merced County Housing Authority to acquire and manage these housing developments.

Housing Condition and Overcrowding

In 1993, a housing survey was done in Gustine. Among the issues addressed were housing condition and overcrowding. Table 1-4 summarizes the number of units in 1993 in need of repair.

Table 1-4: 1993 Housing Conditions

	Single Family	Multi-Family	Mobile Units	Total
Number of Units in Area	1270	177	115	1562
Number of units in need of rehabilitation	414	52	15	481
% of units in need of rehabilitation	33%	29%	13%	31%
Number of units surveyed	156			

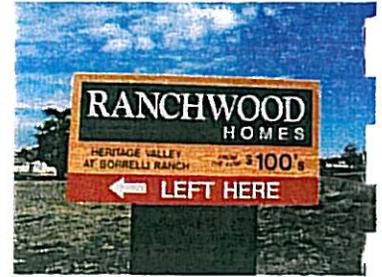
Source: 1993 Self Help Survey

Of those surveyed, a further breakdown was done showing the degree to which homes were in need of repair. Of the 156 surveyed, 51% were in need of moderate repairs and 36% were in need of substantial repairs.

Existing Conditions



approximately \$112,000. Lower priced homes were small, probably one bedroom, which sold for an average price of \$66,000. Local realtors observed an increase in the price of lower priced homes, and a steady price for moderate homes during 1998. Homes under \$130,000 sell well, while higher priced homes (some advertised as high as \$230,000) stay on the market for a greater length of time. Although these homes seem moderately priced compared to other urban areas, providing affordable home ownership for moderate income families in Merced County is a challenge.



Mobile homes provide a more affordable means of home ownership for some residents. A new single-wide mobile home (14'x 60') costs between \$25,000 and \$40,000 depending on amenities, while used mobile homes range between \$2,500 and \$40,000.

There is presently only one mobile home park in the City which is for seniors and has a total of 100 spaces. There are 18 other mobile homes in the City, most of which are in the vicinity of the Beatrice Cheese factory along Highway 140, east of the downtown area.

Household income is a critical factor in determining the type and condition of housing in which people live. According to the 1990 Census, the Gustine median per capita income was \$14,303 per year, compared to \$10,606 for Merced County and \$16,409 for the State of California.

Gustine	\$14,303
Merced County	\$10,606
State of California	\$16,409

**Median
Per Capita
Income**

Tables 1-2 and 1-3 illustrate the gross rent and house payments as a percent of income.

Table 1-2: Number of Renter Households by Gross Rent as a Percent of Income

Rent as % of Income	<10,000	10,000-19,999	20,000-34,999	35,000-49,999	50,000 or more	Total
0-19%	0	12	60	104	19	195
20-24%	0	11	30	10	6	57
25-29%	21	10	4	4	0	39
30-34%	18	43	0	0	0	61
35+%	90	76	0	0	0	166
Not computed	0	14	0	0	0	14

Source: 1990 US Census

Table 1-3: Number of Owner Households by Home Ownership Costs as a Percent of Income

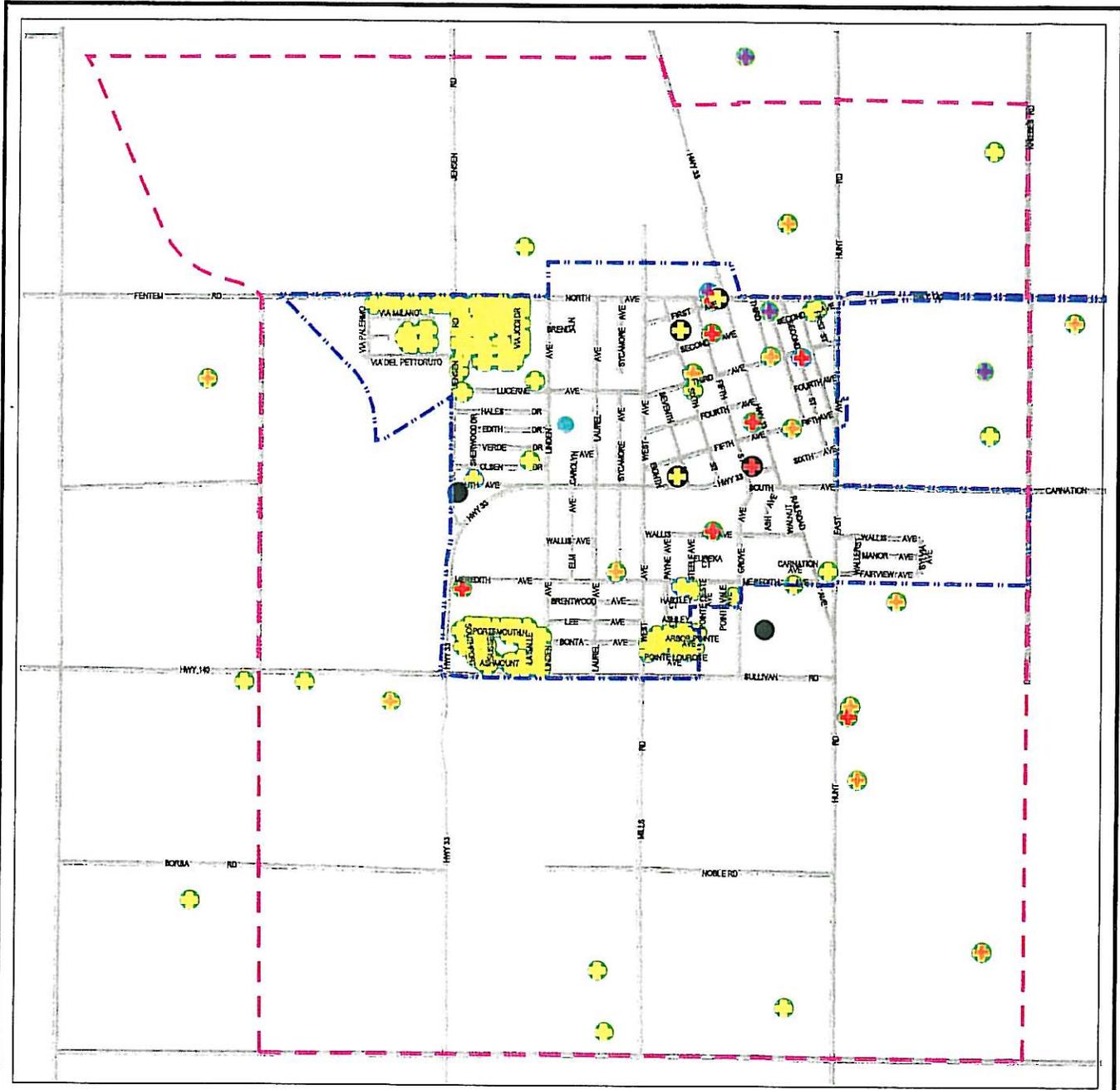
Owner Costs as % of income	< 10,000	10,000-19,999	20,000-34,999	35,000-49,999	50,000 or more	Total
0-19%	17	66	141	114	131	469
20-24%	15	21	28	37	38	139
25-29%	8	13	21	47	9	98
30-34%	0	0	17	14	11	42
35+%	33	39	30	13	8	123

Source: 1990 US Census

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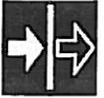
MAP 1-4: Permit Activity



<p>Unit Type</p> <ul style="list-style-type: none"> + Residential + Commercial + Industrial + Other 	<p>Construction Type</p> <ul style="list-style-type: none"> ● New ● Addition ● Demolition 	<p>--- City Limits</p> <p>--- Sphere of Influence</p>	<p>N</p> <p>0 1100 2200 Feet</p> <p>Scale in Feet March 18, 2011</p>
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Existing Conditions

Table 1-5 shows the breakdown of the survey.

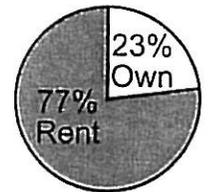
Table 1-5: 1993: Breakdown of Units Classified as in Need of Rehabilitation

	Number of Units	% of Units Surveyed
Minor	18	12%
Moderate	80	51%
Substantial	56	36%
Dilapidated	2	1%
Total	156	100.0

Source: 1993 Self Help Survey

The 1990 U.S. Census indicated that 120 households in Gustine were defined as overcrowded. Of these, 92 (77%) were renter households and 28 (23%) were owner occupied households.

The U.S. Census Bureau defines overcrowding as more than one person per room, not including the kitchen and bathroom. Overcrowding may be a more significant problem than statistically indicated, especially during the summer months when an influx of seasonal and farm workers arrive.



**120
Overcrowded
Households**

Housing Stock Conditions

Housing stock conditions in Gustine are generally good due to active abatement and code enforcement. Many of the City's older houses are also located in stable neighborhoods and are maintained.

Older housing stock can become an important source of housing for low and moderate income people as these houses "filter down" in price. Unfortunately, many older "filter down" units require substantial maintenance and repair that sometimes adds to the "affordability gap" for moderate income households.

Public Facilities and Services

The City's engineer and a consulting engineer completed three studies in 1990, which more specifically defined local water and wastewater system needs. The City Council has used the results of these studies to determine hook-up fees and water and sewer rates, the money from which will be used to make system improvements.

One deficiency that has not yet been comprehensively analyzed or funded for improvement is the city's storm drainage system. It is estimated that within three years, a revised storm drainage plan will need to be completed. This will become a priority during the next two years and before significant development takes place in northern Gustine.

Public Protection

Gustine currently has a 25 member volunteer Fire Department and it also contracts with the County for fire services. The City's Police Department provides adequate service with 6 full time officers, and full time dispatching.

Special Needs

Residents with special needs in the City of Gustine include the elderly, large families, disabled people, families with a single parent head of household,



farm workers, and the homeless.

Currently there is no working relationship between the City and the Merced County Housing Authority. However, there are some low-income residential areas managed by Professional Apartment Management (PAM) of San Joaquin County, in which residents must meet FMHA low income criteria. PAM believes there is a need for additional low income housing, since they do have a waiting list.

Households in the City of Gustine that appear to have the most critical needs are the elderly and single parent headed households. Both groups are sizable percentages of the residents in Gustine with very low incomes, coupled with the need for unique housing, such as larger living units for single parent headed families or accessible community environments for the elderly. These factors sometimes make adequate housing for the two groups difficult. Large family, farm worker, and disabled person households also have special needs.

Elderly

The elderly group in Gustine experienced above average growth between 1980 and 1990. This group grew by 38% compared to the 25% growth for the entire population during the ten year period. In 1990, 541 (36%) of the City's 1523 households consisted of residents 65 years or older. Of these, 108 elderly householders rented homes.

Gustine Garden Apartments, a 35 unit senior citizen housing development was built in 1982 by private enterprise with the use of a 515 Federal loan through Farmer's Home Administration. These duplexes, designed for the elderly are a tremendous asset to the City and there will be an increasing demand for more of these types of units in the future.

It is interesting to note that there are a significant number of people in Gustine who live alone. Of the 378 men and women who live alone, according to the 1990 US Census, 232 or 61% are over the age of 65.

This indicates that there is, or will soon be, a demand for a convalescent facility, more retirement oriented residential communities or both. The City can entertain proposals for these in any medium to high-density residential district using a Planned Community overlay zone. The smaller six person in-home care facilities can be located in any residential district.

Single Parent Head of Household

Single parent heads of households families comprised 12.5% of all households in Gustine in 1990, with 143 households (9.4%) headed by females and 47 households (3.1%) headed by males. In 1990, 96 of the children who lived in single family female head of households lived below poverty level (70% of all children in single female headed households), while all children living with single male headed households lived above the poverty level. Most of the children living below poverty level were under age six.

Thirteen percent of children under six living with a single mother had mothers who worked, while 70% of children between six and 17 living with a single mother had moms who worked.



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As in much of the surrounding area, single-headed families with children are one of the groups most in need of public assistance. The status of such families has planning implications for housing, childcare, recreation programs, schools, and other social services. Gustine recognizes the need for these families to have affordable rental housing, often with three or more bedrooms.

Farm Workers

During the summer and early fall, there is a large migrant farm worker population in Gustine. The size and needs of this group are difficult to gauge because of its transient nature and the fact that some of these workers are undocumented aliens.

The availability of housing for farm laborers is impacted by the influx of better paid packing shed workers who compete for short-term housing. What often happens is that farm laborers "double up" or live in "non-housing" units. This make-do type of farm worker housing is detrimental to the neighborhoods where it takes place and points to a need for adequate seasonal housing.

The 1991 "Merced County Housing Needs Determination" estimates that 280 assisted housing units are currently needed countywide, assuming that farm workers needs are equal to their proportion of the labor force.

Merced County currently has three programs that are specifically directed towards farm worker housing. The FMHA 514 and 516 programs provide assistance to public or private non-profit organizations to develop farm labor housing. The State Housing and Community Development Farmworker Housing Grant Fund provides matching funds to the same organizations for new construction or rehabilitation of housing. The State Office of Migrant Services operates two migrant farm worker housing centers in the County, one of which is located on State Highway 165 north of Los Banos.

Homeless

Gustine occasionally has homeless persons however, there is virtually no permanent group living on the street. The Police Department, in cooperation with the Salvation Army, work to find temporary lodging for destitute persons and families. Additional emergency housing and longer term support is provided by the County Social Services Department and local churches and service organizations.

Persons in Group Quarters

Group quarters refer to two types of living arrangements: a living situation where unrelated persons share kitchen and perhaps bath facilities such as a boarding house and the other situation applies to units in which people are cared for and includes facilities such as hospitals, convalescent homes, boarding schools, and prisons.

According to the 1990 U.S. Census there are currently no Gustine residents living in group quarters. This could change in the next five years as an aging population could be served by the development of a convalescent home.

Noise

The principal noise source in the City of Gustine is traffic on State Highways and industries. The existing noise environment in the City of Gustine was



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determined by a combination of noise level measurements and noise modelling. Following is a discussion of the background noise level survey results, and a description of significant noise sources in the City.

Major Stationary Noise Sources

The production of noise is an inherent part of many industrial, commercial and agricultural processes, even when the best available noise control technology applied. Noise production within industrial or commercial facilities is controlled indirectly by Federal and State employee health and safety regulations (OSHA and Cal-OSHA), but exterior noise emissions from such operations have the potential to exceed locally acceptable standards at nearby noise-sensitive land uses.

The City and BBA selected stationary noise sources that were studied. Noise exposure information was developed from operational data obtained from source operators (when available) and noise level measurements conducted at reference locations around the noise source. Only existing noise levels are described since there are too many variables and unknown conditions to predict future noise exposure.

The following discussions provide generalized information concerning the relative noise impacts of each source, and identify specific noise sources which should be considered in the review of development proposals where potential noise conflicts could result. Not all industrial noise sources in the City are discussed. Unidentified industries or other major noise sources may exist, which could generate significant noise levels and result in noise-related land use conflicts.

Generalized 50 and 55 dBA hourly L_{eq} noise contours were prepared for major stationary noise sources where it was determined that such contours would be located off the property occupied by the source. These contours are included in Map 1-5. The generalized contours contained within Map 1-5 should be used as a screening device to determine when potential noise-related land use conflicts may occur, and when site-specific studies may be required to properly evaluate noise at a given noise-sensitive receiver location.

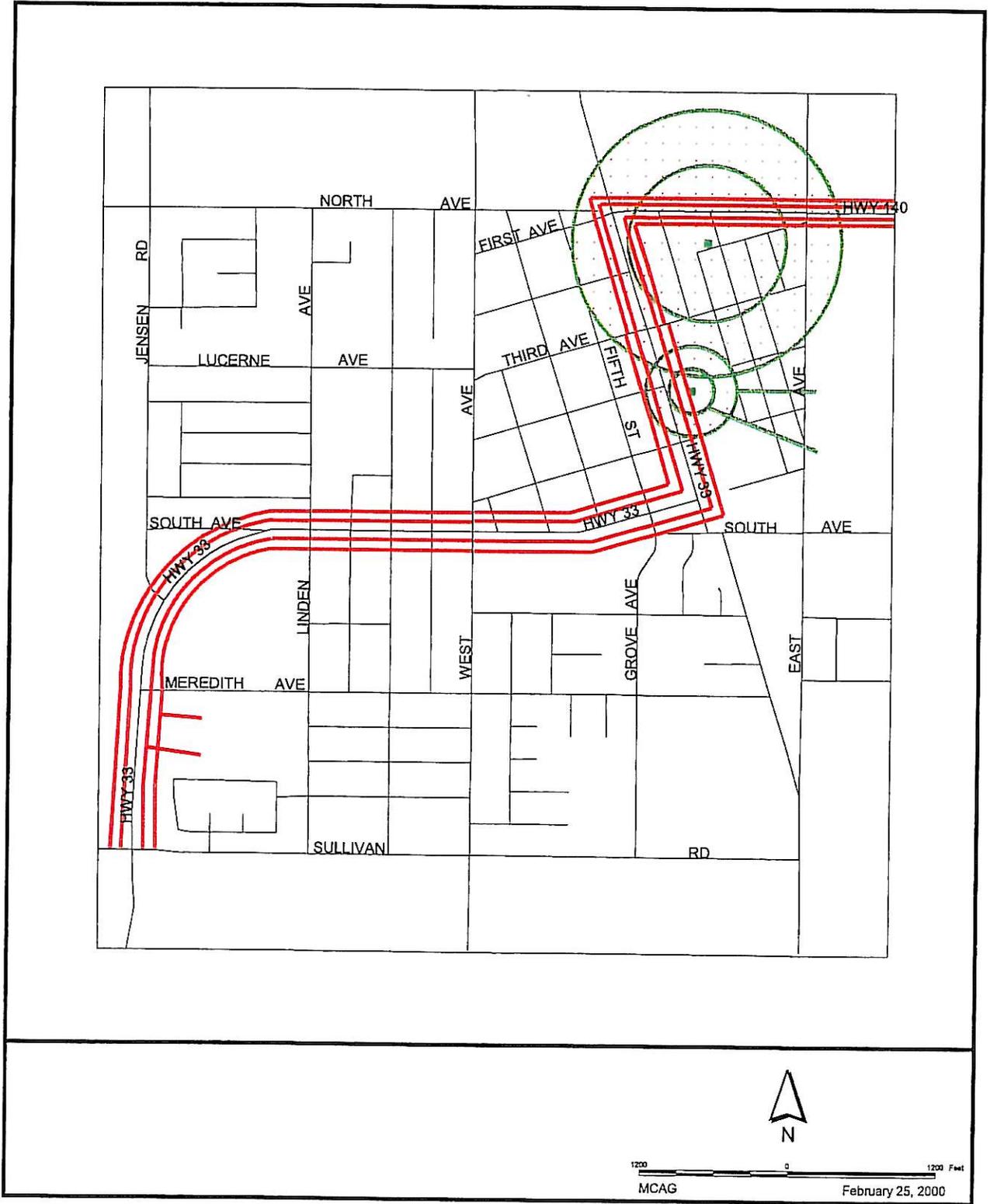
Land O Lakes:

This facility is located south of S.R. 33 between Second and Third Streets. The Beatrice plant processes cheese and cheese by-products. The major noise sources at the plant are cooling towers, pumps, fans, compressors and similar equipment. A residential area is located south and east of the plant. During the morning of February 12, 1999, sound level measurements were conducted at the southeast corner of Second Avenue and Second Street, which is about 120 feet from the plant's cooling tower. Sound levels at this location ranged from about 66-70 dBA, with an energy average (L_{eq}) of 68.8 dBA. Another measurement was conducted at Second Street and Fourth Avenue which is about 700 feet from the cooling tower. Sound levels at this location ranged from about 48-51 dBA, with an L_{eq} of 50.4 dBA.

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Map 1-5: Noise Contours





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Safety

There are wide ranges of environmental hazards that must be taken into account when planning for urban development. In most cases, proper planning can reduce threats to human safety and also the economic and social disruption resulting from natural hazards. The Safety Element identifies safety hazards in an effort to protect Gustine residents from unreasonable risks and reduce the impacts of natural hazards to the community. This section inventories and assesses the major hazards in the Gustine planning area including seismic activity and its related effects, flooding, fires, the storage and transport of hazardous materials and crime. The Safety Element also identifies emergency evacuation routes, their minimum road widths, and peakload water supply requirements in relation to the various safety hazards.

Earthquakes

The nearest faults of major historical significance are the San Andreas to the west of Merced County, a distance of approximately 40 miles from Gustine; the Hayward and Calaveras faults to the northwest; the White Wolf, Garlock, and Sierra Nevada faults to the south, and the Bear Mountain Fault Zone about 40 miles to the northeast of Gustine. These faults have been, and will continue to be, the principal source of seismic activity affecting the County of Merced, see Map 1-6.

The "Ortugalita" is the only known fault inside Merced County, also known as the "Telsa-Ortugalita Fault" This fault bisects the Coastal Range approximately 10 miles from Gustine but historically has not been active.

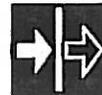
Gustine has never been an earthquake epicenter, however earthquakes originating elsewhere have shaken the city. There is documented evidence of seven earthquakes that shook the area in 1872, 1906, 1952, 1966, 1979, 1984, and 1989 and there may have been others that were not documented.

In the past no loss of life, serious injury, or major damage has occurred in Gustine due to earthquakes. However, if an earthquake epicenter was in or near Gustine, the city's downtown would be destroyed much like Coalinga in 1982.

Liquefaction & Tectonic Subsidence

No specific liquefaction areas have been identified in Gustine; however, the potential exists due to the high water table and disposition of some soil types such as those in the wetlands adjacent to Gustine.

Tectonic subsidence occurs when loose, less cohesive soils are compacted due to earthquake shaking. This is most likely to occur where groundwater surface is deep, the soils are loose to medium in density, and the soil profile includes strata of loose and uniformly graded sand. These characteristics are not present within the Gustine planning area.



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This distance to the 50 and 55 dBA hourly L_{eq} contours are about 1,050 and 600 feet, respectively, using the standard assumption that sound from a point sources diminishes at the rate of 6 dB/doubling of distance. These contours are shown on Map 1-5.

Avoset Foods:

This food processing plant is located east of S.R. 33 and south of Fourth Avenue. Major noise sources at the plant are fans and refrigerated trucks. A residential area is located east of the plant. Sound level measurements were conducted during the morning of February 12, 1999 at Fifth Avenue and Second Street, which is about 150 feet from the fans on the east side of the building. Sound levels ranged from about 48-51 dBA, with an L_{eq} of 50.4 dBA.

The distance to the 50 and 55 dBA hourly L_{eq} contours are about 350 and 200 feet, respectively, using the standard assumption that sound diminishes from a point source at 6 dB/doubling of distance. These contours are shown on Map 1-5.

Traffic Noise Sources

Traffic noise exposure was calculated using the Federal Highway Administration Highway Traffic Noise Model (FHWA Model). The FHWA Model is the analytical method currently favored by most state and local agencies, including Caltrans, for highway traffic noise prediction.

The Model is based upon reference energy emission levels for automobiles, medium trucks, (2 axles) and heavy trucks (3 or more axles), with consideration given to vehicle volume, speed, roadway configuration, distance to the receiver, and the acoustical characteristics of the site.

The FHWA Model was developed to predict hourly leg values for free-flowing traffic conditions, and is generally considered to be accurate with ± 1.5 dB. The Model assumes a clear view of traffic with no shielding at the receiver location. To predict L_{dn} values, it is necessary to determine the hourly distribution of traffic for a typical day and adjust the traffic volume input data to yield an equivalent hourly traffic volume. The Calveno traffic noise emission curves were used as recommended by Caltrans to more accurately calculate noise levels generated by California traffic.

Traffic conditions for existing conditions (1998) that were used in FHWA Model were provided by the Merced County Association of Governments (MCAG). Appendix A lists traffic modelling input data, existing traffic noise levels calculated at locations representing the assumed distance to the nearest residences, and the distance to noise contours. Figure 1-4 shows the distances to noise contours from roadway centers.

In general, existing traffic noise levels on State Highways through Gustine range from about 61-65 dB L_{dn} at the nearest receivers on most roadways. Traffic noise levels that are 60-65 dB L_{dn} usually are considered to be fully compatible with noise-sensitive uses, which include residences, schools, churches and hospitals. Levels between 65 and 75 dB L_{dn} are marginally acceptable, and usually can be mitigated to acceptable levels. Levels over 75 dB L_{dn} are usually unacceptable, and it may not be feasible to reduce such levels to acceptable values.

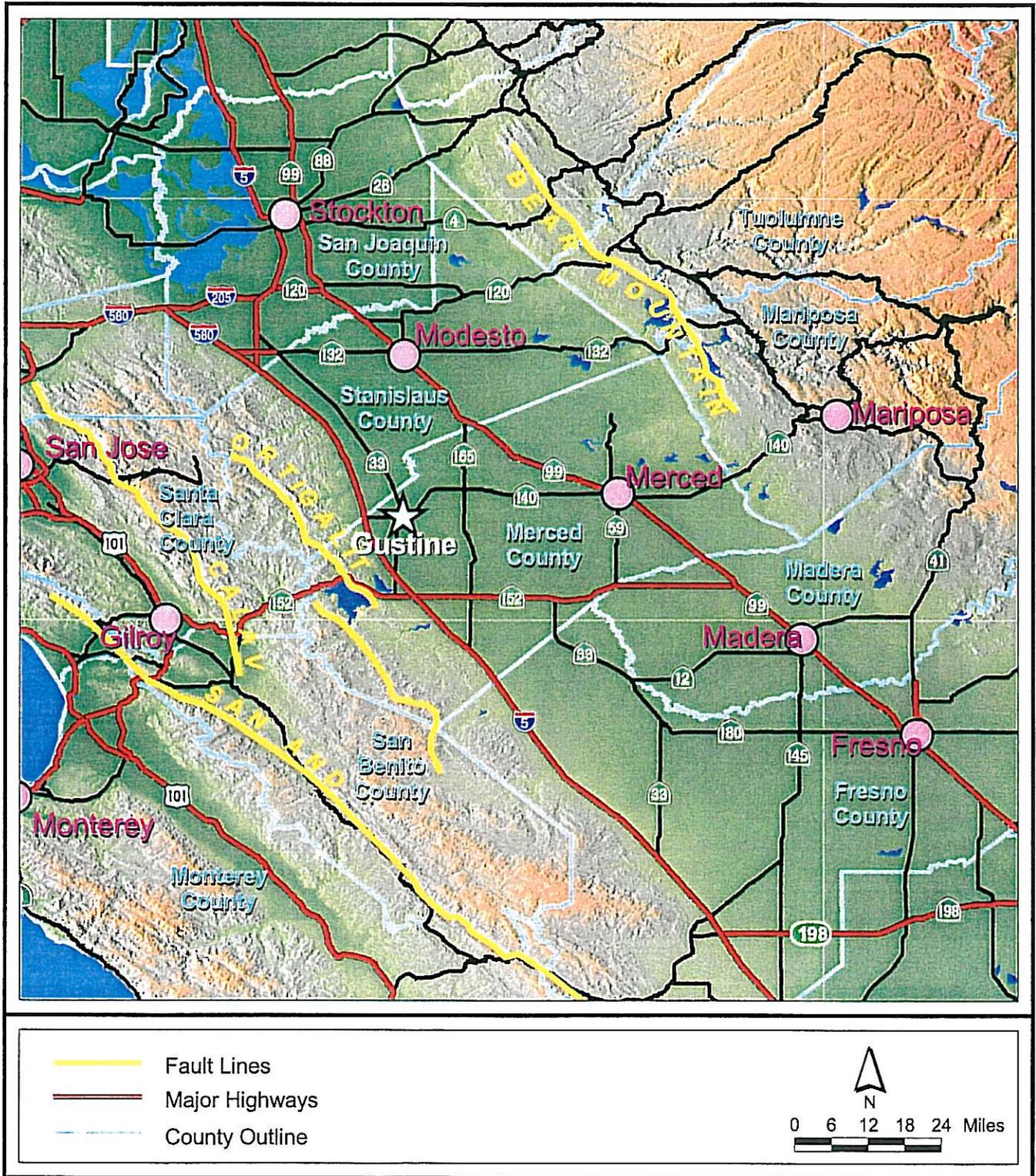


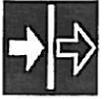
Existing Conditions

Existing Conditions



Map-1-6: Faults of Major Historical Significance





Existing Conditions

Hazardous Buildings

Unreinforced Masonry (URM) buildings are historically known for their poor performance when subjected to earthquake fault displacement, landslide, or soil liquefaction. Consequently, URM buildings are considered a dangerous threat to life. Emergency facilities that are constructed out of URM, such as fire stations and schools, pose an even greater risk during these life threatening circumstances.

The State Division of Mines and Geology has designated the Gustine area with a Maximum Expectable Earthquake Intensity of "High Severity Major Probable Damage". These "intensity zones" identify the severity of earthquake damage which is different than the seismic zones used for building code compliance. Emergency response and evacuation for earthquakes is discussed under Emergency Evacuation routes.

Potential Dam Failure

Gustine is just west of the Potential Dam Failure Inundation Area for the San Luis, McClure, and Los Banos Creek Detention Reservoirs and would therefore be unaffected if failure were to occur.

Flooding

Flooding, more than any other weather related threat, is the greatest contributor to property loss in the United States. Fortunately, Gustine is not within a 100 year floodplain nor has it experienced a disastrous flood. The flooding that has occurred in this area is associated with poorly developed surface drainage because of flat topography, clay soils, and a high water table. In Gustine the free water depth is 5 to 20 feet below the surface. This could result in flooding associated with poor drainage.

Urban Fires

Urban fires are defined as the uncontrolled burning of residential, commercial, or industrial property. Risks involved include personal injuries, fatalities, or property damage caused by fire. Fires are accelerated due to poor building construction, lack of built-in fire protection such as sprinklers, highly flammable contents, delay in detection and alarm, inadequate fire protection equipment and the lack of sufficient water supply.

The Gustine Fire Department is made up of one chief and eighteen trained volunteer firefighters. The station is manned full time by the California Department of Forestry (CDF) whose services are paid for by the County. The City pays for building upkeep, its own fire fighting equipment, and its part-time employees. The City has a mutual aid agreement with the County to cooperatively control major fires. The County is the first to respond to fires and then city volunteers are called as needed.

Response times throughout the City and proposed SOI vary from 2 to 3 minutes.

Peakload Water Supply Requirements

The increased use of hazardous materials and the ever-present threat of arson make it clear that the Gustine area is not exempt from experiencing a major urban fire. The 1990 Water Supply Study for the City of Gustine reveals that during peak demand in the summer months peakload water supply falls short. This can be overcome with the use of the tower storage, however this only



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lasts for 25 of the recommended 120 minutes. To obtain the two hour flow required, either additional storage tanks, additional wells or a combination thereof is needed (1990 Water System Study for the City of Gustine).

Wildland Fires

Wildland fires occur from a combination of climatic, vegetative and physiographic conditions and have the potential to cause loss of life and property damage. Most of the undeveloped land within Gustine is irrigated agricultural land, which has a low potential for fire hazard.

A response to wildland fires would come from federal, state, and local government fire protection agencies through an urban/ rural interface. Wildland fire hazards may be reduced by enforcement of proper building codes, use of green belting, prescription burning to control fuel load, weed abatement, and implementation of other fire safe practices. The City of Gustine subscribes to all of these practices.

Emergency Evacuation Routes

Earthquakes, fires, and flooding are all hazards that require planned evacuation routes to move residents to safer ground. For the most part, major highways such as Highway 33 and 140 would be used for evacuation. However, alternative routes including major east-west and north-south arterials (designated in the Circulation Element) and County roads should also be used. Some hazards are more predictable than others and therefore emergency responses will vary.

Intracity routes would be regulated by the California Highway Patrol in conjunction with County sheriff and City police. For more detailed information on evacuation routes see the Merced County General Plan. The City endorses and will abide by the Office of Emergency Services "Multi-Hazard Functional Plan" and any amendments made to it.

Hazardous Materials

The City of Gustine has had one serious encounter with Hazardous Materials when there was an ammonia leak at the Beatrice Cheese Co. plant in 1986 and nearby residents were forced to evacuate. Luckily there were no serious injuries because local emergency crews knew how to deal with such a disaster. The most common type of hazardous waste problem in Gustine is related to leaking underground storage tanks.

Circulation Safety

In order to provide safe circulation for all types of travel, the City has set standards for the design of building construction and circulation facilities. Design standards include building setbacks for optimum clearances around structures and minimum road widths (also defined in the Circulation Element). Speed limits are set based upon a road's designation and intended use. Crosswalks are also provided for pedestrians at strategic locations.

Canals and Drainage Ponds

The CCID canal, which borders the western edge of the City, and the storm water drainage ponds at various locations are potential safety hazards. As a precaution, warning signs have been posted and fencing will be implemented with development.

Aquatic Insect Problem

Due to the proximity of wetlands and irrigated farmland to Gustine's urban



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areas, some residents may already experience problems with mosquito nuisance and associated health problems.

Open Space and Conservation

The Open Space/Conservation section is a plan for the complete long-range management, preservation, and conservation of "open-space lands" and other natural resources. Gustine has combined these elements because of the interrelated nature of the issues they address.

This Section includes information relating to the management and conservation of the city's natural resources including; wetlands plant and wildlife, soils, agricultural lands, air, water, cultural and historical resources and outdoor recreation.

"Open-space land" is defined as an unimproved parcel or area of land (or water) that is devoted to open-space and is designated on a local, regional or state open space plan. The open-space land must also meet the following requirements:

- (1) Open space for the preservation of natural resources that includes areas required for the preservation of plant and animal life, including habitat for fish and wildlife species and other natural resources; areas required for ecological and other scientific study purposes; bodies of water, which includes streams and their banks, as well as watershed lands.
- (2) Open space used for the managed production of resources, including but not limited to, rangeland, agricultural lands and areas of economic importance for the production of food or fiber; and areas required for recharge of ground water basins.
- (3) Open space for outdoor recreation, which includes areas of outstanding scenic, historic and cultural value; areas uniquely suited for park and recreation purposes, including areas which serve as links between major recreation and open-space reservations, including utility easements and trails.
- (4) Open space for public health and safety, including areas, which because of hazardous or unusual conditions, require special management or regulation. Conditions include flood plains, watersheds, areas presenting high fire risks, areas required for the protection of air and water quality, and water reservoirs.



Conservation

The Conservation Element overlaps provisions found in the Open-Space, Land Use, Safety, and Circulation elements. It differs, however, from other portions of the General Plan in that it is almost exclusively related toward natural resources.

The Conservation Element emphasizes the conservation, development, and utilization of specified resources. In the case of Gustine, these resources include soils, water, wildlife, reclaimed land and watersheds. Flood control,



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as it applies to irrigation canals, is also covered in this section.

No important mineral resources have been identified in the Gustine Planning Area. Therefore, no sites are designated as areas of statewide or regional significance. Should any significant deposits be discovered by the State in the future, the City will establish and incorporate mineral resource management policies into its General Plan.

Wetlands

There are no wetlands within the current or proposed SOI boundaries. Mixed wetland and upland areas east and south of the city consist of flats and marshes while the lands adjacent to them are agricultural.

It should be noted that wetlands are of value because the combination of shallow water and vegetation can remove pollutants from the water, increase nutrient production, provide flood storage and groundwater recharge, reduce storm erosion, create waterfowl and shorebird habitat, and provide passive and active recreation.

Plant and Wildlife

Currently, land within the Gustine SOI which has not been developed, has been cultivated for agricultural use and most native habitats have been replaced.

Soils

Soil resource protection and management issues include loss of soil through erosion, depletion, contamination, and conversion. In the Gustine area, flat terrain, as well as a high level of erosion control awareness and practice by farmers, minimizes soil erosion. Presently, there are no significant problems with pesticide contamination. Instead, soil contamination problems in the Gustine area are associated with increased salts and selenium due to agricultural drainage and irrigation practices.

Soils could be depleted with inappropriate farming practices, but, with properly managed agricultural practices, organic content increases. In areas of urban development, natural and manmade chemical contamination is another concern.

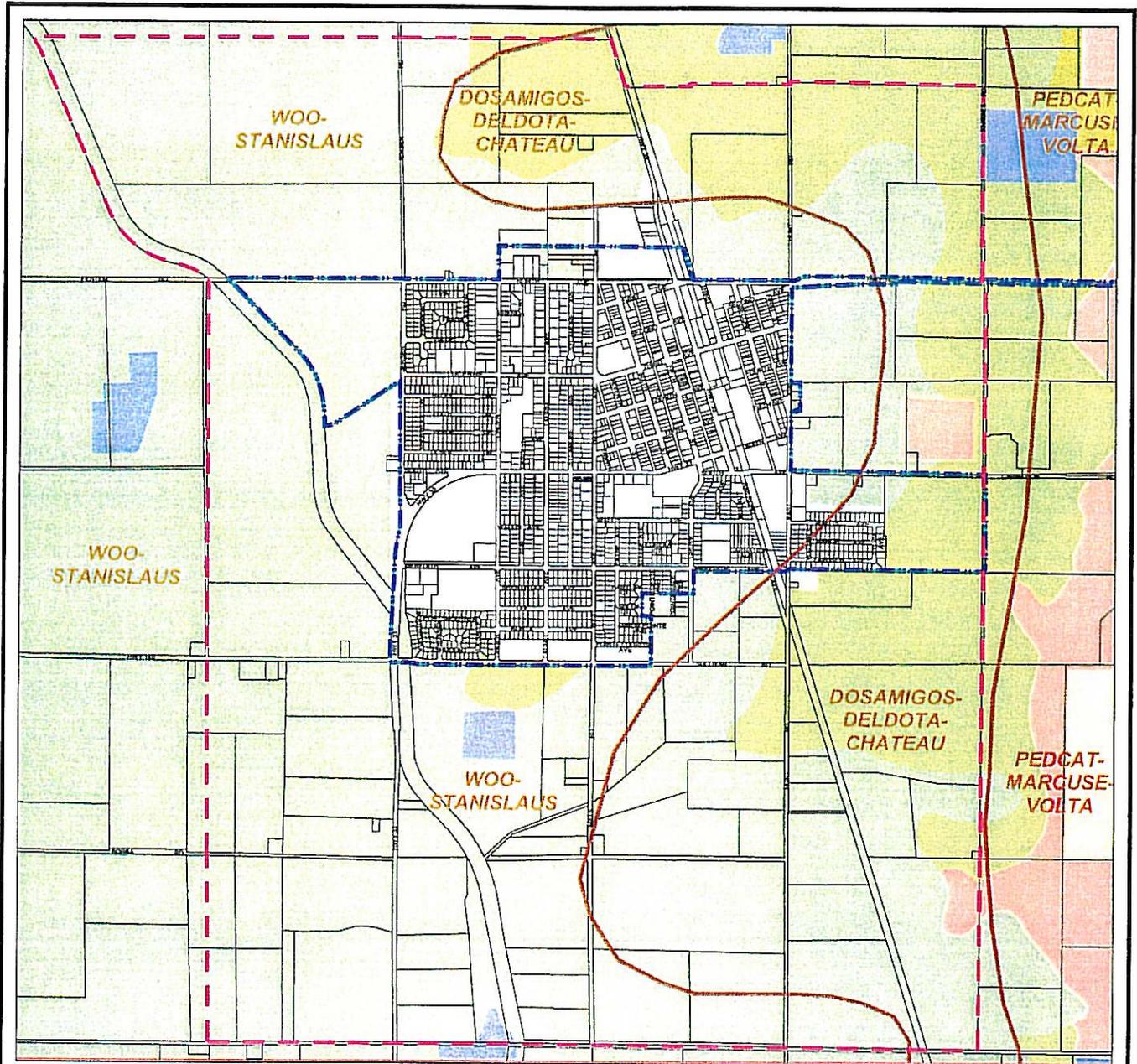
Due to the high salt content of some soils within the Gustine planning area, and a high water table, agricultural practices need to be carefully managed. Agricultural and other open space land uses are capable of renewing and protecting the soil's productive potential and in preserving its availability. Land uses requiring structural development eliminate the soil's productivity. Therefore conversion of valuable soil resources from productive to consumptive uses should be minimized.

Map 1-7 shows that almost half of the land within the proposed Gustine SOI is being used for agricultural purposes and, according to soil data from the United States Soil Conservation Service (SCS), a large percentage of that land is rich agricultural land which does not have excess clay content.

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Map 1-7: Agricultural Purpose



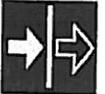
Important Farmlands		
Urban	Statewide Importance	Soils
Grazing	Unique	City Limits
Local Importance	Other	Sphere of Influence
Prime Farmlands		

N

0 1100 2200 Feet
Scale in Feet
July 17, 2000



Existing Conditions



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Even less productive soils have been enhanced by the use of tile drains, which artificially lowers the water table and gives local farmers a degree of success with orchards on the east side of the city.

Soils within the proposed Gustine SOI are predominately Woo (279), Stanislaus (254), and Dosamigos (168). Also within this area is Dosamigos (169) and Woo (274, 277). Additional soils that are within the proposed SOI are Stanislaus (255) and Woo (282). (Source: Soil survey for Western Merced County 1990).

Characteristics of the Gustine area soils include their ability to support various flora and fauna. Most of the soils are also appropriate for recreational uses such as paths, trails, golf fairways, camp, and picnic and playground areas.

Dosamigos (168) is only moderately useful for camping, picnic and playground uses due to its slow percolation rate.

Dosamigos (169) has severe problems for play areas and golf fairways because of the high clay content, and has moderate utility for other recreational uses. Soils should be tested before recreational development occurs. Some of the limitations are due to dustiness, high erosion potential, slow percolation, and a high clay content.

The Gustine area soils do not have potential as a good resource for construction materials and the soil suitability for providing sand and gravel material is improbable.

The majority of the soils have a moderate to severe shrink-swell problem that limits the location of dwellings with or without basements, as well as commercial buildings, streets and roads. Dosamigos (169) has the most severe development limitations within the proposed SOI.

The few choice sites for development also offer the best soils for agriculture and recreational uses. Most of the soils are rated "moderate" for shallow excavations because they are too clayey and wet. Most soils are judged to be good for landscaping, but a few are ranked "severe" because they possess too much clay.

Agricultural Lands

Agriculture provides the major economic base for Gustine, as it does for other west Merced County rural communities. In 1990, almost 34% of the Gustine area employment was in agriculture and its related services. Currently, the major industries are milk product processing, nut processing, and other agricultural related services such as crop dusting and land leveling.

There are approximately 1700 acres of active farmland within Gustine's proposed SOI. There are currently 474 acres of agricultural land within the City's existing SOI boundary.

Water

Gustine is within the Gustine Watershed and Groundwater Recharge Area. Water quality in the Gustine area is generally good. Gustine is also included within a large area on the westside of Merced County that has more than 1,000 parts per million (ppm) Total Dissolved Solids (TDS). The city water



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supply is drawn from four wells approximately 200 feet deep.

The west side of Merced County's surface water has high salinity rates due to the sediments that comprise the Diablo Range of the Coastal Mountains. The quality of groundwater is also determined by salt concentrations in the soil and to a lesser degree by the level of nutrients, pesticides, and other contaminants. Low quality groundwater is found throughout much of the San Joaquin Valley Basin with high levels of soil boron and TDS occurring west of the San Joaquin River.

The Gustine area has high concentrations of Nitrates, DBCP, chloride, lead and sulfate, as well as hard water problems. Groundwater quality affects drinking water, agricultural irrigation, and water diverted to wildlife habitats. In the Gustine area, where there is a high water table, salt-laden water accumulates in the soil and steadily rises as irrigation and leaching continue. Tile drains and groundwater pumping is used to control subsurface drainage that is recirculated for irrigation or is discharged through drainage ditches to marshlands of the Grasslands Water District.

Flood Control

Many of the problems that Gustine has had with flooding are associated with its flat terrain, clay soils, and high water table. There currently is no Storm Drain Master Plan. Drainage water now flows to the east, but there is an absence of adequate municipal drainage north of North Ave.

Air Resources

The City of Gustine is located near the central portion of the San Joaquin Valley Air Basin. The Air Quality of a region is determined by the amount of background pollutants present, physical location, quality of emissions and climate or the ability of the environment to dispense and remove pollutants.

The San Joaquin Valley Air Basin is considered a non-attainment area for both ozone and particulates. Non-attainment refers to the fact that the federal ambient air quality standards are violated in the region.

Emissions from urban centers to the north and west, including the Bay Area, contribute to the emissions and ozone found in Merced County. The major sources of ozone are vehicles, industry, the combustion of fuels, evaporation of paints, solvents, and aerially applied pesticides. Most particulate emissions are from stationary sources, primarily entrained road dust, construction activity, agricultural tilling/ burning and industrial sources.

Cultural Resources

The Yokut Indian tribe inhabited the San Joaquin Valley for decades until European diseases eliminated them. The Yokuts and earlier tribes left a legacy of historical culture. In the Gustine area, eighteen Native American Indian village sites have been revealed during research for the Wastewater Treatment Plant expansion. These are located primarily in the Kesterson Reservoir area. Only a small percentage of the Gustine area has been surveyed for evidence of cultural resources, and most of the area's archaeology is unknown.

Types of archaeological sites that could occur in Gustine include (but are not limited to) occupation sites, indicated by structural features such as house



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pits, ceremonial ("dance house") locations, and remains of sweatshouses and storage structures, which are often found in areas that have been organically enriched by the accumulation of domestic debris. Occupation site deposits, often called "midden sites", are rich in materials such as charcoal, burned bone, chipped and ground stone, fire-cracked rock, baked clay, shell and glass (trade) beads, and sometimes pottery.

Other types of archaeological sites include cemeteries, isolated burials, quarry sites, petroglyph (rock carvings) and pictograph (rock paintings) sites, kill sites where animals were butchered, and sites where certain types of resources (stone, vegetal, clay, paint pigments) were obtained or processed (bedrock mortars).

Historical Sites and Buildings

Gustine was originally established as a "Colony Center" in 1895. The Federal Register lists Bridge # 39C-3 on Carries River Road over the Merced River in Gustine as a California Historic Truss Bridge.

Historic sites likely to be found in Merced County include old homes, adobes, cabins and structures or features related to agriculture, mining, logging and other enterprises. Historic resources are recognized as significant if they are more than 50 years old.

Some structures or features have been used more recently, and because of their character, associations or appearance are of local, county, state or national significance. There are several architecturally distinctive buildings in downtown Gustine which were built in the early 1900's and serve as landmarks for the community.

Outdoor Recreation

The City of Gustine presently has four parks. They are Harry Schmidt Park, a City/County regional park; Henry Miller Park, a community park; and Pioneer and Sherwood neighborhood parks. Combined, park space totals approximately 39 acres within the city limits.

City residents also have access to public open space at Gustine Elementary and High Schools; this provides roughly 14.3 acres of open space.

Existing park facilities include a swimming pool, a community center, softball fields (some with concessions), tennis courts, basketball courts, horseshoe pits, playground equipment, barbecue and picnic areas, picnic shelters with kitchens and restrooms.

The City Recreation Commission has created a tentative list of needed park improvements which include: lights at the existing little league field, additional tennis courts, area lighting, a compact par course in Harry Schmidt Park and an additional ball field. Recreational activities in Gustine include a Fourth of July celebration, Our Lady of Miracles celebration, organized adult slow pitch and youth baseball, public swimming and various summer programs.

Gustine has a ratio of 9 acres of park land per 1,000 persons. The existing ratio more than adequately meets the 5 acre per 1,000 person standard which the City will maintain as it approves development in the future.

*Gustine has a ratio of
9 acres of park land
per 1,000 persons.
This ratio more than
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person standard.*



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The City has been collecting park in-lieu fees on new residential development to maintain existing parks. Park land reserve is being designated at various locations in the proposed Gustine SOI and will be developed when populations are large enough to support them and/or as new development agrees to dedicate land for recreational purposes.