CITY OF ORLAND

GENERAL PLAN

Background Report

March 2008

ORLAND GENERAL PLAN

Background Report

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1.0 INTRODUCTION

1.1 LOCATION

The City of Orland is located in Glenn County in the Northern California Sacramento Valley, approximately 100 miles north of Sacramento. The City encompasses approximately 1,876 acres, or 2.93 square miles and is situated along Interstate 5 (see **Figure 1-1, Regional Location Map**). The Orland Planning Area encompasses 4,110 acres, or 6.42 square miles.

For the purposes of this background report, the study area consists of the Draft Planning Boundary, which includes the City's corporate boundary and additional lands identified as being within the primary and portions of the secondary spheres of influence (see **Figure 1-2, Study Area**). Generally, the study area is bounded by Road 18 on the south, Stony Creek on the north, Road N on the east, and Road H on the west. Lands affected are located within a portion of Township 22 North, Range 3 West, as shown on the USGS Kirkwood and Orland, California, 7.5' series quads. The population of the City of Orland is 7,189.

1.2 GENERAL PLAN UPDATE

In October 2003, the City of Orland updated its General Plan through a comprehensive review of all elements. Previous to that, minor revisions to the General Plan had been updated in 2000, with the original adoption of the Plan in 1974. Additionally, certain elements, such as Land Use and Circulation, were updated in 1991, 1993, and 1994.

BACKGROUND REPORT

This Orland Background Report presents existing setting information for the City and its environs collected as part of the General Plan update process. The primary purpose of this document is to serve as a resource for the General Plan and associated environmental documentation that would be required under the California Environmental Quality Act (CEQA). This document will, in effect, become the background/technical document, while the General Plan will focus more closely on policy issues. Additionally, this document is intended to be used as a resource for future planning studies, including future updates to the Zoning Ordinance.

The Background Report provides data specific to elements of the General Plan. **Table 1-1** below presents the General Plan Elements and corresponding Background Report chapters with information relevant to each Element.

The General Plan Update is one of several interrelated planning endeavors being conducted by PMC. Additional work includes an update to the Issues and Opportunities Report, which was originally prepared as part of the 2003 document, and an update of data components within the Background Report. The Background Report and Draft General Plan will be completed in 2008.

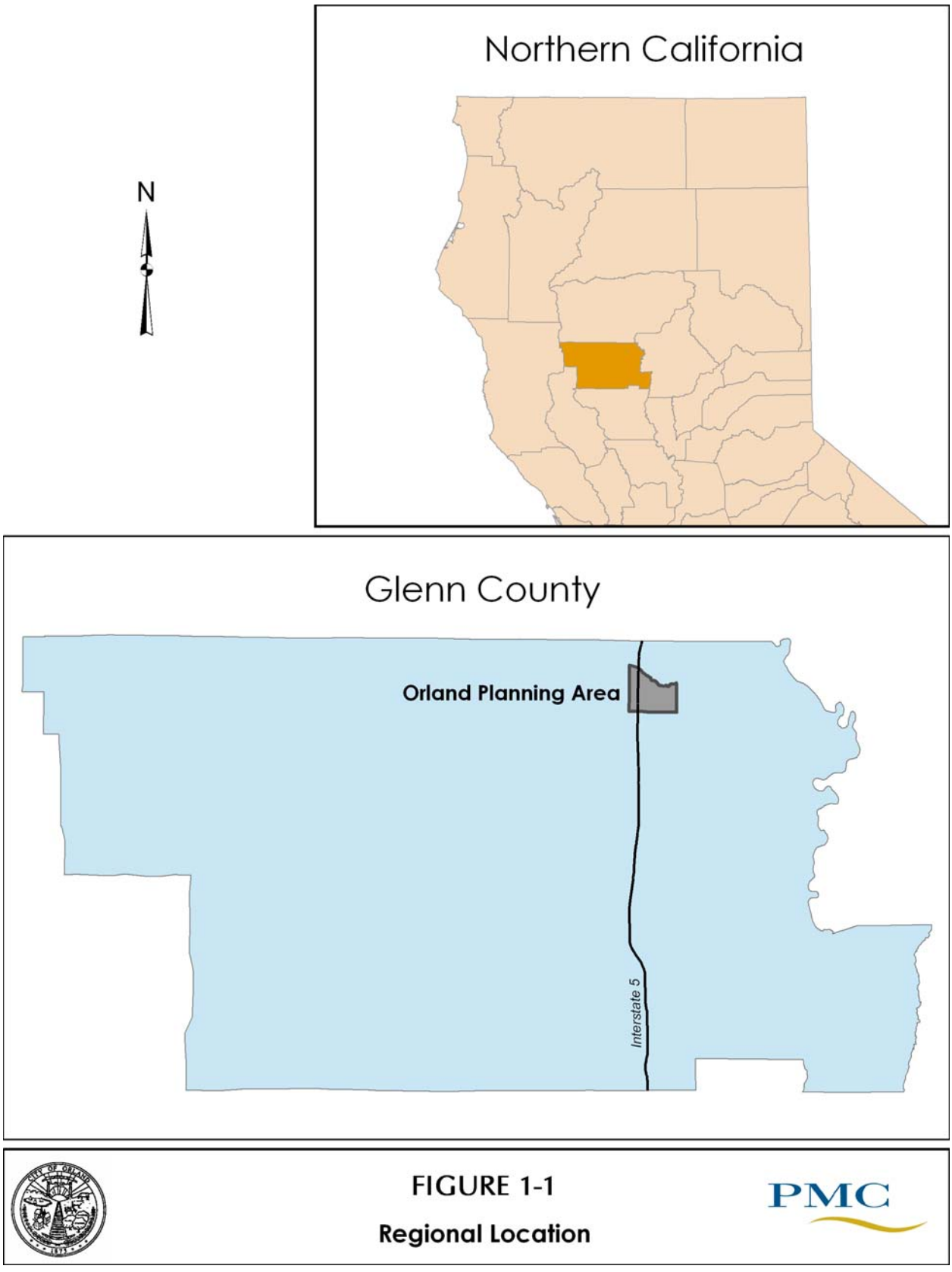


FIGURE 1-1

Regional Location

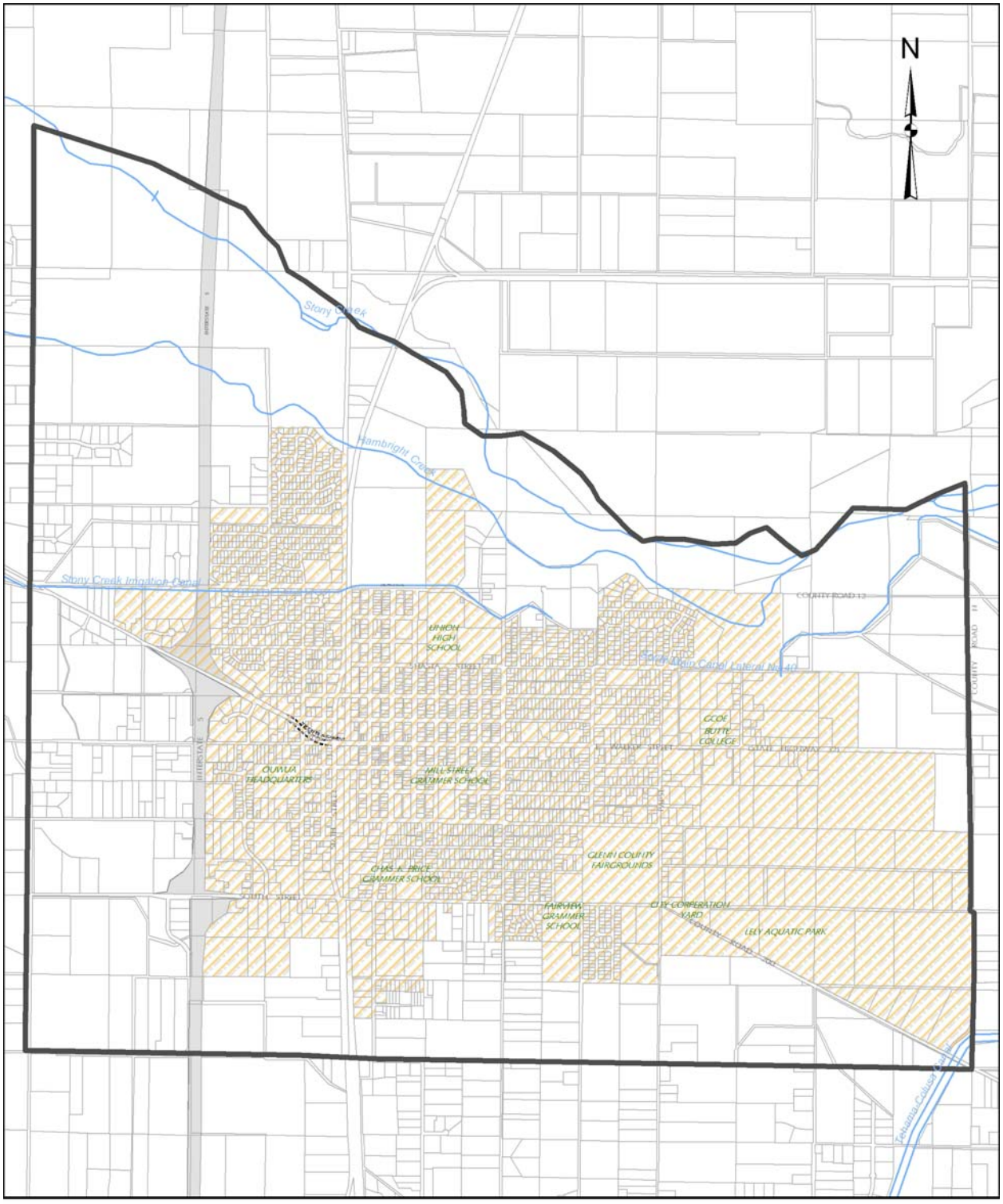


FIGURE 1-2

Plan Area

The development of this Background Report will document the status of concurrent projects as they relate to the General Plan process. Similarly, as the General Plan update process progresses, the information provided here, as well as the guidance provided by City decision-makers, will shape near-term planning projects.

TABLE 1-1:
GENERAL PLAN ELEMENTS AND CORRESPONDING RELEVANT BACKGROUND REPORT CHAPTERS

General Plan Element	Corresponding Background Report Chapter*
1. Land Use	2.0 Land Use 3.0 Public Facilities and Services 4.0 Transportation and Circulation 6.0 Pre-Historic Resources 7.0 Historic Resources 10.0 Economic Conditions and Fiscal Considerations
2. Circulation	4.0 Transportation and Circulation
3. Safety and Seismic Safety	3.0 Public Facilities and Services 8.0 Safety and Seismic Safety
4. Open Space and Conservation	5.0 Natural and Agricultural Resources (includes Open Space and Conservation) 6.0 Pre-Historic Resources
5. Noise	9.0 Noise
6. Housing [Update]	2.0 Land Use

** Please note that information from the background report will be used in more than one General Plan Element as indicated above.*

1.3 PUBLIC INPUT INTO THE GENERAL PLAN

2003 GPU COMMUNITY SURVEY SUMMARY

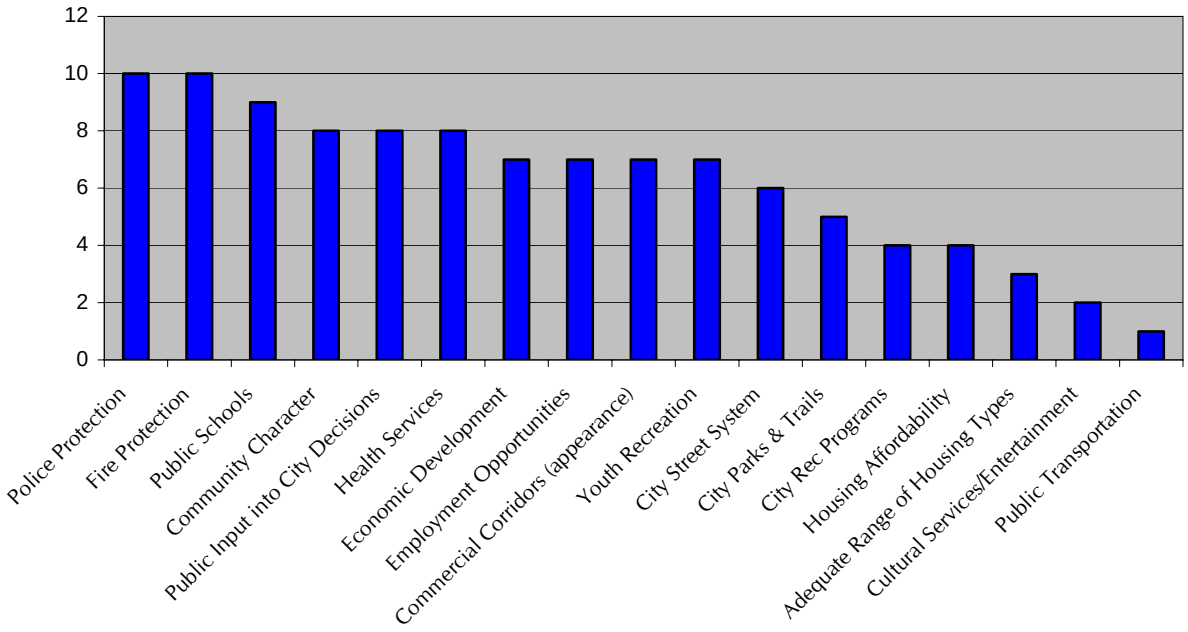
In order for the City of Orland to prepare a General Plan that reflects the needs and visions of the community, the City, in conjunction with PMC, provided several avenues for City residents to provide input and voice their opinions. As part of the 2003 update, a series of public involvement activities were undertaken to provide a forum for these opinions. Activities included a Town Hall Meeting, which was held at the Carnegie Center in 2001. Additionally, a community survey was sent to 4,000 Orland and County residents in the Plan Area in mid-November 2002.

As part of the information-gathering process of the 2003 General Plan Update, a survey form was sent to each address within the City limits, as well as to those in the Orland Planning Area. To ensure the participation of Orland's Hispanic community, surveys were sent both in English and Spanish. Of the 4,000 mailed out, 250 were returned, 5 of which were Spanish responses. This equals a 6% return rate on the original mailing. Part of the survey included a numerical rating of the importance of such topics as police protection, fire protection, community character, etc.

Citizens responded that Police and Fire Protection and the public education system are of primary importance. Community Character, Public Input into City Decisions, and Health Services were also viewed as very important by respondents. **Table 1-2** presents the results of the 2002 numerical ratings.

TABLE 1-2:
NUMERICAL TABULATION OF IMPORTANCE OF ISSUES, 2002

Average Rank of Importance for Community Services, 2002



The overall theme of both the 2002 Townhall Meeting and the community surveys was how to attract more tourism, light industry, and higher paying jobs. Citizens expressed that Orland would benefit from a more diverse economic base, additional businesses and light industrial uses, and the renewal of blighted areas. Proximity to Chico was seen as both an asset (work in Chico, live in Orland) and a liability (close enough to shop in Chico instead of Orland). Concerns related to growth were common amongst those surveyed.

2008 GPU COMMUNITY SURVEY SUMMARY

As part of the 2008 General Plan Update effort, a survey similar to that of the 2003 Update was prepared. The survey aimed to inform the 2008 General Plan Update process by collecting the input and opinions of the community. The survey was provided for attendees to fill out at a 2008 General Plan Citizen Input Meeting held on November 13, 2007. Additionally, surveys were sent to the members of all boards and commissions in the City.

The results of the 2008 General Plan Update Citizen Input Survey were generally similar to those of the 2003 Update survey. Respondents ranked two issues facing Orland above all others: Lack of commercial development and opportunities for living wage employment. Adequate funding for city services (such as fire and police protection) is also considered important. Opportunities for living-wage employment and the overall number of jobs were viewed as the most important issue currently facing Orland, as well as the most important issue for the next 20 years.

Those surveyed indicated that it was essential for the City to focus on increasing commerce as well as the number and quality of jobs in Orland. Ninety-two percent indicated that they would favor additional restaurants and cafes, as well as additional freeway oriented retail. Over 80 percent indicated a desire for additional small retail shops as well as additional retail entertainment opportunities, such as a movie theater. Seventy percent indicated that Orland currently has sufficient nightclubs and bars to serve the city. Those interviewed were neutral as to whether Orland should encourage neighborhood commercial opportunities. Citizens also indicated that it's very important for the City to encourage development west of Interstate 5. Approximately half of those surveyed responded that they travel to Chico for general shopping, whereas the other half shop primarily in Orland.

When asked about alternates concerning undeveloped areas, 70 percent of respondents said that they are against the development of agricultural lands. However, citizens were divided equally on whether to utilize compact, higher density growth and whether to adopt fees or taxes to pay to protect open space.

Those surveyed said they feel generally neutral regarding overall housing levels and density levels in Orland's future. A slight majority said that they believe Orland would benefit from additional multi-family housing and that there is currently sufficient single-family housing. However, a majority of those surveyed indicated that housing is *not* seen as a major issue facing Orland in the near future.

When asked if Orland should consider additional park, recreation, and open space opportunities, 64 percent said that Orland has an adequate level of developed park space. Respondents stated that they use Lely Aquatic Park, Vinsonhaler Park, and Library Park nearly equally, and Spence Park to a lesser extent. Seventy percent of those surveyed indicated that the city needs additional cultural facilities, such as performing arts centers or community centers. Seventy-three percent said there is adequate undeveloped open space.

Citizen outlook on widening streets to add capacity was neutral. Parking in the downtown commercial area is seen as generally sufficient. Respondents stated that they generally feel that the City should provide additional bike lanes and pedestrian options, as well as expand the Glenn Ride transit service.

2.0 LAND USE

2.1 GENERAL PLAN REQUIREMENTS

The 2003 General Plan Guidelines for the State of California describe the mandatory Land Use Element as a guide to planners, the general public, and decision makers to the ultimate pattern of development for the City at buildout. The Land Use Element plays a central role in correlating all land use issues into a set of coherent development policies. Its objectives, policies, and programs relate directly to other elements. In addition, it is the most visible and often used element in the local general plan. The Land Use Element has a pivotal role in zoning, subdivision, and public works decisions. The element's objectives and policies provide a long-range context for short-term actions.

2.2 EXISTING LAND USE/HISTORIC DEVELOPMENT

Approximately 2.47 square miles of land were within the Orland City limits at the time of the previous General Plan Update in 2003. Since then the City has annexed approximately 295 acres of land. The current City limits encompass approximately 1,876 acres or 2.93 square miles (**Table 2-1**). In planning for growth and development, the state's General Plan Guidelines allow a city to include lands outside its city limits within its planning area. For the purposes of the General Plan update, the proposed planning area generally follows the secondary Sphere of Influence boundary of the City. However, in the southern portion of the planning area, the planning area boundary follows that of the primary Sphere of Influence for the City. It is contemplated as part of the 2007 General Plan Update to extend the City's planning area southward to the full extent of the LAFCO adopted secondary Sphere of Influence boundary. Similarly, the northern boundary of the planning area was extended beyond the secondary Sphere of Influence boundary to cover the full extent of the Stony Creek floodplain. (See **Figure 2-1, Land Use Jurisdictions**)

TABLE 2-1:
JURISDICTIONAL AREAS

Jurisdiction	Total Acres	Square Miles
City Boundary	1,876	2.93
Primary Sphere of Influence	2,745	4.29
Secondary Sphere of Influence	4,630	7.23
General Plan Planning Area	4,110	6.42

Source: PMC, 2007

The City of Orland is different from most cities in California in that it has two Spheres of Influence. The primary Sphere of Influence, determined by the Glenn Local Area Formation Commission (LAFCO), is the Sphere of Influence commonly associated with most cities - the area where future expansion of the City is most likely to occur. The primary Sphere of Influence generally follows the City boundaries to the north and west (except for a significant extension in the northwest along Interstate 5), but extends further in places to the east and south. The secondary Sphere of Influence, also determined and adopted by the Glenn LAFCO, identifies areas where the City has an interest in future development that may occur. The boundaries of the secondary Sphere of Influence are similar to those of the primary Sphere of Influence, except that they are extended to the west and south.

Current land use and zoning designations applied within the City limits are presented in **Figure 2-2, Land Use Designations, and Figure 2-3, Zoning Designations. Figure 2-4** depicts actual land use activities within the planning area determined by a land use inventory conducted for this report. Most of the land located immediately outside of the existing City limits and within the planning area is devoted to agricultural and rural residential uses. However, while most of the lands located around the City of Orland are currently in agricultural production or contain larger acreage rural residential uses, the proposed draft Land Use Plan preferred alternative under consideration by Glenn County suggests the potential for increased residential and non-residential densities in the areas to the south and west of the existing City limits. **Figure 2-7** shows the *draft* Land Use Plan preferred alternative of Glenn County for the area surrounding the City of Orland City limits and within the City's Sphere of Influence. It is noted herein that the land uses shown on **Figure 2-7** have not been adopted by the County at this time.

Within the City itself, the land use pattern is generally defined by the following regions:

- The Central Business District (historic downtown), approximately bounded by the Union Pacific Railroad tracks to the west, Tehama Street to the north, Third Street to the East, and Yolo Street to the south. In addition to commercial uses, this area includes city and county government buildings, schools, and other public facilities.

- The commercial/industrial strip located along the length of Sixth Street (Highway 99W) and the Union Pacific Railroad tracks.

- The commercial strip located along the length of East Walker Street (State Route 32).

- The commercial areas located at the interchanges of Interstate 5.

- Residential development located east of the Union Pacific Railroad tracks, and in the northern and eastern central portions of the City.

2.3 URBAN DESIGN AND CIVIC ANATOMY

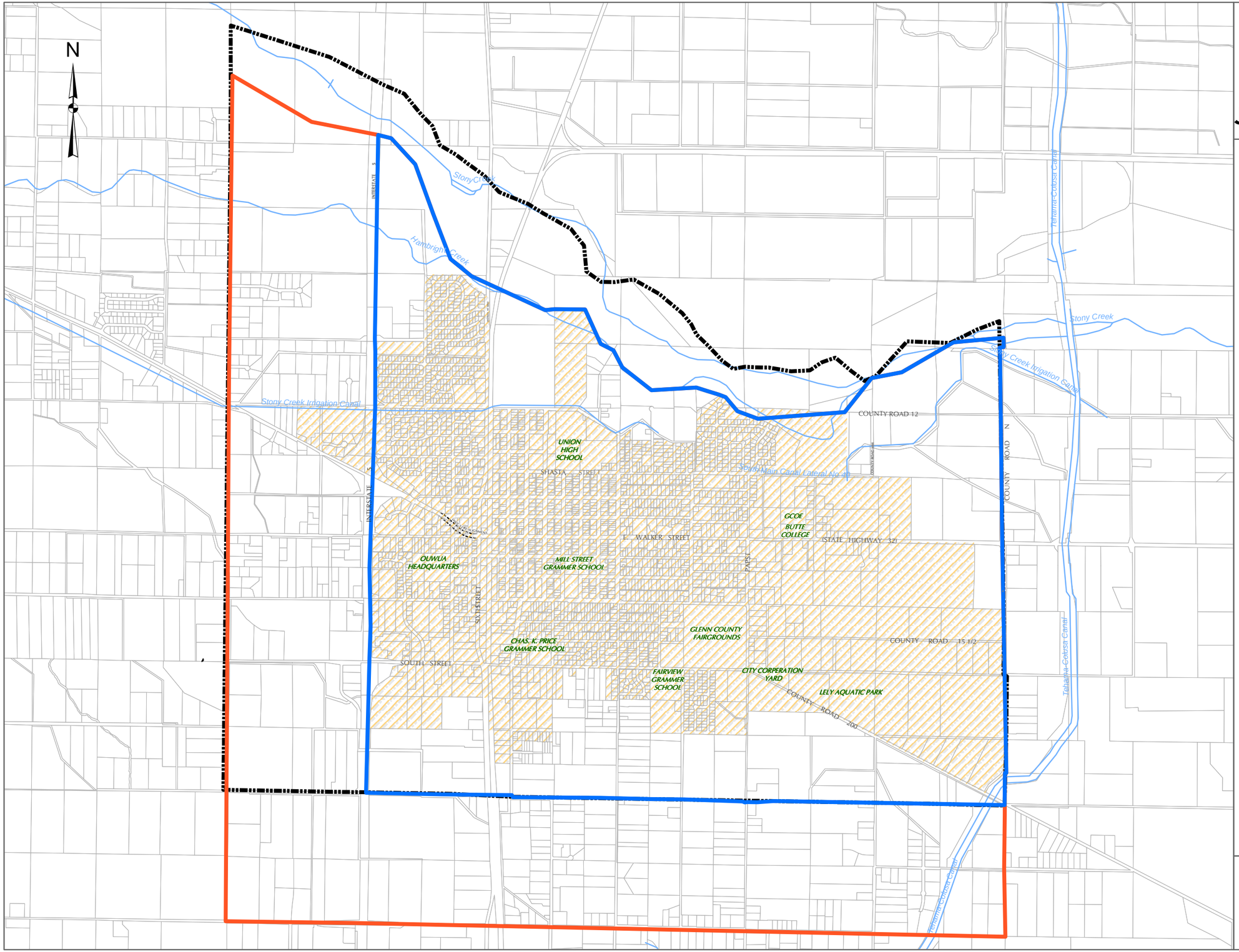
The development of the City of Orland has been strongly influenced by major transportation corridors. Originally, the City's development was influenced by the railroad, adjacent to which the downtown area was formed. Later, the construction of Highway 99W attracted commercial development along the highway corridor. Another commercial area developed along State Route 32. The most recently constructed major transportation corridor, Interstate 5, has not attracted as much development as the other corridors. However, the Stony Creek Square shopping center has been built adjacent to the freeway, and the City has zoned for more development along Interstate 5 in the future. For more information on the history of Orland, refer to Section 7.0, Historic Resources.

Traditionally, Orland has served as a public service center for residents of the City and northern Glenn County. Public service facilities for City residents are concentrated in the downtown area, including City Hall, the Orland Police Department, the Orland Fire Department Station, and the Orland Library. Also located in the downtown area are the U.S. Post Office and the state Department of Motor Vehicles office. A substation for the County Sheriff's Department is located in Orland, along with one of the two maintenance yards for the County Department of Public Works. Located in the northern portion of the City is Orland High School, which serves high school students throughout northern Glenn County except for those in the Hamilton City area.

Figure 2-1

CITY OF ORLAND

Jurisdictional Boundaries



City Limits

Primary SOI

Secondary SOI

Planning Area

0 0.25 0.5 Miles

PMC

Figure 2-2

CITY OF ORLAND

Land Use Designations

N

- Planning Area
- City Boundary

- C - Commercial
- I-H - Heavy Industrial
- I-L/C - Light Industrial/Comm.
- R-E - Residential Estate
- R-L - Low Density Residential
- R-M - Med. Density Residential
- R-H - High Density Residential
- P-F - Public Facility
- OS/RC - Open Space/ Resource Conservation

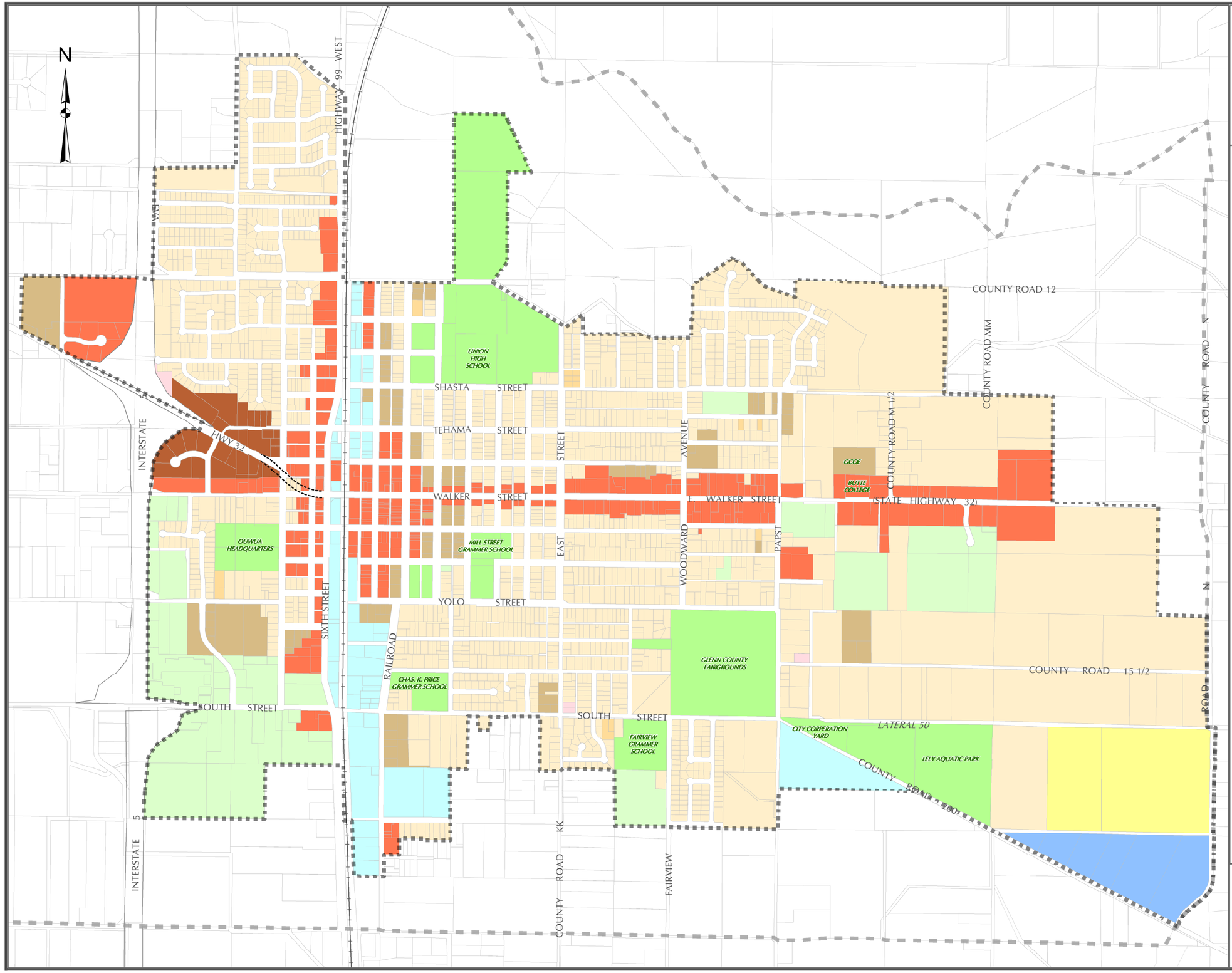
0 0.25 0.5 Miles

INTERSTATE 5
HIGHWAY 99 WEST
Hambright Creek
Stony Creek
Stony Creek Irrigation Canal
Tehama-Colusa Canal
SOUTH CANAL
COUNTY ROAD 12
COUNTY ROAD MM
COUNTY ROAD N
South Main Canal Lateral No 40
UNION HIGH SCHOOL
SHASTA STREET
TEHAMA STREET
WALKER STREET
OUWUA HEADQUARTERS
MILL STREET GRAMMER SCHOOL
YOLO STREET
SOUTH STREET
SIXTH STREET
WOODWARD AVENUE
PAPST
EAST
GCOE
BUTTE COLLEGE
ISTATE HIGHWAY 32
GLENN COUNTY FAIRGROUNDS
COUNTY ROAD 15 1/2
CHAS. K. PRICE GRAMMER SCHOOL
FAIRVIEW GRAMMER SCHOOL
CITY CORPERATION YARD
LATERAL 50
LELY AQUATIC PARK
COUNTY ROAD 200
COUNTY ROAD KK
FAIRVIEW

Figure 2-3

CITY OF ORLAND

Zoning Map



- Sphere of Influence
- City Boundary
- R-1 Residential One Family
- R-2 Residential Two Family
- R-3 Multiple Family
- R-E Residential Estate
- C-1 Neighborhood Commercial
- C-2 Community Commercial
- C-H Highway Service
- M-L Limited Industrial
- M-H Heavy Industrial
- P-D Planned Development
- P-F Public Facilities

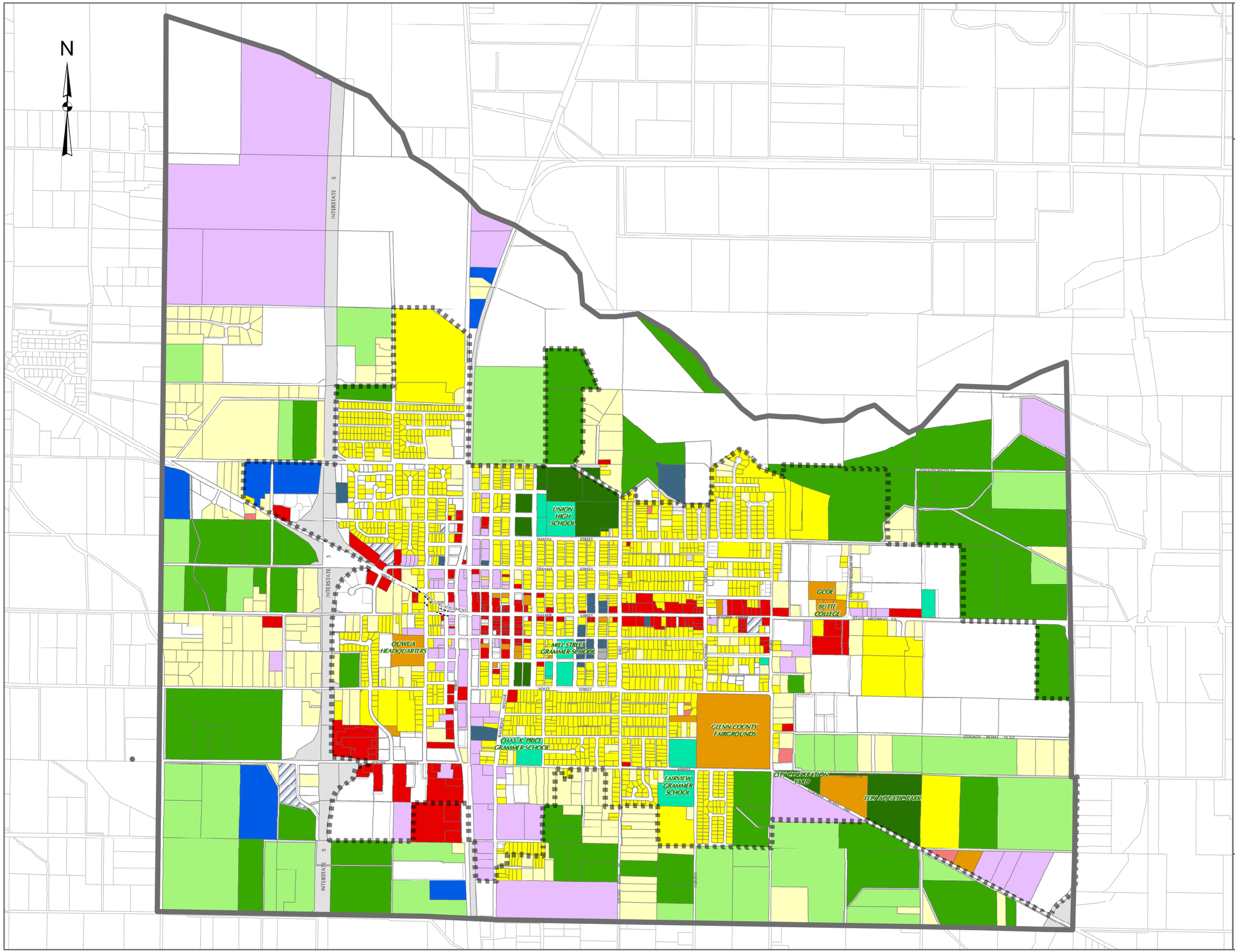
0 0.25 0.5 Miles

PMC

Figure 2-4

CITY OF ORLAND

Land Use Inventory



Planning Area Boundary

City Boundary

Land Use Code

- A - Agriculture
- AR - Ag.- Residential
- C - Commercial
- CH - Church
- I - Industrial
- O - Other
- P - Public/Semi-Public
- PA - Park
- R - Residential
- RR - Rural Residential
- SD - School/Daycare
- ST - Storage
- TP - Trailer Park
- U - Unknown
- UE - Utilities Easement
- V - Vacant

0 0.25 0.5 Miles

PMC

As is the case in most towns in California, Orland is divided into several distinct areas, as indicated by its land use pattern. These areas include the downtown and its adjacent old neighborhoods, strip commercial development along both Highway 99W (Sixth Street) and East Walker Street (State Route 32), industrial development adjacent to the railroad tracks, and freeway-oriented commercial activities. Most of the older residential development is located in the eastern portion of the City, east of the railroad tracks. Newer residential development has occurred around the edges of the City, particularly in the northwest, northeast and south.

In recent years, growth and development in Orland has been influenced by the City's relative proximity to the Chico Urban Area. As Chico has grown, employment opportunities have increased, but the availability of quality affordable housing in Chico has not kept pace. Many people whose place of employment is located in Chico have bought housing in Orland, where housing is more affordable. Aside from stimulating newer residential development, the Orland residents who work in Chico may also be reinforcing the commercial character of East Walker Street, which as part of State Route 32 is the main route taken by commuters to Chico. However, growth in Chico is generally believed to have limited commercial development in Orland. The proximity of Chico, its variety of retail establishments and their competitive pricing have attracted many shoppers from the City, especially those who commute to Chico for work. By contrast, Orland has only one formal shopping center (Stony Creek Square, off Interstate 5 at the South Street exit, much of which is vacant) along with various individual and small-group linear commercial uses located along SR 32 (Sav-Mor Plaza, Longs Drug Store, North State Motors) and various smaller retail establishments in the downtown area. It should be noted that while interest has calmed in the residential market sector, growth within the commercial sector continues in the City. The recent development of commercial use along SR 32 (Kragen Auto Parts and Round Table Pizza), the newly constructed professional office building located at the southeast corner of South Avenue and Cortina Drive and the recent opening of the Longs Drug Store at the intersection of Interstate 5 and SR 32 show that the City of Orland may be underserved by commercial uses.

2.4 SPHERE OF INFLUENCE

As previously mentioned, the City has two Glenn LAFCo-adopted Spheres of Influence. The primary Sphere of Influence currently encompasses 2,745 acres (see **Figure 2-1**). The Sphere of Influence includes all the land presently within the Orland City limits and those areas expected to ultimately be served by the City. Within the planning area and outside of the city limits to the east, west, and south, lands have been zoned by Glenn County primarily as Rural Residential Estate (RE-5). However, lands adjacent to the railroad tracks and Highway 99W are zoned by the County as Industrial (M). North of the City, the majority of lands are zoned by the County as Exclusive Agricultural (AE-20) with lands bordered on multiple sides by the city limits zoned RE-5. Areas adjacent to State Route 32 east of the City are predominantly zoned by the County for Service Commercial (SC).

The secondary Sphere of Influence encompasses 4,630 acres. Land within the secondary Sphere of Influence that is not also within the primary Sphere of Influence is generally zoned Agricultural and Rural Residential. The land within both Spheres of Influence currently has no City of Orland General Plan land use designations.

2.5 ANNEXATION AREAS

Since the previous General Plan Update in 2003, the City has annexed approximately 295 acres predominantly to the north and east of the existing city limits. Approximately 46 acres were annexed in the northwestern portion of the City as part of the Heartlands residential subdivision project. The annexation of 295 acres represents a 19 percent increase in area of the City.

The City has had an interest in guiding development of lands north and west of the current City limits, with future annexation of these lands a possibility. In 2000, a draft Freeway Area Specific Plan was prepared with the joint participation of the City of Orland and Glenn County. The Specific Plan focused on two areas currently outside the City limits. One area was west of Orland, bounded approximately by Interstate 5 to the east, County Road 18 to the south, County Road H to the west, and Stoneridge Drive to the north. The other area was to the north, between the City limits and Hambright Creek. Both areas are within the City's secondary Sphere of Influence and the planning area being addressed in the General Plan Update. The Specific Plan set forth policies concerning the development of these areas, along with mechanisms for implementing the plan. The Specific Plan has not been adopted by the City. Elements of the Specific Plan will be considered as part of the update process for the Orland General Plan.

2.6 LAND USE INVENTORY

LANDS INVENTORY

As part of the formulation of the Background Report, a detailed land use inventory was conducted. The land use inventory was performed using GIS technology, with base data provided by the City. Citywide air photos and Assessor Parcel Number GIS files were utilized to determine existing land uses and to delineate parcel lines. Field surveys were conducted on several occasions in early January 2007 to determine the land use activities in question, as well as the development status of subdivisions.

Both the field survey and "remote" surveying results were added to the existing city parcel database using ArcView GIS software. GIS enables the data to be presented and analyzed in a variety of ways, including the Land Use Inventory Map (provided in **Figure 2-4**).

GROWTH IN ORLAND 2000-2007

The majority of growth in Orland since 2000 has been residential (as a result of subdivisions), with little commercial growth having occurred in the last 7 years. Approximately 340 residential building permits were issued between 2000 and 2007, but only 29 commercial building permits were issued in that period. It should be noted that, as indicated by **Table 2-2**, the quantity of commercial building permits has been increasing since 2005, while the quantity of residential building permits have decreased within the same period.

TABLE 2-2:
2000-2007 BUILDING PERMITS ISSUED

		2000	2001	2002	2003	2004	2005	2006	2007
Commercial	**# of Permits**	0	1	1	0	8	2	7	10
	Valuation	--	$420,000	$400,000	–	$2,747,008	$2,020,000	$1,760,000	$3,260,000
Residential	**# of Permits**	8	8	11	37	48	133	57	39
	Valuation	$852,000	$1,046,760	$1,427,893	$6,369,339	$7,858,931	$17,370,000	$7,980,000	$6,520,000

Source: Orland Building Dept., 2007

LAND USE ACTIVITY

In order to usefully determine and quantify the existing land uses, categories must be determined in order to classify particular land use activities. In some cases the categories such as Parks contain only one land use activity. Most categories, however, contain several land use activities all grouped into one category. For example, the Residential category includes multi-family, duplex, garden apartment, and single family detached residential activities.

Descriptions of each category are provided below:

Agriculture (A): Parcels of land in agricultural use without a residence on the parcel.

Agricultural Residential (AR): Land devoted to agriculture or grazing activities that also contains a residence. All parcels are greater than 5 acres.

Church (CH): This category includes churches, and funeral homes.

Commercial (COMM): This category includes land occupied by any type of business, retail and service facilities, and accessory areas. Developed commercial parcels that were not occupied or vacant were classified as commercial.

Industrial (I): This category includes the land devoted to all types of light and heavy industrial uses, including warehousing, paint shops, auto repair shops, and processing agricultural goods.

Park (PARK): The category includes public parks and sports fields.

Public\Semi-Public Facilities (PUBLIC): Parcels of land that are Publicly owned and used to provide public serves to the community of Orland. Land devoted to semi-public activities includes private social gathering halls.

Residential (R): Residential uses (detached dwellings, duplexes, garden apartments, and multi-family units). Single-family detached dwellings parcels with lots smaller than .5 acres.

Rural Residential (RR): Single-Family residential uses with parcel sizes between .5 acres and 5 acres.

School/Daycare (SD): Land devoted to educational activities and daycare, includes school administration activities.

Storage (ST): Land devoted primarily to small commercial storage activities.

Trailer Park (TP): Mobile Homes clustered in a park development (also includes recreational vehicle park).

Utility Easement (UE): Areas used as utility easements, including canals, roads, and energy distribution lines.

Unknown (U): Undetermined or unknown land uses.

Vacant (VAC): Parcels of land not in use. Typically the land is raw; in some cases, the land is being utilized for storage or equipment staging.

Table 2-3 provides results of the GIS query, based upon the categories presented above. The table depicts land use acreages within both the City limits and the General Plan Planning Area. **Figure 2-4** provides the corresponding map.

TABLE 2-3:
2007 LAND USE ACTIVITY INVENTORY

Land Use	Planning Area		City Limits	
	Acreage	Number of Parcels	Acreage	Number of Parcels
Agriculture (AG)	835.3	82	144.0	12
Agricultural Residential (AR)	434.1	32	84.8	6
Church (CH)	16.6	19	10.5	18
Commercial (COMM)	94.3	174	93.5	177
Industrial (INDUST)	385.8	97	107.1	87
Park (PARK)	57.1	11	56.2	12
Public Facilities (PUBLIC)	70.1	22	86.7	24
Residential (RES)	389.9	1,779	504.7	1,783
Rural Residential (RR)	380.8	258	128.0	109
School/Daycare (SD)	36.1	11	36.0	11
Storage (ST)	6.9	3	4.4	3
Trailer Park (TP)	53.2	7	10.0	1
Utility Easement (UE)	138	96	24.0	33
Unknown (U)	4.5	15	14.1	16
Vacant (VAC)	844	218	316.4	143
Roads *	363	-	250.3	-

**Roads contain no area value in the parcel coverage.*

Source: PMC, 2007

The acreages from **Table 2-3** were further generalized to calculate the ratios of Residential, Commercial, Industrial, and Other uses in the city in **Table 2-4**. Lands categorized in **Table 2-3** as Parks, Public Facilities, Utility Easements, Roads, and Unknown are combined to form the "Other" category. Those lands categorized as Agriculture and Vacant are considered Non-Urban and are not used for the ratio calculation.

TABLE 2-4:
URBAN LAND USE RATIOS WITHIN CITY LIMITS

Land Use	Acreage	Ratio
Residential	727.5	52%
Commercial	95.0	7%
Industrial	111.5	8%
Other	467.3	33%
Non-Urban	(460.4)	

Source: PMC, 2007

VACANT LAND WITHIN THE CITY

As indicated by **Table 2-3**, 143 parcels within the City limits are vacant, totaling approximately 316 acres. Within the Planning Area, there are 218 vacant parcels totaling approximately 844 acres (**Figure 2-5**). **Table 2-4** provides details regarding vacant lands within the City limits. The sum of the total acreage includes land that may not be suitable for development due to physical constraints or proximity to infrastructure, and land too small for development. The results, therefore, should be considered a general indicator of the amount of vacant land available in each zoning designation.

As shown in **Table 2-3**, approximately 16.8 percent (316 acres) of the land within the City limits is vacant. If lands used for agriculture are included, the total amount of land available for urban development would comprise approximately 24.5 percent or 460 acres. In other words, approximately one-third of the land within City limits is potentially available for urban development.

Figure 2-5

CITY OF ORLAND

Vacant Land

N

INTERSTATE 5

UNION HIGH SCHOOL

GCOE

BUTTE COLLEGE

OUWUJA HEADQUARTERS

MILL STREET GRAMMER SCHOOL

GLENN COUNTY FAIRGROUNDS

CHAS. K. PRICE GRAMMER SCHOOL

FAIRVIEW GRAMMER SCHOOL

CITY CORPERATION YARD

LELY AQUATIC PARK

Planning Area Boundary

City Boundary

A - Agriculture

AR - Ag.- Residential

V - Vacant

0 0.25 0.5 Miles

CITY OF ORLAND 1875

PMC

TABLE 2-5:
INVENTORY OF VACANT LAND, CITY OF ORLAND

General Plan Designation	Total Acres	Vacant Acres	Vacant/Agricultural/ Agricultural Residential Acres
C	191.61	38.14	38.14
I-H	36.46	10.79	10.79
I-L/C	123.70	37.25	37.25
OS/RC	0.00	0.00	0.00
P-F	185.84	2.01	33.38
R-E	56.25	0.00	56.25
R-H	58.81	4.83	4.83
R-L	959.66	217.11	358.28
R-M	9.24	5.22	5.22
Total	**1632.65**	**317.00**	**545.87**

Source: PMC, 2007

As part of the General Plan update process, a preliminary development forecast was prepared (See Chapter 10-Population and Housing). The amount of land that would be needed for future development in the City of Orland for the next twenty years (2001-2020) was estimated, based upon three growth scenarios. **Table 2-5** compares the amount of vacant and agricultural land for each designated land use with the amount of land estimated as required for each land use by the preliminary development forecast. For this table, figures calculated under the "High" and "Low" growth scenarios in the Preliminary Development Forecast were used. The "High" growth scenario assumes average City population growth of 2.6 percent annually, while the "Low" scenario assumes an average annual population increase of 1.8 percent.

TABLE 2-6:
VACANT LANDS AND ESTIMATED LAND REQUIRED

Land Use	Vacant/Agricultural/ Agricultural Residential Acres	Estimated Acres Required for Development	
		High	Low
Residential, low density*	414.53	323	206
Residential, medium density	5.22	35	20
Residential, high density	4.83	11	8
Commercial	38.14	26	17
Industrial	48.04	30	18
Other	35.11	123	77
Totals	**545.87**	**548**	**346**

** Includes lands designated Residential Estate.*

Source: PMC, 2007

Table 2-6 compares vacant lands by designation in the current city limits to projected land requirements over the 20 year planning period. The City currently has sufficient lands as currently designated to meet the projected land requirements with the exception of Medium and High Density Residential, and uses designated Other (roads, open space, parks, public facilities). Overall, the City currently has roughly 550 acres of developable land which is the approximate land requirement of the High population projection scenario (2.6 percent annual growth rate through 2028).

These projections assume current land use designation densities which may be subject to change. With an increase in densities applied to land use designations, there would be an associated decrease in land required for development, all other factors remaining equal.

2.7 SPECIAL PLANNING AREAS

Many jurisdictions designate some of their lands for special planning policies and procedures, beyond the conventional zoning process. Reasons for doing this vary. One is that certain lands have unique physical features that may require special attention. Another is the need or desire to develop an area in an integrated manner. Still another is the hope to entice commercial or industrial activities by offering an area where such activities can locate to their advantage. The mechanisms employed for this special planning include specific plans and planned unit developments (PUDs).

No specific plans have been adopted in Orland, although the City did participate in the preparation of a draft Freeway Area Specific Plan, as earlier described. In 2004, a group of developers approached the City with the concept of developing a Specific Plan for the northeast area of the City. During the preliminary phases of the Specific Plan process, City of Orland staff determined that it is likely that infrastructure is extendable to the Northeast Growth Area. In addition, the growth area is surrounded by existing roads, including an existing intersection at East Walker Street and County Road N. A specific plan never materialized out of preliminary discussions; however opportunities for the Northeast Growth Area were made increasingly visible. The City continues in its interest in considering the area for a Specific Plan.

No PUDs have been approved by the City. However, in 1996, a proposal was developed for the revitalization of the downtown area, the approximate boundaries of which were defined as Swift Street, Second Street, Mill Street and Fifth Street. The proposal, entitled the *City of Orland Downtown Business Development and Recruitment Plan*, included programs for the recruitment of new businesses into downtown, design and beautification, and promotion and advertising. The Downtown Plan would be implemented by an Orland Downtown Revitalization Association. The Orland Business Improvement Association (OBIA) was formed in part to implement some of the proposals in the Downtown Plan. Comprised mainly of merchants in the Fourth Street area, the OBIA has held fundraisers and has lobbied the City to implement public beautification projects in the downtown area (Patricia Coshow, pers. comm., 2002).

At approximately the same time as the preparation of the downtown revitalization plan, a proposal was developed for an Orland Area Enterprise Zone. An "Enterprise Zone" is designed to attract new businesses and to sustain existing businesses in a defined area, typically with incentives such as tax credits, net operating loss carryovers and net interest deduction for lenders. A joint effort of the City and Glenn County, the Orland Area Enterprise Zone would encompass the City and unincorporated areas along Interstate 5 southwest and west of the City. The proposed zone would include three distinct marketable areas:

- An unincorporated commercial/industrial area along the Interstate 5 corridor.

- The commercial downtown area of Orland.
- An airport industrial area (Haigh Field) adjacent to the City.

Business attraction would be the primary goal of the Enterprise Zone, with business retention a secondary goal. These goals would be accomplished by City/County joint implementation of local incentives, such as streamlined permitting procedures, fee reduction programs, and infrastructure funding, particularly for the Airport Industrial Park. The application for the Enterprise Zone was submitted around 1997, but was not approved. However, some of the permit processing procedures recommended in the application have been implemented (Gary Freeman, pers. comm., 2002).

2.8 GLENN COUNTY GENERAL PLAN

A significant portion of land within the Planning Area for the Orland General Plan is unincorporated land under the jurisdiction of Glenn County. Land use designations and policies applicable to unincorporated areas are contained in the Glenn County General Plan. Therefore, a brief discussion of the County General Plan is included here.

The Glenn County General Plan was adopted by the County Board of Supervisors in June 1993. The plan addresses all seven elements required by state law. In addition, the County General Plan includes an Economic Development Element, which establishes an economic development strategy for the County. Although an optional element, the Economic Development Element has the same legal authority as the mandatory elements.

The Glenn County General Plan consists of five documents as follows:

- Policy Plan (Volume I)
- Natural Resources, Public Safety and Community Development Issue Papers (Volume II)
- Environmental Setting Technical Paper (Volume III)
- Environmental Impact Report (Volume IV)
- Energy Element

All the elements of the County General Plan are organized under three major subject headings in the Policy Plan: Natural Resources, Public Safety and Community Development.

- The Natural Resources section includes agricultural, water, biological, timber, mineral and energy, and cultural resources. This element incorporates the required aspects of the conservation element and portions of the open space element.
- The Public Safety section includes law enforcement, fire hazards and protection, geologic hazards, air quality, flood hazards, water quality, noise, and solid and hazardous waste. This element incorporates the required safety and noise elements, as well as some of the required portions of the open space element.
- The Community Development section includes land use and growth, transportation and circulation, housing, public services and economic development. This element

incorporates the required land use, circulation and housing elements, and the remaining portions of the open space element.

The County General Plan has goals, policies and implementation strategies and programs that reflect the County's approach to each of the major subject headings.

Figure 2.6 shows the Glenn County General Plan land use designations for land in the unincorporated area surrounding Orland. Much of the unincorporated land depicted in this figure is within the Planning Area for the City's General Plan update. While coordination between the City and County on their land use plans is encouraged by state law, it is not required. Therefore, land use designations on areas covered in both the City and County General Plans may differ. The figure depicting County designations is provided for informational purposes only. County designations would not supersede any designations made by the City's updated General Plan on lands within the City's Planning Area, assuming annexation occurred prior to development.

2.9 REFERENCES

City of Orland. *Orland Area General Plan: Land Use and Circulation Elements*. Adopted April 1991.

City of Orland. *City of Orland Downtown Business Development and Recruitment Plan*. The Palmer Koert Company, Davis, Calif. Adopted March 25, 1996.

City of Orland and Glenn County. *Administrative Draft Freeway Area Specific Plan*. Quad Knopf, Inc., Roseville, Calif., November 2000.

City of Orland and Glenn County. *Orland Area Enterprise Zone Preliminary Economic Development Plan*.

Patricia Coshow, Orland Business Improvement Association. Telephone conversation with Terry Farmer, Pacific Municipal Consultants, January 24, 2002.

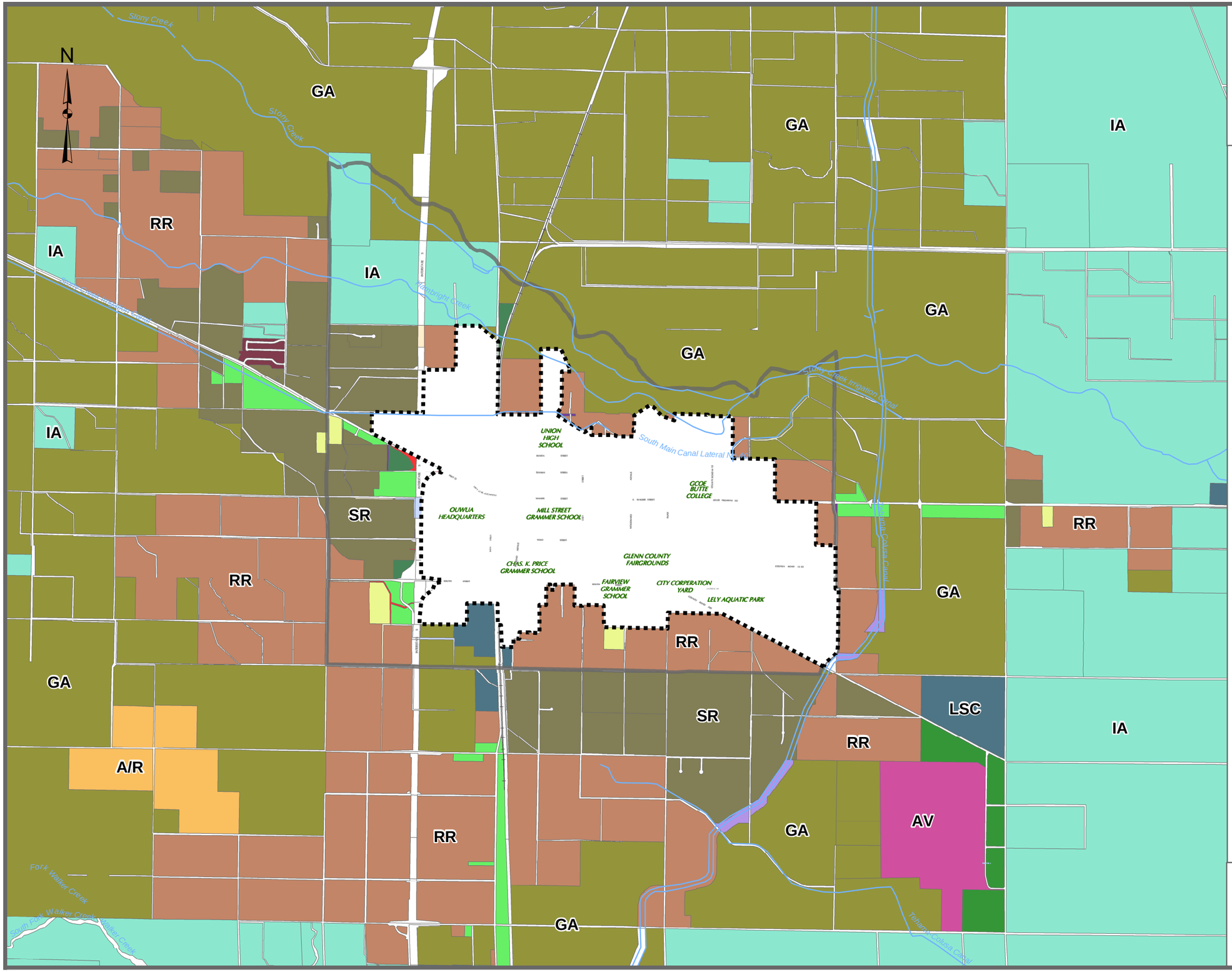
Gary Freeman, Supervisor, Glenn County. Telephone conversation with Terry Farmer, Pacific Municipal Consultants, January 25, 2002.

Glenn County. *Glenn County General Plan*. Adopted June 1993.

Figure 2-6

CITY OF ORLAND

Glenn County Land Use Designations



- Planning Area
- City Boundary

- A/R - Agricultural Residential
- AV - Aviation
- BP - Business Park
- CC - Community Commercial
- GA - General Agriculture
- HVC - Highway/Visitor Commerical
- IA - Intensive Agriculture
- IND - Industrial
- LSC - Light/Service Commercial
- MFR - Multiple Family Residential
- PUB - Public
- REC - Recreation
- RR - Rural Residential
- SC - Service Commerical
- SFR - Single Family Residential
- SR - Suburban Residential
- UA - Urban Area

0 0.5 1 Miles

PMC

Glenn County General Plan

DRAFT Preferred Alternative

Areas within the City Limits are show for display purposes to indicate the relationship between the City General Plan designations and the proposed County General Plan designations; and do not represent changes to the City General Plan land use designations

Legend

- Interstate 5
- Principal Arterial
- Minor Arterial
- Major Collector
- Minor Collector
- Local Road
- Community Growth Boundary
- Sphere of Influence
- City Limits
- Parcel Boundaries

Perferred Plan Alternative Land Use Designations

- Agriculture & Resource Lands
- Rural Residential
- Low Density Residential
- Medium Density Residential
- Mixed Use Residential
- Commercial
- Industrial
- Public Facilities & Open Space

0.25 0.125 0 0.25 0.5 0.75 1 Miles

3.0 PUBLIC FACILITIES AND SERVICES

3.1 GENERAL PLAN RELEVANCE

The Public Facilities and Services Element of the General Plan is an optional element, according to the 1998 General Plan Guidelines for the State of California. Although it is not proposed that this element be prepared for the Orland General Plan Update, information contained in this chapter will be useful for preparing the Land Use Element. This section includes the general distribution, location and extent of existing and proposed infrastructure, i.e. water treatment and distribution facilities, wastewater distribution and treatment facilities; and existing and proposed public facilities, i.e., police and fire stations, schools, libraries, and City Hall. A map of Public Land Uses within the City of Orland has been included as **Figure 3-1**.

3.2 POLICE PROTECTION

Police protection services within the City of Orland are provided by the Orland Police Department, which currently operates from the police station located at 817 Fourth Street. However, due to the need for increased space, the Police Department is in the process of renovating an existing building located on 4th Street in downtown Orland. The new building will provide the police department with approximately 7,500 square feet of floor space, nearly doubling the area of the current building. The new police building is scheduled for completion by 2009.

The Police Department office is open from 8 am to 5 pm Monday through Friday, except holidays. During weekends and at night, services are provided by the Glenn County Sheriff's office, which provides patrol and emergency dispatch services to the City.

There are currently 16 employees in the Police Department, comprised of one sworn community service officer; three non-sworn support employees; two sergeants; nine patrol officers; and one chief. Three of the officer positions are supported by grants, one of which is for the School Resource Officer. The department maintains 5 police vehicles; four marked and one unmarked. These vehicles are owned by the County of Glenn, and leased to the City of Orland on a mileage basis.

The officers serve a 2007 population of 7,189, which means there are approximately 1.9 officers per 1,000 residents (not counting non-sworn support employees). The Chief of Police of Orland has stated that the current force-level is able to meet current call demands within the service area. However, the Chief predicts that the current ratio could drop to 1.4 officers per 1,000 residents if grant funding does not continue. In addition, it is expected that the population served by the Orland Police Department will increase at a more rapid rate in the next ten years than it has in the past. It is anticipated that, during the life of the 2008 – 2028 General Plan, the City of Orland will need to expand the size of the Police Department staff in order to continue to serve the growing population.

3.3 FIRE PROTECTION

Fire protection services within Orland city boundaries are provided by the Orland Volunteer Fire Department. Fire protection outside of the city limits are provided by the Orland Rural Fire Protection District. Both of these fire protection services are staffed by the same volunteers.

Established in 1911, Orland's fire station is located at 810 Fifth Street. (For an interesting history of the Department, please visit the Department's web site at:

http://members.aol.com/jkra436706/orlandfire.html

The Department is currently staffed entirely by volunteer fire fighters, ranging in age from 21 to 55. There are currently 40 active volunteers in the Department. Training, equipment, and other funding is provided primarily by the City's General Fund. The Department currently utilizes one Chief's truck; one utility pick-up truck; one rescue vehicle; four engines (one 1,250 gallons per minute (gpm), two 1,000 gpm, and one 500 gpm); one ladder truck (1,000 gpm); and one tank trailer.

The Department provides services in the form of fire emergency response, medical emergency response, and disaster aid. The Department service area is within the Orland city limits. The Orland Rural Fire Department is a separate Department, which provides fire protection for the Orland Rural Fire District, which generally lies outside of the city limits.

In 2007, there were approximately 512 calls to the Department. Of these calls, 370 were medically-related. According to the Chief, the local ambulance district responds to approximately three calls per day, often outside of the city limits. This causes added impacts to the fire department, considering every medical call takes a minimum of one hour of response time to service. Although the Department has two ambulances, only one is staffed 24-hours per day. The majority of the fire department volunteers are either EMT-trained or are trained First Responders.

Average response time for fire protection and emergency medical services within the City of Orland is 3-5 minutes for arrival at the station, approximately 1 minute to prepare and leave the station, and an additional 2-3 minutes to the actual call site. In the future, the addition of a satellite station could reduce these response times considerably to outlying areas of the City. The placement of an un-staffed satellite equipment facility in the area of the Northeast Specific Plan could serve the purpose of reducing response times for that area and to the east Orland area.

The Fire Department currently has an Insurance Services Office (ISO) rating of 4. The ISO rating is a measure of fire protection service, with ratings from 1 to 10, 1 being the best. This Orland Fire Department rating was established in 2002. ISO ratings are generally calculated as follows:

10% - Communications
40% - Water Supply
50% - Fire Department
100% = ISO rating of (1) one

All hydrants within the City limits will deliver the maximum flow available; such availability depends on the water mains that supply the specific hydrants. There are over 300 hydrants in the City of Orland with an average flow of 700 gpm. The City is currently responsible for checking the hydrants and conducting proper maintenance.

Figure 3-1

CITY OF ORLAND

Public Land Uses

N

Planning Area

City Boundary

P-F - Public Facility

Spence Park

Union High School

Visonhaler Park

Legion Memorial Park

Orland Unit Water User's Association

F.D.

City Hall P.D.

City Library and Park

Mill Street Grammar School

CK Price Middle School

County Fairgrounds

Fairview Grammar School

GCOE

Butte College

Corperation Yard

County Buildings

Lely Aquatic Park

SOUTH CANAL

COUNTY ROAD 12

COUNTY ROAD M 1/2

COUNTY ROAD M4

COUNTY ROAD N

COUNTY ROAD 15 1/2

COUNTY ROAD 200

COUNTY ROAD KK

LATERAL 50

INTERSTATE 5

HWY 32

HWY 32 RE-ALIGNMENT

SHASTA STREET

TEHAMA STREET

WALKER STREET

E. WALKER STREET

(STATE HIGHWAY 32)

YOLO STREET

SOUTH STREET

FIRST STREET

SIXTH STREET

EAST AVENUE

RAILROAD AVENUE

WOODYARD

PAPST

FAIRVIEW

CITY OF ORLAND 1875

PMC

Because the City is expanding outward in multiple directions, there is some concern that increased population could add strain to fire protection in the area. The City currently has plans to construct a new water storage tank with a minimum usable capacity of 1 million gallons. Construction of this facility would address the concerns of water supply dependability, particularly if the tank and its pumps are sized to fire-flow requirements and normal water usage computed at the peak use period (June to August). Fire flow needs are based on usage, type of construction and square footage of buildings. The Orland Fire Department recommends the following:

- Commercial: 3,500 gpm with 3-4 hours duration
- Industrial: 4,500 gpm with 3 to 4 hours duration
- Multi-family residential: 3,500 gpm with 3 to 4 hours duration
- Residential: 2,500 gpm with 2 to 3 hours duration

The Department is funded by the City's general fund, and the budget needs are reviewed annually. A City Council resolution sets forth the truck reserve fund (a capital account), which schedules replacement of equipment through the year 2025. One of the older engines is scheduled for replacement in order to upgrade the total pumping capability. As of the time of this document's production, the acquisition of this new fire engine was scheduled for early 2008. This new engine will increase the fire-flow capability to a fire scene without impacting area flows.

Projected needs for the Department in the next twenty years include continued Public Works projects that upgrade the water system, including:

- Water main replacement
- Storage tank construction
- Fire hydrant replacement as needed
- Funding for the City Engineer to develop a computerized program that analyzes the existing water system serving the City of Orland to determine where the problems are and which water mains to replace in order to maximize fire flows and to increase the existing water system operating pressures for better hydrant flows (first targeting all industrial and commercial districts, then multi-family residential districts)
- Continued work on a multi-agency centralized dispatch center with back-up systems.

The needs of the Department in terms of the water system upgrades may be impacted by the funding ability of the City of Orland. However, with these upgrades, the City of Orland Fire Department could be able to reach their goals of a lower ISO rating.

3.4 COUNTY HEALTH

GLENN COUNTY HEALTH DEPARTMENT

The Glenn County Health Department is a division of the Glenn County Health Services Agency. Located at 242 North Villa in Willows, the Department offers the following health and health education services:

Environmental Health

Environmental Health Services Include: Disaster Sanitation, Food, Proposition 65, Housing and Institutions, Rabies Control, Vector Control, Pools and Spas, Sewage Disposal, Solid Waste, Water Wells and Monitoring Wells.

Mental Health

Mental Health provides crisis intervention, individual and group therapy, children services, community education, continuing care for the chronic mentally ill and contracting with providers for 24 hour acute care and residential programs. Mental Health also provides assessment and treatment of mental health disorders, including counseling and medication, counseling for individuals, families and groups, children, adolescents and adults.

Mental Health, Alcohol & Drug Commission

Program includes: Mental Health, Drug & Alcohol, Public Health and Environmental Health Programs.

Public Health Nursing

Public Health Nursing services include: AFLP & Cal-Learn AWAP C.C.S. C.H.D.P. Communicable Disease Control Family Planning Health Education HIV Testing Home Visits Immunization Clinics Information & Referrals Lead Program M.C.A.H. P.O.E. Pregnancy Testing & Counseling Sexually Transmitted Disease Control TB Screening & Treatment Teen Clinic Tobacco Program, Women, Infant & Children's Program (WIC), & Bioterrorism.

Substance Abuse

Substance Abuse Services Include: Alcohol & Drug Education Classes Assessments and Referrals to Residential Treatment Centers DUI Referrals Groups on topics such as: Co-Dependency, Relapse Prevention, Women's Issues, Anger, Step Study & Higher Power Individual & Family Counseling Prenatal Services Teen Services.

ORLAND AREA HEALTH CARE

Currently, there is no hospital in the City of Orland. The closest full-service hospital to Orland residents is Enloe Medical Center in Chico, approximately 15 miles to the east. The Glenn Medical Center is located 15 miles to the south of Orland in Willows.

Health services available in Orland include emergency response services provided by the Orland Fire and Police Departments, and the Westside Ambulance Association on 4th Street in Orland.

Del Norte Clinics, Inc., has a branch medical center at 1211 Cortina Drive in Orland. This clinic accepts Medi-Cal as well as private insurance, and offers a sliding scale for income eligible patients. The following health care services are available at Del Norte Clinic, Inc.:

- Family Planning
- Free Immunizations

- PAP Smears and Breast Examinations
- Physical Examinations
- Nutritional Counseling
- Prenatal Care
- Immigration and Naturalization Physicals

3.5 SCHOOLS

Table 3.1 lists the current enrollment and capacity of Orland's Elementary and High Schools.

TABLE 3-1:
ORLAND SCHOOLS CURRENT ENROLLMENT AND CAPACITY

Name of School	Current Enrollment	Capacity
Mill Street School (K-2nd)	527	600
Fairview School (3rd – 5th)	543	550
CK Price Middle School (6th – 8th)	530	540
Orland High School (9th – 12th)	657	700
North Valley Continuation High School (9th – 12th)	55	50

ELEMENTARY SCHOOLS

The Orland Unified School District offers two campuses to serve elementary school students in the Orland area.

Mill Street School

Mill Street School, located at 102 Mill Street in Orland, serves students in kindergarten through 2nd grade. Current enrollment at the school is 527, and current capacity is 600 students. Mill Street School has 30 regular classrooms and 30 full-time teachers. The school provides a full school lunch program, offering free or reduced price breakfast and lunch to those students who qualify. At this point in time, approximately 85% of the students at Mill Street School utilize this program. In addition to standard academic instruction, Mill Street School offers several programs to students, including an after school day care program run at Fairview School. A jump rope club and a karate club offer after school activities as well.

In terms of funding, the state General Fund provides funding, and other categorical funds are obtained through the state School Improvement Program, as well as through the federally funded Title 1 program. For the twenty years that this General Plan Update is expected to serve the City of Orland, several needs are foreseen for the future of Mill Street School and other school serving Orland residents. Portable buildings can be used for any student enrollment over current capacity for several years. However, in the long run, it is certain that the City of Orland will need another elementary school campus to serve the growth predicted over the next twenty years.

Fairview School

Fairview School, located at 1308 Fairview, serves students in grades 3 through 5. Current enrollment at the school is 543, which essentially places Fairview School at capacity for students. In 2002, the school submitted a "Modernization Application" to the State of California, in order to obtain funding to provide more housing (classrooms) for their students. One of the results of this Modernization allowed the 2006 installation of a new two-classroom portable. The school principal predicts severe building needs in the near future for Fairview School.

There are 24 regular elementary school teachers employed by Fairview School, as well as one full-time resource specialist teacher; a 40% music/60% Title I teacher; one principal; thirteen part-time instructional aides/yard supervision/crossing guards; administrative support from two district Psychologists; as well as the Superintendent and Assistant Superintendent. Fairview also employs one full-time Special Day Class teacher, who works with those students with learning disabilities who are pursuing individual education plans.

Fairview offers its students a hot lunch program, with hot breakfast and lunch offered free of price to those who qualify. Approximately 70 percent of the students at Fairview School do qualify for this program.

Fairview provides several programs to help students, including a SPARK (Sports, Play, and Active Recreation for Kids) program, which runs from 2:45 pm to 6 pm weekdays, and a Response to Intervention (RTI) program to better serve the individual learning needs of the students. General funding for Fairview School is as above for Mill Street School.

MIDDLE SCHOOL

CK Price Middle School

CK Price Middle School, located at 1212 Marin, serves students in grades 6 through 8. Currently the middle school is at capacity with approximately 530 students. Within the last few years, multiple modular classrooms have been added to the campus in order to meet the growth needs of the school.

Twenty-seven (27) full-time teachers are employed by the school, including the special programs that are offered; Resource Specialist Program (RSP) and Special Day Class (SDC), English language learners along with extra help and support in opportunity classrooms.

The school hot lunch (free or reduced price lunches) program is utilized by close to 70% of the students who attend the middle school.

Added enrollment could create overcrowding at C.K. Price Middle School. Lunch is served in two shifts to accommodate all of the students. Lunch is served in the cafeteria facility, which becomes severely impacted on rainy days. Facility needs in the future include new structures to house the gym and the cafeteria.

Currently, the school library is housed in a modular building purchased from UC Davis twenty years ago, along with science class and the 6th grade RSP class. Although the building is old, the floor underwent repairs and the building is able to meet the needs of the school from a physical aspect.

According to the school's principal, the biggest needs of C.K. Price Middle School are a new gymnasium, some additional classroom space, and some traffic control around the school with slow and stop sign, in order to provide increased safety to students.

HIGH SCHOOLS

Orland High School

Although several attempts were made at acquiring up-to-date information regarding Orland High School, no information has been provided by the school at the time of production of this document.

North Valley Continuation High School

North Valley Continuation High School serves as the first step of intervention for those students who are not succeeding at the Orland High School, for behavioral or academic reasons. The school, located at 250 Roosevelt Drive in Orland, serves approximately 55 students. North Valley is staffed by two full-time teachers, and one part-time teacher, and offers its students the full range of academic courses found at Orland High School.

The condition of the school was described as "fair" by the school's principal. Current needs require maintenance work to the "big room" which is the oldest and most used room in the school. Additional needs include more space for clerical/office activities, additional space for Individual Education Program (IEP) meetings and student activity work.

POST SECONDARY EDUCATION

Butte Community College, located south of Chico on SR 99, offers courses locally in Orland, as well as provides daily bus service to its main campus. The California State University, Chico campus is located about 18 miles to the east in Chico.

3.6 LIBRARY

There is one public library within the City limits – the Orland Free Library, which celebrates its 90th birthday in 2007. It is open during the week: Mondays and Wednesdays from 11 am to 6 pm, and Tuesdays and Thursdays from 12 noon to 8 pm. The library is closed on Fridays and on weekends. The library is currently staffed with 4 full-time employees and 2 part-time employees. It provides public access to more than 60,000 volumes of books, as well 5 public-access computers with internet access.

The Orland Free library is located at 333 Mill Street. Many services besides book check-out are offered at the Library. These include various youth activities, as well as affiliation with the North State Cooperative Library Program, and the Friends of the Orland Free Library, a voluntary non-profit organization.

The Orland Free Library web page (http://www.orlandfreelibrary.net./) offers those with Internet access the following services:

- Internet Search Engines (including Librarians' Index to the Internet and AnyWho, as well as the popular search engines such as Google and Yahoo)
- On-line access to National newspapers
- On-line access to financial trading web sites
- On-line access to sites dealing with linguistic and historic research
- "Cool Links" dealing with current issues (i.e., at the time of this report one of the Cool Links was "Afghanistan Quick Facts")
- On-line access to map and travel route services
- An on-line link to "This Day in History"
- Current weather conditions and Orland area weather radar information

3.7 CITY ADMINISTRATION

Administration for the City is located in the City Hall at 815 Fourth Street. City Hall houses the office of the Department of Public Works, the Orland Municipal Water office, the Planning Department, the office of the City Manager, and the Orland Building Department. The City Engineer position is contracted with Rolls Anderson Rolls and the City Attorney's office is also contracted. The Parks and Recreation Department is located in the Carnegie Hall basement and the Orland Police Department is located adjacent to the City Hall Building.

3.8 WATER SUPPLY, DISTRIBUTION AND TREATMENT

ORLAND PUBLIC WATER SYSTEM

The City of Orland's primary water system, Public Water System 1110001, consists of six wells distributed throughout the City. The wells have an average depth of approximately 200 feet, and the average depth of groundwater is generally between 20-50 feet. Pressure for the City water system is provided by gravity flow from an 80,000 gallon elevated storage tank. The wells produce between approximately 500 and 1,200 gallons per minute each (see **Table 3-2**), and are automatically regulated by the water level in the storage tank. The City is investigating the possibility of either rehabilitating or replacing the elevated tank. Auxiliary stand-by power is provided at four of the City's wells. The water transmission and distribution systems consist of approximately 30 miles of pipeline.

TABLE 3-2:
GENERAL WELL DATA

Well	Status	Capacity (gpm)	Comments
8th Street	Inactive	(620)	Sand separator; water lube; 10,000 gallon pressure tank, chlorinator.
Central Street	Active	860	10,000 gallon pressure tank, direct drive gasoline engine, chlorinator.
Corp. Yard	Active	1,030	7,500 gallon pressure tank, water lube, chlorinator.
Railroad Avenue	Active	1,240	10,000 gal. pressure tank, natural gas generator, water lube, chlorinator
Suisun	Active	1,090	Direct drive natural gas engine, 10,000 gal. pressure tank, chlorinator
Woodward	Active	890	Direct drive natural gas engine, 10,000 gal. pressure tank, chlorinator
Roosevelt	Active	700	2,500 gallon pressure tank.
Lely Aquatic Park	Inactive	(500)	10,000 gallon pressure tank
	Total	**5,810 (6,930)**	

Almost all of the buildings within the City are on water meters, with the only exceptions being some downtown buildings and the parks. However, by 2012, all users will be required to be metered. Water fees are currently $23.50 for two months for both residential and non-residential customers, up to 15,000 gallons. For usage beyond 15,000 gallons, customers are charged an additional $0.60 per 1,000 gallons. The Orland water system currently serves 2,315 residential water customers and 300 non-residential customers.

The City Engineer has indicated that, should Orland grow to the west, a new well would probably be required on the west side of the freeway. There are currently two (2) water borings under I-5, which are located at Trinity Street and Walker Street. These borings currently provide City water service to the west side of I-5.

The Haigh Field Industrial Park, located at the Haigh Field Airport 1.2 miles southeast of Orland, is served by an auxiliary water system. Public Water System 1105003 is not connected to the City's primary water system, and has one well that produces 1,740 gallons per minute, and is also equipped with auxiliary standby power.

WATER QUANTITY AND QUALITY

The City currently has adequate capacity to meet peak water demands. In addition, the City has a well at the Lely Aquatic Park that is currently not connected to the City's public water system. The City has tentative plans to install a larger pump in the well and include the well in its water system operation. According to the City of Orland Engineer, the City intends to connect immediately following the installation of a 10-inch pipe on Hambright Avenue between Orland Park and Whitehawk Estates.

According to the City of Orland Engineer, the City water supply does not have water quality or contamination issues. Continuous disinfection is provided at six of the City's seven wells. The Roosevelt Well has the facilities necessary to chlorinate if needed. Water treatment is a

preventative measure due to intermittent positive bacteriological test of the wells. In 2006, a Water Master Plan was completed for the City of Orland and is currently on file with the City.

ORLAND UNIT WATER USERS ASSOCIATION OPEN CHANNEL SYSTEM

The Orland Unit Water Users Association (OUWUA) wishes to convert its City facilities from an open-channel distribution system to a buried-pipe distribution system. OUWUA open channels exist throughout the planning area. The City of Orland's General Plan currently requires developers to underground open channels as a condition of new development located adjacent to the channels. A technical study by the engineering firm of CH2MHill has been completed, evaluating the hydraulic system and providing guidance on the undergrounding process. The OUWUA, in conjunction with the City, is utilizing the CH2MHill study, in order to meet the City's requirements.

With funding provided through the CALFED Agricultural Water Use Efficiency Program, a Feasibility Study for Undergrounding OWUWU Canals in the City of Orland was prepared in 2005. The feasibility study collected information regarding existing system operations, analyzed availability of storage within the OUWUA reservoirs, and, based upon the assumption that the entire service would be converted to a buried-pipe distribution system, determined the components out of which a range of regional water management alternatives would be developed. The Feasibility Study is current available for review at the City Hall.

3.9 WASTEWATER COLLECTION AND TREATMENT

The City's sanitary sewer system is a gravity-flow based system with flow moving in a southeasterly direction. In areas where gravity flow is not an option, the City utilizes four lift-stations to transport wastewater to gravity-flow lines.

All sewage that is generated inside of the Orland City Limits is collected and treated by the City of Orland Wastewater Collection and Treatment Facility. Areas outside of the city limits are treated by private on-site septic systems. The treatment facility utilizes a Primary treatment process. The process consists of a bar-screen located at the headworks building with screened effluent being disposed into a rotating series of four sewage disposal ponds located west of the airport. These four primary settling ponds, along with two specially lined and isolated brine ponds, are located on a 50-acre City-owned parcel of land.

In 1996, the California Regional Water Quality Control Board issued the City of Orland's Waste Discharge Requirements Order No. 96-129, which indicates that the design capacity in 1996 for the four stabilization ponds and disposal field was 2.1 million gallons per day (mgd), with an average domestic wastewater flow of 1.3 mgd.

The City recently completed improvements to the wastewater treatment plant, which greatly increased the usable percolation area receiving effluent discharge from the ponds. The City Engineer is not aware of any major problems with the collection system (i.e., root intrusion).

Population projections for Orland predict that by 2027 (the life of the revised General Plan), the population will be between 8,974 and 10,495. The wastewater treatment plant can support a population of approximately 12,000. In addition, a Wastewater Master Plan is being developed for the City of Orland.

3.10 STORM DRAINAGE SYSTEM

Information contained in Orland's existing General Plan indicates that the storm drainage system at that time was at capacity at the Lely-Aquatic Park, and that an overflow system at the Orland Airport was being proposed. Currently, the system is still operating at capacity, and the storm drainage retention basin at the Airport was constructed in 1992 through a Joint Powers Agreement between the City of Orland and the County of Glenn. However, the overflow piping from the park to the airport has not yet been installed.

The City has not as yet acquired new storm drainage areas at the Southern Pacific site, and, in conjunction with the County of Glenn, has reached an agreement with Embrey and Stokes to not drain storm water runoff onto this property. A new drainage area was acquired by the City on the Sturm property, but a drainage easement has not yet been approved. Orland does not have any storm drain pump stations; all systems operate by gravity.

A majority of the residential development in Orland since 1990 has taken place in the north and northwest portions of Orland, and storm water runoff from these developments has been disposed of in Stony and Hambright Creeks. Other developments in Orland have utilized onsite storm drainage retention basins, since the Lely-Aquatic Park is at capacity. With the exception of those northerly properties that drain by gravity into Stony Creek, all drainage is disposed of by percolation.

The City of Orland is currently preparing mapping and a Storm Drainage Master Plan to identify future needs of the storm drainage system.

According to the City Engineer, in extremely wet years, the capacity at the Lely-Aquatic Park could be exceeded with resulting storm water flowing onto County Road 200, and moving in a southeasterly direction. Either capacity at Lely-Aquatic Park needs to be increased and/or the City needs to acquire new storm drainage areas to intercept and reduce flow to the park.

Future needs include the acquisition of new regional storm drainage area(s) for disposal of storm water runoff.

3.11 SOLID WASTE COLLECTION AND DISPOSAL

In 1989, the California legislature passed the California Integrated Waste Management Act (AB 939). This legislation mandated a 25 percent reduction in the solid waste stream going to landfills and transformation facilities by 1995, and a 50 percent reduction by 2000. Glenn County prepared the required Source Reduction and Recycling Element (SRRE) and Household Hazardous Waste Element (HHWE) in 1992. The official diversion rate for 2006 was 50%. However, Glenn County is currently working with the California Integrated Waste Management Board to establish the most appropriate statistics used to calculate the rate, and it may be subject to upward revision.

The County of Glenn owns and operates a landfill located at the west end of County Road 33 off Interstate 5 in Artois. Orland residents can contract individually with Waste Management for curbside waste and recycling collection services. Orland area waste is delivered to the Glenn County Landfill by Waste Management. The Glenn County Landfill offers the following services:

HOUSEHOLD HAZARDOUS WASTE PERMANENT COLLECTION FACILITY

Another component of solid waste disposal reduction mandated by AB 939 was the preparation of a jurisdictional Household Hazardous Waste Element (HHWE). This element is intended to encourage proper management of household hazardous waste (HHW).

Glenn County, in cooperation with the Regional Council of Rural Counties Environmental Services Joint Powers Authority and funds from California Integrated Waste Management Board, has located a permanent transfer and collection facility at the Glenn County landfill. This facility accepts the following common household hazardous waste materials:

- adhesives
- paint
- paint thinner and strippers
- solvents
- wood and metal cleaners
- oven cleaners
- drain openers
- lighter fluids
- insecticides
- used oil and filters
- antifreeze
- batteries

ABOP RECYCLING CENTER

An Anti-Freeze, Batteries, Oil and Paint Recycling Center has been opened at the Glenn County Landfill. These materials are accepted free of charge Sunday through Saturday during the hours of 8am - 4:30pm.

OFFICE PAPER RECYCLING

Glenn County Departments participate in a countywide office paper recycling program in cooperation with North Valley Services a local certified recycling company located in Orland.

LEAF COLLECTION PROGRAMS

The City of Orland provides a leaf collection program for city residents during the fall at no charge to City residents. This effort helps to maintain the City's storm drains prior to the winter months.

3.12 ENERGY AND COMMUNICATION SYSTEMS

ELECTRICAL SERVICE

Residents of the City of Orland obtain their electrical service from Pacific Gas and Electric.

TELEPHONE AND CELLULAR PHONE SERVICE

Telephone service is provided to the City of Orland by SBC, formerly Pacific Bell. As with any other town in the Sacramento Valley, Orland residents can avail themselves of any of the proliferation of telephone service providers in the country.

INTERNET SERVICE

Orland residents have a wide variety of Internet service providers to choose from, ranging from those located in the general vicinity, to those that offer services nation-wide.

CABLE TELEVISION SERVICE

Cable television services are provided to Orland area residents by Comcast Cable. A variety of satellite television service providers are also available to residents of Orland.

4.0 CIRCULATION

4.1 GENERAL PLAN REQUIREMENTS

According to the 1998 edition of the General Plan Guidelines for the State of California, the General Plan shall include a Circulation Element addressing the following circulation issues: Major thoroughfares, transportation routes, terminals, and other local public utilities and facilities. By statute, the circulation element must correlate directly with the land use element.

4.2 INTRODUCTION

The Transportation and Circulation element of the General Plan Update addresses the development and maintenance of systems to adequately move persons, goods and services within the City of Orland. An inventory and evaluation of the operating characteristics of the existing circulation system is the initial task required to develop a comprehensive plan to guide transportation planning in Orland in the future. This section describes the transportation system and services within the City of Orland. The discussion addresses existing roadway functions, traffic volumes and traffic Levels of Service, as well as transit, rail service and bicycle routes.

Information contained in this section is based upon a report prepared by kdAnderson Associates Transportation Engineers. Existing traffic volume counts on area streets were conducted in December 2007 for use in this analysis.

4.3 EXISTING STREETS/FUNCTIONAL CLASSIFICATIONS

The existing roadway system in the Orland area is comprised of residential streets, collectors (major and minor), arterials and freeways. **Figure 4-1** displays the functional classification of the street system within the Orland area.

The existing circulation system in the Orland area comprises approximately 27 miles of paved roadway. State facilities consist of Interstate 5 on the westerly boundary of the existing City Limits and Highway 32, which extends east from I-5 through central Orland. The balance of the circulation system is maintained by the City of Orland and generally consists of 2-lane roadway facilities with stop sign controls at intersections. There are currently three signalized intersections on Highway 32, at East Street, 6th Street, and 8th Street. Additionally, a four-way signalized intersection has been planned at the intersection of Papst Avenue and Highway 32.

The designation of streets and the system of arterials, collectors and local streets is based upon 1) the travel needs of auto, truck, and transit uses; 2) the network pattern of existing streets; and 3) the access needs of adjacent land uses.

The primary function of Local Streets is to provide access to individual land uses. Collector streets channel traffic from the local streets and deliver it to the larger "through" streets. Arterial streets are the major movement streets and are intended to move larger volumes of traffic across the community and provide access to and from highways, freeways, and areas beyond the urban boundaries. However, Collectors and Arterials may also provide direct access to individual properties and uses.

The type or classification of a street is generally determined by its intended function, which is generally reflected in the street's physical state. Typical street rights-of-ways in Orland are shown in **Table 4-1**:

TABLE 4-1:
TYPICAL STREET RIGHTS-OF-WAY

	Right-of-Way	Curb-to-Curb (Improved Street Width)
Arterial	110′	68′ (w/22′ median)
Major Collector	84′	64′
Minor Collector/Local	60′	40′

Source: 2003 Orland Area General Plan

STATE ROUTES

Interstate 5

A north-south oriented 4-lane freeway bisecting the western portion of the plan area, I-5 currently carries approximately 23,000 average daily vehicles (ADT) through the City of Orland, according to 2007 Caltrans counts. Within the plan area, I-5 includes interchanges at South Street (County Road 16) and at Highway 32/Newville Road.

South Street interchange

The South Street interchange provides a 2-lane overcrossing of I-5 with ramp intersections separated by approximately 900 feet. The interchange consists of a partial cloverleaf design (type L-7) with loop ramps provided for access to the freeway. Left turn channelization is provided on South Street on the east side of the interchange at the northbound ramp intersection. No left turn channelization is provided at the southbound ramp intersection. Off-ramps are currently controlled with stop signs.

Highway 32 / Newville Road interchange

The Highway 32/Newville Road interchange provides a 2-lane overcrossing of I-5 with ramp intersections separated by approximately 1,100 feet. The interchange consists of a partial cloverleaf design (Type L-9) with loop ramps provided to supplement access to the freeway in the northwest and southeast quadrants. Off-ramps are currently controlled with stop signs.

Figure 4-1

CITY OF ORLAND

Functional Classification

Planning Area Boundary

City Boundary

Road Classification

Arterial

Major Collector

Proposed Major Collector

Minor Collector

Proposed Minor Collector

(All Others) Local

0 0.125 0.25 Miles

I-5
GABLE DR
OLIVE DR
LYNN DR
HWY 99W
ROAD 11
DATE ST
EVA DR
N 8TH ST
N 6TH ST
ROAD 12
ALMOND WAY
TANNER WY
NEWVILLE RD
SUISUN ST
TRINITY ST
BENSON DR
5TH ST
UNION HIGH SCHOOL
A ST
EAST ST
PLUMAS ST
BUTTE ST
STONY CREEK DR
BRYANT ST
BYRON WAY
ROAD MM
CO RD N
SHASTA ST
TEHAMA ST
BONNIE LN
WOODWARD AVE
COUNTY ROAD 13
CO RD HH
ROAD 13
9TH ST
4TH ST
3RD ST
2ND ST
1ST ST
SWIFT ST
E SWIFT ST
CO RD M 1/2
GCOE
BUTTE COLLEGE
WALKER ST
E WALKER ST
PORTER LN
6TH ST
COLUSA ST
E COLUSA ST
MILL STREET GRAMMER SCHOOL
MILL ST
E MILL ST
ROBBINS ST
PAIGEWOOD DR
ELLIS ST
CO RD 15
YOLO ST
E YOLO ST
8TH ST
CENTRAL ST
CHAPMAN ST
WALNUT ST
GLENN COUNTY FAIRGROUNDS
COUNTY ROAD 15
OUWUA HEADQUARTERS
CHAS. K. PRICE GRAMMER SCHOOL
ROAD 16
SOUTH ST
E SOUTH ST
HAMBRIGHT AVE
FAIRVIEW GRAMMER SCHOOL
ROAD K 1/2
COUNTRY DR
CITY CORPERATION YARD
LELY AQUATIC PARK
PINE ST
EDITH CIR
CO RD M
CO RD 17
CO RD 200
COUNTY ROAD I
HWY 99W
RAILROAD AVE
ROAD KK
FAIRVIEW ST
ROAD MM
ROAD 18

Highway 32

Highway 32 through Orland generally consists of a 2-lane rural highway with a center turn-lane, linking Interstate 5 in Orland in the west to the Lassen National Forest east of the City of Chico. Between I-5 and Route 99, Highway 32 is a major route for trucks and serves a significant amount of recreational traffic. Route 32 traverses the City of Orland downtown business district and is designated as Walker Street from Sixth Street to the eastern city limits. The Highway primarily serves as a commercial fronting along the Walker portion with on-street parking located in that area.

In 2006, a major realignment of State Route 32 was undertaken within the City of Orland. This realignment utilized a pair of curves to bring the highway into perpendicular intersection with Sixth Street. Additionally, existing traffic signals were upgraded and new signals were installed. The primary purpose for the realignment was because large trucks were having difficulty making the offset turns without encroaching into opposing traffic lanes. Because turning trucks frequently would mount curbs at the corners and swing out into the lanes of oncoming traffic, several different alternatives for the realignment were discussed before construction began.

ARTERIALS

Arterials streets are intended to handle the movement of goods and people through the area and serve inter-county and inter-regional transportation needs. As shown below, the City of Orland currently has four designated arterial streets, two of which are Interstate 5 and State Route 32. Because of this, Caltrans currently maintains all but South and Sixth Streets of the City's arterial system.

The following streets comprise the City's arterial system:

- Interstate 5
- Highway 32
- Sixth Street
- South Street (I-5 to Sixth Street)

Sixth Street

Sixth Street, or County Road 99, is the only north-south oriented arterial in Orland. Land uses along Sixth Street are primarily commercial/industrial but also include some residential uses to the north, from Almond Way to the northern City limits.

South Street

South Street, the City's other local arterial street, runs east-west and connects Sixth Street to I-5. Like State Route 32, South Street provides access from I-5 to commercial and residential areas in Orland, and to agricultural areas in the County.

MAJOR COLLECTORS

Major collectors provide circulation between arterial streets and major activity centers. Within residential areas, traffic is directed onto major collector streets and then to connecting arterials. Small scale retail or commercial establishments may have direct access to major collectors, but direct access to individual residential lots is discouraged to improve traffic safety and efficiency.

For the purpose of Section 66484 of the Subdivision Map Act, a collector shall be considered a major thoroughfare.

The following streets comprise the City's Major Collector:

- South Street (Sixth Street to Papst Avenue)
- Road 200 (Papst Avenue to Road N)
- Road 18 (Cortina Drive to Road 200)
- Cortina Drive (Newport Street to Road 18)
- Papst Avenue/County Road M (Hwy 32 to County Rd 18)
- Road N (Highway 32 to Road 200)
- Road 16 (West of I-5)

MINOR COLLECTORS

The primary non-local road type in the City is minor collectors, which feed traffic from residential areas to major collectors or arterials.

The following streets comprise the City's Minor Collector system (** proposed*):

- Date Street & extension (Olive Street to 6th; *6th to Road N)
- Bryant Street (Papst Avenue to Road MM)
- Tehama Street (Highway 32 to East Street)
- *Road 17 (East Street to Road MM)
- Road HH (Road 16 to Road 200)
- Hillsan Street (Papst Avenue to Road N)
- Railroad Avenue (Yolo Street to County Road 18)

- Yolo Street (Railroad Avenue to East Street)
- Fourth Street (Yolo Street to Highway 32)
- Cortina Drive/Porter Lane (Newport Avenue to Walker)
- East Street (Road 18 to Roosevelt;*Roosevelt to Date)
- Papst Avenue (Hwy. 32 to Date St)
- *Road M ½ (Bryant Street to Date Street)
- Road MM (Co. Rd 18 to Route 200;*Road 200 to Date St)
- Road N (Hwy. 32 to Date Street)
- Eighth Street (South Street to Date Street)

LOCAL STREETS AND ALLEYS

Local streets provide direct access to individual adjoining properties. Local streets are accessed by at least two other streets. Alleys provide direct access to individual adjoining properties.

TRUCK ROUTES

Trucks shall be routed through the City for safety and to minimize their impact on residential areas. Local deliveries are allowed on all streets, however, through truck traffic is restricted to streets on the designated truck routes.

The following streets comprise the designated truck routes in the City:

- State Route 32
- Sixth Street (County Road 99)
- South Street (Interstate 5 to the eastern boundary of Railroad Avenue)
- Railroad Avenue (South Street to County Road 18)
- Papst Avenue (Highway 32 to South Street)
- County Road 200 (Papst Avenue to County Road N)

4.4 PUBLIC TRANSPORTATION

RAIL

The City of Orland is served by railroad lines owned by the Union Pacific Railroad and leased/operated by the California Northern Railroad, which provide freight hauling service. The line runs north-south between 6th and 5th Streets with generally two trips per day. Passenger service provided by Amtrak runs the Sacramento-Dunsmuir line. The nearest passenger stop is in Chico.

Rail-served industrial activities, within and adjacent to the rail line, contribute to the City's economic base. Freight-rail service plays a key role in the transportation of heavy or bulky materials produced locally and shipped to regional markets. Rail spurs serving these activities represent an important asset to the City of Orland and Glenn County.

BUS SERVICE / TAXI SERVICE

Commercial

Bus service is provided to the City of Orland through Glenn Ride. Glenn Ride is a public transportation fixed route bus system with seven round trips every weekday and three round trips on Saturday from Willows to Chico, with enroute service to Artois, Orland and Hamilton City.

School

School buses are operated by the Orland School District. The district currently operates approximately 15 buses.

Taxi

There is currently no taxi service operating within the City of Orland.

PEDESTRIAN/BICYCLE FACILITIES

Pedestrian

City standards require sidewalks along all improved streets except in the industrial areas. The City is currently planning for a pedestrian facility to include a multi-use path along Stony Creek. Additionally, the City has planned to provide multi-use trails within the right-of-ways of undergrounded canals, which could be utilized as pedestrian pathways.

Bicycle

Presently there are no formally designated bike lanes or bicycle facilities in the City. However, the City understands the need to move people through the community. As mentioned above, the City is planning for a multi-use pathways along Stony Creek, as well as multi-use pathways within the right-of-ways of undergrounded canals. Additionally, street widths can accommodate bicycle traffic in some areas and bike racks are available at schools and parks.

TABLE 4-2:
RANGE OF DAILY TRAFFIC VOLUMES FOR EACH LEVEL OF SERVICE

Facility Type	Number of Lanes	Range of Daily Traffic Volumes for Each Level of Service					
		LOS A	LOS B	LOS C	LOS D	LOS E	LOS F
Local	2	0 - 2,700	2,701 - 3,150	3,151 - 3,600	3,601 - 4,050	4,051 - 4,500	More than 4,500
Minor Collector	2	0 - 4,800	4,801 - 5,600	5,601 - 6,400	6,401 - 7,200	7,201 - 8,000	More than 8,000
Major Collector	2	0 - 7,620	7,621 - 8,890	8,891 - 10,160	10,161 - 11,430	11,431 - 12,700	More than 12,700
Arterial	2	0 - 9,000	9,001 - 10,500	10,501 - 12,000	12,001 - 13,500	13,501 - 15,000	More than 15,000
Arterial	4	0 - 18,000	18,001 - 21,000	21,001 - 24,000	24,001 - 27,000	27,001 - 30,000	More than 30,000

EXISTING LEVELS OF SERVICE

Table 4-3 presents the existing daily traffic volumes on study area roadways within the Orland area. Daily traffic volumes on the State Highway system have been obtained from Caltrans' Publication *2000 Traffic Volumes on California State Highways*. On City streets, daily traffic volume counts were conducted by kdAnderson in December 2007. Traffic count locations are also summarized in **Figure 4-2**.

As shown in **Table 4-3**, the majority of the roadway system in Orland is currently categorized by Level of Service (LOS) "A" operations. The only exception is Highway 32/Walker Street. Although Highway 32/Walker Street east of Papst Avenue currently experiences satisfactory LOS "B" operations based upon daily volume thresholds, increasing traffic within the City has resulted in a LOS "D" on the section of Walker between 6th Street and Papst Avenue. While LOS "D" exceeds the threshold for arterial streets within Orland, it should be noted that Walker Street/Highway 32 is a State Route. According to the Department of Transportation, the acceptable level of service on State Routes is an LOS "D". This section of Walker Street/Highway 32 is therefore consistent with LOS standards.

TABLE 4-3:
EXISTING ROADWAY VOLUMES AND OPERATING LEVELS OF SERVICE

Roadway and Count Location		Functional Classification	Lanes	Volume		Levels of Service
				Daily	Peak Hour	
1	Almond Way, between 6th Street & 8th Street	Local	2	1,025	113	A
2	Monterey Street, between 5th Street & 6th Street	Local	2	1,425	195	A
3	Shasta St, between Melanie Circle & Woodward Ave	Local	2	658	69	A
4	Fifth Street, north of Walker Street (SR 32)	Local	2	756	85	A
5	Fifth Street, south of Walker Street (SR 32)	Local	2	1,427	148	A
6	Fourth Street, north of Walker Street (SR 32)	Local	2	1,210	163	A
7	Third Street, north of Walker Street (SR 32)	Local	2	1,079	145	A
8	Third Street, south of Walker Street (SR 32)	Local	2	1,240	143	A
9	Second Street, north of Walker Street (SR 32)	Local	2	474	72	A
10	Second Street, south of Walker Street (SR 32)	Local	2	725	154	A
11	A Street, north of Walker Street (SR 32)	Local	2	209	22	A
12	A Street, south of Walker Street (SR 32)	Local	2	406	53	A
13	Woodward Avenue, north of Walker Street (SR 32)	Local	2	1,951	185	A
14	County Road M-1/2, north of Walker Street (SR 32)	Local	2	963	131	A
15	Yolo Street, west of Papst Avenue	Local	2	1,045	128	A

Roadway and Count Location		Functional Classification	Lanes	Volume		Levels of Service
				Daily	Peak Hour	
16	Newville Road (SR 32), west of County Road HH	Major Collector	2	5,018	446	A
17	County Road 16, west of County Road HH	Major Collector	2	1,160	109	A
18	Cortina Drive, north of South Street	Major Collector	2	723	67	A
19	South Street, west of Papst Avenue	Major Collector	2	2,010	241	A
20	Papst Avenue, south of South Street	Major Collector	2	1,284	140	A
21	South St (County Rd 200), west of County Rd N	Major Collector	2	981	115	A
22	County Rd N, north of South St (County Rd 200)	Major Collector	2	206	38	A
23	Tehama Street, between 5th Street & 6th Street	Minor Collector	2	1,562	186	A
24	County Road HH, south of Newville Road (SR 32)	Minor Collector	2	945	90	A
25	Tehama Street, northeast of Swift Street (SR 32)	Minor Collector	2	1,602	150	A
26	Fourth Street, south of Walker Street (SR 32)	Minor Collector	2	2,141	214	A
27	East Street, north of Walker Street (SR 32)	Minor Collector	2	2,482	331	A
28	East Street, south of Walker Street (SR 32)	Minor Collector	2	3,072	363	A
29	Fourth Street, between Mill Street & Yolo Street	Minor Collector	2	1,350	182	A
30	8th Street, north of South Street	Minor Collector	2	1,039	97	A
31	Railroad Avenue, north of South Street	Minor Collector	2	1,983	226	A
32	East Street, north of South Street	Minor Collector	2	2,311	310	A
33	6th Street, between Trinity Street & Shasta Street	Arterial	2	6,369	579	A
34	6th Street, north of South Street	Arterial	2	5,372	496	A
35	6th Street, south of South Street	Arterial	2	4,612	423	A
36	SR 32 (Newville Road), east of I-5	Arterial	4	6,200	470	A
37	SR 32 (Walker Street), east of 6th Street	Arterial	2	12,800	1,000	D
38	SR 32 (Walker Street), east of Papst Avenue	Arterial	2	9,200	700	B
39	SR 32 (Walker Street), east of County Road N	Arterial	2	9,400	900	B

AIRPORT FACILITIES

There are two publicly-owned airports in Glenn County: Haigh Field, located in Orland, and the Willows-Glenn Airport. Haigh Field, located southeast of the City off County Road 28, has a 4,500-foot paved and "pilot controlled" lighted runway, 60' wide. Its length qualifies it as a "Basic Transport" facility, suitable for use by general aviation users and capable of handling small or light business jets. There is sufficient land area for expanding service and facilities to meet the City's needs and also those of the region.

Regional commercial carrier service is available at the City of Chico Municipal Airport where international and national connections can be made through San Francisco International Airport. However, the nearest major regional and international service is provided by Sacramento International Airport.

4.5 EXISTING ROADWAY LEVELS OF SERVICE

To assess the quality of existing traffic conditions, Levels of Service were calculated for individual roadway segments. "Level of Service" (LOS) is a qualitative measure of traffic operating conditions whereby a letter grade "A" through "F", corresponding to progressively worsening operating conditions, is assigned to an intersection or roadway segment.

METHODOLOGY

For this General Plan Update, daily traffic volumes on area roads have been acquired and compared to generalized capacity thresholds to assess the quality of traffic operations. These thresholds are based on "typical" non-peak and peak-hour parameters and can be helpful for planning purposes to suggest the daily volume of traffic that might yield various peak hour Levels of Service. The daily volume thresholds utilized by the City of Orland are presented in **Table 4-2**. It should be noted that the capacity of urban roadway segments is generally governed by the operation of adjacent intersections, and that auxiliary lanes at these intersections can have a significant effect on street segment and intersection capacity.

Figure 4-2

CITY OF ORLAND

Traffic Count Locations

Planning Area Boundary

City Boundary

Purple - Local

Blue - Major Collector

Orange - Arterial

0 0.15 0.3 Miles

SOUTH CANAL
UNION HIGH SCHOOL
SHASTA STREET
TEHAMA STREET
WALKER STREET
E. WALKER STREET
YOLO STREET
SOUTH STREET
INTERSTATE 5
HWY 32
HWY 32 RE-ALIGNMENT
OUWUA HEADQUARTERS
MILL STREET GRAMMER SCHOOL
CHAS. K. PRICE GRAMMER SCHOOL
GLENN COUNTY FAIRGROUNDS
FAIRVIEW GRAMMER SCHOOL
CITY CORPERATION YARD
LELY AQUATIC PARK
GCOE
BUTTE COLLEGE
COUNTY ROAD 12
COUNTY ROAD MM
COUNTY ROAD M 1/2
COUNTY ROAD 15 1/2
COUNTY ROAD 200
COUNTY ROAD KK
LATERAL 50
STATE HIGHWAY 32
WOODWARD AVENUE
PAPST AVENUE
EAST STREET
SIXTH STREET
RAILROAD AVENUE
FAIRVIEW
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32
33 34 35 36 37 38 39

5.0 NATURAL AND AGRICULTURAL RESOURCES

5.1 GENERAL PLAN REQUIREMENTS

According to the 1998 edition of the General Plan Guidelines for the State of California, the General Plan shall include a conservation element for the conservation, development, and utilization of natural resources including water and its hydraulic force, forest, soils, rivers and other waters, harbors, fisheries, wildlife, minerals, and other natural resources.

5.2 CLIMATE

Orland's climate is generally characterized as Mediterranean in character, with hot, dry summers, and moderate to cool, wet winters. Summers are characterized by abundant sunshine and light winds (6-8 miles per hour generally from the northwest in the winter and from the south in the summer). The lack of moisture during the summer makes irrigation necessary in any intensified agricultural program. Winter rains provide moisture for dry farming and growth of annual native range grasses and forbs.

Annual precipitation is variable with an average of 15 inches, most of which falls during the winter. Humidity varies from 70-90 percent in winter and from 25-60 percent in the summer. The mean annual temperature is 62°F with extreme highs up to 117°F. The mean minimum temperature in February averages 36°F. Cold snaps occasionally occur, dropping temperature from 0°F to 20°F (BOR, 1998).

5.3 TOPOGRAPHY

Orland rests atop the geologic province known as the Sacramento Valley. The Sacramento Valley consists of nearly level terraces, smooth alluvial fans, narrow flood plains and water filled basins. Elevation ranges from approximately 100 feet above mean sea level (MSL) at the Sacramento River to approximately 300 feet above MSL at the western edge of the Valley, west of Interstate 5 (Glenn County, 1993).

5.4 GEOLOGY

Orland is located within the Great Valley geomorphic province. Different geologic history coupled with local climatic conditions dictates geologic conditions. Geological information below was compiled and summarized primarily from the *Lower Stony Creek Fish, Wildlife and Water Use Management Plan* prepared by the U.S. Department of Interior, Bureau of Reclamation (1998).

The planning area lies atop the Stony Creek Fan, an alluvial fan formed as Stony Creek deposited sediments onto the plain of the Sacramento Valley. The fan occupies an area approximately 30 miles long and 25 miles wide at its greatest extent, from Black Butte Dam to the Sacramento River. The fan consists of a total thickness of 1,400 to 1,600 feet of sediments deposited by fresh water. Figure 5-1 is a geologic map of the Stony Creek Fan. Geologic materials consist primarily of unconsolidated Pleistocene deposits from Stony Creek and are divided into three types according to soil profile development: Older Alluvial Fan Deposits, Young Alluvial Fan Deposits, and Recent Alluvial Fan Deposits.

Older Alluvial Fan Deposits: The Older Alluvial Fan Deposits (Qoal) occur on elevated terraces north of Artois and south of the Tehama County line. These sediments underlie the Capay area north of Stony Creek, and consist of unconsolidated to moderately consolidated clay, silt, sand,

and gravel. They represent dissected remnants of an ancestral Stony Creek fan. The Arbuckle-Kimball-Hillgate soil association is linked to this alluvium.

Young Alluvial Fan Deposits: The Young Alluvial Fan Deposits south of Stony Creek (Qyf) consist of unconsolidated silt, sand and gravel. The Tehama and Plaza soils, which have slightly developed profiles, are associated with these deposits.

The Young Alluvial Deposits are found in the Stony Creek and Sacramento River channels (Qrsc), on flood plains (Qfl and Qofl), in flood basins (Qob), and associated with intermittent streams on low foothills southwest of Orland (Qal). In the stream channels, deposits consist of sand and gravel with high to very high hydraulic conductivity. The flood plain deposits follow the west side of the Sacramento River and consist of unconsolidated clay, silt, and sand. They are associated with the Columbia soils. The related soils are the Willows-Plaza-Castro association.

Recent Alluvial Fan Deposits: The Recent Alluvial Fan Deposits (Qrf) occur between Bayliss and Capay and consist of silt, sand, and gravel. The Cortina, Wyo, and Jacinto soils are also associated with these deposits. They have a high gravel content and a very high hydraulic conductivity. Gravel mining is typically associated with these deposits.

5.5 MINERAL RESOURCES

AGGREGATE MINING

Lower Stony Creek traverses its alluvial fan from Black Butte Dam to the Sacramento River, following one of three major fingers of gravelly soil that represent former channel courses. These former channels are represented by the coarse textured, well-drained soils depicted on the geologic map of the Stony Creek Fan (see **Figure 5-1**). In-stream gravel mining has been particularly intensive in lower Stony Creek. Generally Stony Creek aggregates consist of stream channel deposits, including flood and overbank deposits in the upper reaches, and are classified as MRZ-2a (marginal reserves). According to the Department of Mines and Geology, using past consumption rates (1965-1995) adjusted for anticipated changes in market conditions and mining technology, a depletion of reserves is expected by the year 2038 (BOR, 1998).

Currently, two gravel extraction facilities are in operation along Stony Creek within or adjacent to the planning area (see Figure 5-6 in the fisheries discussion below). The two operations are located in the northwestern portion of the planning area upstream and downstream of I-5. All operations are subject to the Surface Mining and Reclamation Act (SMARA) and have reclamation plans. The DFG has monitored these operations with restrictions on in-channel operations since 1976. A new aggregate operation is proposed on the Hunt East Property along Stony Creek north of Orland, bordered on the east side by County Road 99W and the west side by I-5. Gravel mining operations generally employ bar skimming in which gravel bars above water level are harvested; the channel is not excavated below the existing thalweg. The thalweg is a line in the stream channel representing the low point of the low water channel.

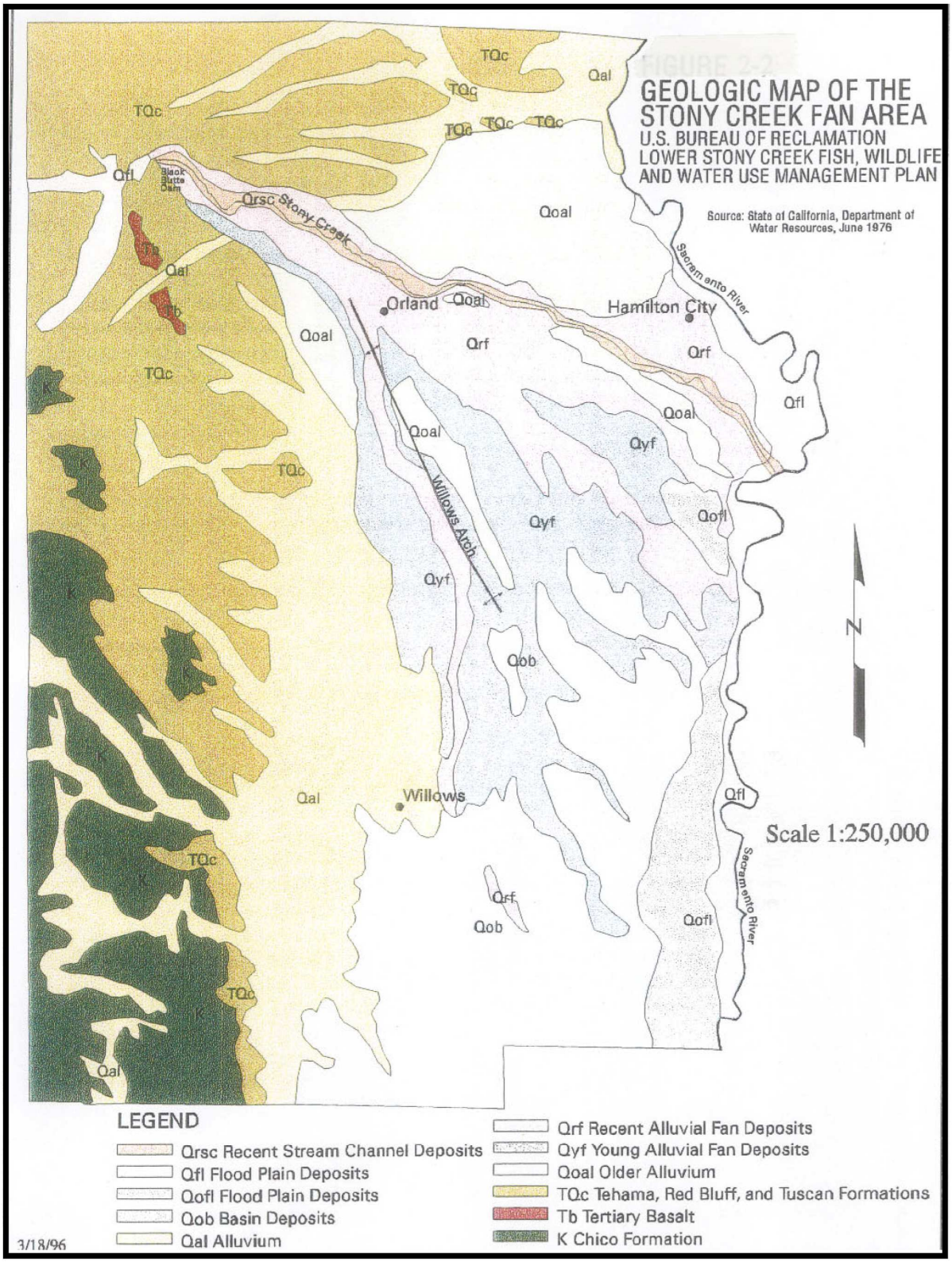


FIGURE 5-1
Geologic Map of Stony Creek Fan Area

In-channel mining may affect the vegetation, channel geomorphology, and surface hydrology of stream systems if not properly mitigated. Mining affects in-stream hydraulics and impairs sediment transport, gravel recruitment, and stream channel meander processes. In-stream gravel removal may also affect water quality. The level of effect will vary by the extent of area mined annually within the active channel zone, the type of mining, i.e., bar skimming, deeper channel pit mining, or mining of outer bank terrace deposits, and the type of reclamation or special conditions that are required as part of future use permits. Gravel bar skimming is the typical gravel removal technique used in lower Stony Creek (BOR, 1998).

Recently, Glenn County is attempting to regulate resource damage through its permitting process where "disturbance of banks, riparian vegetation, and flowing portions of the creek is usually prohibited" (Glenn County, 1997). Since 1977, DFG has allowed no pit mining in-stream, and encourages off-stream mining, which is isolated from flowing water, maintains stream bank protection conditions, and limits elevations of gravel removal to maintain slopes.

As Glenn County promotes a gradual shift to permitted gravel extraction in off-channel terrace mines, in-channel mining operations may taper to a lower level as sites with existing permits are further depleted. Future Streambed Alteration Agreements under Section 1603 of the California Fish and Game Code, renewed annually, may require additional conditions that also encourage an industry shift to off-channel mine sites.

5.6 SOILS

Soils are determined by physiographic position, soil texture, soil profile, and slope. Orland is located on a more recent alluvial fan of Stony Creek. There are three major soils types: Riverwash, Orland Loam, and Cortina Loam.

Riverwash consists of stratified deposits of sand and gravel with 0 to 8 percent slopes. Riverwash occurs along drainageways, on sand and gravel bars of major active streams, and in the channels of intermittent creeks.

The planning area contains two related Orland loam soils -- Orland loam and Cortina loam. Most of the soils on more recent alluvial fans and floodplains generally consist of shallow to deep, well-drained to excessively-drained gravelly and non-gravelly stratified material. The soils in this association are shallow to deep over alluvium washed chiefly from areas on schistose and sedimentary rocks. Cortina soils, on floodplains and in channels, are gravelly and are excessively drained. They are shallow to moderately deep over channel sand and gravel.

Soils within the planning area are essentially gravelly. There is not a significant difference in the soils between different parts of the planning area which would be an overriding consideration for recommendation of development in one area or another.

5.7 AGRICULTURAL RESOURCES

Agriculture is the most extensive land use in Glenn County and the most significant component of the County's economy. Two-thirds of Glenn County's 1,317 square miles are comprised of agricultural croplands and pasture. Orland is surrounded by agricultural uses, which constitute a significant component of the local economy.

The majority of agricultural operations within the Orland planning area are a mixture of smaller "hobby" farms, meaning that they provide supplemental rather than primary income and larger commercial farming operations. Orland is at an agricultural transition area with field and row

crops located around the southern portion of the City and grazing and tree crops located around the northern portion of the City. Orland's agricultural picture includes orchards of almonds, walnuts, olives, peaches, and prunes. Special climatic conditions allow orange groves to flourish in the Orland area -- the northernmost citrus-growing area in the state. Fields of corn, wheat, rice, and beans also surround the greater Orland area. Newer crops in production locally include kiwis and pistachios. Dairy farmers and woolgrowers are also present in the regional area. Agriculture-related industries are prominent in and around the City and include processing plants for nuts, olives, citrus, prunes and dairy products. Also, several locations offer farm-fresh produce direct from the grower to the consumer (COC Brochure).

In addition to providing direct food production and employment, agricultural land also provides valuable open space and important wildlife habitat. It is important that the City take steps to preserve its agricultural land from both an economic and environmental perspective.

The California Department of Conservation's Farmland Mapping and Monitoring Program (FMMP) maintains inventories of important farmland within California. **Figure 5-2** depicts the recent FMMP inventory of land within the Orland planning area, showing approximate locations of different categories of important farmland. The FMMP land use categories are broken up into four categories. Prime Farmland has the best combination of physical and chemical characteristics for crop production. Farmland of Statewide Importance is not as productive as prime soil, though it still has supported crop production for at least the three preceding years. Unique Farmland ranks below Prime and Statewide Important Farmlands, though it is still capable of producing "high economic value crops" such as olives, avocados, or grapes. Finally, Farmland of Local Importance ranks below the other three, yet "may be important to the local economy due to its productivity" (Department of Conservation, Important Farmland Map Categories, 1998).

Owners of agricultural lands have an opportunity to take advantage of the property tax advantages offered by the Williamson Act (California Land Conservation Act), which reduces the tax burden on qualifying agricultural land in exchange for a commitment from the landowner to not develop the land with uses other than those compatible with and supportive of agriculture. There are currently no lands within the planning area that are under Williamson Act contract.

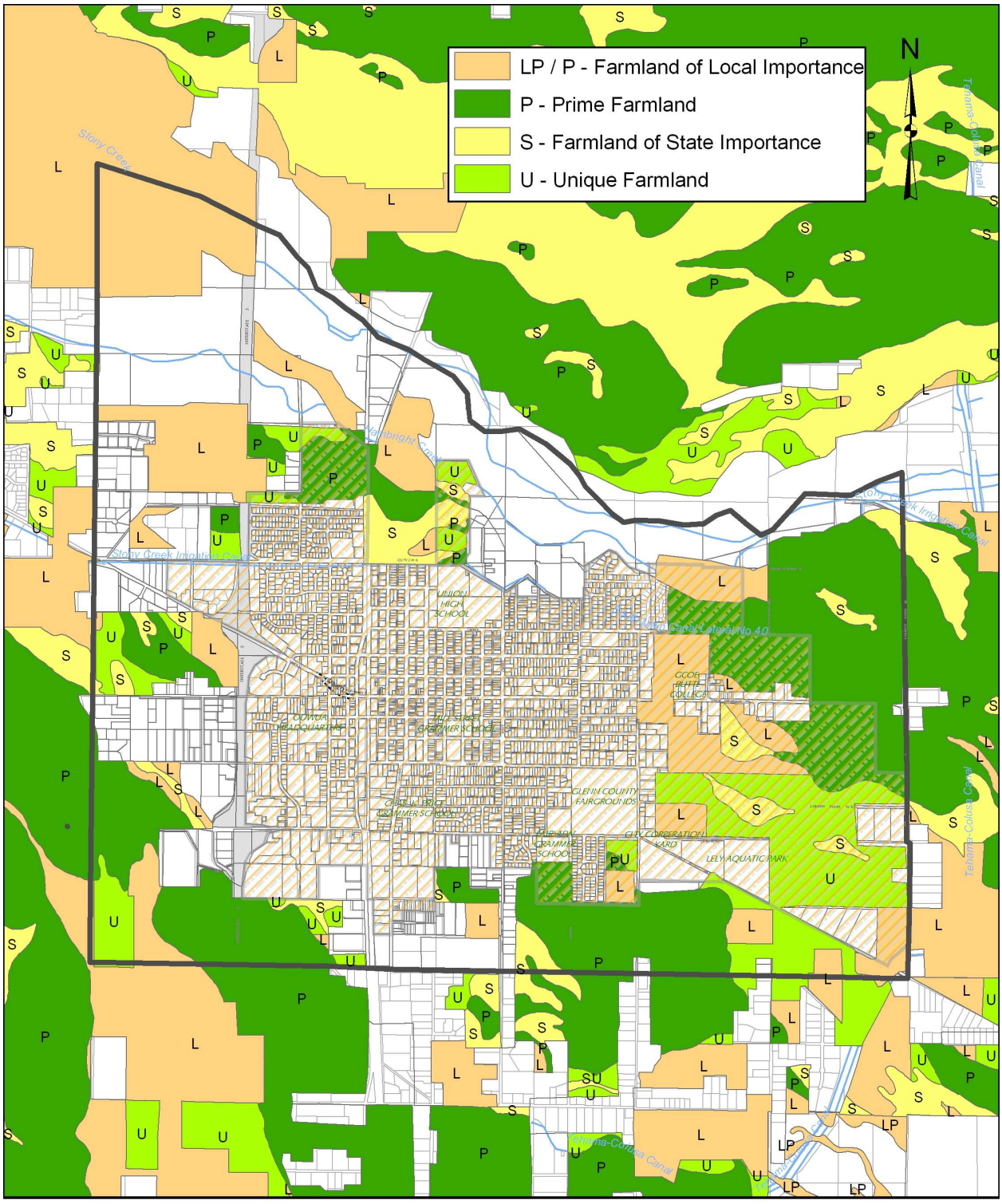


FIGURE 5-2

FMMP Important Farmland

AGRICULTURAL BUFFERS

Urban encroachment into agricultural areas can impact surrounding agricultural operations and result in the loss of additional productive soils if not properly monitored and controlled. The existing General Plan includes Policies and Implementation Programs which allow—or in some cases require—agricultural lands to be protected from incompatible adjacent land uses. Incompatible adjacent land uses are those which tend to interfere or disrupt agricultural practices and may constrain agricultural activities over time. One of the protective methods mentioned by the existing General Plan is to insulate or buffer agricultural properties from adjacent incompatible land uses. A buffer is generally described as a strip of land or other design feature used to physically separate one conflicting use from another. Buffer zones are specifically intended to shield or obstruct noise, dust, lights, or other nuisances generated on one parcel and transmitted to another.

In September 2005, the *City adopted the Administrative Guidelines for Implementation of General Plan Agricultural Buffering Policies.* These buffering standards and Guidelines provide a set of criteria and examples for buffering that will be used to incorporate appropriate buffering designs for various development projects. The Guidelines are used by the City and applicants in determining the general development characteristics and design features with which projects requiring buffers should comply.

5.8 REGIONAL SURFACE WATER RESOURCES

Two major water features, Black Butte Reservoir and the Sacramento River, are located near the Orland planning area.

BLACK BUTTE RESERVOIR

Black Butte Reservoir, located eight miles west of the City of Orland, is part of the Black Butte Project, which is operated cooperatively by the U.S. Army Corps of Engineers (Corps) for flood control and by Bureau of Reclamation for irrigation in non-flood control periods. The Black Butte Project was authorized by Congress as part of the comprehensive plan of development for the Sacramento River Watershed under the Flood Control Act of 1944. The reservoir had an original capacity of approximately 160,000 acre feet, but the gross pool has been reduced to approximately 140,000 acre feet due to sedimentation. The maximum scheduled flood control release to Stony Creek from Black Butte Dam is 15,000 cfs. Black Butte Reservoir offers a privately-owned marina as well as fully developed public campgrounds maintained by the Corps. Other recreational uses include fishing, boating, swimming, picnicking, hiking, hunting, and wildlife viewing.

SACRAMENTO RIVER

The Sacramento River is the defining water feature of the Sacramento Valley. The Sacramento River Basin encompasses about 26,500 square miles and is bound by the Sierra Nevada to the

east, the Coast Ranges to the west, the Cascade Range and Trinity Mountains to the north, and the Delta-Central Sierra area to the south. The Sacramento River and its riparian forest are recognized as areas of significant biological importance, providing a movement corridor for aquatic and terrestrial species alike. In addition, the Sacramento River is the primary source of surface irrigation water in Glenn County, as it is diverted into two major canals, the Glenn-Colusa and the Tehama-Colusa.

Numerous locations along the Sacramento River provide public access. Irvine Finch River Access Park on the Sacramento River east of Orland is Northern California's only facility specially designed to provide a recreation area for "tubers" and rafters. Other recreational uses include fishing, boating, swimming, picnicking, hiking, hunting, and wildlife viewing.

5.9 LOCAL SURFACE WATER RESOURCES

Several creeks and other drainage features flow through and adjacent to the Orland planning area (see **Figure 5-3**).

STONY CREEK

Stony Creek defines the entire northern edge of the City's planning area. As a western Sacramento Valley foothill stream, Stony Creek has a seasonal run-off pattern of high winter flows, and low summer and fall flows, with an average annual precipitation of 15 inches in the lower watershed. Water is diverted from several locations along Stony Creek below Black Butte Dam. Summer and fall releases are higher than unimpaired flows as water is released from the dam for irrigation and other deliveries.

Historically, the portion of Stony Creek adjacent to the planning area was a braided channel, which supported narrow strips of mature riparian vegetation. Current riparian vegetation along this stretch of Stony Creek extends intermittently along the creek, but the overall habitat quality of the riparian plant communities is low with respect to species composition, extent and level of reestablishment, and stand maintenance. Generally, the presence of mature riparian trees has decreased since dam construction and the abundance of invasive weed species such as giant reed and tamarix has increased.

All of the land along Stony Creek within the planning area is privately owned. Private land uses generally include grazing, gravel mining, agriculture, and rural residential uses. Lack of public ownership limits public access and therefore opportunities for recreational activities.

Generally Stony Creek aggregates consist of stream channel deposits, including flood and overbank deposits in the upper reaches, and are classified as marginal reserves. Black Butte dam altered the flow and sediment transport to lower Stony Creek. Flows in the stream are typical for reservoirs regulated for flood protection and irrigation storage. The planform morphology of lower Stony Creek changed after dam construction from a predominantly braided channel to one that is more of a single, sinuous, meandering channel. Pre-dam, the channel was a high-gradient, bedload dominated system with sharp fluctuations in discharge, where the channel carrying the main flow periodically shifted location. Post-dam, the flood peaks were attenuated, and storm run-off releases were stored for planned release. Both the two-year and ten-year floods have decreased in magnitude since construction of the dam, but the duration of the flood flows have increased. Channel width and sediment transport have been reduced in the upper reaches and significant channel realignment has occurred.

Figure 5-3

CITY OF ORLAND

Hydrological Resources

N

Planning Area Boundary

City Boundary

Hydrological Resource

Stony Creek

Hambright Creek

Tehama-Colusa Canal

UNION HIGH SCHOOL

GCOE

BUTTE COLLEGE

OUWUA HEADQUARTERS

MILL STREET GRAMMER SCHOOL

GLENN COUNTY FAIRGROUNDS

CHAS. K. PRICE GRAMMER SCHOOL

FAIRVIEW GRAMMER SCHOOL

CITY CORPERATION YARD

LELY AQUATIC PARK

INTERSTATE 5

HWY 32

COUNTY ROAD 12

COUNTY ROAD 13 1/2

0 0.25 0.5 Miles

CITY OF ORLAND 1875

PMC

Throughout the reach in the planning area, the channel is migrating at a moderate rate (one-half to one channel width in three years). The channel has migrated into and consumed agricultural lands within the planning area (BOR, 1998). Significant bedload and suspended load have been eliminated by the dam. With reservoir releases more abrupt, changes occur on downstream elevations, accelerating bank erosion, the only source of coarse bedload below the dam. The clear water being released from the dam maintains sufficient stream power to contribute to channel incision and lateral erosion as meanders develop.

HAMBRIGHT CREEK

Hambright Creek is a relatively small tributary watershed (approximately 18 square miles in area) of Stony Creek, and is shown on USGS maps as intermittent over its entire length. The current confluence of Hambright and Stony Creeks is located just outside the northeastern city limits of Orland (see **Figure 5-3**). Hambright Creek is largely ephemeral over much of its reach, flowing only after rainfall of a sufficient magnitude. There are no stream gages on Hambright Creek.

OTHER WATER FEATURES

A major canal traverses the eastern portion of the planning area and forms a physical boundary east of the City. The Tehama-Colusa Canal, a major canal which is located east of the City and forms a physical boundary to the agricultural lands to the east, begins at the Red Bluff Diversion Dam and trends southward through Glenn County eventually terminating near Dunnigan in Yolo County. In addition, the entire planning area is criss-crossed by a system of smaller concrete-lined canals, which distributes water for irrigation to area agricultural users (see OUWUA discussion below).

Orland Unit Water Users' Association

The Orland Unit Water Users' Association (OUWUA) supplies water for irrigation to land around Orland. In addition, the OUWUA owns and operates the developed facilities in and around the City. The OUWUA secured a water right to water from Stony Creek in 1902 and the first water was delivered to the Orland Project in 1910. In 1990, the OUWUA had 1100 shareholders. Each shareholder was assessed $25.00 per acre per year to pay for the cost of water delivery. Shareholders receive three (3) acre feet of water per acre per year. The OUWUA is governed by a nine (9) member Board of Directors. Assessment fees may change from year to year, but the amount of water available for delivery does not.

5.10 GROUNDWATER RESOURCES

Orland overlies the 5,000 square mile Sacramento Valley Groundwater Basin, which extends from Red Bluff south to the Sacramento-San Joaquin Delta, to the north Coast Range on the west, and east to the Sierra Nevada and Cascade Ranges. This basin contains abundant supplies of high quality groundwater to depths of 800 feet. Groundwater is the primary source of domestic water supply in the planning area and is also used for irrigation in areas where surface water is not available. A thick sequence of sedimentary materials underlying the valley floor contains fresh groundwater to a depth of about 400' near Orland (Glenn County, 1993b). The average well yields 800 gallons per minute.

According to the Glenn County General Plan Environmental Setting Technical Paper (1993b), the greatest amount of natural recharge occurs in the Stony Creek area. The aquifer underlying the planning area receives recharge from a number of sources. The relative importance of

each of these sources depends on hydraulic conditions, the specific geographical area, and land uses in that area. On the Stony Creek Fan, recharge comes from the following sources:

- Infiltration of winter rains
- Deep percolation of agriculturally applied water
- Seepage from Stony Creek

Groundwater levels may lower as a result of pumping combined with periods of drought, but generally rebound following normal and wet years. The State Department of Water Resources monitors groundwater conditions, including semi-annual measurements of wells. Groundwater levels generally show a 5- to 15-foot drop from spring to fall each year. According to DWR records, groundwater levels show more significant drops related to droughts, for example the dry years of the late 1980's/early 1990's. However, it is recognized that the aquifer fills quickly by recharge from Stony Creek, and fluctuates seasonally with conditions. Again, this indicates the importance of Stony Creek as a groundwater recharge source.

Please see Section 3.0, Public Facilities and Services, for a more detailed discussion of Orland's water supply.

5.11 WATER QUALITY

Water quality in Orland is generally good. Because the main source of domestic water in Orland is groundwater, maintenance of groundwater quality is of primary importance to residents. Potential sources of groundwater pollutants include chemicals used in the growing and processing of agricultural products, industrial sources, and improper installation of individual septic tank systems in areas containing extremely porous soils with a high groundwater table.

Surface water quality is regulated through the National Pollutant Discharge Elimination System (NPDES), which is a federal program administered by the Environmental Protection Agency and locally by the State Regional Water Quality Control Board. There are also local and State programs in place, which address protection of ground and surface water from contamination related to agricultural practices. The Glenn County Health Department regulates the installation of individual septic systems and wells.

5.12 OPEN SPACE

Open Space within the planning area can be broken down into three categories: Developed Parks, Agricultural Land, and Stony Creek (see **Figure 5-4**).

DEVELOPED PARKS

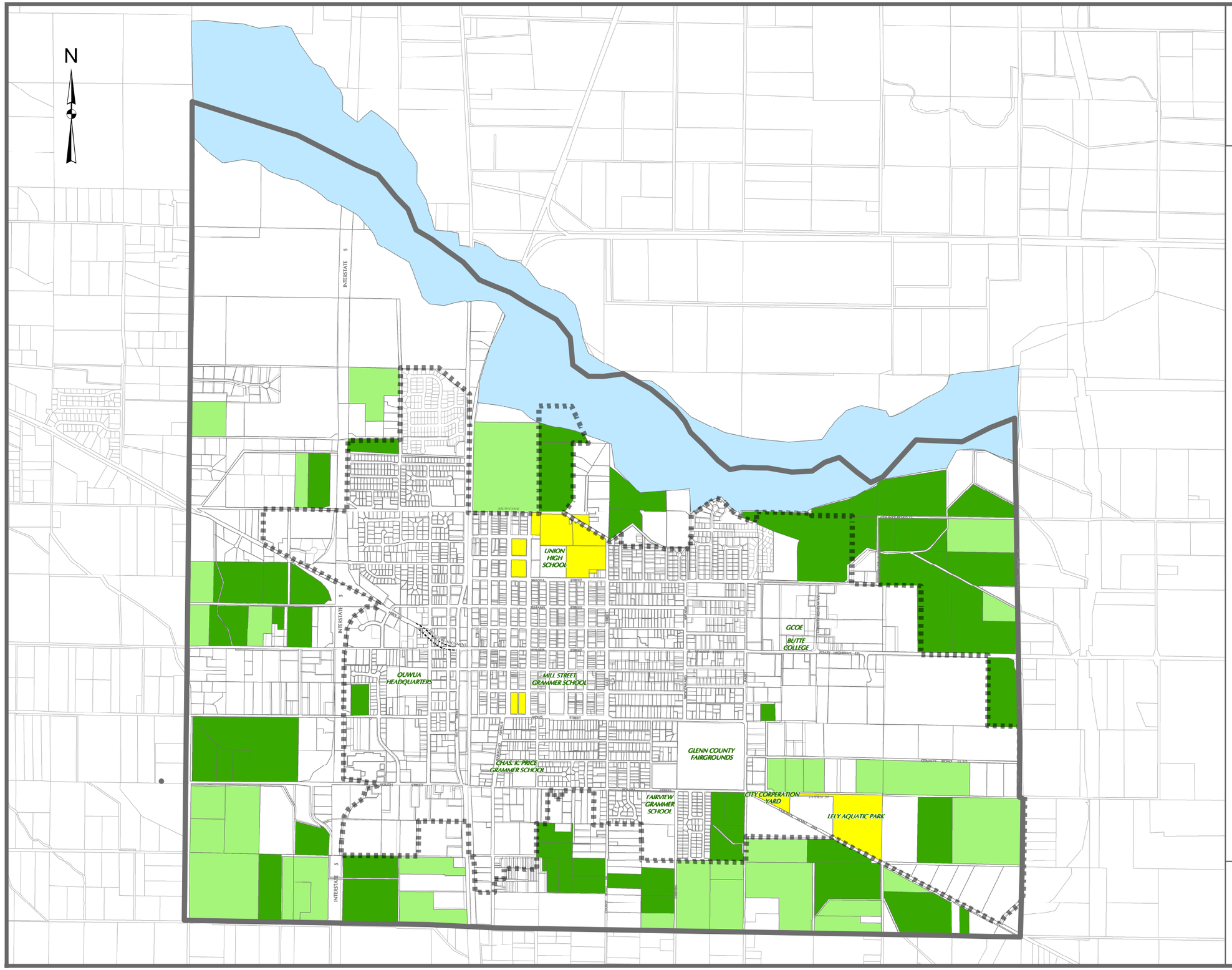
The City has approximately fifty-three (53) acres of parks and facilities for its population as follows:

- Vinsonhaler Park 18.1 acres
- Lely Aquatic Park 30.0 acres
- Library Park 2.6 acres
- Spence Park 2.1 acres
- Welcome to Orland Park 0.26 acres

Figure 5-4

CITY OF ORLAND

Open Space and Parks



- Planning Area Boundary
- City Boundary

- Agriculture
- Ag. Residential
- Parks
- Stony Creek

0 0.25 0.5 Miles

CITY OF ORLAND 1875

PMC

Orland's parks provide developed Open Space opportunities, including softball fields, baseball fields, soccer fields, basketball courts, horseshoe pits, lighted tennis courts, picnic tables, a children's playground, and a city swimming pool. The City is in the process of building a new basketball gymnasium/recreation center at Lely Park and has received a grant to install a new soccer complex north of the high school. Additionally, there are approved entitlements in various stages of development that, combined, contain an additional 22 acres of parkland for the residents of the City.

AGRICULTURAL LAND

Outside of Orland's city limits, agricultural land represents the majority of land that is undeveloped within the planning area, all of which is privately owned. Land uses within the undeveloped areas of the planning area include agricultural residential, agriculture, and grazing, and total approximately 1270 acres. Parcels that are 40 acres or larger were considered Open Space areas.

Agricultural Residential: The planning area has significant agricultural residences associated with the agricultural operations in the area.

Agriculture: Agriculture is by far the dominant land use in the planning area outside of Orland's city limits. Perennial and annual crops are grown. Agricultural fields are committed to perennial and annual crops, as well as irrigated pasture.

Grazing: Irrigated and non-irrigated grazing pasture also occupies significant portions of the planning area outside Orland's city limits.

Agricultural land provides valuable Open Space and important wildlife habitat. It is important that the City take steps to preserve its agricultural land from both an economic and environmental perspective.

STONY CREEK

Stony Creek and its floodplain (including Hambright Creek) provide the greatest extent of "natural" Open Space in the planning area (totaling approximately 675 acres), however public access is extremely limited because the majority of the property is privately owned. The Biological Resources discussion below gives detailed information on the natural resources of Stony Creek and its adjacent riparian corridor.

5.13 BIOLOGICAL RESOURCES

The primary area within the planning area which has natural vegetation and wildlife is the zone along Stony Creek.

Information on riparian habitat along Stony Creek for this section was compiled and summarized primarily from the Lower Stony Creek Fish, Wildlife and Water Use Management Plan prepared by the U.S. Department of Interior, Bureau of Reclamation (1998). The Bureau of Reclamation report relied on previous studies on Stony Creek, primarily conducted by Federal and State agencies, specific information on plant communities and sensitive plant species occurrences contained in DFG's Natural Diversity Database (NDDB), other unpublished information from ecologists working in the area, and aerial photograph interpretation. No extensive studies have been conducted to evaluate the riparian plant communities, their size structure, species diversity, distribution, or condition along Stony Creek. Limited field access to private land along the creek has limited the level of assessment of the types of vegetation, species composition,

level of native plant species establishment or disturbance, and extent of non-native weedy plant invasion.

The California Natural Diversity Database (NDDB) does not include any information on riparian vegetation along Stony Creek. Riparian plant community data for the area is for nearby locations on the Sacramento River. Similarly, the NDDB does not include any occurrences of sensitive plant species associated with Stony Creek riparian vegetation.

Riparian plant community composition is fairly uniform over large areas as compared to other habitat communities. Key information was obtained from interpretations of riparian habitat ecology of other creeks and rivers in California, such as Cache Creek in Yolo County and the Sacramento River in the Butte Basin. Other creeks have experienced similar modifications that have resulted in changes of stream channel geomorphology leading to losses of native riparian vegetation and invasion by non-native weedy plants. A comparison of current and historical aerial photographs aided in the evaluation of trends in the Stony Creek riparian vegetation.

STONY CREEK VEGETATION

Three zones within Stony Creek were identified during mapping conducted by the Bureau of Reclamation: active, border, and outer zone. Different habitat types fall within one of these three zones in Stony Creek (see **Figure 5-5**).

Active Zone Units. Within this zone, sand and gravel bars are frequently deposited and eroded. Vegetation in the active zone is usually sparse because of frequent, scouring flood flows. The active zone can be thought of as the frequently flooded zone. Most of the active aggregate extraction on Stony Creek takes place within this zone.

- **Open Water:** The open water unit corresponds to the active channel portion of Stony Creek as interpreted from the 1992 aerial photos. The extent and location of open water varies considerably from year to year.

- **Gravel Bar:** This map unit encompasses vegetated and unvegetated gravel bars within the active zone of Stony Creek. Vegetated sand and gravel bars in Stony Creek typically have less than 20 percent cover of vegetation. Scattered patches and individuals of giant reed can be found to some extent on nearly all gravel bars downstream from the I-5 bridge, and to a lesser extent upstream of the bridge.

- **Giant Reed:** This unit indicates vegetated gravel bars with greater than 20 percent cover of giant reed, a weedy non-native grass. In many instances giant reed forms a monoculture stand with virtually no other types of vegetation present. Significant giant reed stands are present along Stony Creek within the planning area.

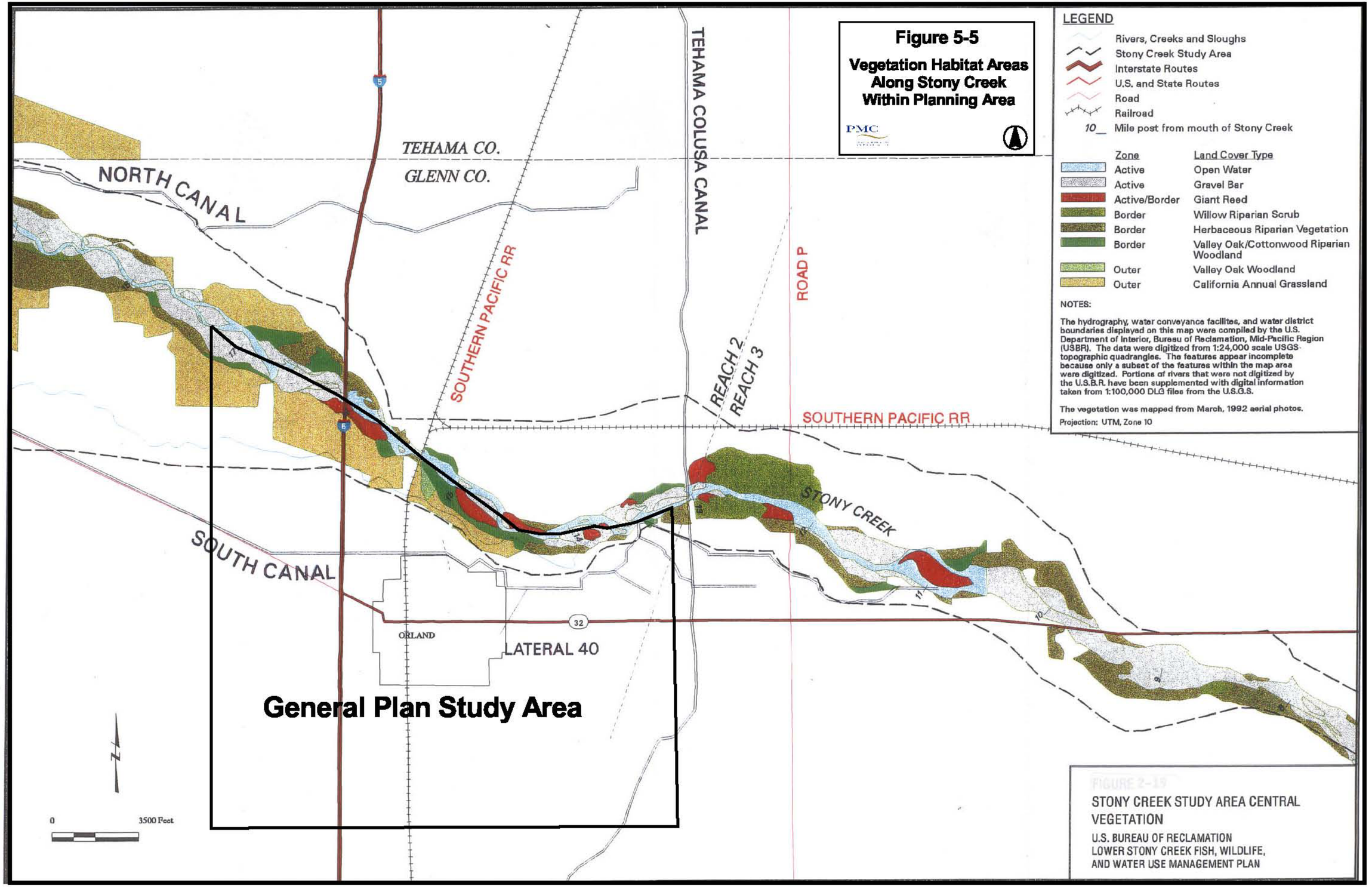
- **Border Zone Units:** This is the zone that roughly corresponds to the low floodplain of Stony Creek. The substrate in this zone is more stable than in the active zone and is consequently more heavily vegetated. In many instances, this zone is restricted to a thin band between the incised channel and the farmed uplands.

- **Willow Riparian Scrub:** Willow riparian scrub is an early seral, shrub dominated riparian vegetation type. Typical shrub species of willow riparian scrub include arroyo willow, sandbar willow, blackberries, mule fat, tamarix, giant reed, and small individuals of Goodding's willow. The majority of cover in this vegetation type is provided by one, or several, species of willow. This is probably the most under-represented vegetation type on Stony Creek. Most of the willow riparian scrub that once occurred on Stony Creek is likely now dominated by giant reed.

Figure 5-5

Vegetation Habitat Areas Along Stony Creek Within Planning Area

PMC



LEGEND

- Rivers, Creeks and Sloughs
- Stony Creek Study Area
- Interstate Routes
- U.S. and State Routes
- Road
- Railroad
- 10__ Mile post from mouth of Stony Creek

Zone	Land Cover Type
Active	Open Water
Active	Gravel Bar
Active/Border	Giant Reed
Border	Willow Riparian Scrub
Border	Herbaceous Riparian Vegetation
Border	Valley Oak/Cottonwood Riparian Woodland
Outer	Valley Oak Woodland
Outer	California Annual Grassland

NOTES:

The hydrography, water conveyance facilities, and water district boundaries displayed on this map were compiled by the U.S. Department of Interior, Bureau of Reclamation, Mid-Pacific Region (USBR). The data were digitized from 1:24,000 scale USGS topographic quadrangles. The features appear incomplete because only a subset of the features within the map area were digitized. Portions of rivers that were not digitized by the U.S.B.R. have been supplemented with digital information taken from 1:100,000 DLG files from the U.S.G.S.

The vegetation was mapped from March, 1992 aerial photos.

Projection: UTM, Zone 10

FIGURE 2-19

STONY CREEK STUDY AREA CENTRAL VEGETATION

U.S. BUREAU OF RECLAMATION
LOWER STONY CREEK FISH, WILDLIFE, AND WATER USE MANAGEMENT PLAN

- **Valley Oak/Cottonwood Riparian Woodland:** This unit represents the remnant "old growth' riparian forest associated with portions of Stony Creek. Historically, this vegetation type consisted of a closed canopy riparian forest flanking the floodplain of the creek. Currently, this vegetation type is limited to scattered narrow stringers of tall trees. Characteristic trees of this vegetation type may include valley oak, white alder, Fremont cottonwood, Gooding's willow, and an occasional California sycamore. The understory of valley oak/cottonwood riparian woodland is composed of components of willow riparian scrub and herbaceous riparian vegetation.

- **Herbaceous Riparian Vegetation:** This unit represents areas within the border zone that are dominated by herbaceous vegetation consisting of forbs and grasses. Common species in this vegetation type may include sweetclovers, star-thistle, thistles, cocklebur, ripgut brome grass, and other opportunistic herbaceous species.

- **Giant Reed:** The giant reed unit in the border zone is identical in structure and composition to the giant reed unit in the active zone. The largest and densest stands of giant reed in the border zone are found in the vicinity of the City of Orland.

Outer Zone Units

This is the zone that roughly corresponds to the high floodplain and low terraces of Stony Creek. This zone is composed of annual grassland and valley oak woodland habitats.

- **Valley Oak Woodland:** This unit encompasses remnant stands of valley oak woodland on the high floodplain. Historically, valley oak woodland occurred within the 100-year floodplain of Stony Creek. Valley oak woodland in the planning area consists of an open canopied woodland with scattered individuals or groves of valley oaks in an annual grassland matrix. The majority of valley oak woodland in the planning area is savannah-like in structure with widely spaced trees dotting the grassland.

- **California Annual Grassland:** This unit is present where soil conditions do not support intensive agriculture. Occasionally, scattered oaks may occur in this vegetation type, however, it is largely treeless. Common species in California annual grassland include soft chess, filaree, blue dicks, and owl's clover.

The current flow releases, with a decrease in magnitude and an increase in duration, tend to decrease overbank flooding and deposition of fine material, which is essential for the regeneration of plant seedlings. The reduction of sediment supply as a result of the dam reduces significantly the amount of fine material in the system and contributes to channel armoring and the winnowing of fine material from the bed and bar surfaces. This reduces effective habitat for plant regeneration.

FISHERIES RESOURCES

This section presents an account of the existing fisheries resources in the planning area. Fisheries information was compiled and summarized primarily from the Lower Stony Creek Fish, Wildlife and Water Use Management Plan prepared by the U.S. Department of Interior, Bureau of Reclamation (1998).

Existing Fisheries Resources

Three types of native fish assemblages use lower Stony Creek. These include larger migratory species, smaller resident non-migratory species, and salmonid species. **Figure 5-6** depicts general locations along Stony Creek within the planning area populated by fish. This figure should be used with caution, however, as appropriate flows, water temperature, and habitat conditions are not readily available for spawning chinook salmon as detailed by this figure.

Stony Creek below Black Butte Dam extends approximately 24 miles before its confluence with the Sacramento River. The majority of the adjacent riparian corridor of the creek is privately owned and as such fishing access is restricted. Stony Creek's streambed has a low gradient and alternates between a meandering single channel and a braided channel. Water temperatures in Stony Creek in the planning area become warm in the summer months, providing suitable habitat conditions for many native and introduced (exotic) warm-water species. Flows in Stony Creek can diminish to extremely low levels during the summer months, resulting in segmented stream habitats.

Adult Non-Salmonid Migratory Species

These species such as Sacramento sucker, hardhead, Sacramento pike minnow, and hitch, migrate out of the Sacramento River in late winter through spring to spawn in lower Stony Creek. Juveniles of these species rear and remain in Stony Creek for up to several years. To flourish, these species require free movement up and downstream. The abundance of these species in Stony Creek is unknown.

Smaller Non-Migratory Native Species

These species found on lower Stony Creek include the specked dace, Tule perch, California roach, and riffle sculpin. These species maintain populations entirely within Stony Creek. Both adults and juveniles of these resident species inhabit pools and riffles that become segmented at times as a result of seasonal low flows. In addition to native non-migratory fish species, introduced species including black bass and smallmouth bass, sunfish, crappie, and minnows reside in lower Stony Creek. Many of these species have been transported from Black Butte Reservoir into Stony Creek and have become established in the Afterbay and downstream reaches. Fishing pressure is light because of limited angler access. The abundance of these species is unknown at the present time.

Salmonids

Historically, spring-run chinook salmon were found in the Stony Creek watershed above the present dams and reservoirs. The current presence of salmonids in lower Stony Creek has been debated. Migratory chinook salmon and steelhead trout have been known to use Stony Creek, although documentation on spawning activities is limited and conflicting, and exact locations are not always provided. Salmonids use of lower Stony Creek is predominantly by rearing non-natal juveniles from other spawning areas (chinook salmon and steelhead), and by intermittent spawning and rearing of natal juveniles (chinook salmon). The existing opportunistic use by salmonids is currently limited both spatially and temporally, due to their life cycle, water temperature, and habitat.

Figure 5-6

General Fish Locations Along Stony Creek

PMC

TEHAMA CO.

GLENN CO.

NORTH CANAL

TEHAMA COLUSA CANAL

SOUTHERN PACIFIC RR

ROAD P

REACH 2

REACH 3

SOUTHERN PACIFIC RR

STONY CREEK

SOUTH CANAL

32

ORLAND

LATERAL 40

General Plan Study Area

N

0 3500 Feet

LEGEND

- Resident Species (Potential)
- Resident Species, USFWS, 1995
- Spawning Chinook Salmon (Reavis, 1983)
- Juvenile Chinook and Steelhead (Maslin, 1994)
- Juvenile Chinook (Maslin, 1994)
- Juvenile Chinook (CDFG, 1983)
- 1966 Chinook Salmon Spawning Suitability Study Area
- Warm Water Sport Fishery
- Water Bodies
- Passage Barriers
- Unscreened Diversions
- DWR Temperature Monitoring Site
- Rivers, Creeks and Sloughs
- Stony Creek Study Area
- Permit to Mine Aggregate Resources Boundary
- Interstate Routes
- U.S. and State Routes
- Road
- Railroad
- Approximate Centerline of Stony Creek
- 10__ Mile post from mouth of Stony Creek

NOTES:

The hydrography, water conveyance facilites, and water district boundaries displayed on this map were compiled by the U.S. Department of Interior, Bureau of Reclamation, Mid-Pacific Region (USBR). The data were digitized from 1:24,000 scale USGS topographic quadrangles. The features appear incomplete because only a subset of the features within the map area were digitized. Portions of rivers that were not digitized by the U.S.B.R. have been supplemented with digital information taken from 1:100,000 DLG files from the U.S.G.S.

Projection: UTM, Zone 10

STONY CREEK STUDY AREA CENTRAL FISHERIES

U.S. BUREAU OF RECLAMATION
LOWER STONY CREEK FISH, WILDLIFE, AND WATER USE MANAGEMENT PLAN

WILDLIFE RESOURCES

Wildlife information was compiled and summarized primarily from the Lower Stony Creek Fish, Wildlife and Water Use Management Plan prepared by the U.S. Department of Interior, Bureau of Reclamation (1998). During the preparation of Lower Stony Creek report, a California Natural Diversity Database (NDDB) search was conducted for information regarding the occurrence of special-status wildlife species. USGS topographical maps and aerial photos were reviewed to estimate the extent and quality of wildlife habitats along lower Stony Creek.

Wildlife habitats along lower Stony Creek generally correspond to three broad zones as shown in the Stony Creek Vegetation Map (see **Figure 5-5**), including the active zone of the creek channel, the border zone of riparian vegetation along the banks of the channel, and the outer zone of oaks and grasslands along the upper terraces of the floodplain.

Active Zone Wildlife

The active zone includes frequently flooded gravel bars, open channels, and low terraces of the creek. Wildlife in unvegetated portions of the active zone of lower Stony Creek may include a variety of fish-eating species such as great blue herons, great egrets, common mergansers, belted kingfishers, and river otters. Other wildlife that may frequent the active zone include spotted sandpipers, killdeers, black phoebes, beavers, and coyotes. Bald eagles and ospreys have also been observed flying along the creek. Scattered stands of cottonwoods remaining in the active zone are important for a variety of migrant birds.

Belted kingfishers, bank swallows, and northern rough-winged swallows nest in vertical earthen banks of the active zone along undisturbed portions of lower Stony Creek. California gulls and herring gulls forage along the creek channels and unvegetated gravel bars.

Major portion of lower Stony Creek are currently dominated by giant reed and tamarix, and these non-native plants have low wildlife habitat values. A few species such as striped skunks, raccoons, coyotes, and owls may use these plants for cover, but giant reed and tamarix are not considered preferred foraging or breeding habitats for native birds and mammals of California. Giant reed currently creates a monoculture of unproductive wildlife habitat throughout major portions of the active zone of the creek. Giant reed has replaced native willows and cottonwoods, with a potential for lost wildlife habitat.

Border Zone Wildlife

The border zone includes all vegetated riparian habitats along the outer banks of the creek that depend on its flows for water. Species such as Cooper's hawks, Swainson's hawks, red-tailed hawks, red-shouldered hawks, white-tailed kites, great egrets, and great blue herons build bulky stick nests high in the crowns of cottonwoods and oaks in the border zone of many foothill creeks, but no specific nesting records of these species along lower Stony Creek were reported in the NDDB.

Woodpeckers excavate cavities in the border zone trees that may be subsequently used by other hole-nesting species such as western screech-owls, tree swallows, plain titmice, and western bluebirds. Migratory and resident passerine birds such as flycatchers, vireos, warblers, and sparrows forage and nest in cottonwoods and oaks.

Small mammals attracted to rich resources of border and outer zone riparian habitats, in turn, draw predatory animals like red-shouldered hawks, white-tailed kites, gray foxes, and coyotes.

Several bat species roost in streamside trees along lower Stony Creek. Reptiles that occur in border zone habitats include Pacific tree frogs, western fence lizards, western skinks, alligator lizards, western whiptails, common king snakes, westerns rattlesnakes, gopher snakes, and racers.

Outer Zone Wildlife

The outer zone of lower Stony Creek includes high terrace habitats such as oak woodlands, grasslands, orchards, and pastures. Oak woodlands and grasslands near the creek provide shade, shelter, and breeding habitat for many wildlife species, including black-tailed deer, gray foxes, western gray squirrels, white-tailed kites, turkey vultures, American kestrels, northern harriers, mourning doves, California quail, acorn woodpeckers, Nuttall's woodpeckers, scrub jays, yellow-billed magpies, rufous-sided towhees, and northern orioles.

Mammals usually found in adjacent grasslands and outer zone oak woodlands, such as deer mice, California voles, western gray squirrels, black-tailed hares, and gray foxes, often use riparian corridors as refuge from summer heat and drought. All these animals use the food, water, and cover that are found in riparian and wetland habitats.

SPECIAL-STATUS SPECIES

In preparation of the Lower Stony Creek Fish, Wildlife and Water Use Management Plan prepared by the U.S. Department of Interior, Bureau of Reclamation (1998), a list of Federal and State listed and proposed endangered and threatened species and candidate species that occur or potentially occur in Glenn and Tehama Counties was obtained from the NDDB. These are listed in **Appendix A**, along with information on their distribution in California habitats, reasons for decline or concern, and their known occurrence.

As indicated in **Appendix A**, several species included on the list which occur or potentially occur in Glenn and Tehama Counties have not been observed and suitable habitats for them are not present along lower Stony Creek. Included in this group are vernal pool obligates (vernal pool fairy shrimp and vernal pool tadpole shrimp), freshwater species with specialized or localized breeding habitats (western spadefoot toad, California red-legged frog, giant garter snake), and Central Valley marshland species (white-faced ibis and Aleutian Canada goose). Since they are not known to occur in the study area, none of these species will be considered further.

The remaining species listed in **Appendix A** have actual or potential occurrence in the planning area and are discussed as either Threatened or Endangered, or as Candidates and Species of Special Concern.

Discussions of individual species such as the Valley Elderberry Longhorn Beetle (VELB), Bald Eagle, Swainson's Hawk, Western Yellow-Billed Cuckoo, Northwest pond turtle, Osprey and Golden Eagle, focus on their occurrence or potential for occurrence in the planning area along lower Stony Creek.

THREATENED AND ENDANGERED SPECIES

Valley Elderberry Longhorn Beetle

Valley elderberry longhorn beetles (VELB) are pith-borers on elderberry shrubs (*Sambucus* sp.) in riparian habitats. Recent information has demonstrated that the beetles are found only in elderberry stems 1 inch or greater in diameter. Portions of lower Stony Creek were surveyed for VELB in 1993, and elderberry shrub losses from previous Bureau of Reclamation activities were

quantified. The Bureau of Reclamation prepared a mitigation plan for VELB with the cooperation of the U.S. Fish and Wildlife Service that commenced in the fall of 1995. The mitigation plan is under contract with California State University, Chico to plant and maintain and monitor elderberry seedlings and produce an 80 percent survivability rate over a five-year period.

Bald Eagle

Wintering bald eagles occur regularly at Stony Creek reservoirs, and occasionally below Black Butte Dam. Bald eagles are attracted to sources of fish and carrion for foraging. Nesting surveys have been performed at East Park and Stony Gorge reservoirs, but no known nests have been observed in lower Stony Creek.

Swainson's Hawk

This species prefers to nest in the crowns of tall oaks and riparian trees and forages in nearby grasslands and agricultural lands. Several Swainson's hawk nest sites have been observed near the mouth of Stony Creek along the Sacramento River, however, none have been documented in the planning area.

Western Yellow-Billed Cuckoo

This species prefers to nets in the crowns of tall cottonwood, and forages in a variety of riparian trees. Several yellow-billed cuckoo nests have been found along the Sacramento River near Stony Creek, however, none have been documented in the planning area.

CANDIDATE AND SPECIAL CONCERN SPECIES

Northwestern Pond Turtle

Western pond turtles, California's only native aquatic turtle, occur throughout California west of the Cascade-Sierra crest. Western pond turtles are associated with ponds and waterways in grassland, oak woodland, and coniferous forest. This aquatic reptile inhabits quiet waters of ponds, marshes, creeks, and irrigation ditches. This species was observed along lower Stony Creek (not in the planning area), and benefits from increased riparian habitat and woody debris in the channel.

Osprey

This species is regularly present along the Sacramento River. This fish-eating species would benefit from increased fish in lower Stony Creek. Tall trees and snags are also preferred by nesting and roosting ospreys.

Golden Eagle

This species is occasionally observed flying over lower Stony Creek. Golden eagles are unlikely to nest or forage within the riparian habitats of Stony Creek, preferring grasslands and chaparral.

5.14 AIR QUALITY

The City is located within the Northern Sacramento Valley Air Basin (NSVAB), which includes the Sacramento Valley and is bounded by the coastal ranges to the west and the Sierra Nevada to the east (**Figure 5-7**). The entire air basin is about 200 miles long in a north-south direction, and has a maximum width of about 150 miles, although the valley floor averages only about 50 miles in width.

The environmental conditions of Glenn County are conducive to potentially adverse air quality conditions. The basin area traps pollutants between two mountain ranges to the east and the west. This problem is exacerbated by a temperature inversion layer that traps air at lower levels below an overlying layer of warmer air. Prevailing winds in the area are from the south and southwest. Sea breezes flow over the San Francisco Bay Area and into the Sacramento Valley, transporting pollutants from the large urban areas. Growth and urbanization in Glenn County has also contributed to an increase in emissions.

REGULATORY FRAMEWORK

Federal Clean Air Act

Under the Federal Clean Air Act (FCAA) of 1970, the U.S. Environmental Protection Agency (EPA) established ambient air quality standards for six air pollutants, referred to as "criteria pollutants." The criteria pollutants are ozone, carbon monoxide (CO), particulate matter (PM_{10}), nitrogen oxides (NO_x), sulfur dioxide (SO_2) and lead. The specific standards are based on medical evidence that indicates that exposure to these air pollutants is harmful to public health. The ambient standards are two-tiered. Primary standards are designed to protect public health, while secondary standards are designed to protect the environment (e.g., damage to vegetation or property). Both primary and secondary standards are keyed to averaging periods that range from one hour to one year. **Table 5-1** lists the federal ambient air quality standards.

California Clean Air Act

In 1988, California passed the California Clean Air Act (CCAA). Like its federal counterpart, the CCAA establishes ambient air quality standards. The state standards differ from the federal standards in two ways: (1) the state standards are more stringent; and (2) the state list of criteria pollutants includes sulfates, hydrogen sulfide (H_2S), vinyl chloride, and visibility reducing particles. As with federal standards, California standards are keyed to certain averaging periods. **Table 5-1** lists the state ambient air quality standards. The California Air Resources Board (CARB) is responsible for establishing the air quality standards. CARB also regulates mobile emission sources and oversees the activities of the air pollution control districts (APCDs) and the air quality management districts (AQMDs).

FIGURE 5-7:
SACRAMENTO VALLEY AIR BASIN

County Regulations

Within Glenn County, the air quality regulating authority is the Glenn County Air Pollution Control District (APCD). The APCD adopts and enforces controls on stationary sources of air pollutants through its permit and inspection programs, and it regulates agricultural burning. Other responsibilities include monitoring air quality, preparing clean air plans, and responding to citizen complaints concerning air quality.

In 1994, the air districts within the NSVAB, including the APCD, prepared an Air Quality Attainment Plan for ozone and PM10. This plan was updated in 1997 and again in 2000. Like the 1994 and 1997 Plans, the 2000 Plan focuses on the adoption and implementation of control measures for stationary sources, area-wide sources, indirect sources, and public information and education programs. The 2000 Plan contains fourteen feasible control measures designed to reduce ozone emissions, in compliance with the goals of California's State Implementation Plan (SIP) for ozone. The APCD has adopted eight of those measures, another measure was considered not applicable. Three more measures (Architectural Coating, Internal Combustion Engines, Gas Turbines) will be adopted in the fall of 2002, while the remaining measures will be under consideration for future adoption. In addition, the 2000 Plan proposes six new control measures taken from the CARB document Identification of Performance Standards for Existing Stationary, Tier I Stationary Source Categories (April 1999). The measures are part of the first of

three tiers that include over 80 stationary source categories that are potential candidates for air districts to consider when updating their plans (NSVAB, 2000).

TABLE 5-1:
FEDERAL AND STATE AIR QUALITY STANDARDS AND 2006 COUNTY ATTAINMENT STATUS

Pollutant	Averaging Time	Federal	State	Attainment Status
Ozone	1-hour	0.12 ppm	0.09 ppm	F = U/A S = Nonattainment-Trans.
	8-hour	0.08 ppm	0.07	F = U/A S = Nonattainment-Trans.
Carbon Monoxide	8-hour	9.0 ppm	9.0 ppm	F = U/A S = U/A
	1-hour	35 ppm	20 ppm	F = U/A S = U/A
Nitrogen Dioxide	Annual	0.05 ppm	--	S = Attainment
	1-hour	--	0.25 ppm	F = U/A
Sulfur Dioxide	Annual	0.03 ppm	--	F = U/A S = Attainment
	24-hour	0.14 ppm	0.05 ppm	F = U/A S = Attainment
	1-hour	--	0.25 ppm	F = U/A S = Attainment
Sulfates	24-hour	25 $\mu g/m^3$	--	S = Attainment
PM_{10}	Annual Mean	--	20 $\mu g/m^3$	S = Nonattainment
	24-hour Average	150 $\mu g/m^3$	50 $\mu g/m^3$	F = U/A S = Nonattainment
$PM_{2.5}$	Annual Mean	15 $\mu g/m^3$	12 $\mu g/m^3$	F = U/A S = U/A
	24-hour Average	65 $\mu g/m^3$	--	F = U/A
Lead	30-day	--	1.5 $\mu g/m^3$	S = U/A
	Calendar Quarter	1.5 $\mu g/m^3$	--	F = U/A
Hydrogen Sulfide	1-hour	0.03 ppm	--	S = U/A
Visibility Reducing Particles		--	In sufficient amount to reduce the prevailing visibility to less than 10 miles when relative humidity is less than 70 percent.	S = U/A

[1] EPA is currently reviewing recent U.S. Supreme Court decision to determine approach and schedule for implementing 8-hour standard.

[2] Vinyl chloride level is lowest level which can be reliably detected, but is not a threshold level and does not necessarily protect against harm.

ppm = parts per million. *$\mu g/m^3$ = micrograms per cubic meter.*

mg/m^3 = milligrams per cubic meter *U/A = Unclassified or Attainment*

Source: California Air Resources Board, 2006.

AIR QUALITY STATUS

As indicated in **Table 5-1**, Glenn County is in attainment of, or is unclassified for, all federal ambient air quality standards. However, the County is classified as "nonattainment" for state ozone and PM_{10} standards. The County is in attainment of, or is unclassified for, all other state ambient air quality standards.

There are no air quality monitoring stations located in the City of Orland. The nearest monitoring station is located in Willows on East Laurel Street. **Table 5-2** shows the highest measurements for ozone and PM_{10} emissions at the Willows monitoring station. These are the two pollutants for which Glenn County is currently in nonattainment status under state standards. The table also shows the number of days measurements exceeded both federal and state standards for these pollutants.

TABLE 5-2:
AIR QUALITY DATA FOR GLENN COUNTY, 2004-2006

Year	Highest Measurement		Days Exceeded Ambient Standard			
	1-hr Ozone (ppm)	PM10 (ug/m3)	Fed. Ozone	State Ozone	Fed. PM10	State PM10
2004	0.084	134.0	0	0	0	4
2005	0.077	67.0	0	0	0	3
2006	0.076	35.0	0	0	0	0

ppm - parts per million

ug/m^3 - micrograms per cubic meter

Source: California Air Resources Board.

Ozone is a product of a photochemical reaction involving nitrogen oxides (NO_x) and reactive organic gases (ROG), which are referred to as "ozone precursors". These ozone precursors are emitted as part of the exhaust of internal combustion engines, commonly found in motor vehicles. Other sources include factories, power plants, chemical solvents, combustion products from various fuels, and consumer products. The ozone problem in the NSVAB is exacerbated by the transport of emissions from the Sacramento and San Francisco metropolitan area. Ozone is a seasonal problem, typically occurring during the months from May through October, when there is plenty of sunlight. It can impair the ability of people to breathe and cause shortness of breath, chest pain and coughing.

PM_{10} is small particulate matter 10 microns or less in diameter. It includes dust, soot and chemical droplets. PM_{10} is directly emitted into the atmosphere as a by-product of fuel combustion (including burning), abrasion, agricultural activities, or through wind erosion and unpaved roads. Inhalation of PM_{10} can cause persistent coughing, phlegm, wheezing and other physical discomfort. Long-term exposure may increase the rate of respiratory and cardiovascular illness.

Other emissions of concern are grouped under the term "toxic air contaminants" (TACs). TACs are airborne substances that are capable of causing short-term (acute) and/or long-term (chronic or carcinogenic) adverse human health effects. They include both organic and inorganic chemical substances, and they may be emitted from a variety of common sources. These include gasoline stations, automobiles, dry cleaners, industrial operations, and painting operations. Chemical and biological research facilities are also sources of TACs. TACs are

regulated separately from the criteria air pollutants at both federal and state levels. According to the Glenn County APCD, there are approximately 19 TAC sources in the Orland area. Each of these sources is regulated by the APCD, which issues permits and requires conformance with applicable regulations.

5.15 GLOBAL CLIMATE CHANGE

Scientific consensus supports the conclusion that humans are impacting global climate by increasing greenhouse gases (GHG) in the atmosphere. There is a vast body of credible scientific evidence to support the fact that global climate change is real. The Intergovernmental Panel on Climate Change (IPCC), a body created by the World Meteorological Organization and the United Nations Environment Program, was created to assess peer reviewed scientific and technical studies and reports in order to present "comprehensive, objective, open and transparent" information on climate change. (reference – *Principles Governing IPCC Work*, 1998 and amended 2003) According to the latest scientific research available at the time of this General Plan, the IPCC Fourth Assessment Report made the following statement:

> "Global atmospheric concentrations of carbon dioxide, methane and nitrous oxide have increased markedly as a result of human activities since 1750 and now far exceed pre-industrial values determined from ice cores spanning many thousands of years. The global increases in carbon dioxide concentration are due primarily to fossil fuel use and land-use change, while those of methane and nitrous oxide are primarily due to agriculture."[1]

The Report goes on to state that "warming of the climate system is unequivocal" and scientists agree that there is a very high confidence (9 out of 10 chance of being correct) "that the globally averaged net effect of human activities since 1750 has been one of warming." This assessment is based upon peer reviewed scientific studies from a body of international scientists, which have taken into account changes in the climate system due to natural causes such as solar energy variations from the sun. These natural variations do not explain current rates or levels of warming or atmospheric concentrations of GHG.

California ranks 12th in the world in greenhouse gas emissions (GHG), but has taken the lead in creating stringent GHG emissions reduction policies. Assembly Bill 32 will require the implementation of measures to reduce the state's GHG emissions to 1990 levels by 2020 – an expected 25% reduction. The main source of atmospheric carbon dioxide in California is the burning of fossil fuels, comprising 98% of gross carbon dioxide emissions.[2]

Climate change is a global problem, and GHGs impact the global atmosphere. This means that activities that take place in one part of the world impact the entire atmosphere, unlike criteria pollutants which have an impact on local air quality. It will take a global effort to reduce GHG emissions to the point where global climate does not pose a serious threat to our communities.

5.16 REFERENCES

Bureau of Reclamation, U.S. Department of Interior, 1998. *Lower Stony Creek Fish, Wildlife, and Water Use Management Plan*.

[1] Contribution of Working Group I to the Fourth Assessment Report of the IPCC. *Climate Change 2007: The Physical Science Basis*. February 2007.
[2] California Environmental Protection Agency. *Climate Action Team Report*. March 2006.

Chamber of Commerce, Orland. Promotional Brochure. No date.

City of Orland, 1991. *Orland Area General Plan*. Adopted in April 1991.

ECO-ANALYSTS, 2001. *Draft EIR for the Hunt East Property Gravel Mining Operation*. Prepared for Glenn County. October 2001.

Glenn County, 1993a. *Glenn County General Plan*. Adopted June 1993.

Glenn County, 1993b. *Environmental Setting Technical Paper/Glenn County General Plan Volume III*. Prepared by QUAD Consultants. February 1993.

Northern Sacramento Valley Air Basin, 2000. *2000 Air Quality Attainment Plan*.

6.0 PRE-HISTORIC RESOURCES

6.1 GENERAL PLAN REQUIREMENTS

Although there are no state requirements for including an inventory of cultural and historical resources in the General Plan, Orland is an area that is rich in both. This report details the results of a Class I cultural resources records search and overview for the City of Orland, Glenn County, California. The City is updating its General Plan, components of which include recommendations for future land use designations. Upon completion, the updated General Plan could allow areas currently in agricultural and other uses to be further developed for industrial, commercial, and residential use. Per CEQA and State agency definitions, the General Plan Update constitutes an action or "undertaking" with the potential to impact various types of resources located within the City's corporate boundary and its sphere of influence. Evaluation of the potential impacts of the undertaking to cultural resources is required as one component of the City's own General Plan rules and regulations, which in turn comply with the California Environmental Quality Act of 1970, Public Resources Code, Section 21000, et seq. (CEQA), and The California CEQA Environmental Quality Act Guidelines, California Administrative Code, Section 15000 et seq. (Guidelines, as amended October 1998).

6.2 METHODOLOGY

For the 2003 General Plan Update, the City undertook the following general tasks consistent with a Class I cultural resources overview:

- Completed a Records Search at the Northeast Center of the California Historical Resources Information System at CSU, Chico to determine if any previously recorded sites exist within the corporate boundary.

- Consulted with affected Native American groups in the area to determine if such groups have any specific information concerning cultural resources or traditional use areas within or adjacent to the project area.

- Conducted a cursory-level field inspection of lands within the General Plan study boundary in order to identify any areas with an especially high potential to contain significance resources, the presence of which might prohibit, substantially constrain, or require extraordinary future studies prior to further development under the revised General Plan.

- Prepared a Class I overview which summarizes potential effects of potential land use change, including, where appropriate, recommendations for additional specific studies considered necessary to reduce the effects of such future development to less than adverse levels.

The remainder of this report details the results of the archaeological records search, consultation, background research, and cursory-level field survey conducted for the 2003 General Plan Update. The report provided an assessment of cultural resources already documented as being present, or considered likely to be present, within the study boundary and which could be affected by particular land use designations or other components contained in the updated General Plan. The report concludes with recommendations for mitigative actions or treatments which are consistent with the expectation that potential impacts from future developments within the General Plan boundary can be reduced to less than significant levels. Note that the present document is focused on cultural resources related to prehistoric and Native American use of and occupation within the study area; an historic overview and a consideration of architectural and other historic resources within the study boundary are

addressed in Chapter 7.0, and in a separate section of the revised General Plan. For the purpose of this document, the status of prehistoric resources are considered to be unchanged from their state at the time of the study referenced.

6.3 EXISTING SETTING

The study area consists of the Draft Planning Boundary, which includes the City's corporate boundary and additional lands identified as being within the primary and secondary spheres of influence. The primary and secondary spheres of influence in 2007 are unchanged with the boundaries at the time of the study.

Generally, the study area is located both west and east of Interstate 5, with the northern boundary approximating Stony Creek and extending approximately three miles south of Stony Creek. Lands affected are located within a portion of Township 22 North, Range 3 West, as shown on the USGS Kirkwood and Orland, California, 7.5' series quads (please refer to **Figure 1-2** in the Introduction).

As noted above, Stony Creek defines the approximate northern boundary of the study area, proceeding from northwest to southeast adjacent to the north side of Orland and eventually intercepting the Sacramento River near Hamilton City. Additional ephemeral drainages are located within the study area, but most of these have been substantially modified over the years as the community of Orland has expanded and drainages have been channelized to concentrate and direct runoff and protect commercial and residential properties.

Based on a review of topographic and other maps, and notwithstanding prior impacts to surface and subsurface soil components throughout the area resulting from early agricultural use and more than a century of residential and commercial development, the project area appears to contain lands ranging from low to high in sensitivity for prehistoric sites and features.

6.4 EXISTING INFORMATION

RECORDS AT CSU, CHICO

Prior to conducting the cursory-level field survey, a search of archaeological records maintained by the Northeast Center at CSU-Chico was conducted (I.C. File #W01-133, dated December 6, 2001), with the following results:

Previous Surveys

Three previous archaeological surveys are documented by the Northeast Center as having been conducted within the planning area. Two of these were undertaken by Jensen (1998; 2000) in conjunction with small residential subdivision projects. The remaining survey involved both sides of Stony Creek along the entire Creek corridor that defines the northern study boundary (Johnson 1975). This latter project involved most of the highest sensitivity areas within the study boundary, and was commissioned by the US Army Corps of Engineers in conjunction with the Corp's modifications to Black Butte Reservoir, including use of Stony Creek as a component of the Black Butte flood control project. No prehistoric or historic archaeological sites were recorded during either one of the two residential subdivision projects or the Stony Creek Bank survey project in 1975.

Recorded Sites

There are no prehistoric archaeological sites, isolates or features formally documented within the planning area. The Southern Pacific Railroad, County Road 99W, and other historic and architectural resources are known to be present and have been documented within the planning area. These historic/architectural resources are addressed in Chapter 7.0, Historic Resources.

Other Sources Consulted

In addition to examining the official records of Glenn County as maintained by the Northeast Center at CSU-Chico, the following sources were consulted:

- The National Register of Historic Places (1986, Supplements to 12/00).
- The California Inventory of Historic Resources (State of California 1976).
- The California Historical Landmarks (State of California 1990).
- Cortina Indian Rancheria, Williams, California. No response received.
- Paskenta Band of Nomlaki, Orland, California. No response received.
- The Native American Heritage Commission, Sacramento. Response received 12/12/01 indicating that no Sacred Lands have been listed in the project area.
- Existing published and unpublished documents relevant to environment, prehistory, ethnography, and early historic developments. These sources provided a general context by means of which to assess likely site types and distribution patterns for the project area, and are summarized below.

ENVIRONMENTAL CONTEXT

The project area consists of lands within the Northern Sacramento Valley, a relatively short distance north of what is commonly referred to as the Colusa Basin. The Valley has been uplifted along its western margin, where the Valley's floor interfaces with the lower foothills of the North Coast Range. Orland is located easterly of these uplifted and dissected foothills, approximately equidistant between the foothills to the west and the Sacramento River to the east.

Prehistoric settlement within and use of the Sacramento Valley were intensive, in view of the substantial surface water sources that were available throughout this area generally. However, the Native American population was not randomly distributed. Clearly, the most intensively occupied lands were along the Sacramento River to the east of Orland, and along the Valley/Foothill interface to the west of Orland and the project area. While the land areas between the foothills and the Sacramento River (locales such as Orland) are in fact dissected by numerous streams, the opportunities for settlement and permanent settlement within these areas were for a number of reasons less appealing than those in the foothill zones and along the River.

Stony Creek represents one of these streams which originates in the foothills of the North Coast Range and proceeds through/adjacent to the planning area on its way to the Sacramento River. That relatively few sites have been identified along its middle reaches in general and the

Orland area in particular may be at least partially explained by the substantial impacts to which this cobble-laden water course has been subjected over the years.

Prehistory

The earliest residents in the Great Central Valley are represented by the Fluted Point and Western Pluvial Lakes Traditions, which date from about 11,500 to 7,500 years ago (Moratto 1984). Within portions of the Central Valley of California, fluted projectile points have been found at Tracy Lake (Heizer 1938) and around the margins of Buena Vista Lake in Kern County. Similar materials have been found to the north, at Samwel Cave near Shasta Lake and near McCloud and Big Springs in Siskiyou County. These early peoples are thought to have subsisted using a combination of generalized hunting and lacustrine exploitation (Moratto 1984), and are likely to have temporarily resided around or passed through the project vicinity.

These early cultural assemblages were followed by an increase in Native population density after about 7,500 years ago. One of the most securely dated of these assemblages in north-central California is from the Squaw Creek Site located north of Redding. Here, a charcoal-based C-14 date suggests extensive Native American presence around 6,500 years ago, or 4,500 B.C. Most of the artifactual material dating to this time period has counterparts further south, around Borax (Clear) Lake located southwest of Orland, and in the Farmington Area in a Valley setting east of Stockton. Important artifact types from this time period include large wide-stemmed projectile points and manos and metates.

In the Northern Sacramento Valley in the general vicinity of the project area, aboriginal populations continued to expand between 6,500 and 4,500 years ago. Early Penutian-speaking arrivals in this area may be represented by the archaeological complex known in the literature as the "Windmiller" or "Early Horizon." These sites date to about 4,000-5,000 years ago, with the connection to Penutian-speaking peoples suggested on the basis of extended burials, large leaf-shaped and stemmed projectile points similar to points of the Stemmed Point Tradition in the Modoc Plateau and portions of the Great Basin, large villages established along major waterways, and elaborate material culture with a wide range of ornamental and other non-utilitarian artifact types being present (Ragir 1972). The continuation of this pattern through the "Middle Horizon", or from about 1,000 B.C. to A.D. 300, has also been documented at riverine sites within the Sacramento Valley, including several sites along the Sacramento River east of Orland and near Colusa, a relatively short distance south of Orland.

Sometime around AD 200-300, the Valley may have experienced another wave of Penutian immigration. Arriving ultimately from southern Oregon and the Columbia and Modoc Plateau region and proceeding down the major drainage systems (including the Feather, Yuba and American Rivers and the Sacramento River), these Penutian-speaking arrivals may have displaced the earlier populations, including remnant Hokan-speaking peoples still resident within the Valley, especially along the Sacramento River. Presumably introduced by these last Penutian-speaking peoples to arrive were more extensive use of bulbs and other plant foods, animal and fishing products more intensively processed with mortars and pestles, and perhaps the bow and arrow and associated small stemmed- and corner-notched projectile points.

Ethnography

The project area is located within territory which, at the time of Contact with Euroamerican culture (*circa* AD 1850), was claimed by the Nomlaki (Goldschmidt 1978). Nomlaki core territory included lands along and west of the Sacramento River, from Cottonwood Creek in the north to around Princeton in the south.

The Nomlaki were Penutian speakers for whom the basic social unit was the family, although the village may also have functioned as a social, political and economic unit. Villages were usually located near major water courses, inhabited mainly in the winter as it was necessary to go out into the hills and higher elevation zones to establish temporary camps during food gathering seasons (i.e., spring, summer and fall). Villages typically consisted of a scattering of bark houses, numbering from four or five to several dozen in larger villages, each house containing a single family of from three to seven people.

As with all northern California Indian groups, economic life for these Penutian speaking peoples revolved around hunting, fishing and the collecting of plant foods. Deer were an important meat source and were hunted by individuals by stalking or snaring, or by groups in community drives. Salmon runs, and other food resources available along the Sacramento River and some of its major tributaries, also contributed significantly to Nomlaki economy. While much of the fish protein was consumed immediately, a significant percentage, particularly during the fall salmon run, was prepared for storage and consumed during winter months. Acorns represented one of the most important vegetal foods and were particularly abundant within the Oak Park Woodland which flanked both sides of the Sacramento River and its major tributaries.

Relations between Euro-Americans and Native Americans in the northern Sacramento Valley followed the course of interaction documented in most other parts of North America, but with particularly devastating consequences for the Sacramento Valley Indians. John Work's fur trapping expedition through the Central Valley in 1832-33 resulted in the introduction of several communicable diseases, the results of which were devastating to Native culture and society (Work 1945; Cook 1955).

Resource Considerations, Native American Sites

The discussion of regional prehistory and ethnography provides insight into the types of Native American sites likely to be present within the general project vicinity, with the most likely types for this area including:

- Large village sites located along the margins of streams, particularly at confluences. Previous survey along Stony Creek did not identify substantial prehistoric villages, in part because of extensive historic and contemporary disturbance along this corridor, intensive periodic flooding, the absence of confluences along the segment adjacent to Orland, and the availability at nearby locations (both east and west of Orland) of more suitable terraces and benches in the presence of a wider range of resource types.

- Surface scatters of lithic artifacts and debitage without associated middens, resulting from short-term occupation and/or specialized economic activities.

- Bedrock milling stations, including both mortar holes and metate slicks, located in areas where bedrock is exposed, particularly along stream channels.

- Petroglyphs, especially bedrock outcrops containing small "cupules".

- Mortuary sites, often but not exclusively associated with large village complexes.

- Buried cultural deposits associated with buried stream levees/terraces and encountered at depths to 10-20 feet in some areas.

- Isolated finds of aboriginal artifacts and flakes.

Historic Context in Relation to Earliest Historic Site Types

While there is some evidence that Spanish and Mexican expeditions and early fur trapping ventures may have come through and made brief stays within northern California, Orland's history really begins with the appearance of Euroamerican emigrants into this part of the Valley (McGowan 1961). One of the earliest was Granville Swift who accompanied the Kelsey Party in 1843 on their journey to California. Swift served in John Sutter's campaign for California independence (the Bear Flag Revolt) and later served as a militia Captain in Fremont's California Battalion. Swift later settled immediately north of Orland, between the core of the City and Stony Creek, and established a cattle ranching operation that at one time extended as far south as Woodland. One of the structures dating to his early ranching operation is the Swift Adobe, addressed in Chapter 7.0 of the General Plan Update.

Named after a town in England, Orland emerged as a true community in the early 1870's with arrival of the Southern Pacific Railroad. As elsewhere in California, many of the communities in the Great Central Valley were purposefully created and funded by the railroads, with one of the objectives being to provide necessary services for the system itself (water, fuel), and another being to benefit from housing construction spurred by the extension of the railroad itself. Orland represents one of those communities whose early growth was directly related to the railroad, and to the benefits to local agriculture and ranching (both sheep and cattle) that accompanied expansion of the market created by the extension of long-haul freight.

The growth in agriculture through the late 19th and into the early 20th Centuries fostered the development of local trade, and additional communities emerged in this part of the Valley. But Orland stood out as one of the larger grain shipping points in Northern California, and later became the center of the Orland Federal Irrigation Project (OFIP), a precursor to the Central Valley Project, covering an area of 20,000 acres watered by Stony Creek. OFIP began in the early 1900's, at which time it represented the only irrigation project in California constructed and operated by the U.S. Bureau of Reclamation.

Additional historic themes for the Orland area addressed in Section 7.0, Historic Resources, include water storage and water diversion projects not associated with OFIP, and more recent urban expansion. Collectively, these various historic and contemporary activities have impacted the local cultural resource base, although with less severe consequences than historic mining did elsewhere in northern California.

Resource Considerations, Historic Resources

Historic overviews for the region clearly document a wide range of historic site and feature types within the Northern Sacramento Valley in general and the Orland area in particular. These range from substantial portions of existing communities (for example, the core of the City of Orland itself contains historic buildings and structures) to isolated farms, homesteads and ranch complexes. Site/feature types already documented and potentially present within unsurveyed land areas within the present study boundary include:

- Railroad.
- Water distribution systems, including small and large ditch and canal systems.
- Historic homesteads and associated features such as refuse disposal sites, privy pits, barns, sheds, fences.

- Refuse disposal areas associated with historic Orland.

- Ranch features, including standing structures, structural remnants, corrals, salt licks, etc.

6.5 CURSORY-LEVEL FIELD SURVEY

A cursory-level field survey was conducted by the author on December 11 and 19, 2001, and involved a general inspection of the south bank of Stony Creek, and a drive-by and occasional pedestrian inspection of undeveloped lots and other lands within the plan area.

Generally and from the point of view of cultural resources, there are three major land types within the plan area: the margins of Stony Creek, agricultural and other lands which have not been substantially graded or otherwise improved, and built environment.

The built environment contains a range of resource types, as addressed in Section 7.0, Historic Resources. Undeveloped lands, particularly along the margins of Stony Creek, have the highest potential to contain surface evidence of prehistoric and early historic sites and features. As well, intact or partially intact prehistoric sites could be present below the surface within lands on which buildings and structures already exist.

During the cursory-level pedestrian survey, no prehistoric sites or activity areas, and no demonstrably historic-period sites or features were identified (excepting components of the built environment). While it is clear that planning area lands are generally low to moderate in archaeological sensitivity for such sites, it is equally clear that most of the land area within the study boundary has not been subject to intensive pedestrian archaeological survey.

6.6 SUMMARY OF THE CLASS 1 OVERVIEW

Based on the Class I archaeological overview and field inspection, the following tasks were undertaken, observations made, and conclusions reached.

- The archaeological records of the Northeast Information Center at CSU, Chico contain no documented prehistoric or historic archaeological sites (excluding components of the built environment, addressed elsewhere in the updated General Plan). As noted in discussions above, however, previous archaeological study has involved less than 1 percent of the study area.

- A cursory-level field inspection of the project area did not identify any prehistoric sites or features, nor any evidence of demonstrably historic-period sites or features excepting those related to the built environment (see Section 7.0, Historic Resources).

- Impacts to the surface and subsurface soil components throughout the planning area range from minimal to substantial, and derive from (1) early historic ranching and agricultural activities, (2) intensive mechanized agriculture, and (3) construction of commercial and residential buildings and associated components (roads, water and wastewater treatment facilities, etc.).

- Although archaeological sensitivity is considered generally low throughout the majority of the land comprising the study area, it is likely that prehistoric and early historic archaeological sites exist within unsurveyed portions of the study area and would be encountered during routine pedestrian archaeological field survey of such areas.

6.7 MITIGATIVE RECOMMENDATIONS

Land use changes or various types of development, including commercial, residential subdivisions, new road construction, utility placement, etc., are made at the local level according to California land use planning law and the City's General Plan. These planning requirements include provisions for various types of environmental studies, including intensive-level archaeological survey prior to approval of ground disturbing activities. Such archaeological studies, two of which have already been completed within the City boundary, are presented in the form of Class III Archaeological Inventory Survey Reports. If no significant resources are encountered during such surveys, it is typically concluded that the proposed project can proceed without impacting significant cultural resources. If significant resources are encountered, then treatment recommended in the Class III archaeological reports includes measures for site protection and/or other mitigation measures commensurate with reducing impacts to less-than-adverse levels. By definition, reducing impacts to less than adverse levels implies that there would be no irreversible or irretrievable commitment of cultural resources.

MITIGATION MEASURE

Specific undertakings or development projects that could affect cultural resources should be preceded by Class III or equivalent archaeological inventory surveys. Such inventory surveys include resource identification, resource evaluation in relation to CEQA significance criteria, and recommendations for mitigative action or treatment commensurate with the significance of the resource in relation to the effects to the resource from the proposed undertaking.

6.8 REFERENCES

California, State of. 1970. Public Resources Code, Section 21000, et seq. (CEQA), and The California Environmental Quality Act Guidelines, California Administrative Code, Section 15000 et seq. (Guidelines as amended).

_____.1976. *The California Inventory of Historic Resources.* Sacramento.

_____.1990. *The California Historical Landmarks*. Sacramento.

Cook, S. F. 1955. *The Aboriginal Population of the San Joaquin Valley, California.* University of California Publications, Anthropological Records, Vol. 16:31-80. Berkeley and Los Angeles.

Goldschmidt, Walter A. 1978 "Nomlaki", IN, *Handbook of North American Indians*, Volume 8: California, Robert F. Heizer, Editor, pp. 341-349. Smithsonian Institution, Washington, D.C.

Heizer, Robert F. 1938. "A Folsom-Type Point from the Sacramento Valley." *The Masterkey* 12(5):180-182. Los Angeles.

Jensen, Peter M. 1998. *Archaeological Inventory Survey, CHIP's Proposed JFK Residential Subdivision Project, Orland,* Glenn County, California. Report on File, Northeast Information Center, CSU, Chico.

Jensen, Peter M. 2000. *Archaeological Inventory Survey, CHIPS Proposed Orland Terrace Residential Subdivision Project*, Orland, Glenn County, California. Report on Report on File, Northeast Information Center, CSU-Chico.

Johnson, Keith L. 1975. *Archaeological Survey of the Stony Creek Bank Protection Project, Tehama and Glenn Counties, California*. U.S. Army Corps of Engineers, Sacramento District. Report on File, Northeast Information Center, CSU-Chico.

McGowan, Joseph A. 1961. *History of the Sacramento Valley, Volumes 1 and 2*. Lewis Historical Publishing Company, New York.

Moratto, Michael. 1984. *California Archaeology*. Academic Press, New York.

Ragir, Sonia. 1972. *The Early Horizon in Central California Prehistory*. Contributions of the University of California Archaeological Research Facility. Berkeley.

Work, John. 1945. "Fur Brigade to the Bonaventura: John Work's California Expedition, 1832-1833, for the Hudson's Bay Company", In, *The Journal of John Work, Alice B. Maloney*, Editor. California Historical Society, San Francisco.

7.0 HISTORIC RESOURCES

7.1 GENERAL PLAN REQUIREMENTS

Although there are no specific requirements for including a survey of historical resources, this report aims to provide background information on Orland's history that might be helpful in guiding its future. It attempts specifically to increase a general understanding of the remnants, mostly buildings, of that history. The first part of the report looks at events of the past, with an emphasis on the period before 1950. The second part focuses on historic resources, without, however, trying to identify and evaluate them in detail.

7.2 SETTLEMENT (1849 — 1889)

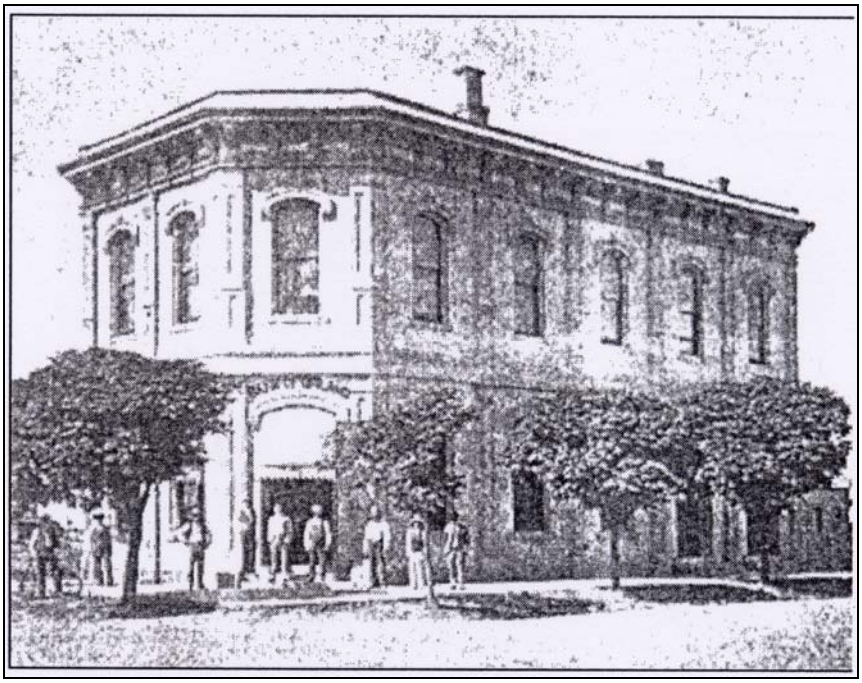
Non-native incursions into the Orland area began in the 1840s. The first permanent settler, Granville P. Swift, established a large cattle ranch in 1849. His adobe on Stony Creek became the first house in the area. He was followed in the 1850s by several other stockmen with large ranches nearby. The raising of cattle and sheep remained Colusa County's largest industry—Glenn County had not yet been formed—until the early 1870s. Then began two decades in which grain production dominated county (and state) agriculture. Former grazing land was divided into smaller parcels, with the typical holding between 160 and 640 acres. The need to transport increasing amounts of grain taxed the capacity of the shippers on the Sacramento River. The Central Pacific Railroad responded by laying a new line through Colusa County to Red Bluff.

The new line created the need for shipping points along the route. The towns of Arbuckle, Williams, Maxwell, and Willows developed as the tracks moved north. Further north two landowners, the Chamberlain brothers, anticipated the railroad's arrival and in 1878 laid out another town, soon to be called Orland. The railroad arrived two years later and quickly took over management of the townsite. Stores and warehouses for local ranchers created residents for the new settlement. The 1880 census showed Orland's population to be 292.

With local agriculture booming, the 1880s saw much new development in Orland. A catastrophic fire in 1880 led to the construction of more permanent commercial buildings, a few in brick or stone. Most, however, were wood-framed, one story, and fronted by porches and boardwalks. The most important exception was the two-story masonry Bank of Orland building, constructed in 1887 at Walker and Fifth Streets (**Figures 7-1 and 7-2**). Other downtown businesses at the end of the decade included three general merchandise stores, three saloons, two hotels, two livery and feed stores, and a variety of specialty shops. By far the largest building was a huge grain warehouse that stretched 750 feet along the tracks north of Walker Street.

Although commerce was a large part of community life within the Orland area, other factors were very important as well. Orland had three churches (Catholic, Methodist, and Baptist), chapters of at least two fraternal organizations (Masons and Oddfellows), a primary school, a "college," and a community hall. Residential development was scattered. Two additions to the original town plat, one to the south and one to the east, contained large parcels and gave residents an opportunity to spread out (**Figure 7-3**). Houses were generally small. Few, if any, rose above one story. In 1891, despite the efforts of local promoters, the City of Willows became the seat of the newly created Glenn County, instead of the City of Orland.

FIGURE 7-1:
THE ORNATE BANK OF ORLAND BUILDING

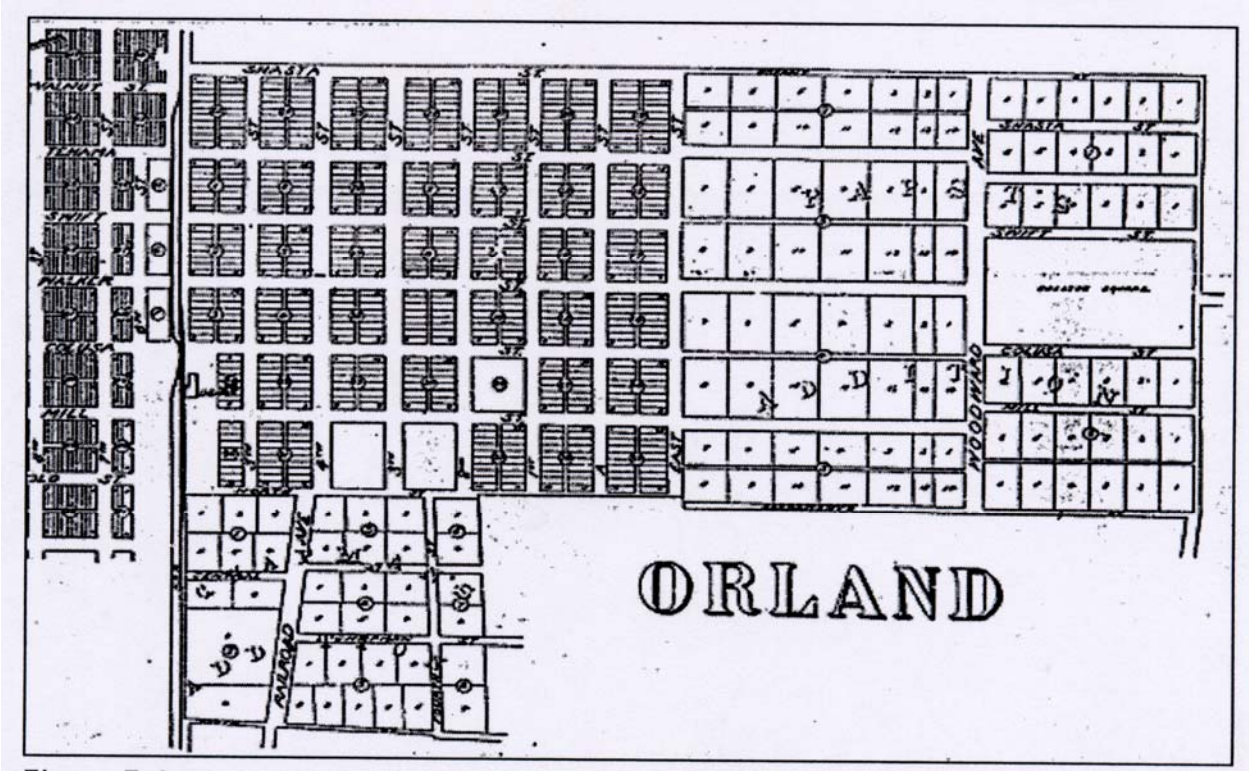


The ornate Bank of Orland building, shown here in 1900, probably gave depositors a sense of security. Source: Freeman, Italy of California, p. 24.

FIGURE 7-2:
THE FORMER BANK OF ORLAND BUILDING

The former Bank of Orland building, modernized ca. 1940, continues to serve the community.

FIGURE 7-3:
THE FIRST TWO ADDITIONS TO ORLAND



The first two additions to Orland, shown on this 1900 map, nearly doubled the land available for development. Weston and Weston, Official Map of the County of Glenn.

7.3 BOOM TIMES (1890 — 1923)

Local agriculture began to change again in the early 1890s. Providing the impetus was irrigated water from Stony Creek, which ran north of Orland and emptied into the Sacramento River. An irrigation district was formed in 1887, and the first land was irrigated in 1893. The supply of water was not large or reliable enough for the project to be entirely successful. But enough local land shifted to dairying and orchard crops to stave off the effects of the collapse of international grain markets and the subsequent nationwide depression. In a decade in which the population of California actually dropped, the number of residents in Orland more than doubled from 440 in 1890 to 893 in 1900. Local ranchers, meanwhile, realized that their own irrigation efforts were unlikely to prove adequate. They initiated a drive for involvement by the federal government, which led the United States Reclamation Service to construct a dam on Stony Creek in 1909. The steady source of irrigated water led to the further subdivision of large ranches. The Orland area became the most densely settled in the county.

Orland's population continued to rise, reaching nearly 1,600 by 1920. The town took on a more settled appearance. Important new buildings went up downtown: a concrete block commercial building at Fifth and Walker Streets, the Orland Hotel at Fourth and Walker Streets (both ca. 1903), the Oddfellows Hall at Fourth and Colusa Streets, the three-story Royal Hotel on Colusa between Fourth and Fifth Streets (both 1910), and the Masonic Hall at Fourth and Colusa Streets (1914). Smaller new commercial buildings filled in spaces on Fourth, Fifth and Walker Streets. In addition, street paving began, and an irrigation ditch that ran down Fifth Street was graded for vehicle traffic. Sixth Street, meanwhile, became part of a new state highway. Local

businesses offered a wide array of goods and services. In 1918 the town had, among other establishments, five grocery stores and commercial garages; four realtors; three butchers, druggists, candy shops, and saloons; and two banks, hotels, restaurants, newspapers, and hardware stores. Adding to local industry were two creameries, two lumber yards, and a feed mill.

A series of civic improvements, stimulated in part by the incorporation of the city in 1909, supplemented business advances. A severe downtown fire in 1911 sparked the creation of a volunteer fire department, which operated a fully equipped hook-and-ladder truck. In the same year local voters approved bonds for the construction of a water and sewer system. Education received a boost with the erection of a new primary school building in 1910 and a high school building in 1918. Also in 1918, a decade-long effort by the Women's Improvement Association came to fruition when the town opened its new Carnegie Library (**Figure 7-4**). The fairgrounds, under private ownership, also opened in 1918.

FIGURE 7-4:
THE CARNEGIE LIBRARY BUILDING

A major step in civic improvement came with the opening of the Carnegie Library building, which looks today much as it did in 1918.

Residential neighborhoods began to fill in, even as the city annexed newly subdivided land on the southeast. Parcels remained large, so the density of housing continued to be low. Many lots contained vegetable gardens or chicken patches. The new dwellings were larger and more stylish that those of the 19th century. Most still had only one story, but a few conspicuous houses rose to two stories. A 1918 description probably provided more truth than hyperbole: "There is no place of similar size in Northern California where so large a percentage of the population is housed in commodious homes equipped with all the modern conveniences."

7.4 ECONOMIC COLLAPSE AND REVIVAL (1924 — 1950)

The 1920s started out with a roar, but the good times did not last long. Crop failures and depressed agricultural prices strangled local growth. Other Sacramento Valley towns—Biggs,

Chico, Corning, Willows, and Winters—lost population during the decade. But none suffered as large a drop as Orland, where the number of residents fell more than 25. And then came the Great Depression. The town managed to build its largest civic building, the Veterans Memorial Hall, in 1931. Otherwise, economic stagnation limited new construction to a large powdered milk plant and a few auto-related businesses along Sixth Street (then State Highway 99W) until the late 1930s. A municipal swimming pool opened in 1939. The federal Works Progress Administration (WPA) got half way through a major project at the fairgrounds before wartime needs forced a suspension of construction. Perhaps the most striking visual change to the City in the 1930s came in mid-decade, when a fire took out the northern 450 feet of the grain warehouse along the railroad tracks.

Prosperity returned in the 1940s. Agricultural production increased in the Orland area during World War II and remained strong in the postwar period. The city's population began to climb steadily, topping 2,000 in 1950. New commercial buildings filled in empty lots on Fourth, Fifth, and Walker Streets. The new structures were usually of one story and suitable only for single firms. The business district had already spread south of Colusa Street on Fourth Street. In 1948 it expanded all the way to Mill Street with the opening of the Purity grocery. The city also experienced some industrial growth during the I 940s, led by the expansion of the Golden State facility along the tracks north of Walker Street in 1946. In addition, work resumed at the fairgrounds. A new exhibit building opened there in 1949.

Population growth produced a substantial amount of new housing, almost all of it for single families. Two additions to the city, one on the north and the other on the south, were subdivided for residential development. Tract-style houses went in there and on the blocks east of East Street Meanwhile, neighborhoods closer to downtown finally began to fill in. Greater densities ended the scattered appearance of the city's residential areas.

Residents of Orland in 1950 could look ahead with confidence. The local economy was humming, the population was growing, new houses were going up all over town, and new schools were on the drawing boards. Although destined to remain a small town, Orland nevertheless promised to be a vibrant place in the second half of the twentieth century.

7.5 COMMERCIAL AND INDUSTRIAL RESOURCES

Orland has commercial buildings remaining from all the decades between the 1880s and the 1950s. The greatest concentration is wanted in the downtown, primarily on Fourth, Fifth, Colusa, and Walker Streets. A few additional resources remain on Sixth Street between Shasta and Mill Streets and scattered through the City's residential areas. Industrial structures line the railroad tracks. Due to functional designs and severe alterations, many of the buildings do not clearly reflect their construction periods and historical significance.

The downtown commercial buildings form a fairly coherent district. Most were built before the mid-1920s. About a quarter date from before 1912, and another third were constructed in the following decade. Most have been built out to the sidewalks in front and to the parcel lines on each side. Empty lots are rare. Stucco finishes predominate. Most buildings have a single story and storefronts with display windows. The storefronts themselves, however, vary markedly in appearance. A few remain unaltered since the 1920s. Most were modernized after 1950 (**Figures 7-5 and 7-6**).

FIGURE 7-5:
BUILDINGS ON WALKER STREET

These buildings on Walker Street still have a 1950s look.

FIGURE 7-6:
THE STOREFRONT OF THE CA. 1920 BUILDING ON FOURTH STREET

The storefront of the ca. 1920 building on Fourth Street appears to have changed little over the years, although the sign probably hides or has replaced a clerestory window band.

The downtown district has several multistory buildings, most of which occupy conspicuous corner locations. With one or two exceptions, the large buildings date from before 1915. These structures still look old, but they have lost much of the classically inspired detail that typifies their construction period. Most noticeably, ornamental cornices and window hoods have disappeared. In addition, wood window sashes have been replaced (usually with brushed aluminum) or removed. The alterations appear to have begun in the 1930s and continued in the 1940s and 1950s (**Figures 7-7 and 7-8**).

FIGURE 7-7:
THE OLD HOTEL ORLAND BUILDING (CA. 1903)

The old Hotel Orland building (ca. 1903) is now home to Orland's local newspaper.

FIGURE 7-8:
THE MASONIC HALL AT FOURTH AND COLUSA STREETS (1914)

The Masonic Hall at Fourth and Colusa Streets (1914), despite the loss of its original windows, is the least-altered of downtown Orland's large buildings.

Modifications to buildings, both large and small, continued in the following decades. A few new structures went in, and a few old ones taken down. The overall look of the district, however, has not changed much since 1960.

Orland's industrial section stretches along the east side of the tracks from Tehama Street to Colusa Street. The section originally extended across the tracks, where the huge grain warehouse and some lumber sheds were located. These structures are now gone. The dominant remaining building is the old Golden State milk processing plant, which has two facades of red brick but, because of its disparate sections, gives a somewhat jumbled appearance. The other buildings are completely functional in design. Those to the north date from after World War II and include one structure with a semi-elliptical roof. Those on the south, which have pitched roofs and walls of corrugated metal, are more dilapidated. They are also older, with one dating from around 1910 (**Figure 7-9**).

FIGURE 7-9:
INDUSTRIAL BUILDINGS ALONG THE EAST SIDE OF THE TRACKS

Most of the industrial buildings along the east side of the tracks are more than fifty years old.

Further east are a few remnants of the days when State Highway 99W ran along Sixth Street. One interesting building is the remodeled gas station at Colusa Street, which has a band of 1930s speed lines. The most important structure on the street is a concrete arch, which was constructed in 1925 at the outskirts of town to welcome motorists from the north.

7.6 INSTITUTIONAL RESOURCES

Orland retains a number of well preserved civic and religious buildings. The most notable is probably the Veterans Memorial Hall (1931), which is not highly ornamented but does display classical details, including semi-circular arched openings and a Tuscan colonnade. A smaller but still impressive public building is the former Carnegie Library (ca. 1918), now a community center. Designed by the prolific William H. Weeks, the building eschews classicism for an informal Prairie School look. The city's early school buildings have been demolished. The Fairview School (1951), however, still possesses architectural interest as a small-scale example of the International Style. The county fairgrounds offer a collection of buildings from the same period. The Exhibits Building (1949) is the largest of the group. Orland has lost its nineteenth-century Gothic Revival churches but retains many examples from later decades in a variety of styles.

7.7 RESIDENTIAL RESOURCES

Orland has an architecturally diverse collection of residential buildings. Nearly all have wood frames and were built for single families. Most have only one story. Many houses represent architectural styles popular at the times of their construction. Others show a mix of styles, and some exhibit stylistic details without clearly exemplifying any one style (craftsman, ranch, bungalow, etc.). Those dating from before 1950 were usually constructed individually (**Figures 7-10 and 7-11**) as opposed to current subdivision-type construction. Because blocks filled in over many years, houses of different ages and styles often sit on adjacent parcels. Although there are

many exceptions, houses generally exhibit a high level of preservation: They are well maintained and not substantially altered.

FIGURE 7-10

FIGURE 7-11

The oldest remaining houses appear to be Queen Anne cottages, which were constructed around the turn of the last century. Earlier dwellings were small, functional, and subject to replacement as soon as owners could afford something more elaborate. Few, if any, are left today. The town has a few of the Queen Annes, which are notable for decorative gable shingles, turned porch posts, and ornamental woodwork.

In the first decade of the twentieth century, the Colonial Revival enjoyed a brief period of popularity throughout California. Houses in this style usually have hipped roofs, often with dormers, classically inspired porch columns, usually Tuscan, and other classical details, such as dentil courses and window hoods. Orland has a number of examples.

By 1910 the Craftsman style had supplanted the Colonial Revival. An informal, often sprawling appearance typify this style, which got its start in the Los Angeles area. Details have a hand-made look. Shingles cover the walls. Windows contain leaded glass. Eaves overhang the walls and are supported by knee braces, exposed rafter tails, and extended purlins. Porches have simple posts that are often topped with decorative pegs. Elaborate examples of the style use stone for chimneys and porch walls. The Craftsman era coincided with boom times in Orland.

As might be expected, the town has dozens of examples, both large and small. A few are large and finely detailed.

More surprising is Orland's small collection of Prairie School houses. This style, associated with Frank Lloyd Wright, came to prominence in the first two decades of the last century. It enjoyed more popularity in the Midwest than in California, where it competed with the Craftsman style. The two styles share a horizontal emphasis and expanses of multipaned windows. They differ in the use of ornament, with Prairie School buildings sporting a modern, stripped-down look. Orland has at least two striking examples, which are located across Third Street from one another.

Residential styles from the 1920s that enjoyed great popularity in most of the state—Tudor Revival, Mediterranean Revival, Spanish Colonial Revival, and even California Bungalows—do not make much of an appearance in Orland. This is readily understandable. The need for new housing was nearly non-existent during a decade in which the local population dropped by 25 percent.

California saw the arrival of modern styles in the 1930s and 1940s. Notable examples of the California Ranch House and the International Style went up in wealthy communities around the state. Most construction from the period was much simpler and more modest. The houses were usually small, had low-pitched roofs, and displayed little ornament. Period detail includes brick trim, scalloped gable boards, and picture windows. Narrow entrance porticos or simple hoods took the place of front porches. Orland has a number of houses from the period, though they generally do not make much of an impression.

Some design trends of the 1940s became more conspicuous in the following decade. These included the use of metal-sashed windows (especially aluminum sliders) and the incorporation of a garage within the overall house plan). Houses often went up in groups, with adjacent buildings utilizing the same design. Orland has no huge housing tracts from the 1940s and 1950s, but it does have neighborhoods that exemplify these design wends.

7.8 RESOURCES IN OUTLYING AREAS

Most resources outside the city limits but within Orland's present planning area are connected to agriculture. By 1950 the number of farm structures within the area might well have reached 200. Maybe half remain today. A few may date from the late nineteenth century when wheat dominated local agriculture. Most, however, come from the era of dairying and the raising of orchard crops. Some ranches are still in operation. A few farmsteads, containing a house, auxiliary buildings, and surrounding open land, remain today. Individual farm buildings, not always houses, are more common. Architectural styles of farm houses usually replicated those of buildings in town—but not always. Several trends have diminished the number of farm structures in the past half-century: the abandonment of ranching, the replacement of old houses with newer ones, and the conversion of land from farming to residential tracts. Other resources outside the city limits include structures associated with the Stony Creek Irrigation Canal and buildings scattered along routes into town—old Highway 99W, State Route 32, and the old Newville Road.

7.9 THE HERITAGE TRAIL

Orland is one of the few cities in the state to be actually importing historic resources. Since around 1980 the county fairgrounds has been collecting old buildings as part of the "Heritage Trail" interpretive program. Today, over 20 buildings are included as part of the Heritage Trail, each containing numerous antiques and historical artifacts. Many of these structures and artifacts have been imported from outside Orland, including the Chrome School, a 1927 gas station, a wine press and olive press, and a lemonade stand shaped like a lemon. The Heritage Trail includes a steam engine, caboose, blacksmith shop, and other pieces representing the history of Northern California. Tours are offered to the public, with the historical areas managed and maintained by the Orland Historical Society. All of the artifacts belong to the Society, while the structures and buildings are properties of the State of California.

7.10 HISTORIC PRESERVATION ISSUES

In general, Orland's historic resources need to be precisely identified and then given official recognition. In addition to that, different groups of potentially significant old buildings raise different preservation issues. The multi-pronged strategy employed by the California Main Street Program might prove beneficial. If the major building alterations occurred before 1950, it is imaginable that the district would be eligible for listing in the National Register. Some of the houses in the nearby residential area need maintenance. Several have been inappropriately remodeled, while others are probably vulnerable to a loss of architectural details if they undergo

renovation. Original windows, in particular, may be targeted. The industrial section presents a difficult problem. The area, which is the gateway to downtown, was never very attractive and is now something of an eyesore. Yet most of the buildings are over fifty years old and have been little altered in recent decades. The return of the railroad depot would brighten up the area, but insuring the viability of the building in its original setting would be a daunting task. In addition, old ranch buildings in outlying areas, of critical importance because of Orland's agricultural heritage, may also be at risk as land is subdivided for residential use. The Heritage Trail, meanwhile, appears to be running out of room for additional buildings. Adaptive reuse will become essential for threatened structures in the future.

In order to improve the aesthetics of buildings within the City, the Façade Rejuvenation Program was started by the City of Orland through the Tri-County Economic Development. Using money provided by block grants, the program has improved the exterior conditions of many of downtown Orland's buildings.

7.11 REFERENCES

Freeman, Frank. *The Italy of California: Orland the Capita*l. Orland: Orland Real Estate Association, [1900].

Green, Will S. *Colusa County, California.* San Francisco: Elliott and Moore, 1880; reprint ed. Sacramento: Sacramento Lithograph Company, 1950.

McComish, Charles Davis and Lambert, Rebecca T. *History of Colusa and Glenn Counties, California*. Los Angeles: Historic Record Company, 1918.

N. K. Spelt and Company and Knock Thomas L. Map of the County of Glenn. San Francisco: Punnett Brothers, 1894.

Orland Unit, 22 April 1935, 7 June 1935, 19 August 1935.

Rice, S. H. Rice's Official Map of the County of Glenn. San Francisco: Bashford Smith, 1914. Rogers, Justus H. Colusa County. Orland: n.p., 1891.

Russell, Gene H. *Orland's Colorful Past* [Orland:] Orland Community Scholarship Association, 1977.

Russell, Gene H. *Orland's Colorful Place Names*. Chico: Association for Northern California Records and Research, 2000.

Thomas, John. Photo album of Orland, California, and surrounding area. California Room Collection. California State Library. Sacramento.

U. S. Department of the Interior. *Geological Survey.* Kirkwood, Calif Quadrangle Maps, 1914, 1950, 1969.

U. S. Department of the Interior. *Geological Survey.* Orland, Calif Quadrangle Maps, 1914, 1950, 1978.

Wagon Wheels I 0 (February 1961): 7- 18.

Weston, J. F. and Weston, H. E., comp. Official Map of the County of Glenn, California. San Francisco: Britton and Rey, 1900.

Wigmore, L. W. *The Story of the Land of Orland*. Orland: Orland Register, 1955.

8.0 SAFETY AND SEISMIC SAFETY

8.1 GENERAL PLAN REQUIREMENTS

The Hazards, or Safety, Element is a mandatory element according to the 1998 General Plan Guidelines for the State of California. The aim of this element is to reduce the potential risk of death, injuries, property damage, and the economic and social dislocation resulting from hazards such as fire, floods, earthquakes, landslides and other hazards. Other locally relevant safety issues such as emergency response, hazardous materials spills, and crime reduction may also be included.

8.2 SEISMIC AND GEOLOGIC HAZARDS

According to the Glenn County Seismic Safety Element, geologic hazards such as earthquake shaking, landslides, and volcanic eruption are minimal and are not expected to be a major problem in the planning area. The information below provides a preliminary indication of the degree of potential hazard or risk that may exist for various geologic or seismic events in the planning area.

SEISMIC RISK

Fault Rupture

The Alquist-Priolo Special Studies Zone Act (APSSZ) represents the current State mandated approach to preventing development in active fault zones. The Special Studies Zones are delineated and defined by the State Geologists and within the assigned zones Cities and Counties must establish special procedures for reviewing applications for new building permits. There are no designated APSSZ within the planning area, nor are there any known or inferred active faults. Thus, the potential for ground rupture within Orland is considered very low. During the past 100 years, Glenn County has experienced only minor earthquakes within its boundaries and secondary impacts from earthquakes centered out of the area.

The closest fault to Orland is located approximately 10 miles to the west near Black Butte Reservoir. This fault trends northwest-southeast and can be considered potentially active. Several other faults are located further west in the Coastal Ranges, as well as to the east in the Sierra Nevada. Although the planning area is not prone to seismic hazards, potential geologic hazards can be substantially eliminated through action of the City and County such as uniform building code enforcement. It should be noted that, as of March 2008, new Building Code requirements have gone into effect which may result in additional requirements and/or designations for Building Code issues within the City.

Ground Shaking

Development within the Orland planning area may be exposed to violent shaking from periodic earthquakes or faults in the region. The major cause of structural damage from earthquakes is the result of ground shaking and liquefaction. However, because nearby faults have not been active, the likelihood of an earthquake originating from them is considered low, and the likelihood of structural damage as a result of ground shaking is also considered low.

Liquefaction

Liquefaction can occur when strong ground shaking causes the densification of soils, with a resultant local or regional settlement of the ground surface. Settlement is typically associated

with high intensities of ground shaking, a shallow water table, and the presence of loose alluvial deposits on sandy soils. High intensity ground shaking is unlikely in the planning area as discussed above. However, area conditions (shallow groundwater and sandy alluvial soils) do favor settlement if a strong seismic event occurred in the area. Detailed soils engineering evaluations are appropriate to further evaluate the liquefaction potential for individual projects.

OTHER GEOLOGIC CONSTRAINTS AND HAZARDS

Other geologic hazards in the planning area include the potential for landslides, subsidence erosion, and soil expansion. The extent of the potential hazards is summarized below.

Landslides

Areas of highest apparent landslide potential generally correlate with relief, precipitation, and grading. The Orland planning area is relatively flat and has a low potential for landslides.

Subsidence

Subsidence occurs at great depths below the surface when subsurface pressure is reduced by the withdrawal of fluids (i.e., groundwater, natural gas). A vacuum may be created that gradually causes sinking of the ground. The primary cause of subsidence in the planning area would be from overdrafting of groundwater. Currently, no area of serious overdraft has been identified in the planning area. Additionally, there have been no reports of subsidence. The groundwater in the planning area continues to recharge to prior levels, indicating overdraft is not a problem.

Erosion

Erosion may be expected in the planning area where protective vegetation is removed by construction, fire, or cultivation. Factors that contribute to erosion include topography, rainfall, and soil type. Similar to land sliding potential, because the Orland planning area is relatively flat, there is a low potential for erosion. For a discussion of erosion concerns along Stony Creek, please review the Natural and Agricultural Resources section of this report (Section 5.0).

Expansive Soils

A soil's potential to shrink and swell depends on the amount and types of clay in the soil. Certain clays expand when wet and disproportionately shrink when dry. A map of expansive soils in the Glenn County General Plan shows the majority of expansive soils in the plan area exist west of I-5 (see **Figure 8-3**).

Highly expansive soils can cause structural damage to foundations and roads and are less suitable for development than non-expansive soils. However, a variety of standard design and construction methods exist to strengthen structures against the stresses caused by expansive soils. These design standards construction methods are found in the Uniform Building Code or are addressed through engineered design.

8.3 FLOODS

Areas adjacent to Stony Creek and Hambright Creek are subject to flooding during heavy rainfall. Severe flooding is prevented in the planning area by flood control dams on Stony Creek and the Sacramento River. A designated floodway has been mapped and adopted by the State Reclamation Board for Stony Creek. The State has jurisdiction within this designated floodway and supersedes local control.

Flood hazard areas within the planning area have been mapped by the Federal Emergency Management Agency (FEMA) on Flood Insurance Rate Maps (FIRM). However, these maps are designed for use in determining flood insurance needs and do not necessarily show all areas subject to flooding, such as agricultural areas which have flooding potential due to irrigation water delivery systems and agricultural practices. As discussed in more detail in the Public Facilities and Services section (3.0) of this report, localized flooding is due, in part, to Orland's storm drainage system operating at capacity. However, according to the City Engineer, the City's storm drainage system is not reflected as being substandard.

According to the FEMA Flood Insurance Rate Map most of the area in the northwest portion and along the northern edge of the planning area is in either flood zone A or X, which means the area is subject to flooding (see **Figure 8-1**). Areas directly adjacent to Stony Creek and Hambright Creek are in flood zone A (subject to a 100-year flood event). Areas outside of zone A and designated as zone X are subject to 500-year flood events. It should be noted that zone X overlaps small portions of the northwest corner of Orland's city limits. The remainder of the planning area is not subject to 100- or 500-year flood events.

DAM INUNDATION

The California Office of Emergency Services (CA OES) has developed and approved dam failure inundation maps for areas below California's dams. These maps are intended to be used by state and local officials for the development and approval of dam failure emergency procedures. The maps are also used to provide information needed to make natural hazard disclosure statements. Files are maintained on the CA OES home page. The inundation maps maintained on file by CA OES are prepared for emergency planning purposes only and may not be drawn at a sufficient scale or level of detail to identify specific parcels of land.

The legislative intent of the original CA OES seismic safety of dams legislation (SB 896, of 1972) was to establish emergency procedures for the evacuation and control of populated areas below dams which could be used to save lives and reduce injury in the event of a dam failure. As a result of this legislation, CA OES established the dam failure inundation mapping and emergency procedure program.

Dam owners submit inundation maps to CA OES for review and approval in accordance with guidance issued by CA OES. Copies of the approved inundation maps are sent to the city and county emergency services coordinators of affected local jurisdictions. Inundation maps represent a reasonable estimate of where water would flow if a dam failed completely and suddenly with a full reservoir. **Figure 8-2** represents the area of inundation in the event Black Butte Reservoir Dam was to fail.

The black line is defined as a "limit of inundation" and the number refers to the estimated time in hours after the initial dam failure when serious flooding occurs at a given location. The entire planning area is subject to flooding and floodwaters would reach the planning area in approximately two (2) hours. Based upon approved inundation maps, cities and counties with territory in the affected areas are required to adopt emergency procedures for the evacuation and control of populated areas below the dams.

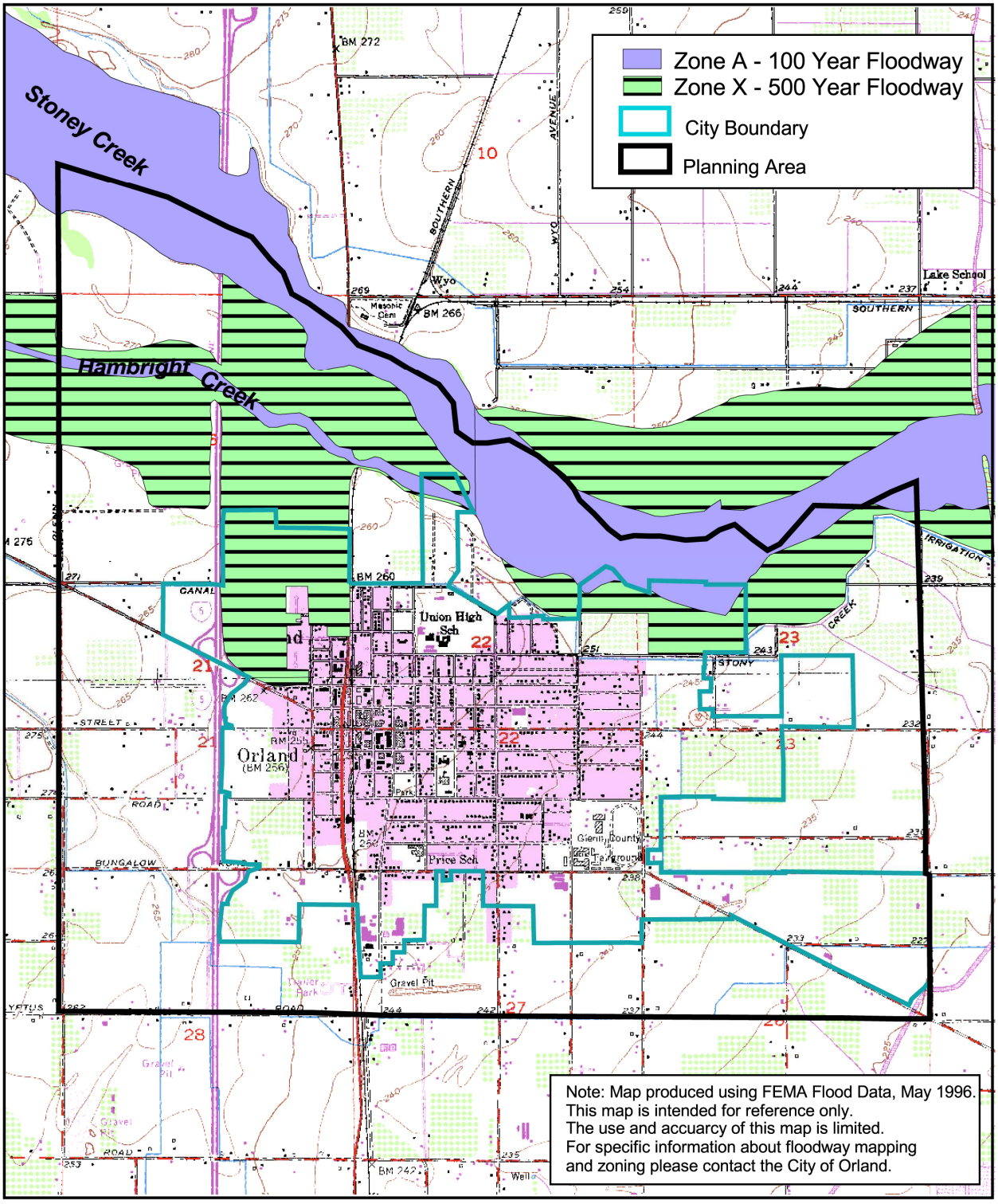


FIGURE 8-1
FEMA FIRM Floodway Data

FIGURE 8-2:
CALIFORNIA OFFICE OF EMERGENCY SERVICE INUNDATION MAP BELOW BLACK BUTTE RESERVOIR DAM

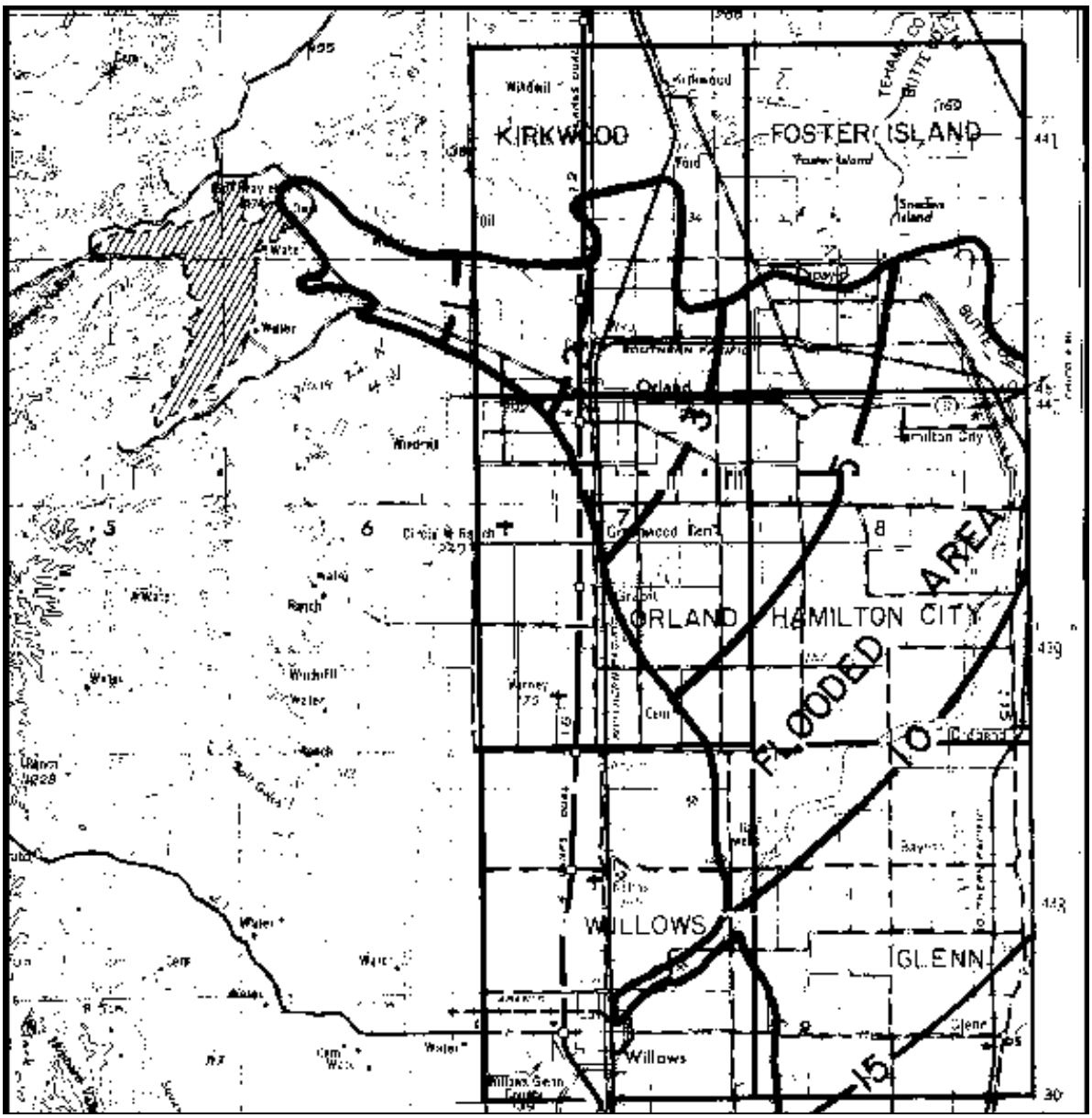
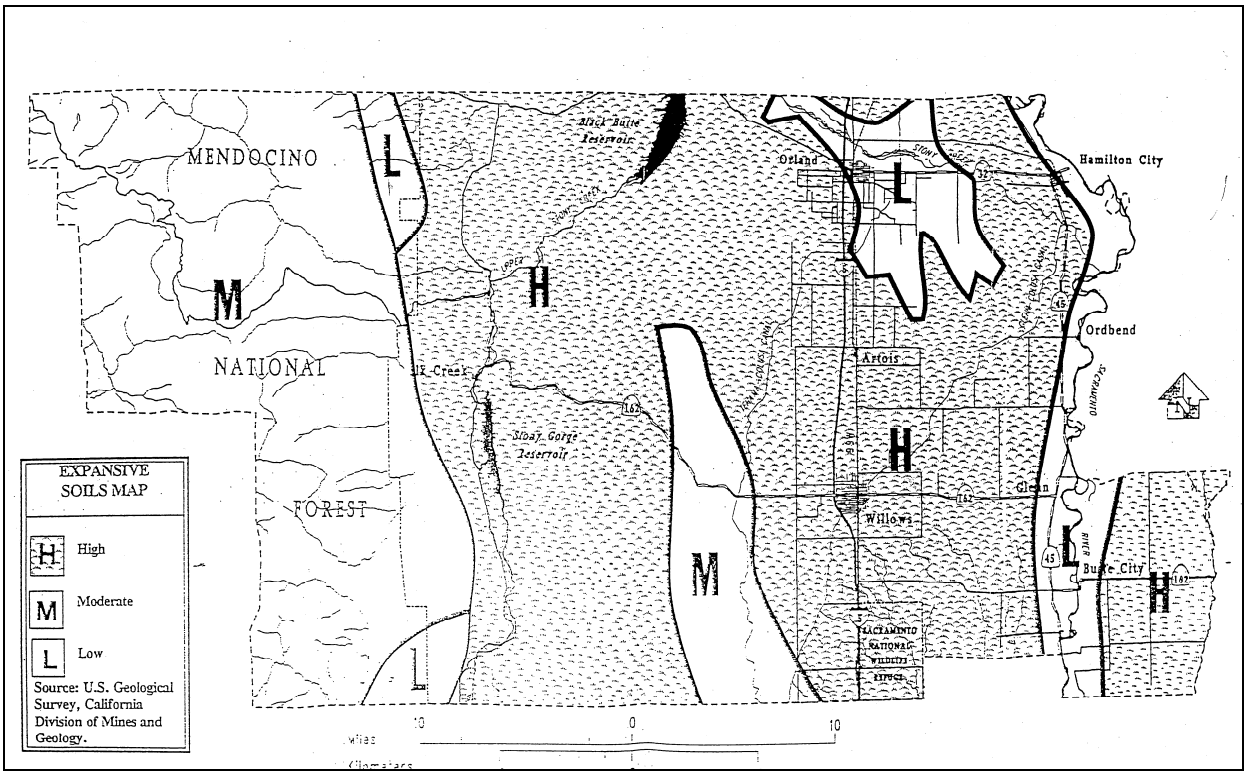


FIGURE 8-3:
EXPANSIVE SOILS



8.4 WILDLAND AND URBAN FIRES

Figures 8-4 and **8-5** depict Fire Hazard Severity Zones in the Local Responsibility Area (LRA) and State Responsibility Area around Orland as determined by the California Department of Forestry and Fire Protection (CAL FIRE) in 2007. Fire Hazard Severity Zone mapping is based on relevant factors such as fuels, terrain, and weather. No unique or significant fire hazards exist in the rural/urban interface between the City and surrounding open spaces. Areas designated to have Moderate Fire Hazard Severity are located adjacent to riparian areas near Hambright and Stony Creeks. Fire protection services for the Orland planning area are further described in Section 3, Public Facilities and Services.

8.5 HAZARDOUS MATERIALS AND WASTE

Hazardous materials consist of "injurious substances", which include flammable liquids and gases, poisons, corrosives, explosives, oxidizers, radioactive materials, and medical supplies and waste. These materials are either generated or used by various commercial and industrial activities. They are also commonly transported over major highways and railroads. Hazardous wastes are injurious substances that have been or will be disposed. The location of Interstate 5 and SR 32 through the planning area raises concern of accidents with vehicles carrying hazardous materials. Transportation of hazardous materials is strictly regulated by State and federal agencies.

8.6 CRITICAL FACILITIES AND EMERGENCY RESPONSE

CRITICAL FACILITIES

The General Plan Guidelines define "critical facilities" as those "which either (1) provide emergency services or (2) house or serve many people who would be injured or killed in case of disaster damage to the facility. Examples include hospitals, fire stations, police and emergency services, utility facilities, and communications facilities." Although identification of critical facilities is not required by codes pertinent to the safety element, it serves a useful purpose. It singles out those facilities for which special maintenance plans and actions are necessary to ensure their ability to function during emergencies or to reduce the impairment of services provided by these facilities. Within the Orland planning area, the following are considered critical facilities:

- Orland Fire Department station
- Orland Police Department building
- Orland City Hall
- Water supply lines and wells
- Wastewater treatment plant and trunk lines
- Major electrical transmission lines and substations
- Major communication lines and microwave transmission facilities

Critical facilities also include major roadways, which may serve as principal evacuation routes. **Figures 3-1** through **3-3** in the Public Facilities and Service section (3.0) of this report detail the locations for most of the critical facilities mentioned above.

Responsibility for day-to-day emergency response falls to the Orland Police and Fire Departments, which are first responders in emergency situations. Under more extreme general emergency conditions, other City departments may become involved, along with State, county and federal agencies as needed.

8.7 REFERENCES

Bureau of Reclamation, U.S. Department of Interior, 2006. *Lower Stony Creek Fish, Wildlife, and Water Use Management Plan*.

City of Orland, 2003. *Orland Area General Plan*. Adopted in March 2003.

City of Orland, 2003. *Orland General Plan Background Report*. Adopted in March 2003.

ECO-ANALYSTS, 2001. *Draft EIR for the Hunt East Property Gravel Mining Operation*. Prepared for Glenn County. October 2001.

Glenn County. *Glenn County General Plan*. Adopted June 1993.

Glenn County, 1993. *Environmental Setting Technical Paper/Glenn County General Plan Volume III*. Prepared by QUAD Consultants. January 1993.

FIGURE 8-4:
FIRE HAZARD SEVERITY ZONES: LOCAL RESPONSIBILITY AREA

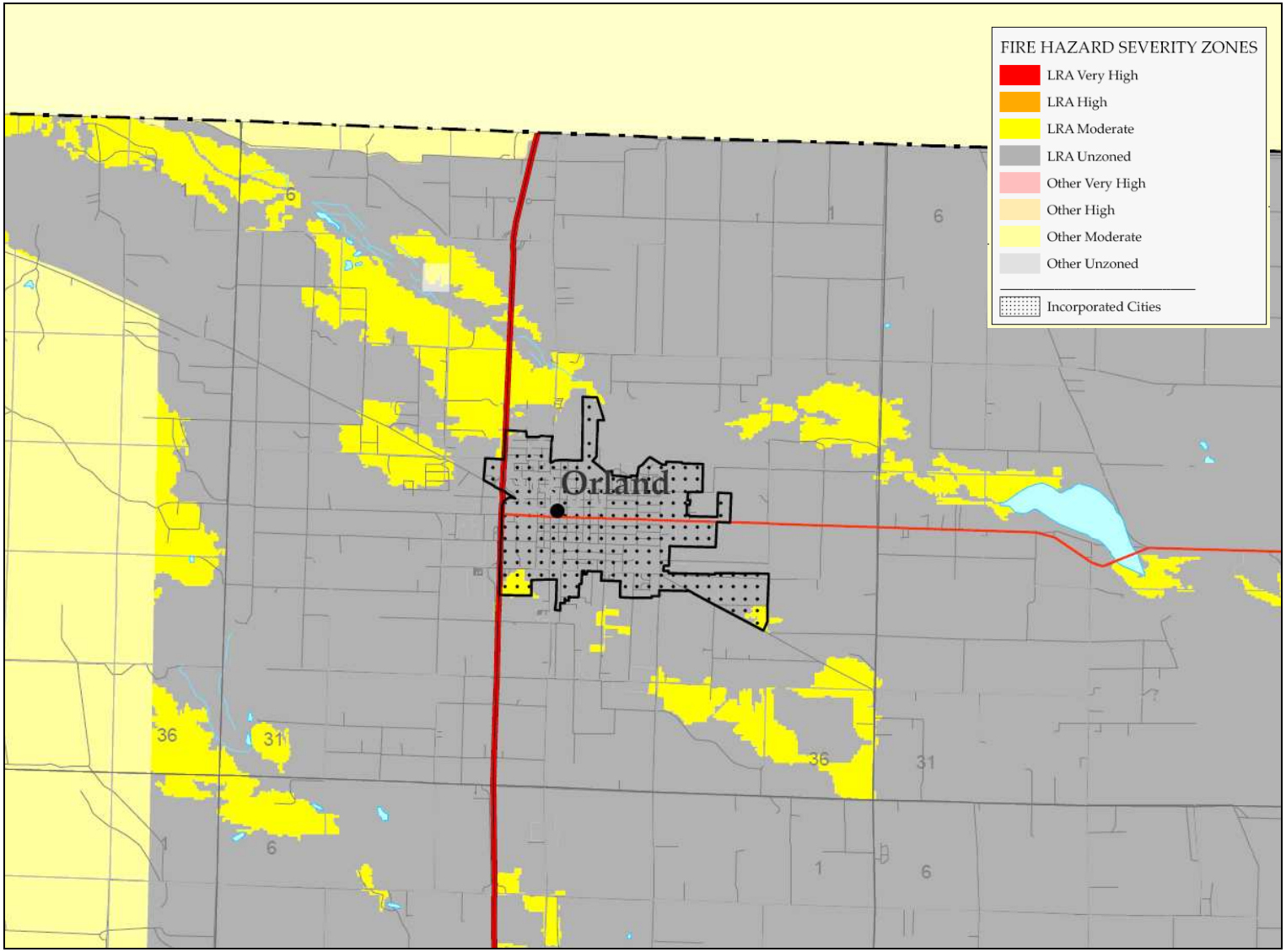
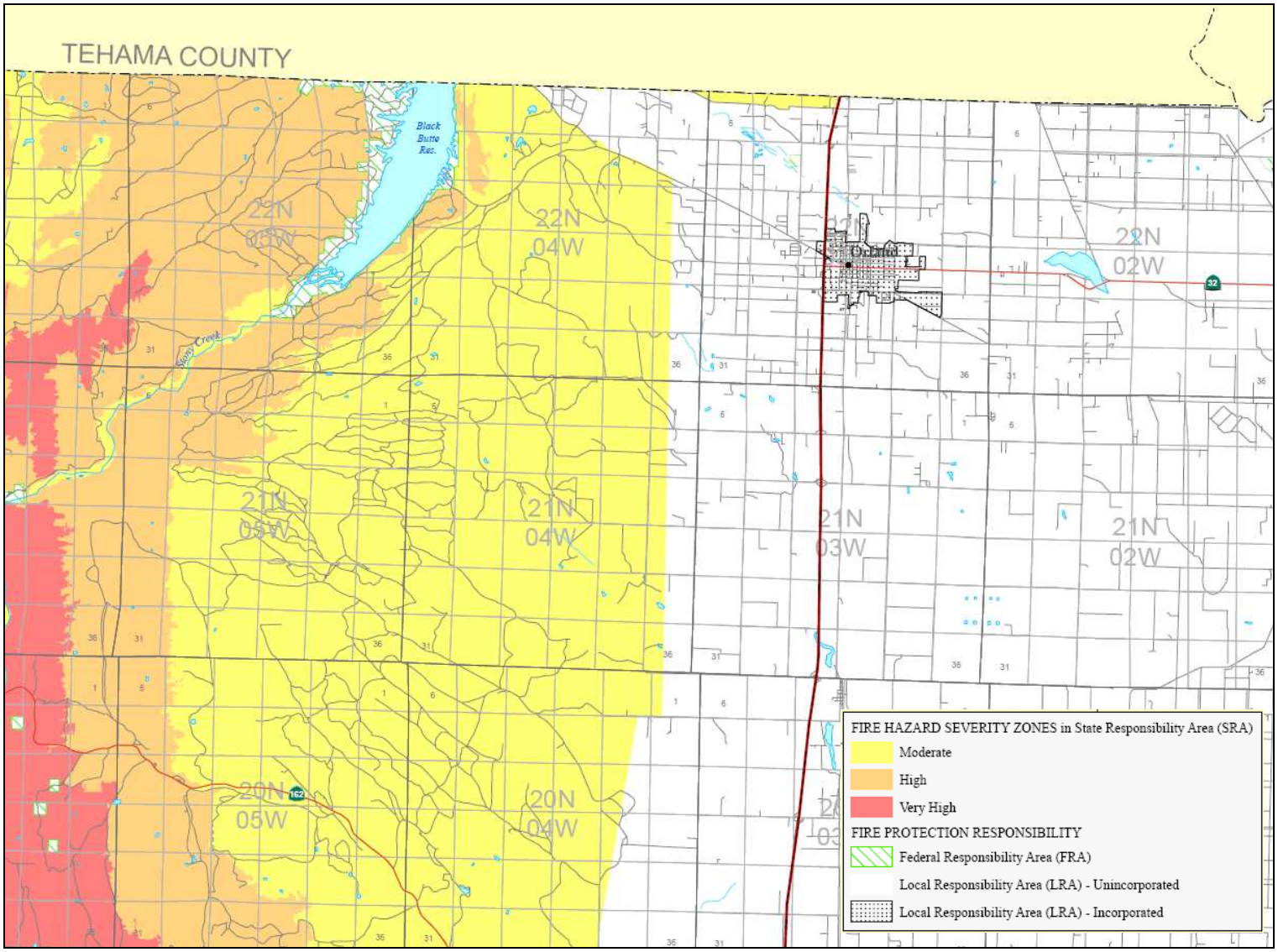


FIGURE 8-5:
FIRE HAZARD SEVERITY ZONES: STATE RESPONSIBILITY AREA



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Bureau of Reclamation, U.S. Department of Interior, 2006. *Lower Stony Creek Fish, Wildlife, and Water Use Management Plan*.

City of Orland, 2003. *Orland Area General Plan*. Adopted in March 2003.

City of Orland, 2003. *Orland General Plan Background Report.* Adopted in March 2003.

ECO-ANALYSTS, 2001. *Draft EIR for the Hunt East Property Gravel Mining Operation*. Prepared for Glenn County. October 2001.

Glenn County. *Glenn County General Plan*. Adopted June 1993.

Glenn County, 1993. *Environmental Setting Technical Paper/Glenn County General Plan Volume III*. Prepared by QUAD Consultants. January 1993.

9.0 NOISE

9.1 GENERAL PLAN REQUIREMENTS

According to the 1998 General Plan Guidelines for the State of California, the General Plan shall include a Noise Element. Local governments must analyze and quantify noise levels and the extent of noise exposure through actual measurement or the use of noise modeling. Noise level contours must be mapped and the conclusions of the element used as a basis for land use decisions. The element must include implementation measures and possible solutions to existing and foreseeable noise problems. Furthermore, the policies and standards must be sufficient to serve as a guideline for compliance with sound transmission control requirements. The noise element directly correlates to the land use, circulation, and housing elements.

9.2 CITY LOCATION

The City of Orland is located in Glenn County, approximately 18 miles west of the City of Chico, along the Interstate 5 corridor.

9.3 OVERVIEW OF EXISTING NOISE ENVIRONMENT

In addition to Interstate 5, the ambient noise environment in Orland is defined by State Route 32 (SR 32), which runs east to west directly through the middle of the city, local traffic on city streets, commercial and industrial uses, active recreation areas of parks and outdoor play areas of schools, auto racing events at the fairgrounds, and occasional railroad operations on the Western Pacific Railroad tracks. There are no airports within the Orland plan area, although the Orland Haigh Field Airport is within the City of Orland's Primary Sphere of Influence. However, the airport is located approximately ¾ of a mile to the southeast of the City so as not to appreciably affect the City of Orland ambient noise environment. Because existing traffic volumes on City streets are relatively low, the ambient noise levels in the residential areas of the City of Orland which are somewhat distant from Interstate 5 and SR 32 are low.

9.4 PURPOSE OF THE NOISE ELEMENT

The Noise Element of the City of Orland General Plan provides a basis for comprehensive local policies to control and abate environmental noise and to protect the citizens of Orland from excessive noise exposure. The fundamental goals of the Noise Element are as follows:

- To provide sufficient information concerning the community noise environment so that noise may be effectively considered in the land use planning process.
- To develop strategies for abating excessive noise exposure through cost-effective mitigation measures in combination with appropriate zoning to avoid incompatible land uses.
- To protect those existing regions of the planning area whose noise environments are deemed acceptable and also those locations throughout the community deemed "noise sensitive".
- To protect existing noise-producing commercial and industrial uses in the City of Orland from encroachment by noise-sensitive land uses.

9.5 FUNDAMENTALS OF NOISE

Noise is often described as unwanted sound. Sound is defined as any pressure variation in air that the human ear can detect. If the pressure variations occur frequently enough (at least 20 times per second), they can be heard and hence are called sound. The number of pressure variations per second is called the frequency of sound, and is expressed as cycles per second, called Hertz (Hz).

Measuring sound directly in terms of pressure would require a very large and awkward range of numbers. To avoid this, the decibel scale was devised. The decibel scale uses the hearing threshold (20 micropascals), as a point of reference, defined as 0 dB. Other sound pressures are then compared to the reference pressure, and the logarithm is taken to keep the numbers in a practical range. The decibel scale allows a million-fold increase in pressure to be expressed as 120 dB. Another useful aspect of the decibel scale is that changes in levels (dB) correspond closely to human perception of relative loudness. **Figure 9-1** shows examples of noise levels for several common noise sources and environments.

The perceived loudness of sounds is dependent upon many factors, including sound pressure level and frequency content. However, within the usual range of environmental noise levels, perception of loudness is relatively predictable, and can be approximated by weighing the frequency response of a sound level meter by means of the standardized A-weighing network. There is a strong correlation between A-weighted sound levels (expressed as dBA) and community response to noise. For this reason, the A-weighted sound level has become the standard tool of environmental noise assessment. All noise levels reported in this document are in terms of A-weighted levels.

Community noise is commonly described in terms of the "ambient" noise level, which is defined as the all-encompassing noise level associated with a given noise environment. A common statistical tool to measure the ambient noise level is the average, or equivalent, sound level (Leq), which corresponds to a steady-state A-weighted sound level containing the same total energy as a time-varying signal over a given time period (usually one hour). The Leq is the foundation of the composite noise descriptor, Ldn, and shows very good correlation with community response to noise.

The Day-Night Average Level (Ldn) is based upon the average noise level over a 24-hour day, with a +10 decibel weighing applied to noise occurring during nighttime (10:00 p.m. to 7:00 a.m.) hours. The nighttime penalty is based upon the assumption that people react to nighttime noise exposures as though they were twice as loud as daytime exposures. Because Ldn represents a 24-hour average, it tends to disguise short-term variations in the noise environment. Please refer to **Appendix B**, Acoustical Terminology.

FIGURE 9-1:
TYPICAL A-WEIGHTED SOUND LEVELS OF COMMON NOISE SOURCES

Loudness Ratio Level	A-Weighted Sound Level (dBA)	
128	130	Threshold of pain
64	120	Jet aircraft take-off at 100 feet
32	110	Riveting machine at operators position
16	100	Cut-off saw at operators position
8	90	Bulldozer at 50 feet
4	80	Diesel locomotive at 300 feet
2	70	Commercial jet aircraft interior during flight
1	60	Normal conversation speech at 5-10 feet
1/2	50	Open office background level
1/4	40	Background level within a residence
1/8	30	soft whisper at 2 feet
1/16	20	Interior of recording studio

Noise in the community has often been cited as being a health problem, not in terms of actual physiological damages such as hearing impairment, but in terms of inhibiting general well-being and contributing to undue stress and annoyance. The health effects of noise in the community arise from interference with human activities such as sleep, speech, recreation and tasks demanding concentration or coordination. When community noise interferes with human activities or contributes to stress, public annoyance with the noise source increases, the acceptability of the environment for people decreases. This decrease in acceptability and the threat to public well-being are the bases for land use planning policies preventing exposures to excessive community noise levels.

To control noise from fixed sources which have developed from processes other than zoning or land use planning, many jurisdictions have adopted community noise control ordinances. Such ordinances are intended to abate noise nuisances and to control noise from existing sources. They may also be used as performance standards to judge the creation of a potential nuisance, or potential encroachment of sensitive uses upon noise-producing facilities. Community noise control ordinances are generally designed to resolve noise problems on a short-term basis (usually by means of hourly noise level criteria), rather than on the basis of 24-hour or annual cumulative noise exposures.

In addition to the A-weighted noise level, other factors should be considered in establishing criteria for noise sensitive land uses. For example, sounds with noticeable tonal content such as whistles, horns, droning or high-pitched sounds may be more annoying than the A-weighted sound level alone suggests. Many noise standards apply a penalty, or correction, of 5 dBA to such sounds. The effects of unusual tonal content are generally more of a concern at nighttime, when residents may notice the sound in contrast to low levels of background noise.

Because many rural residential areas experience very low noise levels, residents may express concern about the loss of "peace and quiet" due to the introduction of a sound which was not audible previously. In very quiet environments, the introduction of virtually any change in local activities will cause an increase in noise levels. A change in noise level and the loss of "peace and quiet" is the inevitable result of land use or activity changes in such areas. Audibility of a new noise source and/or increases in noise levels within recognized acceptable limits are not usually considered to be significant noise impacts, but these concerns should be addressed and considered in the planning and environmental review processes.

9.6 EXISTING NOISE ENVIRONMENT

The major noise sources in Orland consist of Interstate 5 and local traffic on City streets, commercial and industrial uses, active recreation areas of parks, outdoor play areas of schools, auto racing events at the fairgrounds, and occasional railroad operations on the California Northern Railroad. Each of these noise sources is discussed individually below.

ROADWAYS

The Federal Highway Administration Highway Traffic Noise Prediction Model (FHWA-RD-77-108) with the Calveno vehicle noise emission curves was used to predict traffic noise levels within the Orland City Limits. The FHWA Model is the traffic noise prediction model currently preferred by the Federal Highway Administration, the State of California Department of Transportation (Caltrans), and most city and county governments, for use in traffic noise assessment. Although the FHWA Model is in the process of being updated by a more sophisticated traffic noise prediction model, the use of RD-77-108 is considered acceptable for the development of General Plan traffic noise predictions.

Interstate 5 and Highway 32 (Walker St.)

Interstate 5 and Highway 32 are the two most heavily traveled roadways in the City of Orland. The FHWA Model was used with existing traffic data to develop Ldn contours for Interstate 5 and Highway 32, as well as other major roadways in the City of Orland. The FHWA Model input data for those roadways is provided in Appendix A. The predicted Ldn at a reference distance of 100 feet and the distances from the centerlines of the major roadways to the 60 and 65 dB Ldn contours are summarized in **Table 1**.

To check the accuracy of the FHWA Model in predicting noise levels for Interstate 5, continuous noise level measurements were conducted at the highway right of way on January 21-22, 2008, at location "B" identified on **Figure 2**. The noise measurement results from that location are provided in Appendix B. The 24-hour noise level measurements indicate that the FHWA Model provided a reasonably accurate assessment of existing Interstate 5 traffic noise levels in Orland.

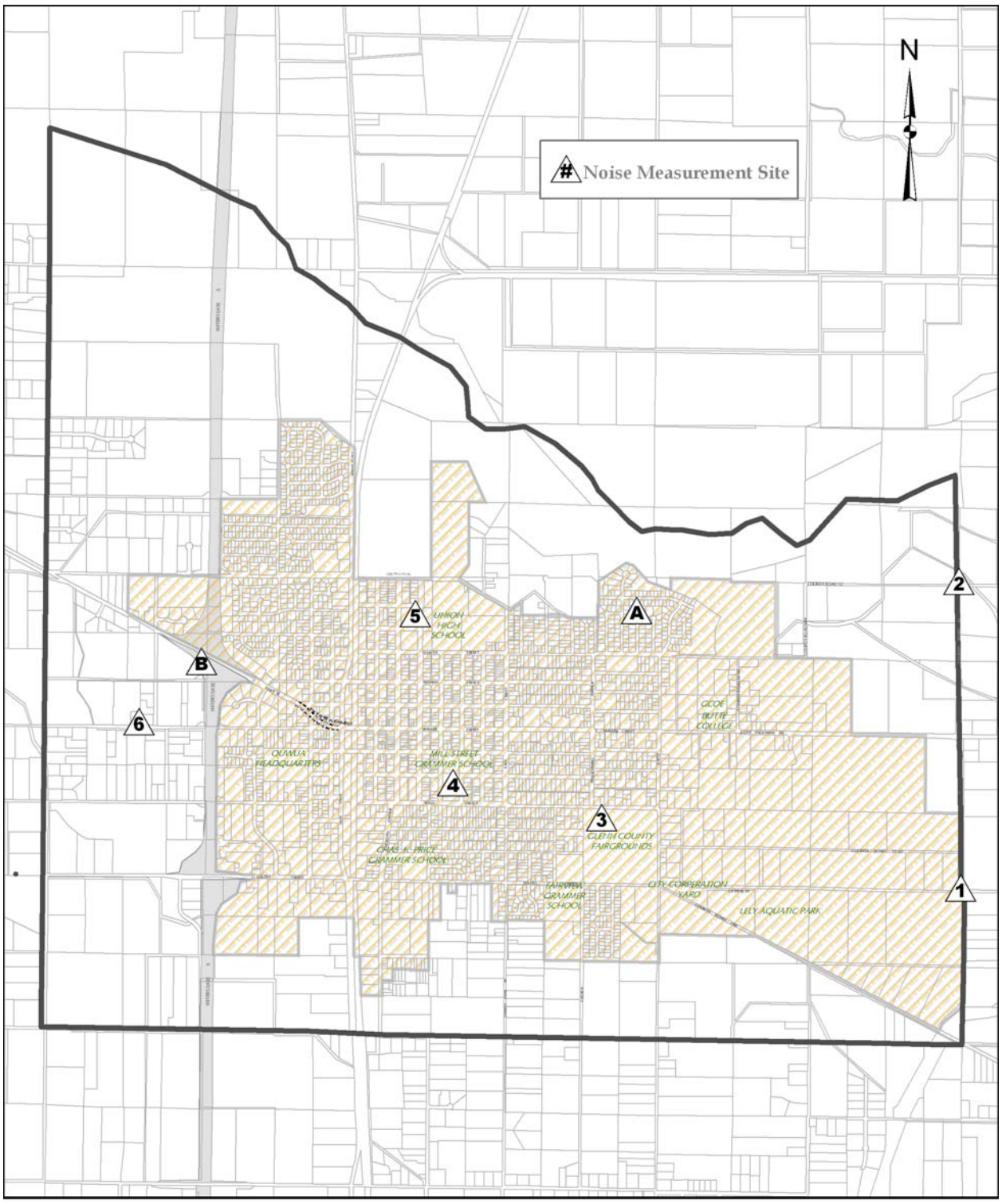

FIGURE 9-2

Noise Measurement Locations

TABLE 9-1:
EXISTING TRAFFIC NOISE LEVELS

Segment	Roadway Name	Segment Description	Ldn @ 100 feet from C/L	Distance to Ldn Contours, feet		
				70 dB Ldn	65 dB Ldn	60 dB Ldn
1	Interstate 5	Within Orland City Limits	77	285	613	1321
2	State Route 32	West of County Road HH	63	33	72	155
3		County Road HH to I-5 SB Ramps	63	34	73	157
4		I-5 NB Ramps to 6th Street	64	38	83	178
5		6th Street to East Street	65	47	101	218
6		East Street to Papst Avenue	65	50	107	230
7		Papst Avenue to County Road N	64	43	92	199
8		East of County Road N	64	43	92	198
9	6th Street	Trinity Street to Shasta Street	59	18	38	83
10		North of South Street	58	16	34	74
11		South of South Street	57	14	31	67
12	8th Street	North of South Street	51	5	11	25
13	Almond Way	6th Street to 8th Street	51	5	11	24
14	Cortina Drive	North of South Street	49	4	9	19
15	CR-16	West of CR-HH	51	6	12	27
16	CR-HH	South of Newville Road	50	5	11	23
17	CR-M 1/2	North of Walker Street	51	5	11	23
18	CR-N	North of South Street	44	2	4	8
19	East Street	North of Walker Street	55	10	20	44
20		South of Walker Street	56	11	24	51
21		North of South Street	54	9	20	42
22	Fifth Street	North of Walker Street	50	4	9	20
23		South of Walker Street	52	7	14	30
24	Fourth Street	North of Walker Street	52	6	13	27
25		South of Walker Street	54	9	19	40
26		Mill Street to Yolo Street	52	6	14	29
27	Monterey Street	5th Street to 6th Street	52	7	14	30
28	Newville Road	West of CR-HH	58	15	33	71
29	Papst Avenue	South of South Street	52	6	13	28
30	Railroad Ave	North of South Street	54	8	18	38
31	Second Street	North of Walker Street	47	3	7	15
32		South of Walker Street	49	4	9	19
33	Shasta Street	Melanie Circle to Woodward	49	4	8	18
34	South Street	West of Papst Avenue	54	8	18	38
35		West of CR-N	51	5	11	24
36	Tehama Street	5th Street to 6th Street	53	7	15	32
37		Northeast of Swift Street	53	7	15	33
38	Third Street	North of Walker Street	51	5	12	25
39		South of Walker Street	52	6	13	28
40	Woodward	North of Walker Street	54	8	17	38
41	Yolo Street	West of Papst Avenue	51	5	12	25

Source: Bollard Acoustical Consultants, Inc., 2007

RAILROADS

According to the Railroad Atlas of North America, the railroad tracks in Orland are operated by the California Northern Railroad (CFNR). The tracks run from north to south and generally parallel 6th Street (Hwy 99 West) as shown on **Figure 9-2**.

According to noise level measurements and field observations conducted by Bollard Acoustical Staff, this line has relatively few train passages per day. Due to the low number of existing daily railroad operations on the CFNR, railroad noise generation in Orland is not expected to exceed accepted land-use compatibility criteria at noise-sensitive land uses in the City. It is recognized, however, that the use of the railroad warning horns at the roadway crossings results in brief periods of elevated noise levels in the proximity of the tracks.

It is difficult to report existing, or predict future, railroad noise exposure in the City of Orland without knowing if, or to what degree, railroad activity currently exists or may change in the future. **Table 9-2** was developed to estimate the distances to the 60 and 65 dB Ldn railroad noise contours for various numbers of daily trains in Orland. The **Table 9-2** data assume that, since this is not a main line, additional railroad operations in Orland would likely occur primarily during daytime hours (7 am to 10 pm). The **Table 9-2** data also assume a mean railroad sound exposure level (SEL) of 100 dB at a distance of 100 feet.

TABLE 9-2:
RAILROAD NOISE EXPOSURE AS A FUNCTION OF THE NUMBER OF DAILY TRAINS

Number of daily Trains	Ldn at 100 feet, dB		Distance to 60 dB Ldn Noise Contours	
	Without Horn	With Horn	Without Horn	With Horn
1	51	56	24	51
2	54	59	38	81
3	55	60	49	106
5	58	63	69	150
7	59	64	87	187
10	61	66	110	237

Note: The predicted distances to the Ldn contours assume a mean railroad sound exposure level of 100 dB without horn usage and 105 dB with horn usage at a reference distance of 100 feet from the tracks and that all train operations occur during daytime hours.

NON-TRANSPORTATION NOISE SOURCES

The production of noise is a result of many processes and activities, even when the best available noise control technology is applied. Noise exposures within industrial facilities are controlled by Federal and State employee health and safety regulations (OSHA), but exterior noise levels may exceed locally acceptable standards. Commercial, recreational and public service facility activities can also produce noise which affects adjacent sensitive land uses.

From a land use planning perspective, fixed-source noise control issues focus upon two goals: to prevent the introduction of new noise-producing uses in noise-sensitive areas, and to prevent

encroachment of noise-sensitive uses upon existing noise-producing facilities. The first goal can be achieved by applying noise performance standards to proposed new noise-producing uses. The second goal can be met by requiring that new noise-sensitive uses in proximity to noise-producing facilities include mitigation measures to ensure compliance with those noise performance standards.

Descriptions of existing fixed noise sources in the City of Orland are provided below. These uses are intended to be representative of the relative noise generation of such uses, and are intended to identify specific noise sources which should be considered in the review of development proposals. Site-specific noise analyses should be performed where noise sensitive land uses are proposed in proximity to these (or similar) noise sources, or where similar sources are proposed to be located near noise-sensitive land uses.

Musco Family Olive Company

Operations at the Musco Family Olive Co. facility consist of the processing of olives. The plant is located in the vicinity of Fifth and Swift Streets. According to Mr. Matt Koball of Musco Family Olive Co., operations at this facility typically occur in 8-hour shifts, 5 days per week, but the plant is not precluded from 24-hour operations. Typical noise-producing equipment used at this facility consists of forklifts, pumps, and boilers, with much of the plant equipment housed indoors. The plant generates approximately 1 truck trip on a typical day with more during harvest time. Mr. Koball was unaware of any recent noise complaints associated with the operation of this facility, and the plant has no current plans for expansion.

Duche Nut Co. Inc. - 1502 Railroad Avenue

Operations at the Duche Nut Company consist of processing almonds. According to Mr. John Willson of Duche, operations at this facility occur year round, but are heaviest during almond harvest season, which is late summer through the end of the year. Duche normally operates two 8-hour shifts, 5 days per week, but is not precluded from operating 24-hours per day, seven days per week during busy times. Typical noise-producing equipment at this facility includes fans blowers, overhead conveyors, truck traffic and forklifts. The plant generates approximately 10 truck trips on a typical busy day during harvest season. Mr. Bryant was unaware of any noise recent complaints associated with the operation of this facility, and there are currently no specific plans for expansion of this facility which would cause noise levels to increase appreciably in the community.

Baldwin Minkler Farms -320 E. South Street

Operations at the Baldwin-Minkler Farms facility consist of processing almonds. According to Mr. Bill Minkler, operations at this facility are heaviest during almond harvest season, but regular operations occur year-round. Baldwin-Minkler typically operates one 8-hour shift, 5 days per week, with more intensified operations during harvest season, and they are not precluded from operating 24-hours per day if necessary to meet demand. Most of the noise producing equipment associated with this facility is enclosed, but an air-handling/dust collection system is located outdoors and generates noise. In addition, the plant generates approximately 5 truck trips on a typical busy day during harvest season. Mr. Minkler was unaware of any noise recent complaints associated with the operation of this facility, and there are currently no specific plans for expansion of this facility which would cause noise levels to increase appreciably in the community.

Fairground Racing Events

The Glenn County Fairgrounds are located at the intersection of South Street and Papst Avenue, and auto racing events typically occur weekly at the fairgrounds on Saturday nights between April and October. The events usually begin about 7 p.m. and there is an 11 p.m. curfew on the racing events. The race track is less than 1/4 mile, and standard stock car type racing events are held at this venue. According to a contract with the racing promoter, the event is not allowed to generate noise levels in excess of 95 dB at a 100-foot radius, and the promoter is required to conduct noise monitoring during the events. Occasional noise complaints have been received regarding the racing events in the past, but the complaints do not appear to be widespread, and are reportedly handled by providing information about the events to the complainant.

General Service Commercial & Light Industrial Uses

Noise sources associated with service commercial uses such as automotive and truck repair facilities, tire installation centers, car washes, loading docks, corporation yards, hardware and feed stores, are found at various locations within the City of Orland. Many of these sources are located on Hwy 32, 6th St, Railroad Avenue, 3rd Street, 4th Street, and County Road 200. The noise emissions of these types of uses are dependant on many factors, and are therefore, difficult to quantify precisely. Nonetheless, noise generated by the these uses contributes to the ambient noise environment in the immediate vicinity of these uses, and should be considered where either new noise-sensitive uses are proposed nearby or where similar uses are proposed in existing residential areas.

Parks and School Playing Fields

There are several park and school uses within the City limits. These uses are spread throughout the City. Noise generated by these uses depends on the age and number of people utilizing the respective facility at a given time, and the types of activities they are engaged in. School playing field activities tend to generate more noise than those of neighborhood parks, as the intensity of school playground usage tends to be much higher. At a distance of 100 feet from an elementary school playground being used by 100 students, average and maximum noise levels of 60 and 75 dB, respectively, can be expected. At organized events such as high-school football games with large crowds and public address systems, the noise generation is often significantly higher. As with service commercial uses, the noise generation of parks and school playing fields is variable.

Airports

The City of Orland is separated from the Orland Airport, which is operated by Glenn County, by a considerable distance. Although occasional aircraft overflights of the City occur, the City of Orland is located well beyond the noise impact zones of this airport, as illustrated by the noise contours contained within the Airport's Land Use Plan. That Plan is incorporated into this background document by reference. As a result, the existing ambient noise environment of the City of Orland is not significantly influenced by aircraft noise.

Community Noise Survey

To quantify existing noise levels in the quieter parts of the City of Orland, a community noise survey was performed at seven locations in this City which are removed from major noise

sources. These survey locations were chosen to be in close proximity to those used in the 2002 General Plan Update noise survey. One of the seven locations was monitored over a continuous 24-hour period, while the other six locations were each monitored for two short term periods during daytime hours and one during nighttime hours. The community noise survey noise measurement locations are shown on **Figure 9-2**. The results of the community noise survey are provided in T**able 9-3**.

TABLE 9-3:
COMMUNITY NOISE MEASUREMENT SURVEY RESULTS

Site	Location	Dates	Time Period	Leq	Lmax	Estimated Ldn	Sources
1	SE Corner of N St. and 16 St.	1-21-08	Morning	51	60	50	N St. Traffic
		1-22-08	Afternoon	53	61		Faint Distant Traffic (Hwy 32)
		1-21-08	Nighttime	44	49		
2	NW Corner of N St. and 12 St.	1-22-08	Morning	52	63	53	12th St. Traffic
		1-21-08	Afternoon	52	66		
		1-21-08	Nighttime	48	53		
3	On Fair Grounds South of East Yolo St.	1-22-08	Morning	51	63	55	East Yolo Traffic
		1-22-08	Afternoon	54	64		
		1-21-08	Nighttime	48	59		
4	Library Park	1-22-08	Morning	55	64	56	Local Traffic
		1-15-08	Afternoon	56	62		Faint Distant Traffic (I-5)
		1-22-08	Nighttime	49	60		
5	Spence Park	1-22-08	Morning	55	66	56	Local Traffic
		1-22-08	Afternoon	54	64		Faint Distant Traffic (I-5)
		1-21-08	Nighttime	49	57		
6	West side of H1/2 St.	1-22-08	Morning	53	62	56	H1/2 St. Traffic
		1-22-08	Afternoon	52	89		I-5 Traffic
		1-21-08	Nighttime	45	59		
A	Woodhaven Drive Residence	1-21/22-08	Daytime	55	74	48	Local Traffic, barking dog
			Nighttime	49	67		

Source: Bollard Acoustical Consultant, Inc.

9.7 NOISE MITIGATION OPTIONS

Any noise problem may be considered as being composed of three basic elements: the noise source, a transmission path, and a receiver. The appropriate acoustical treatment for a given project should consider the nature of the noise source and the sensitivity of the receiver. The problem should be defined in terms of appropriate criteria (Ldn, Leq, or Lmax), the location of the sensitive receiver (inside or outside), and when the problem occurs (daytime or nighttime). Noise control techniques should then be selected to provide an acceptable noise environment for the receiving property while remaining consistent with local aesthetic standards and practical structural and economic limits. Fundamental noise control techniques include the following:

USE OF SETBACKS

Noise exposure may be reduced by increasing the distance between the noise source and the receiving use. Setback areas can take the form of open space, frontage roads, recreational areas, storage yards, etc. The available noise attenuation from this technique is limited by the characteristics of the noise source, but is generally about 4 to 6 dB per doubling of distance from the source.

USE OF BARRIERS

Shielding by barriers can be obtained by placing walls, berms or other structures, such as buildings, between the noise source and the receiver. The effectiveness of a barrier depends upon blocking line-of-sight between the source and receiver, and is improved with increasing the distance the sound must travel to pass over the barrier as compared to a straight line from source to receiver. The difference between the distance over a barrier and a straight line between source and receiver is called the "path length difference," and is the basis for calculating barrier noise reduction.

Barrier effectiveness depends upon the relative heights of the source, barrier and receiver. In general, barriers are most effective when placed close to either the receiver or the source. An intermediate barrier location yields a smaller path-length-difference for a given increase in barrier height than does a location closer to either source or receiver.

For maximum effectiveness, barriers must be continuous and relatively airtight along their length and height. To ensure that sound transmission through the barrier is insignificant, barrier mass should be about 4 lbs./square foot, although a lesser mass may be acceptable if the barrier material provides sufficient transmission loss. Satisfaction of the above criteria requires substantial and well-fitted barrier materials, placed to intercept line of sight to all significant noise sources. Earth, in the form of berms or the face of a depressed area, is also an effective barrier material.

Transparent noise barriers may be employed, and have the advantage of being aesthetically pleasing in some environments. Transparent barrier materials such as laminated glass and polycarbonate provide adequate transmission loss for most highway noise control applications. Transparent barrier materials may be flammable, and may be easily abraded. Some materials may lose transparency upon extended exposure to sunlight. Maintaining aesthetic values requires that transparent barriers be washed on a regular basis. These properties of transparent barrier materials require that the feasibility of their use be considered on a case-by-case basis.

The attenuation provided by a barrier depends upon the frequency content of the source. Generally, higher frequencies are attenuated (reduced) more readily than lower frequencies.

This results because a given barrier height is relatively large compared to the shorter wavelengths of high frequency sounds, while relatively small compared to the longer wavelengths of the frequency sounds. The effective center frequency for traffic noise is usually considered to be 550 Hz. Railroad engines, cars and horns emit noise with differing frequency content, so the effectiveness of a barrier will vary for each of these sources. Frequency analyses are necessary to properly calculate barrier effectiveness for noise from sources other than highway traffic.

There are practical limits to the noise reduction provided by barriers. For highway traffic noise, a 5 to 10 dB noise reduction may often be reasonably attained. A 15 dB noise reduction is sometimes possible, but a 20 dB noise reduction is extremely difficult to achieve. Barriers usually are provided in the form of walls, berms, or berm/wall combinations. The use of an earth berm in lieu of a solid wall may provide up to 3 dB additional attenuation over that attained by a solid wall alone, due to the absorption provided by the earth. Berm/wall combinations offer slightly better acoustical performance than solid walls, and are often preferred for aesthetic reasons.

SITE DESIGN

Buildings can be placed on a project site to shield other structures or areas, to remove them from noise-impacted areas, and to prevent an increase in noise level caused by reflections. The use of one building to shield another can significantly reduce overall project noise control costs, particularly if the shielding structure is insensitive to noise. As an example, carports or garages can be used to form or complement a barrier shielding adjacent dwellings or an outdoor activity area. Similarly, one residential unit can be placed to shield another so that noise reduction measures are needed for only the building closest to the noise source. Placement of outdoor activity areas within the shielded portion of a building complex, such as a central courtyard, can be an effective method of providing a quiet retreat in an otherwise noisy environment. Patios or balconies should be placed on the side of a building opposite the noise source, and "wing walls" can be added to buildings or patios to help shield sensitive uses.

Another option in site design is the placement of relatively insensitive land uses, such as commercial or storage areas, between the noise source and a more sensitive portion of the project. Examples include development of a commercial strip along a busy arterial to block noise affecting a residential area, or providing recreational vehicle storage or travel trailer parking along the noise-impacted edge of a mobile home park. If existing topography or development adjacent to the project site provides some shielding, as in the case of an existing berm, knoll or building, sensitive structures or activity areas may be placed behind those features to reduce noise control costs.

Site design should also guard against the creation of reflecting surfaces which may increase onsite noise levels. For example, two buildings placed at an angle facing a noise source may cause noise levels within that angle to increase by up to 3 dB. The open end of "U"-shaped buildings should point away from noise sources for the same reason. Landscaping walls or noise barriers located within a development may inadvertently reflect noise back to a noise-sensitive area unless carefully located. Avoidance of these problems while attaining an aesthetic site design requires close coordination between local agencies, the project engineer and architect, and the noise consultant.

BUILDING DESIGN

When structures have been located to provide maximum noise reduction by barriers or site design, noise reduction measures may still be required to achieve an acceptable interior noise

environment. The cost of such measures may be reduced by placement of interior dwelling unit features. For example, bedrooms, living rooms, family rooms and other noise-sensitive portions of a dwelling can be located on the side of the unit farthest from the noise source.

Bathrooms, closets, stairwells and food preparation areas are relatively insensitive to exterior noise sources, and can be placed on the noisy side of a unit. When such techniques are employed, noise reduction requirements for the building facade can be significantly reduced, although the architect must take care to isolate the noise impacted areas by the use of partitions or doors.

In some cases, external building facades can influence reflected noise levels affecting adjacent buildings. This is primarily a problem where high-rise buildings are proposed, and the effect is most evident in urban areas, where an "urban canyon" may be created. Bell-shaped or irregular building facades and attention to the orientation of the building can reduce this effect.

NOISE REDUCTION BY BUILDING FACADES

When interior noise levels are of concern in a noisy environment, noise reduction may be obtained through acoustical design of building facades. Standard residential construction practices provide 10-15 dB noise reduction for building facades with open windows, and approximately 25 dB noise reduction when windows are closed. Thus a 25 dB exterior-to-interior noise reduction can be obtained by the requirement that building design include adequate ventilation systems, allowing windows on a noise-impacted facade to remain closed under any weather condition.

Where greater noise reduction is required, acoustical treatment of the building facade is necessary. Reduction of relative window area is the most effective control technique, followed by providing acoustical glazing (thicker glass or increased air space between panes) in low air infiltration rate frames, use of fixed (non-movable) acoustical glazing or the elimination of windows. Noise transmitted through walls can be reduced by increasing wall mass (using stucco or brick in lieu of wood siding), isolating wall members by the use of double- or staggered- stud walls, or mounting interior walls on resilient channels. Noise control for exterior doorways is provided by reducing door area, using solid-core doors, and by acoustically sealing door perimeters with suitable gaskets. Roof treatments may include the use of plywood sheathing under roofing materials.

Whichever noise control techniques are employed, it is essential that attention be given to installation of weather-stripping and caulking of joints. Openings for attic or subfloor ventilation may also require acoustical treatment; tight-fitting fireplace dampers and glass doors may be needed in aircraft noise-impacted areas.

Design of acoustical treatment for building facades should be based upon analysis of the level and frequency content of the noise source. The transmission loss of each building component should be defined, and the composite noise reduction for the complete facade calculated, accounting for absorption in the receiving room. A one-third octave band analysis is a definitive method of calculating the A-weighted noise reduction of a facade.

A common measure of transmission loss is the Sound Transmission Class (STC). STC ratings are not directly comparable to A-weighted noise reduction, and must be corrected for the spectral content of the noise source. Requirements for transmission loss analyses are outlined by Title 24 of the California Code of Regulations.

USE OF VEGETATION

Trees and other vegetation are often thought to provide significant noise attenuation. However, approximately 100 feet of dense foliage (so that no visual path extends through the foliage) is required to achieve a 5 dB attenuation of traffic noise. Thus the use of vegetation as a noise barrier should not be considered a practical method of noise control unless large tracts of dense foliage are part of the existing landscape.

Vegetation can be used to acoustically "soften" intervening ground between a noise source and receiver, increasing ground absorption of sound and thus increasing the attenuation of sound with distance. Planting of trees and shrubs is also of aesthetic and psychological value, and may reduce adverse public reaction to a noise source by removing the source from view, even though noise levels will be largely unaffected. It should be noted, however, that trees planted on the top of noise control berms can actually slightly degrade the acoustical performance of the barrier. This effect can occur when high frequency sounds are diffracted (bent) by foliage and directed downward over a barrier.

In summary, the effects of vegetation upon noise transmission are minor, and are primarily limited to increased absorption of high frequency sounds and to reducing adverse public reaction to the noise by providing aesthetic benefits.

9.8 REFERENCES

Bryant, Ron. Duche Nut Compnay. Personal Communication. January 2002.

City of Orland. *City of Orland General Plan.* 2003.

City of Orland General Plan Update Background Report. *Circulation Element Background Report.* kdAnderson Transportation Engineers. December 2001.

Federal Highway Administration Highway Traffic Noise Prediction Model (RD-77-108). 1977.

McFadden, Otis. Fire-Trol Holdings, LLC. Personal Communication, January 2002.

Minkler, Bill. Baldwin-Minkler Farms. Personal Communication, January 2002.

Orland Airport Comprehensive Land Use Plan.

Vlach, Joe. Musco Family Olive Company. Personal Communication , January 2002.

Walgenbach, Jake. Glenn County Fairgrounds. Personal Communication, January 2002.

10.0 POPULATION AND HOUSING

10.1 GENERAL PLAN RELEVANCE

This chapter provides background demographic and housing stock data for the City of Orland. Data contained in this section will be useful in developing specific General Plan elements, including the housing and land use elements.

10.2 POPULATION

Table 10-1 shows the population growth of the City of Orland and Glenn County from 1990 to 2007.

TABLE 10-1:
POPULATION OF ORLAND AND GLENN COUNTY, 1990-2007

Year	City of Orland		Glenn County	
	Population	% Change	Population	% Change
1990	5,052	-	24,798	-
1991	5,175	2.4%	25,200	1.6%
1992	5,350	3.4%	25,650	1.8%
1993	5,400	0.9%	25,900	1.0%
1994	5,475	1.4%	26,100	0.8%
1995	5,600	2.3%	26,350	1.0%
1996	5,650	0.9%	26,650	1.1%
1997	5,675	1.4%	26,800	0.6%
1998	5,750	1.3%	26,850	0.2%
1999	5,775	0.4%	26,850	0.0%
2000	6,281	8.8%	26,453	-1.5%
2001	6,343	1.0%	26,719	1.0%
2002	6,379	0.6%	26,996	1.0%
2003	6,465	1.3%	27,424	1.6%
2004	6,544	1.2%	27,859	1.6%
2005	6,692	2.3%	28,271	1.5%
2006	6,992	4.5%	28,651	1.3%
2007	7,189	2.8%	28,915	0.9%

Sources: California Department of Finance, Demographic Research Unit.
1990 and 2000 figures from U.S. Bureau of the Census.

As the 2000 U.S. Census figures indicate, the population of the City of Orland grew significantly during the 1990s, exceeding the California Department of Finance estimated 2000 population of 5,875. This accounts for the large increase in the growth rate for 2000. While City population growth has increased every year for the past 20 years, there have been significant fluctuations in the growth rate from year to year.

County population growth in the 1990s was slower than that projected by the California Department of Finance, which had estimated a 2000 population of 27,100. This accounts for the apparent decrease in County population in 2000, and does not necessarily mean a population decline occurred in the County. Over the past 20 years, population in the County has grown more slowly than that of Orland, but at a steadier rate. From 1990 to 2000, the population of the City increased by 24.3 percent, an average annual increase of 2.2 percent. By comparison, the population of Glenn County increased by just 6.7 percent during the same time period. Between 2000 and 2005 the City of Orland and Glenn County grew by 1.3 percent and 1.4 percent, respectively.

FUTURE POPULATION GROWTH

The first step in estimating the amount of residential land needed for the City of Orland during the planning period covered by the updated General Plan is to project the City's population during the planning period. Population projections for Orland were developed based upon historical population growth rates, as derived from figures in **Table 10-1**. Three growth rates were used to develop the population estimates. The "High" growth rate is a 2.6 percent average annual growth rate, which was the growth rate of the City's population from 1970 to 2000. The "Medium" rate is a 2.2 percent average growth rate, which was the growth rate of the City's population from 1990 to 2000, the most recent years. The "Low" growth rate is a 1.8 percent average annual growth rate. This was an arbitrarily selected rate, which was obtained by subtracting the Medium rate from the High rate, then subtracting the difference from the Medium rate.

For the 2003 General Plan, the Census 2000 population of 6,281 was used as the baseline for the projections. The actual average annual growth rate was 2.1 percent between 2000 and 2007, falling just below the Medium projected growth rates. However, between the time of General Plan adoption in 2003 and 2007, the rate of growth was 2.8 percent. An average annual population increase of 2.8 percent above the High projection made in the existing General Plan. The population of Orland in January of 2007, as estimated by the California Department of Finance, was 7,189. The estimated 2007 population is used in **Table 10-2** below as the baseline for the projections over the General Plan 20 year period.

TABLE 10-2:
GENERAL PLAN POPULATION PROJECTIONS FOR ORLAND, 2008-2028

Growth Rate	Orland Population				
	2008	2013	2018	2023	2028
High (2.6%)	7,376	8,386	9,534	10,840	12,324
Medium (2.2%)	7,347	8,192	9,133	10,183	11,354
Low (1.8 %)	7,318	8,001	8,748	9,564	10,456

10.3 DEMOGRAPHICS

The 2000 U.S. Census provides some data on the City's demographic characteristics. Of the 6,281 people counted as residents of Orland in 2000, 49.1 percent were males, and 50.9 percent were females. Thus, the population was virtually evenly divided between genders.

Table 10-3 below presents the racial composition of City residents:

TABLE 10-3:
CITY POPULATION DISTRIBUTION BY RACE, 2000

Race	Population Distribution	Percent of Population
White	4,263	67.9
Black	37	0.6
American Indian	98	1.6
Asian	119	1.9
Hawaiian/Pacific Islander	11	0.2
Other	1,514	24.1
Two or more	239	3.8
Hispanic/Latino (of any race)	2,340	-
Total	**6,281**	100.0

Figures may not equal totals due to rounding.

For the purposes of the Census, Hispanics/Latinos are considered independently of the single race categories listed above.

Source: 2000 U.S. Census

As of the 2000 Census, the City had 2,340 residents that are Hispanic, an ethnic group that can be associated with several races. Hispanics comprised 37.3 percent of the City's population. Most Hispanic residents are Mexican in descent. If Hispanics were counted as a separate racial group, the percentage of the City population that is white would decrease to 57.4 percent, with the remaining 53 percent divided among other racial groups. The percentage of Hispanics in Orland is similar to the percentage in California, which is 32.4 percent.

The 2000 age distribution of the City's population is shown below in **Table 10-4**. Compared with the state as a whole, the population of Orland is slightly younger. The median age in Orland is 31.0, compared with 33.3 for the state. Approximately 35.4 percent of Orland's population is 19 years old or younger, compared with 30.1 percent of the state's population. However, the City also has a greater proportion of people age 65 and over than the state (13.2 percent vs. 10.2 percent). In contrast, approximately 37.7 percent of the City's population is ages 25-54, compared with 44.4 percent of the state's population. Thus, when compared to the state population, Orland's age distribution is skewed slightly toward both the younger and the older ages.

TABLE 10-4:
CITY POPULATION DISTRIBUTION BY AGE, 2000

Age	Population Distribution	Percent of Population
14 and under	1,704	27.1
15-19	521	8.3
20-24	435	6.9
25-34	828	13.2
35-44	894	14.2
45-54	644	10.3
55-64	427	6.8
65 and over	828	13.2

Source: 2000 US Census

Table 10-5 shows the educational attainment of the Orland population age 25 years or over, based upon the 2000 U.S. Census. Approximately 61.9 percent of Orland residents in 2000 were high school graduates or higher, compared with 76.8 percent of the state population. Only 7.9 percent of Orland residents had a bachelor's degree or higher, while 26.6 percent of the state population had such degrees.

TABLE 10-5:
EDUCATIONAL ATTAINMENT, CITY OF ORLAND, 2000

Educational Level	Percent of City Population*
Less than ninth grade	19.1
Ninth to twelfth grade, no diploma	19.9
High school graduate (includes equivalency)	25.1
Some college, no degree	23.1
Associate degree	5.7
Bachelor's degree	5.6
Graduate or professional degree	2.3

** City population 25 years of age and over. Source: 2000 US Census*

According to 2000 U.S. Census figures, the median household income for the City of Orland was $27,973, which was below both the Glenn County median of $32,107 and the statewide median of $47,493. More recent income data for Orland is not available. According to the federal Bureau of Economic Analysis, the median personal income for Glenn County was $22,561, as compared to $36,936 for the state.

Median incomes are not necessarily indicative of the standard of living in an area. It is possible for a region to have a high standard of living, but a low median household income. This could be due to a favorable environment or lower cost of living expenses, which can increase the quality of life (Center for Economic Development, 2001).

Another indicator of the economic status of a population is the poverty rate. According to the 2000 U.S. Census, the poverty rate in Orland was 19.0 percent. This is above the poverty rate for Glenn County, which was 18.1 percent, and above the statewide rate of 14.2 percent.

10.4 HOUSING STOCK

In 2003, the City of Orland developed the Housing Element of its General Plan, and subsequently adopted it in February 2004. The Housing Element describes housing needs and sets forth goals and implementation measures intended to address housing needs in a manner consistent with the overall economic and social values of the City, while achieving the State goal of accommodating the housing needs of Californians at all economic levels. It provides a framework for achieving these goals in a timely and orderly manner. The Housing Element is the City's official response to the findings by the State Legislature that availability of decent housing and a suitable living environment for every Californian is a high priority. By identifying local housing needs, adopting appropriate goals and policies, and providing local legislation and programs to meet these needs, City government may be more effective in dealing with the housing needs of its residents.

The Housing Element relied heavily upon 2000 U.S. Census data. Other housing information was found on the California Department of Finance (DOF) website, and it is used in the discussion below.

Table 10-6 provides data on housing units and occupancy in Orland for 2000 and 2007. The percentage of vacant units in Orland has increased slightly from 4.7 percent in 2000 to 5.1 percent in 2007. This could be accounted for in the large increase (12 percent) in the overall number of housing units available. A notable change is the average number of persons per household, which has increased from 2.86 in 2000 to 2.91 in 2007. One possible factor in this change could be an increase in the number of households with families.

TABLE 10-6:
COMPARISON OF GENERAL DATA RELATED TO ORLAND POPULATION, VACANCY RATES, AND PERSONS PER HOUSEHOLD (2000 AND 2007)

	2000	2007	% Change
Total Population	6,281	7,189	15
Group Quarters	24	38	58
Households	6,257	7,151	14
Total Housing Units	2,309	2,585	12
Occupied	2,190	2,452	12
Vacant[1]	109	133	22
% Vacant	4.7	5.1	9
Persons Per Household	2.86	2.92	2

[1] Excludes units for seasonal, recreational or occasional use.

Source: California Department of Finance Table E-5.

Total housing units are the total number of single-family and multiple-family dwellings located within a given jurisdiction. According to the Department of Finance, there are 2,585 housing units in Orland. This is an increase of 276 units from 2000, an increase of approximately 12 percent or an average increase of approximately 39 units per year. **Table 10-7** compares housing units by dwelling type between 2000 and 2007. In general, while the total number of housing units has significantly increased, the composition of housing unit types has remained similar between 2000 and 2007. Significant increases in duplex and townhouse units have occurred, while the number of single-family residences has kept up with population growth. The number of mobile homes and trailers dropped significantly in the comparison period. It should be noted, however, that the annexation of the Black Butte Mobile Home Park in 2007 has increased the number of mobile homes in the City of Orland by 30 (7.4 acres). These additional mobile homes were not included into the Department of Finance figures used for the projections below because the Department of Finance figures were compiled before the annexation. When added to the Department of Finance figure of 41 mobile home units, the 30 annexed mobile home units results in 71 mobile home units in Orland.

TABLE 10-7:
COMPARISON OF HOUSING UNITS IN ORLAND, 2000 AND 2007

Dwelling Type	2000		2007		Change 2000-2007
	Units	% of Total	Units	% of Total	
Single family, detached	1,676	73%	1,907	74%	**+14%**
Single family, attached	42	2%	56	2%	**+33%**
Multifamily, 2 to 4 units	301	13%	384	15%	**+28%**
Multifamily, 5 or more units	199	9%	197	8%	**-1%**
Mobile homes, trailers	90	4%	41	1%	**-54%**
Total Housing Units Available	**2,308**	100%	**2,585**	100%	**+12%**

Source: California Department of Finance

The homeowner vacancy rate in Orland was 1.9 percent in 2007. For owner-occupied units, vacancy rates of three to five percent are typically considered "normal" (City of Atwater, 1998). The lower-than-normal homeowner vacancy rate in Orland could be indicative of a demand for housing that is greater than the available supply. The vacancy rate for renter-occupied units in Orland was 5.1 percent in 2007. This also could indicate a strong demand for rental housing that the available supply is just able to satisfy.

As in other cities in California, satisfying the housing needs of its residents is an issue in Orland. Housing need consists of three major components: housing affordability, housing quality and housing quantity. The Housing Element states that existing housing stock in Orland consists predominantly of low- and moderate-income housing. Recent data on home values are not available. However, the low homeowner vacancy rate mentioned earlier is indicative of a situation in which the housing supply is limited. This situation encourages an increase in prices for residences, which would make it more difficult for low- and moderate-income families in Orland to afford to buy a home. Another factor, though not quantified, is the number of Chico-area workers purchasing housing in the City, taking advantage of the affordability of housing in Orland relative to Chico. Competition from these workers further increases the difficulty for low- and moderate- income families to acquire housing.

The situation concerning rental housing is less clear. Recent data on rental rates are not available, so trends in rents cannot be determined. On the one hand, the rental vacancy rate in Orland is that indicative of a "normal" condition. Also, duplex and townhouse units that could be rented at affordable rates have been built in the City over the past ten years. On the other hand, no multifamily residences of 5 or more units have been built in Orland over the past ten years, although applications for the development of multifamily units are currently being processed by the City. Also, the City could be attracting renters from Chico, where the rental market is tight. It is probable that rental rates have increased in Orland during the 2000's, which would make it harder for low- and moderate-income families to afford decent and uncrowded housing. However, as previously stated, no data on rents are available.

FUTURE HOUSING DEMANDS

Table 10-8 presents the projected number of households in Orland, which was obtained by dividing the population projections by the average household size in the City according to the California Department of Finance, which was 2.91.

TABLE 10-8:
HOUSEHOLD PROJECTIONS FOR ORLAND

Population Projections	Orland Household Projections				
	2008	2013	2018	2023	2028
High (2.6%)	2,535	2,882	3,276	3,725	4,235
Medium (2.2%)	2,525	2,815	3,139	3,499	3,902
Low (1.8%)	2,515	2,750	3,006	3,287	3,593

Source: PMC

Depending upon the projections used, it is estimated that there will be from 1,078 to 1,700 new households in Orland by 2028, or from 54 to 85 new households per year on average. Therefore, the City must provide between 54 and 85 housing units per year on average to satisfy the demand from the additional households, as projected. With varying levels of incomes, varying types of housing will need to be provided. For this study, it is assumed that the type of housing to be provided in the future will be in the same proportion as exists in 2007. The percentage of each type of housing is presented in **Table 10-9**, along with the amount of each housing type projected to be required by 2028. **Table 10-10** indicates the number of new housing units required for each five-year time period within the General Plan planning period. The projections for each five-year time period were developed using the same methodology in the preparation of **Table 10-9**.

TABLE 10-9:
TOTAL PROJECTED HOUSING NEEDS FOR ORLAND

Housing Type	Percentage of Housing Units (2007)	Projected New Units Required, 2008-2028		
		High	Medium	Low
Single family, detached	74%	1,258	1,019	798
Single family, attached	2%	34	28	22
Multifamily, 2-4 units	15%	255	207	162
Multifamily, 5+ units	8%	136	110	86
Mobile homes	1%	17	14	11
Total*	100%	**1,700**	**1,377**	**1,078**

** Figures may not add up to totals due to rounding.*

Source: PMC

TABLE 10-10:
ORLAND HOUSING NEEDS BY TIME PERIOD

Housing Type	Projected Housing Units		
	High (2.6%)	Medium (2.2%)	Low (1.8%)
2008-2012			
Single-family, detached	257	215	174
Single-family, attached	7	6	5
Multifamily, 2-4	52	44	35
Multifamily, 5+	28	23	19
Mobile home	3	3	2
Total*	**347**	**290**	**235**
2013-2017			
Single-family, detached	292	240	189
Single-family, attached	8	6	5
Multifamily, 2-4	59	49	38
Multifamily, 5+	32	26	20
Mobile home	4	3	3
Total*	**394**	**324**	**256**
2018-2022			
Single-family, detached	332	266	208
Single-family, attached	9	7	6
Multifamily, 2-4	67	54	42
Multifamily, 5+	36	29	22
Mobile home	4	4	3
Total*	**449**	**360**	**281**
2023-2028			
Single-family, detached	377	298	226
Single-family, attached	10	8	6
Multifamily, 2-4	77	60	46
Multifamily, 5+	41	32	24
Mobile home	5	4	3
Total*	**510**	**403**	**306**

** Figures may not add up to totals due to rounding.*

Source: PMC

FUTURE RESIDENTIAL ACREAGE

The number of acres required for the new housing units can be estimated using densities contained in the City's current General Plan. The General Plan has four residential designations: Residential Estate (2 units per acre), Low Density (1-6 units per acre), Medium Density (7-10 units per acre), and High Density (11-15 units per acre). For the purposes of this paper, the Residential Estate designation is not used. **Table 10-11** shows the projected acreage needs for each five - year time period based on current land use designation densities.

Since the residential designations do not correspond exactly to the types of housing units listed in **Table 10-9** and **Table 10-10**, the following assumptions are made:

- Detached single-family units were placed under the Low Density designation.
- Attached single-family units were placed under the Low Density designation.
- Multifamily units, 2-4 units, were placed under the Medium Density designation.
- Multifamily units, 5+ units, were placed in the High Density designation.
- Mobile homes and other units were placed in the Medium Density designation.

In addition, the densities prescribed for each residential designation in the General Plan are given as a range. For this assessment, an average density for each designation is used. For Low Density, the average is 4 units per acre. For Medium Density, the average is 8 units per acre. For High Density, the average is 12.5 units per acre. Using the average densities and the number of new units required annually, an estimated demand for residential acreage can be calculated.

TABLE 10-11:
ORLAND RESIDENTIAL ACREAGE NEEDS BY TIME PERIOD AND HOUSING TYPE

Housing Type	Projected Acreage Needs (acres)		
	High Growth (2.6%)	Medium Growth (2.2%)	Low Growth (1.8%)
2008-2012			
Single-family, detached	64	54	44
Single-family, attached	2	2	1
Multifamily, 2-4	7	6	4
Multifamily, 5+	2	2	2
Mobile home	0	0	0
Total	**75**	**64**	**51**
2013-2017			
Single-family, detached	73	60	47
Single-family, attached	2	2	1
Multifamily, 2-4	7	6	5
Multifamily, 5+	3	2	2
Mobile home	1	0	0
Total	**86**	**70**	**55**
2018-2022			
Single-family, detached	83	67	52
Single-family, attached	2	2	2
Multifamily, 2-4	8	7	5
Multifamily, 5+	3	2	2
Mobile home	1	1	0
Total	**97**	**79**	**61**
2023-2028			
Single-family, detached	94	75	57
Single-family, attached	3	2	2
Multifamily, 2-4	10	8	6
Multifamily, 5+	3	3	2
Mobile home	1	1	0
Total	**111**	**89**	**67**

Source: PMC

Table 10-12 below shows the projected acreage required for each residential designation for each five-year time period.

TABLE 10-12:
ORLAND RESIDENTIAL ACREAGE NEEDS BY TIME PERIOD AND DESIGNATION

	Projected Acreage Required (acres)				
	2008-2012	2013-2017	2018-2022	2023-2028	Total
Low-Density Residential					
High growth (2.6%)	66	75	85	97	**323**
Medium growth (2.2%)	56	62	69	77	**213**
Low growth (1.8%)	45	48	54	59	**206**
Medium-Density Residential					
High growth (2.6%)	7	8	9	11	**35**
Medium growth (2.2%)	6	6	8	9	**29**
Low growth (1.8%)	4	5	5	6	**20**
High-Density Residential					
High growth (2.6%)	2	3	3	3	**11**
Medium growth (2.2%)	2	2	2	3	**9**
Low growth (1.8%)	2	2	2	2	**8**
Total					
High growth (2.6%)	75	86	97	111	**369**
Medium growth (2.2%)	64	70	79	89	**251**
Low growth (1.8%)	51	55	61	67	**234**

Source: PMC

NOTE ON THE ESTIMATED RESIDENTIAL ACREAGE

It must be emphasized that the above estimates of residential acreage are at best rough estimates. A more accurate estimate would require consideration of other factors, such as demographics and economics. For instance, a more sizable aged population in the City may require that more residential acreage be set aside for multifamily complexes oriented towards seniors. Likewise, a more sizable lower income population could require more multifamily units that could be rented at a lower cost than single-family residences.

10.5 GROWTH PROJECTIONS

Table 10-13 presents a summary of the projected land requirements in Orland for the planning period 2008-2028. The summary presents a range of development forecasts that may be used in the Orland General Plan update process. These are preliminary development forecasts, and as such are subject to refinement as more data become available. Therefore, the data presented in this paper should be taken as a rough approximation of the amount of land that will be used for development in Orland during the General Plan planning period.

TABLE 10-13:
ORLAND LAND USE DEVELOPMENT FORECAST

Land Use	Land Required (acres)				
	2007-2011	2012-2016	2017-2021	2022-2027	Total
All Residential					
High growth (2.6%)	75	86	97	111	369
Medium growth (2.2%)	64	70	79	89	251
Low growth (1.8%)	51	55	61	67	234
All Commercial					
High growth (2.6%)	13	15	17	19	64
Medium growth (2.2%)	11	12	13	15	51
Low growth (1.8%)	9	9	10	11	39
All Industrial					
High growth (2.6%)	15	17	19	22	73
Medium growth (2.2%)	12	14	15	17	58
Low growth (1.8%)	10	11	12	13	46
All Other					
High growth (2.6%)	62	71	81	92	306
Medium growth (2.2%)	52	58	64	72	246
Low growth (1.8%)	43	46	50	52	191
Total					
High growth (2.6%)	165	189	214	244	812
Medium growth (2.2%)	139	157	171	193	606
Low growth (1.8%)	113	121	133	143	510

Source: PMC

10.6 REFERENCES

Center for Economic Development, California State University, Chico. *Glenn County 2007 Economic and Demographic Profile*. Chico, Calif., 2007.

City of Orland. *Orland Area General Plan: Land Use and Circulation Elements*. Adopted April 1991.

City of Orland. *Preliminary Development Forecast for the City of Orland General Plan Update.* Pacific Municipal Consultants, Chico, Calif., December 2001.

State of California, Department of Finance, *E-5 Population and Housing Estimates for Cities, Counties and the State, 2001-2007, with 2000 Benchmark.* Sacramento, California, May 2007

U.S. Department of Commerce Bureau of Economic Analysis website. *File CA1-3.*

U.S. Department of Commerce Bureau of the Census website. *1990 U.S. Census.*

U.S. Department of Commerce Bureau of the Census website. *2000 U.S. Census.*

11.0 Economic Development and Fiscal Conditions

11.1 GENERAL PLAN RELEVANCE

This chapter provides background demographic and economic data for the City of Orland. Although an economic element is not required, recent surveys have indicated that this is an important subject for Orland residents and the data contained in this section will be useful in developing specific General Plan elements, including the housing, land use, and public service elements.

11.2 EMPLOYMENT

The labor force for the City of Orland is summarized in **Table 11-1**. Labor force is defined as the sum of employment and unemployment, excluding people in the military. *Total employment* is a term used to describe the level of civilian employment in the city.

TABLE 11-1:
CITY OF ORLAND LABOR FORCE

Year	Labor Force	Percent Change	Total Employment	Percent Change	Unemployment Rate
1990	2,300	--	2,000	--	17.8%
1991	2,500	8.7%	2,000	0.0%	21.5%
1992	2,600	4.0%	2,100	5.0%	25.6%
1993	2,400	-7.7%	1,900	-9.5%	23.6%
1994	2,500	4.2%	2,000	5.3%	22.4%
1995	2,400	-4.0%	2,000	0.0%	22.0%
1996	2,400	0.0%	2,000	0.0%	21.1%
1997	2,400	0.0%	1,900	-5.0%	18.8%
1998	2,200	-8.3%	1,900	0.0%	19.0%
1999	2,300	4.5%	2,000	5.3%	16.1%
2000	2,600	13.0%	2,400	20.0%	7.6%
2001	2,600	0%	2,400	0.0%	7.6%
2002	2,500	-3.8%	2,300	-4.2%	8.0%
2003	2,600	4.0%	2,300	0.0%	11.5%
2004	2,600	0.0%	2,400	4.3%	7.8%
2005	2,900	11.5%	2,500	4.2%	13.8%
2006	2,700	-6.9%	2,500	0.0%	7.4%

Sources: Center for Economic Development (2007), California Employment Development Department

The City experienced high unemployment rates during the early 1990s, which was a time of economic recession in California. While unemployment rates have declined since that time, the Orland unemployment rate in 2000 (17.1%) was higher than the rate for Glenn County (11.9 percent) and for the state (4.9 percent). Although relatively high, the unemployment rate in Orland was consistent with that of rates in other rural California communities, where unemployment rates are higher than the state average. By 2006, the unemployment rate in Orland had fallen to 7.4 percent, versus 6.3 percent in Glenn County.

For the percentage of the City's population age 16 years and over that is employed, **Table 11-2** profiles employment by occupational group. As discussed later in this section, agriculture is an important part of the Orland and County economy, including in terms of employment. However, other economic sectors have significant roles.

TABLE 11-2:
EMPLOYMENT BY OCCUPATIONAL GROUP, CITY OF ORLAND

Occupation	Employed Persons*
Agriculture, forestry, fishing, and hunting	336
Construction	87
Manufacturing	357
Wholesale trade	74
Retail trade	293
Transportation and warehousing, and utilities	171
Information	77
Finance, insurance, real estate, and rental and leasing	124
Professional, scientific, management, administrative, and waste management services	118
Educational, health, and social services	416
Arts, entertainment, recreation, accommodation, and food services	105
Other services (except public administration)	149
Public administration	101
Total	2408

** 16 years of age or older.*
Source: 2000 US Census

Within Glenn County as a whole, agriculture maintains its predominant role in the economy. **Table 11-3** illustrates industrial employment in the County for the past fifteen years. Agriculture and mining account for approximately 30 percent of total employment in the County in 1998, which is higher than the approximately 4.5 percent for the state as a whole. Some sectors have generally experienced steady increases in employment, such as agriculture, retail trade, services and government. All sectors, however, have experienced fluctuations in employment, which generally coincide with state and national economic trends.

TABLE 11-3:
EMPLOYMENT BY INDUSTRY, GLENN COUNTY

Year	Agri-culture, mining	Construction	Manu-facturing	Transpor-tation, public utilities	Whole-sale trade	Retail trade	Fire*	Services	Govern-ment, Public Admin.
1985	2,974	425	1,181	432	590	1,304	440	1,570	1,860
1990	3,110	510	1,579	535	279	1,344	364	1,564	1,953
1995	3,331	476	1,279	484	305	1,645	ND	1,618	2,103
2000	3,436	526	868	486	426	1,542	460	1,916	2,121
2004	2,244	544	663	554	428	1,080	195	1,451	2,186

** Finance, insurance and real estate*
ND - information not disclosed
Source: Center for Economic Development, 2007.

Of potential concern is the state of manufacturing employment, which was at a lower level in 2004 than in 1985. Finance, insurance, and real estate jobs have also dropped off heavily between 2000 and 2004.

11.3 COMMERCIAL ACTIVITIES AND TRENDS

Historically, the local economy of Orland and Glenn County has depended upon agriculture and natural resources. While agriculture remains a significant sector of the local economy, employment in agriculture is seasonal and wages tend to be low. A reduction in timber harvests has had an impact on Glenn County in the timber sector, which has been a source of relatively high-wage jobs.

Retail trade has become a more significant sector of the Orland economy. **Table 11-4** presents historic retail sales in Orland and Glenn County. The growth in the City's population in recent years has provided an expanding local market for retail outlets, as well as the City's proximity to Interstate 5, a major regional freeway. However, Orland also faces competition for retail sales from nearby Willows, Corning, and Chico.

TABLE 11-4:
TOTAL TAXABLE RETAIL SALES ($1,000)

Year	Orland	Glenn County
1990	$34,330	$89,158
1991	$33,092	$90,371
1992	$33,307	$92,774
1993	$31,758	$96,391
1994	$34,509	$111,819
1995	$37,044	$108,825
1996	$40,084	$111,786
1997	$38,217	$113,055
1998	$37,045	$107,422
1999	$41,600	$117,103
2000	$44,115	$125,870
2001	$45,447	$132,628
2002	$49,587	$145,220
2003	$53,572	$155,412
2004	$59,993	$168,982
2005	$68,624	$183,370

Source: California Board of Equalization, Center for Economic Development (2007)

For Glenn County, total taxable retail sales have generally followed an upward trend, although sales have fluctuated in recent years. A significant increase in taxable retail sales occurred as a result of the increase in available housing in the region. Between 2003 and 2005 there has been a 28 percent increase in taxable retail sales.

11.4 REGIONAL ECONOMIC TRENDS AND OPPORTUNITIES

In September 2001, the Great Valley Center issued a report entitled *The Economic Future of the Sacramento Valley: Regional Pathways to Prosperity*. The report defines the Sacramento Valley as a ten-county region extending from Sacramento County in the south to Shasta County in the north. The report divides the Sacramento Valley into four economic regions. Glenn County is included in an area called the "agricultural heartland", the predominantly rural portion of the Sacramento Valley that also includes Colusa and Tehama Counties.

The economy of the agricultural heartland region has been dictated by its location within the mostly flat Sacramento Valley, and by its weather. Agriculture has been the region's strongest economic driver, employing nearly 8,000 workers and being eight times more concentrated in this region than in the United States as a whole. While agricultural employment has decreased in other parts of the United States, agricultural jobs in the agricultural heartland region increased by 29 percent since 1990. The growing and processing of rice, milk, fruits and nuts have been the primary agricultural activities. Agriculture in the region has been undergoing a transition to smaller, family-operated specialty farming and processing. Specialty agricultural products produced in the region include artisan cheeses, essential oils, olive oils and specialty rice varieties. A local example of this trend is the Pedrozo Dairy and Cheese Company, which makes three varieties of farmstead cheeses (Great Valley Center, 2001).

Other significant economic activities in the agricultural heartland region include wood products, which employs almost 2,000 people. There has been a 78 percent increase in employment since 1990, even though Glenn County has been considered impacted by reduced timber harvests mandated by the Pacific Northwest Forest Management Plan. Logistics (warehousing and distribution) is another important sector, employing approximately 2,200 people and experiencing a 169 percent increase in employment since 1990. The presence of Interstate 5 and the proximity of the region to urban markets have encouraged growth in logistical activities. One of the fastest growing sectors is professional and business services, as more business and information technology professionals have moved into the region to take advantage of its quality of life. The average annual increase in employment in this sector from 1990 to 2000 has been approximately 15 percent (Great Valley Center, 2001).

The Great Valley Center report suggested one avenue of economic development for the agricultural heartland region. It includes continued development of specialized, high-value-added agricultural products, while promoting a strong regional identity based upon these products. Associated logistics and business support services could be developed to support agricultural producers. Another component of the development strategy is to attract and support "free agents", individuals in the business and professional fields who could relocate their businesses to the region. Key to this strategy would be the provision of necessary infrastructure and trained personnel in support services such as administrative and computer services (Great Valley Center, 2001).

11.5 FISCAL CONDITIONS

CITY FINANCES

For the 2005-2006 fiscal year, the City of Orland had expenditures totaling $4,149,128. **Table 11-5** shows the revenue sources used by the City to cover its expenditures.

TABLE 11-5:
CITY OF ORLAND REVENUES, FY 2005-06

Revenue Source	Amount
General Fund Revenues	**$2,734,617**
Taxes	
Sales	$952,438
Property	$579,803
Franchise	$81,072
Hotel Users	$44,000
Business Licenses	$76,166
Other	$43,886
Fines and Forfeits	$38,479
Interest Income	$40,000
Intergovernmental Payments	$657,451
Charges for Services	$53,334
Miscellaneous	$167,988
Special Revenue Fund Transfers	**$1,414,512**
General Fund Carryover	**–**
Total	**$4,149,128**

Source: City of Orland

As shown in **Table 11-5**, sales taxes provided the largest portion of General Fund revenues, followed by intergovernmental payments and property taxes. Sales tax revenues are generated by retail activity in the City. As discussed earlier, retail growth in Orland has been limited, due in large part to competition from nearby communities. Property tax revenues increase with new construction.

FISCAL IMPACTS OF ANNEXATION

Annexations of unincorporated lands to the City require the approval of the Glenn Local Agency Formation Commission (LAFCO). One of the issues that is resolved prior to annexation is the division of tax revenues. Typically, a city and a county reach an agreement on the division of property tax revenue generated by the annexed property. This reduces the impact to the county of the loss of property tax revenue.

The City of Orland has annexed 295 acres in three separate annexation actions in 2005 and 2006. With previous annexations, the City has received 54 percent of the property tax revenue from the annexed area, while Glenn County has received 46 percent. However, with this most recent group of annexations the City and County reached an agreement to split property tax revenues evenly. It is possible that future annexations could have different agreements on property tax splits. Nevertheless, assuming that previous agreements apply, the City would be expected to receive at least 54 percent of the property tax revenue from annexed property.

The City may potentially gain more tax revenue if commercial property were annexed. Not only would the City receive property tax, it would also receive additional sales tax, business license fees and franchise tax. If the property contains a lodging facility, the City would receive additional hotel users tax as well. However, most existing commercial activities in the Orland area are already annexed to the City. Property annexed to the City can be designated for future commercial development; however, future development depends upon market conditions over which the City has little control. Also, at least some of these other revenue

sources could be subject to an agreement with the County, so the City may not receive all the potential revenues. Because of these factors, an analysis of the fiscal impacts of annexation can only be done on a case-by-case basis, and not at a comprehensive level.

11.6 REFERENCES

California Board of Equalization. *Taxable Sales in California*, 2006 Annual Report.

California Department of Finance. *City/County Population and Housing Estimates, 2000-2006*. Demographic Report E-5.

Center for Economic Development, California State University, Chico. *Glenn County 2007 Economic and Demographic Profile*. Chico, Calif., 2001.

City of Orland. Orland Area General Plan: Land Use and Circulation Elements. Adopted 2003.

City of Orland. *City of Orland Downtown Business Development and Recruitment Plan*. The Palmer Koert Company, Davis, Calif. Adopted March 25, 1996.

City of Orland and Glenn County. Orland Area Enterprise Zone Preliminary Economic Development Plan.

Great Valley Center. *The Economic Future of the Sacramento Valley: Regional Pathways to Prosperity*. Collaborative Economics, Mountain View, Calif., September 2001.

Christy Leighton, Glenn County Local Agency Formation Commission. Personal communication with Terry Farmer, Pacific Municipal Consultants, January 17, 2002.

U.S. Census Bureau. 1990 U.S. Census.

U.S. Census Bureau. 2000 U.S. Census.