
4.0 SAFETY ELEMENT

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Safety Element



Railroad crossing in northern Orland

INTRODUCTION

The Safety Element, a legally required element, is included in this General Plan to address the safety services performed by the City of Orland related to public safety, such as fire protection and crime prevention. The City also endeavors to plan for hazards such as flooding, earthquakes, and other potentially dangerous situations. It seeks to provide education in disaster preparedness, including public outreach, to enable residents to help themselves during a disaster. The Safety Element addresses safety concerns of the community and sets forth the goals and policies essential in addressing these concerns.

LEGAL BASIS AND REQUIREMENTS

California State law (Government Code Section 65302(g)) requires that a safety element be included within the general plan for:

[T]he protection of the community from any unreasonable risks associated with the effects of seismically induced surface rupture, ground shaking, ground failure, tsunami, seiche, and dam failure; slope instability leading to mudslide and

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landslides; subsidence and other geologic hazards known to the legislative body; flooding; wildland and urban fires.

In addition to these concerns, this Element also addresses the issues of hazardous waste management, and emergency response preparedness, and climate change.

RELATIONSHIP TO OTHER PLANS

MULTI-JURISDICTIONAL HAZARD MITIGATION PLAN

The Glenn County Multi-Jurisdictional Hazard Mitigation Plan (MJHMP) identifies and profiles hazard conditions, analyzes risk to people and facilities, and outlines mitigation actions to reduce or eliminate hazard risks in Glenn County and the incorporated cities of Orland and Willows. The MJHMP was developed in accordance with the Disaster Mitigation Act of 2000 and followed the Federal Emergency Management Agency's Local Hazard Mitigation Plan guidance. The Plan was approved by the City Council on January 7, 2019 and the Federal Emergency Management Agency (FEMA) (conditionally) approved the Plan on January 17, 2018. The Plan provides guidance and insight into the hazards that exist in the City of Orland and suggests possible mitigation projects. This Plan should be consulted when addressing known hazards to ensure the general health and safety of the City of Orland's residents. The Safety Element goals, policies and programs of this General Plan support and are consistent with the most recent Glenn County MJHMP.

COMMUNITY WILDFIRE PROTECTION PLAN

The Glenn County Community Wildfire Protection Plan (CWPP) was developed as a means of describing current fire related conditions within Glenn County, identifying public and private assets at risk from wildfire, and assessing currently in-place infrastructure developed in order to protect those assets. The CWPP provides detailed and specific information and policies related to wildfire, while the Safety Element is an all-encompassing document to address general safety concerns throughout the City of Orland. The Tehama-Glenn County Fire Safe Alliance has the responsibility for coordinating updates to the CWPP.

4.1 EMERGENCY PREPAREDNESS

STANDARDIZED EMERGENCY MANAGEMENT SYSTEM

As a result of the 1991 East Bay Hills Fire in Oakland, Senate Bill 1841 was introduced by Senator Petris, passed by the California legislature, and made effective January 1, 1993. The legislation established the Standardized Emergency Management System (SEMS). The intent of the law is to improve the coordination of state and local emergency response in California. The law is found in Section 8607 of the Government Code, and the regulations governing SEMS became effective September 2, 1994.

The law directed the State of California Office of Emergency Services (OES), in coordination with other state agencies and interested local emergency management agencies, to establish, implement and maintain SEMS by December 1, 1996.

The law stipulates that all state agencies must use SEMS in responding to emergencies involving multiple jurisdictions or multiple agencies. Local governments must use SEMS in responding to emergencies involving multiple jurisdictions of multiple agencies in order to be eligible for state funding or response-related personnel costs. Participation in SEMS is also required to assure reimbursement of expenses resulting from a State-declared emergency. SEMS is the standard throughout the State of California.

EVACUATION ROUTES

Standard evacuation routes have not been designated within Glenn County or the City of Orland. It is likely that Caltrans facilities such as State Route 32 and Interstate 5 would be used to evacuate the community in an emergency. Major county roads such as Sixth Street (County Road 99) and South Street are also suited to evacuation depending on the location of the emergency. These routes are all identified as Arterials in the Circulation Element of the City of Orland General Plan.

California Government Code Section 65302(g)(5) requires that the Safety Element indicate residential properties located in defined hazard areas that have limited roadway access. No residential areas in defined hazard areas within the City are currently identified as having only one point of access. Policy 3.2.1 ensures new subdivisions within the City and Planning Area provide at least two routes of access for police, fire and medical vehicles.

GOALS, POLICIES, AND PROGRAMS

GOAL 4.1: ENSURE THAT THE CITY OF ORLAND AND INVOLVED LOCAL AGENCIES ARE ABLE TO EFFECTIVELY RESPOND TO EMERGENCY SITUATIONS THAT MAY THREATEN THE PEOPLE AND PROPERTY OF ORLAND.

Policy 4.1.A: The City shall work toward cultivating and maintaining a relationship with other agencies that improve the City's ability to serve and protect the citizens of Orland.

Policy 4.1.B: The City shall continue participation in emergency preparedness planning with Glenn County.

Program 4.1.B.1: Review procedures for local implementation of the County Emergency Operations Plan (EOP) and help to educate the community on the need for emergency preparedness.

Program 4.1.B.2: Pursue adoption of the State of California Standardized Emergency Management System (SEMS).

4.2 FLOOD HAZARD

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. As discussed in further detail within the Background Report, localized flooding is due, in part, to Orland's storm drainage system operating at capacity.

According to the 1996 FEMA Flood Insurance Rate Map, which was the most current information available, most of the area in the northwest portion of the City and along the northern edge of the Planning Area is in either Flood Zone A or Flood Zone X, which means the area may be subject to flooding. Areas located directly adjacent to Stony Creek and Hambright Creek are within Flood Zone A, which is defined as area within the 100-Year Floodway. Areas located to the north and south of Stony and Hambright creeks, but not immediately adjacent to them, are generally designated as being within Flood Zone X, which is area within the 500-Year Floodway (Figure 4-1).

It should also be noted that Flood Zone X overlaps small portions of the northwest corner of Orland's city limits. Other than this portion, the remainder of Orland is not subject to flood events, according to the 1996 FEMA Flood Insurance Rate Map. See the Background Report for additional information.

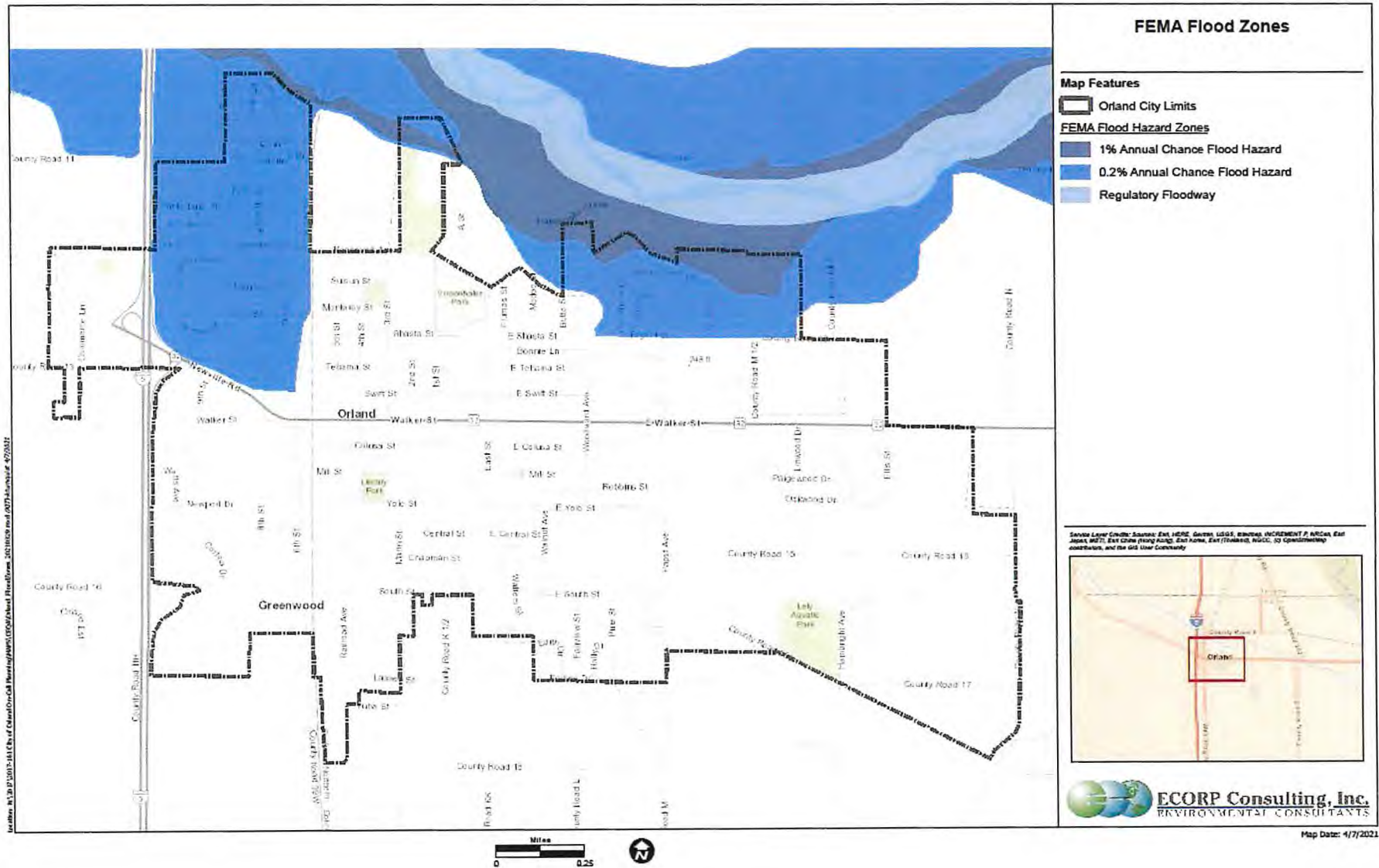
Local Flooding

As mentioned previously, a very small portion of northwest Orland is located within the 100-year flood zone as defined by FEMA. There is also significant area in the north portions of the Planning Area that are in either the 100- or 500-year flood zone. Localized flooding occurs in and around Orland during storms of less than 100-year proportions.

In extremely wet years, the capacity at the Lely Aquatic Park may be exceeded and stormwater flows onto County Road 200, then southeasterly along County Road 200. Although flood hazard areas within the Planning Area have been mapped by FEMA on Flood Insurance Rate Maps, 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 of the Orland Background Report, localized flooding is due, in part, to Orland's storm drainage system operating at capacity. In addition to operating at capacity, localized flooding can also be attributed to obstructions or blockages in the system often caused by illegal dumping. According to the City Engineer, the City's storm drainage system is adequate and is not reflected as being substandard or deficient.

Localized flooding can also occur as an unintended result of flood irrigation of adjacent agricultural land. The amount of flooding varies depending on the difference in road and field elevations but can be a temporary hazard to traffic.

**FIGURE 4-1
FLOOD ZONES**



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Regional Flooding

The primary regional flooding threat for the City of Orland is the potential failure of Black Butte Dam located northwest of the City.

Flood Protection

Flood management is handled by multiple government entities at the Federal, State and local level. Federal flood management is provided by the U.S. Army Corps of Engineers and Federal Emergency Management Agency (FEMA). At the State level the Department of Water Resources and Office of Emergency Services provides flood assistance. At the local level the Glenn County Public Works Agency manages special districts responsible for flood control and the City of Orland Public Works Department handles public services including storm water management.

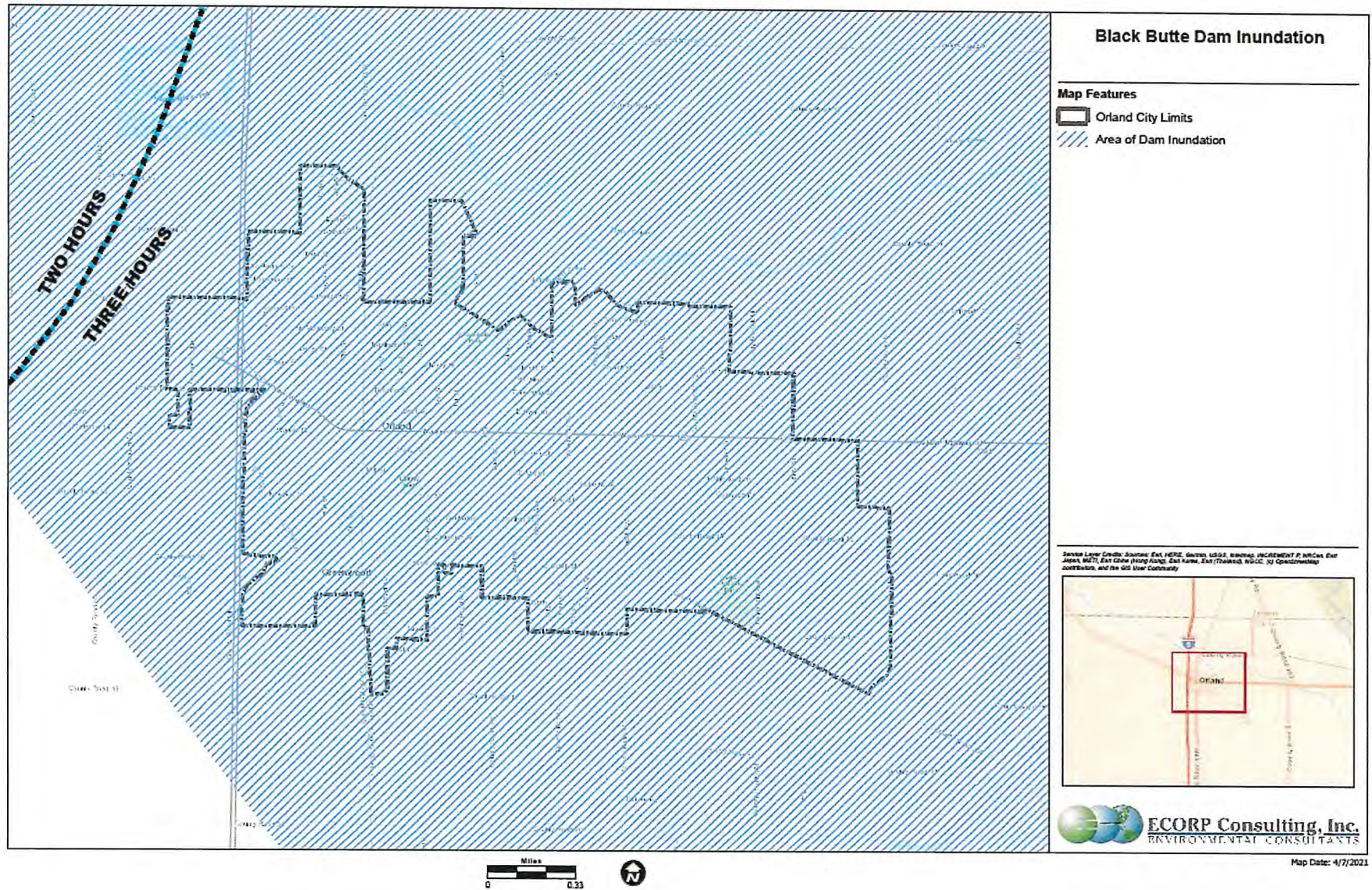
Dam Inundation

The California Office of Emergency Services (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 OES home page. The inundation maps maintained on file by 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. More information on these maps is available in the Background Report.

Black Butte Reservoir is fed by Upper Stony Creek and has a capacity of approximately 137,000 acre-feet of water. However, it is uncommon for the actual facility to reach capacity and the reservoir levels are typically lower than capacity during most of each year.

As shown in **Figure 4-12**, the entire Planning Area is subject to flooding should the Black Butte Dam fail. The U.S. Army Corps of Engineers Inundation Map shows a three-hour contour line just east of the City which advises that inundation is expected to occur within three hours of dam failure.

FIGURE 4-1.2
DAM INUNDATION MAP



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GOALS, POLICIES, AND PROGRAMS

GOAL 4.2: MINIMIZE THE RISK OF PERSONAL INJURY AND PROPERTY DAMAGE RESULTING FROM FLOODING.

Policy 4.2.A: The City shall work to develop and implement flood control strategies for the City of Orland.

Program 4.2.A.1: As necessary, the City may adopt new standards to ensure flood safety in new construction.

Program 4.2.A.2: New development projects shall be designed to avoid increases in peak storm runoff levels.

Program 4.2.A.3: All privately owned storm drainage basins and systems shall have a mechanism to reimburse the City for maintenance costs should the private maintenance fail.

Program 4.2.A.4: For any project that may affect a Caltrans facility, the City shall submit hydrologic/hydraulic study information and drainage plans for buildings, streets, parking, etc., to Caltrans in order that they may adequately evaluate impacts upon the State's rights-of-way and drainage facilities.

Policy 4.2.B: New development shall not be approved in areas which are subject to flooding without prior review and approval of plans for improvements which provide a minimum flood protection level equal to the 100-year occurrence storm event.

Policy 4.2.C: Development of habitable or commercial structures within the 100-year floodplain must be completely mitigated through proper design.

4.3 FIRE PROTECTION

Fire protection services within Orland are provided by the Orland Volunteer Fire Department. The City Department has a mutual aid agreement with the Orland Rural Fire District which is a separate department that provides fire protection services to greater Orland's surrounding, unincorporated county area. Both of these fire protection services are staffed by volunteers.

There are currently 40 45 active volunteers in the Orland Volunteer Fire Department. Training, equipment, and other funding is provided by the City's General Fund. 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.

In 2007, there were approximately 512 fire and emergency calls for service 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. See Section 4.4 below for more information regarding emergency

medical services, and see the Background Report for more information regarding fire protection services.

WILDFIRE PROTECTION RESPONSIBILITY AREAS

Throughout the State of California, different organizations have responsibility for wildfire protection based on location. These responsibility areas are codified under state law into three categories: local responsibility areas (LRAs), state responsibility areas (SRAs), and federal responsibility areas (FRAs).

- Local Responsibility Area (LRA): LRA's are areas protected by local agencies, including city and county fire departments, local fire protection districts, and the California Department of Forestry and Fire Protection (CAL FIRE) when under contract to local governments. All of the land in the City of Orland is LRA.
- State Responsibility Area (SRA): SRA's are generally unincorporated areas that are not federally owned, are undeveloped, and are covered by wildland vegetation or rangeland.
- Federal Responsibility Area (FRA): FRA's are areas that are managed by a federal agency.

FIRE THREAT

Wildfire is an ongoing concern for all communities in California. The combination of California's complex terrain and Mediterranean climate (cold and wet winters/spring and warm and dry summers/fall) supports very productive natural plant communities and contributes to one of the most fire-prone and consequently fire-adapted landscapes in the world. Generally, the fire season extends from early spring through late fall of each year during the hotter, dryer months. Fire conditions arise from a combination of high temperatures, low-moisture content in the air and plant matter, an accumulation of vegetation, and high winds.

Three types of fires have the potential for resulting in major losses in and around the City. These include fire or explosion at one of the local agricultural processing plants, major operational failure of the rail service or interstate that pass-through Orland, and urban conflagration (multiple simultaneous structural fires).

The most likely fire threat in Orland would be a structural fire within a residence or small business. There are no unique or significant fire hazards associated with the rural/urban interface between the City and surrounding open spaces. The threat of wildland fire is considered to be minimal based on land uses surrounding the City.

The City of Orland Background Report provides additional information on state vs. local responsibility areas and provides Fire Threat Maps for the Orland area.

OTHER SIGNIFICANT FIRE HAZARDS

A highly flammable invasive fuel called *Arundo donax*, more commonly known as giant reed, grows along the Lower Stony Creek channel. *Arundo donax* exacerbates

erosion, significantly reduces wildlife habitat, and poses a serious threat of fire to the City and its residents. On an intermittent basis, State Conservation Camp crews contract with the Glenn County Public Works department to conduct hand reductions of Arundo vegetation within the Lower Stony Creek stream channel near Orland as well as areas around state and county bridges that cross the stream channel. Additionally, the City of Orland supports the Glenn County Resource Conservation District (GCRCDD) in their efforts to eradicate the Arundo growth within the flood channel of Lower Stony Creek.

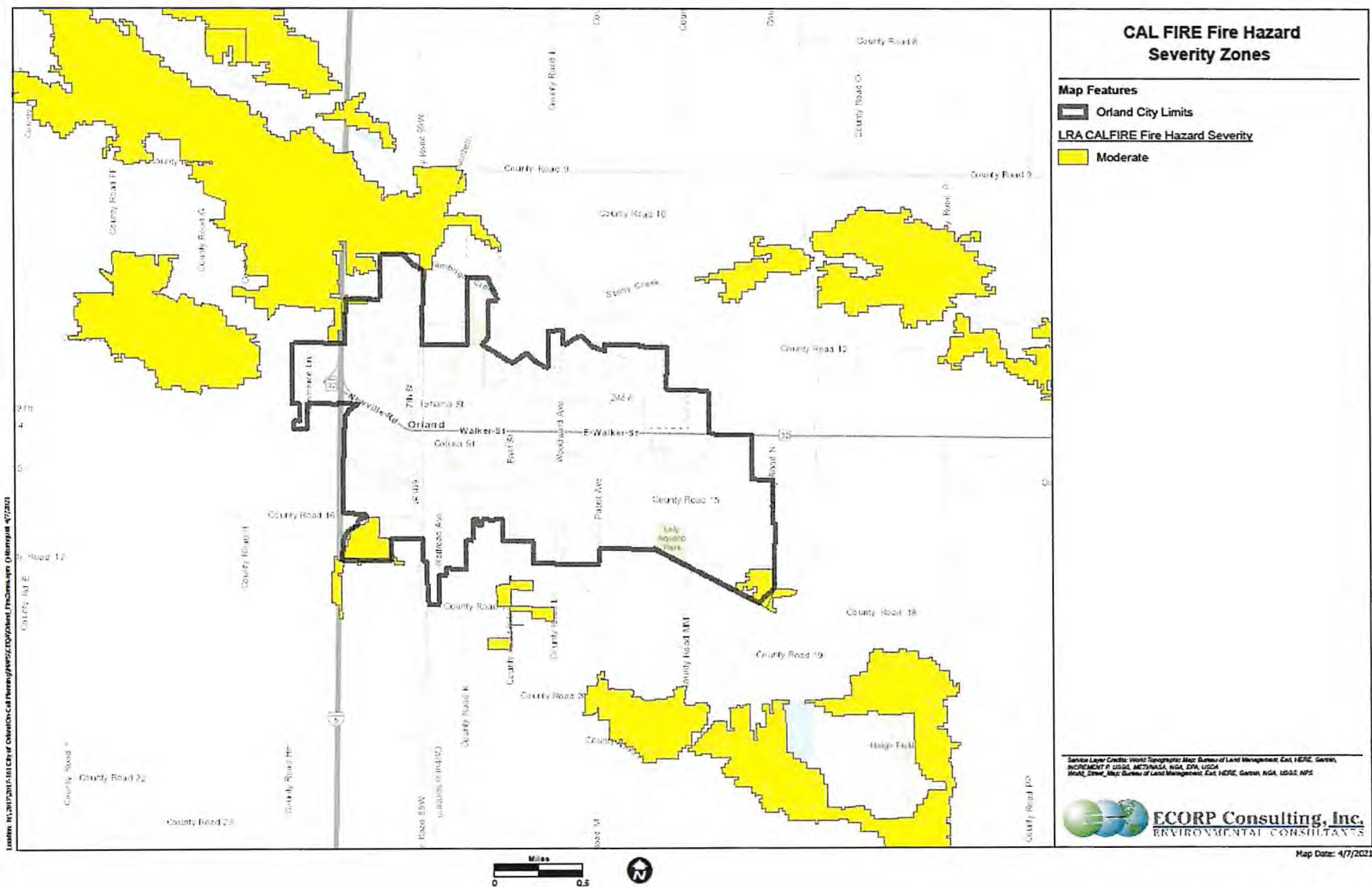
FIRE HAZARD SEVERITY ZONES

The California Department of Forestry and Fire Protection (CAL FIRE) identifies and maps Fire Hazard Severity Zones (FHSZ) based on the severity of the fire hazard expected to prevail there. CAL FIRE ranks fire threat according to the availability of fuel and the likelihood of an area burning (based on topography, fire history, and climate). The rankings include little or no fire threat, moderate, high, and very high fire threat. FHSZs do not predict when or where a wildfire will occur, however, they do identify areas where wildfire hazards could be more severe and therefore are of greater concern. FHSZs are meant to help limit wildfire damage to structures through planning, prevention, and mitigation strategies that reduce risk. Figure 4-3 shows the fire hazard severity zones within Orland.

PAST FIRE EVENTS

No major fire events have occurred in the City or Orland or the planning area in the past 10 years. However, as noted in Section 4.8.2 *Past Occurrences* of the Glenn County Multi-Jurisdictional Hazard Mitigation Plan, since 2012, five major wildfire events have occurred in Glenn County. None of these wildfire events took place in or near Orland, though wildfire events are still a major concern throughout the County. Of the region's fire history, the majority of fires in Glenn County occur in the areas of the County located west of I-5 - in and adjacent to Mendocino National Forest and in the areas with larger amounts of vegetation and greater slopes. Additional data on past fire events can be found in Section 6 of the Glenn County Community Wildfire Protection Plan (CWPP).

FIGURE 4-3
FIRE HAZARD SEVERITY ZONES



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RESPONSE TIME

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. Target response time for fire protection and emergency medical services are seven (7) minutes or less during daylight hours and at night. In the future, creation of a satellite station(s) could reduce these response times considerably to outlying areas of the City. The placement of an unstaffed satellite equipment facility in the area of the eastern section of the Planning Area could serve the purpose of reducing response times for that area, as well as to the east Orland area.

Response time to an emergency situation is affected by adequate street access for emergency vehicles. Minimum standards for roadway widths and guidelines for ensuring adequate emergency vehicle access are provided within the Circulation Element of this General Plan.

~~A final~~ An important component of rapid emergency response is the clear identification of addresses on homes and businesses. Without clearly recognizable addresses, emergency response may be unnecessarily delayed.

WATER DELIVERY SYSTEM

~~There are over 300 close to 500 hydrants within the city limits. While the City strives to deliver maximum flow through all hydrants in the City, flow depends on multiple varying factors such as pipe size and age. Although all of the 300 hydrants are capable of delivering the maximum flow available (1,500 gallons per minute on average), such availability depends on the water mains that supply the specific hydrants. Therefore, the average flow for hydrants within the City is approximately 700 gallons per minute. The City is responsible for checking all hydrants and conducting proper maintenance to ensure that they are operating properly.~~

Because the City is expanding outward in multiple directions, there is some concern that increased population could add strain to fire protection services 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).

For additional discussion and policies related to water supply and wastewater, please see **Section 5.7** and **Section 5.8** of the Open Space, Conservation, and Public Facilities Element.

FIRE STATION STAFFING/EQUIPMENT

The Orland Fire Protection District is an independent special district that provides the funds for the fire protection services to the parcels in the unincorporated area surrounding the City of Orland. The Orland Volunteer Fire Department is the entity that

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provides fire protection services to the parcels within the Orland Fire Protection District, which includes unincorporated areas in Glenn County and all parcels within the boundaries of the City of Orland. Orland's Volunteer Fire Department is made up of a 40-45-member volunteer crew, one full time paid chief, and one part time paid office assistant. As mentioned previously, the department is currently staffed by a 40-45-member volunteer crew that operates one Type 6 (150 GPM) chief's truck, one utility pickup, one rescue squad, four engines (one 1,500 GPM, one 1,250 GPM, two 1,000 GPM, and one 500 GPM), one ladder truck (2,000 GPM), and one tank trailer, and three water tenders totaling 11,000 gallons. Additionally, the department has access to Rural District firefighting apparatuses in the event that extra equipment is needed.

The Department currently has an Insurance Service Office (ISO) rating of three (3). The Department has mutual-aid agreements with the City of Willows, Artois and Hamilton City for creek fires and mutual-aid agreements with Willows and Artois for structure fires. Additionally, the City has mutual-aid agreements with CAL FIRE for strike teams and station protection.

GOALS, POLICIES, AND PROGRAMS

GOAL 4.3: PROTECT PEOPLE AND PROPERTY WITHIN THE CITY OF ORLAND AGAINST FIRE-RELATED LOSS AND DAMAGE.

Policy 4.3.A: The City shall maintain current levels of service for fire protection by continuing to require development to provide and/or fund fire protection facilities, operations, and maintenance.

Program 4.3.A.1: Develop and adopt standards for fire suppression facilities, including water supply and distribution system standard, and fire hydrant spacing.

Program 4.3.A.2: Review the need for automatic fire protection sprinklers within new residential and commercial development. If needed, incorporate such requirements within the City Building Code.

Program 4.3.A.3: Require all new development to design public facility improvements to ensure that water volume and hydrant spacing are adequate to support efficient and effective fire suppression.

Program 4.3.A.4: Consider amending existing ordinances or adopting a new ordinance that requires clear and recognizable addresses for all structures within the City of Orland.

Program 4.3.A.5: Enforce the requirements of Public Resources Code Sections 4290 and 4291 on all development projects. This includes, but is not limited to, the following:

- Maintain roofs of structures free of vegetative growth.*
- Remove any portion of trees growing within ten (10) feet of*

chimney/stove pipe outlets.

- *Maintain screens over chimney/stovepipe outlets or other devices that burn any solid or liquid fuel.*

Policy 4.3.B: The City shall continue to support the needs of the Orland Volunteer Fire Department and shall provide assistance as necessary to maintain an efficient and functional fire service operation.

Policy 4.3.C: The City shall strive to improve the City's current Insurance Service Office (ISO) rating of four, for safety and associated economic benefits.

4.4 OTHER EMERGENCY SERVICES

This section discusses emergency services other than fire protection. These services include police protection, emergency medical services, and health services. Section 4.3, Fire Protection, describes existing fire protection services in the City of Orland and includes goals, policies, and programs related to those services.

POLICE PROTECTION

The City of Orland Police Department provides police protection services within the City of Orland. The main station is 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 Fourth Street in downtown Orland. The new building will provide the Police Department nearly double the square footage area of current building. The new police station is scheduled for completion by 2010-2011.

The Police Department office is open from 8 a.m. to 5 p.m. 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.

The Orland Police Department currently has 16 employees, comprising one sworn community service officer, three non-sworn support employees, two sergeants, nine patrol officers, and one chief. The Police Department uses five vehicles for its services. For more information on the Police Department, please see the Orland Background Report.

EMERGENCY MEDICAL SERVICES

The Orland Volunteer Fire Department assumes the first response to all medical emergency calls in the City. In addition to fire emergency services, the Department provides services in the form of medical emergency response and disaster aid. The Department currently has two ambulances, with one staffed 24 hours per day. The majority of the fire department volunteers are either EMT-trained or are trained First Responders. See the Background Report for more information.

HEALTH SERVICES

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Orland's role in health services issues is somewhat limited. The City is not directly involved with the establishment, management, or operation of any health care facilities. Nevertheless, Orland is a growing community with an ever-increasing need for health services that is recognized by the City in its planning efforts.

Currently, there is no hospital in the City of Orland. The closest full-service hospital is Enloe Medical Center in Chico, which is located approximately 18 miles to the east. Additionally, the Glenn Medical Center is located 15 miles to the south of Orland in Willows.

~~Del Norte Clinics, Inc.~~ Ampla Health 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. Orland is also served by Enloe Immediate Care Medical located at 1361 Cortina Drive. Additionally, 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 multiple health services as well as numerous health education services.

OUTLOOK

At the current population of ~~7,179~~ 8,527 (California Department of Finance 2021), the Orland Police Department provides approximately ~~1.92~~ officers per 1,000 residents (not including non-sworn support employees). The Chief of Police has stated that the current force-level is able to meet current call demands within the City area. However, it is anticipated that during the life of the 2008–2028 General Plan, the City will need to expand the size of the Police Department staff in order to continue to serve the growing population.

Generally speaking, cities maintain a fire staffing/population ratio similar to police departments. However, because Orland's fire protection services are made up of volunteers, maintenance of a specific ratio may be impractical. While it is the City's goal to respond to fires within five minutes, the nature of a volunteer force precludes this from always occurring. As mentioned above, the placement of an unstaffed satellite equipment facility in the area of the northeastern section of the Planning Area could serve the purpose of reducing response times for that area, as well as to the east Orland area.

There are currently no plans for expansion of EMS or hospital services. As the City's population grows, the need for emergency medical services and medical facilities will likewise increase. The City has a limited role in medical services, as most facilities are operated by private organizations.

GOALS, POLICIES, AND PROGRAMS

GOAL 4.4: PROVIDE POLICE AND EMERGENCY MEDICAL SERVICES IN A WELL-PLANNED, COST-EFFECTIVE, AND PROFESSIONAL MANNER.

Policy 4.4.A: The City shall strive to provide high-quality police services for City residents and businesses with adequate facilities, modern technology and

current training to maximize job performance.

Program 4.4.A.1: The City should continue to emphasize the use of modern technology in providing effective law enforcement for the community and support such technology through the budget. Up-to-date technology assists in the maintenance and improvement of service levels and response times. The City should strive to maintain and improve its stated response time standards for all calls, especially emergency.

Program 4.4.A.2: The City should continue to participate in its mutual aid agreements and coordination between the City's Police Department and other law enforcement agencies.

Program 4.4.A.3: During its annual budget review, the City shall consider the needs of the Orland Police Department and will support those needs with budget revenues, grants, and impact fees. As part of the budget review process, the City shall review impact fee rates to ensure they adequately reflect a fair share of funding by development and other law enforcement service recipients.

Policy 4.4.B: The City shall incorporate police protection considerations into City and community activities.

Program 4.4.B.1: Refer development proposals to the Orland Police Department for review and comment. The review process shall consider the provision of access to lands for emergency services, street access to all structures, and crime prevention programs.

Program 4.4.B.2: Promote ongoing public safety programs, including Neighborhood Watch, Police Explorers, Volunteers in Police Services (VIPS) and other public education and crime prevention efforts.

GOAL 4.5: ENSURE A RANGE OF HEALTH CARE SERVICES ARE CONVENIENTLY AVAILABLE TO CITY RESIDENTS.

Policy 4.5.A: The City shall assist local health service and care providers in pursuing funding opportunities, both public and private, for the planning, construction and staffing of health and medical facilities.

Program 4.5.A.1: The City should take the lead role and/or partner with nonprofit organizations in applying for funds that they cannot pursue directly because of their legal status (e.g., Community Development Block Grant program).

4.6 GEOLOGIC HAZARDS

This section addresses seismic and geologic hazards that could result in structural failures and damage to structures in the City of Orland. According to the Glenn County Seismic Safety Element, geologic hazards such as earthquake shaking, landslides, and

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volcanic eruption are minimal and are not expected to be a major problem in the planning area. However, the information below provides a preliminary indication of the degree of potential hazard or risk that may exist for various geologic or seismic events within the Planning Area.

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.

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. Because the Orland Planning Area is relatively flat, there is a low potential for erosion. For a discussion of erosion concerns along Stony Creek, see the Open Space, Conservation, and Public Facilities Element.

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. Highly expansive soils can cause structural damage to foundations and roads and are less suitable for development than non-expansive soils. According to the Glenn County General Plan, the Orland Planning Area has a low to high potential for expansive soils. A map of expansive soils in the General Plan shows the majority of expansive soils west of I-5. Detailed geologic investigations may be necessary for areas with moderate to high shrink-swell potential. Development on expansive soils may require special grading and construction techniques. This type of soil also increases the cost of installing sewer and water lines and affects the design of storm drainage facilities since percolation is slow. This may present specific challenges in developing commercial uses in areas west of I-5. Additional soils information is presented in **Table 4-1**.

TABLE 4-1
SELECTED PHYSICAL AND ENGINEERING PROPERTIES OF SOILS IN THE ORLAND GENERAL PLAN AREA

Soil	Depth (Inches)	USDA Texture	Percentage passing sieve number:				Liquid Limit %	Plasticity Index	Permeability : in./hr.	Shrink- Swell Potential
			4	10	40	200				
Czk: Cortina	0-8	Gravelly fine sandy loam	55- 80	50- 75	35- 60	25- 40	20-30	NP-5	2.00-6.00	Low
	8-15	Stratified very gravelly loamy sand to very gravelly loam	30- 60	25- 55	15- 40	5-35	20-30	NP-5	2.00-6.00	Low
	15-60	Stratified very gravelly sand to very gravelly loamy sand	30- 60	25- 55	15- 45	0-10	---	NP	6.00-20.00	Low
Czt:	0-8	Very gravelly sandy loam	30-	25-	15-	5-35	20-30	NP-5	2.00-6.00	Low

Cortina			60	55	50					
	8-32	Stratified very gravelly loamy sand to very gravelly loam	30-60	25-55	15-40	5-35	20-30	NP-5	2.00-6.00	Low
	32-60	Stratified very gravelly sand to very gravelly loamy sand	30-60	25-55	15-45	0-10	---	NP	6.00-20.00	Low
Omr: Orland	0-11	Loam	80-95	75-90	65-85	50-65	25-35	NP-10	0.60-2.00	Low
	11-42	Stratified loam to silt loam	80-95	75-90	65-85	50-65	25-35	NP-10	0.60-2.00	Low
	42-60	Stratified sand to gravel	15-65	10-60	5-40	0-15	---	NP	>20.00	Low
Wg: Wyo	0-11	Loam	80-95	75-90	65-85	50-65	25-35	NP-10	0.60-2.00	Low
	11-42	Loam, very fine sandy loam	80-95	75-90	65-85	50-65	25-35	NP-10	0.60-2.00	Low
	42-60	Sand and Gravel	30-55	25-50	20-30	0-5	---	NP	>20.00	Low
Wh: Wyo	0-11	Gravelly loam	65-90	55-75	50-75	35-50	25-35	5-10	0.60-2.00	Low
	11-30	Gravelly loam	65-90	55-75	50-75	35-50	25-35	5-10	0.60-2.00	Low
	30-60	Sand and Gravel	50-85	40-80	30-50	5-10	---	NP	6.00-20.00	Low
Wn: Wyo	0-11	Silt loam	100	100	85-100	60-85	25-35	5-10	0.60-2.00	Low
	11-60	Silt loam, silty clay and gravel	95-100	100	85-100	70-85	25-40	5-20	0.60-2.00	Low

SEISMIC HAZARDS

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 farther 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 California building code enforcement. For building code purposes, the City of Orland is in Seismic Zone "D."

As shown in Figure 4-4, the Corning Fault runs through Orland. This fault is a Quaternary fault, or one that has been recognized at the surface and which have evidence of movement in the past 1.6 million years, or during the Quaternary Period.

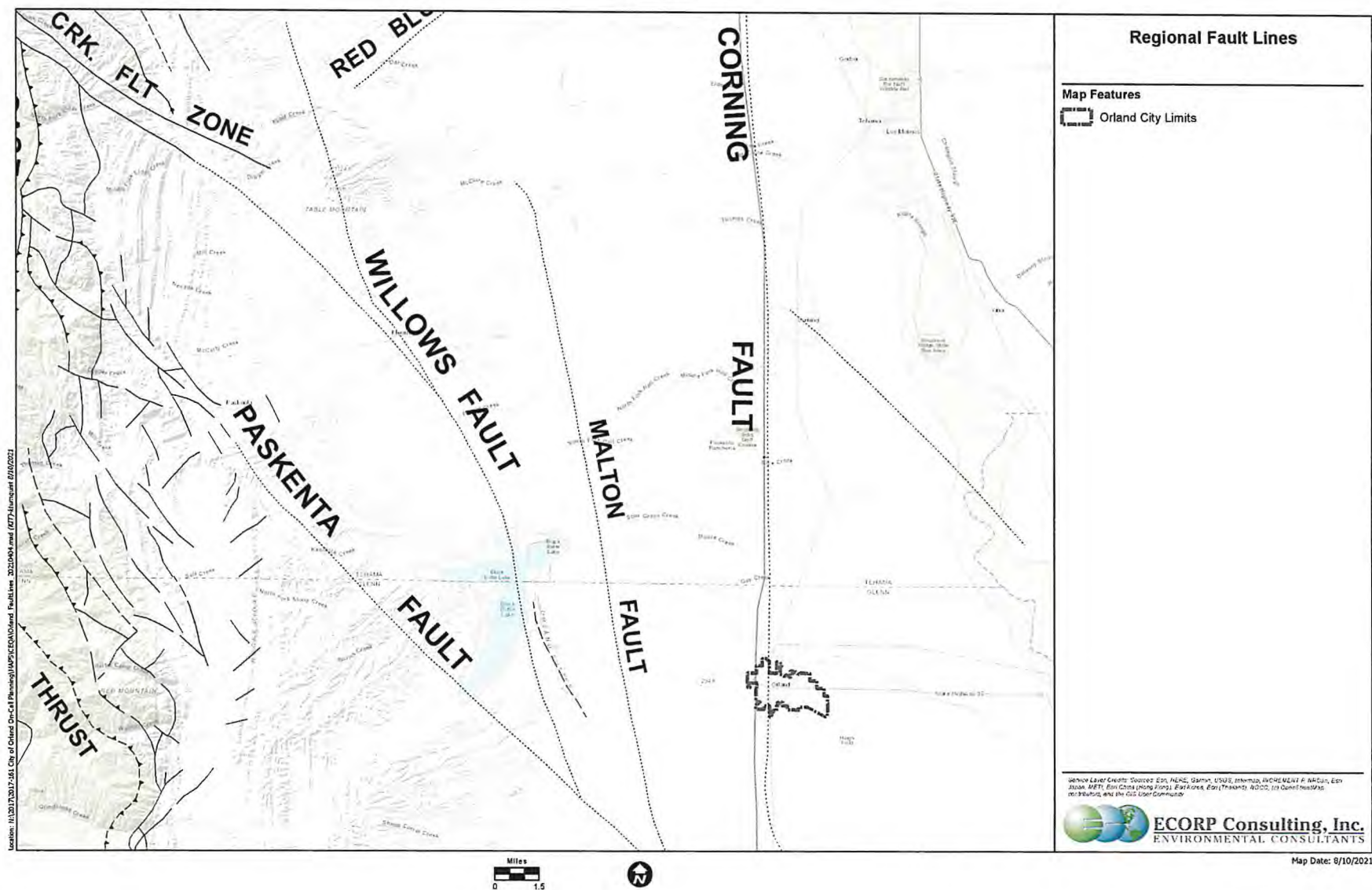
Ground Shaking

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.

FIGURE 4-4
FAULT LINES



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GOALS, POLICIES, AND PROGRAMS

GOAL 4.6: MINIMIZE THE THREAT OF PERSONAL INJURY AND PROPERTY DAMAGE DUE TO SEISMIC AND GEOLOGIC HAZARDS.

Policy 4.6.A: The City shall consider the potential for expansive soils and earthquake-related hazards when reviewing applications for developments.

Program 4.6.A.1: The City may require that a soils report, prepared by a licensed soils engineer, be required for all projects within areas of identified soils limitations. Soils reports shall evaluate shrink-swell and liquefaction potential of sites and recommend measures to minimize unstable soil hazards.

Program 4.6.A.2: Public buildings and areas designed for assembly will be constructed to meet seismic safety standards.

Program 4.6.A.3: Work with owners of existing buildings to encourage structural improvements to meet current seismic standards.

Program 4.6.A.4: Consider funding options to assist property owners with costs related to seismic safety structural improvements.

Policy 4.6.B: The City shall work with landowners and interested parties to address seismic safety concerns for older and historic buildings within the downtown area.

Program 4.6.B.1: Explore options to amend existing development codes where feasible to facilitate the reuse and redevelopment of existing structures within the downtown area relative to seismic safety standards.

Policy 4.6.C: The City shall require applications for projects that extract groundwater, oil, or gas to include a report evaluating the potential for resulting subsidence. Reports shall discuss appropriate mitigation measures to reduce the potential for subsidence.

4.7 CLIMATE CHANGE HAZARDS

CLIMATE CHANGE

In 2015, California adopted Senate Bill (SB) 379, which amended Section 65302(g) of the California Government Code to require General Plan Safety Element's to address climate adaptation and resiliency strategies applicable to the local planning area.

Climate change refers to prolonged changes in temperature, precipitation, and wind patterns attributed to increased concentrations of greenhouse gases (EPA 2017). While some levels of these gases are necessary to maintain a comfortable temperature on Earth, an increased concentration of these gases traps additional heat, impacting Earth's

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climate system in several ways. These effects can lead to an increase in frequency and intensity of climate change hazards such as flooding, severe weather, wildfires, landslides, and drought conditions, among others (EPA 2017). Impacts from climate change already occurring in California, include loss of the Sierra snowpack, severe drought periods, sea level rise, more frequent and intense wildfires, and heat waves (OEHHA 2018).

STATE LEGISLATION ON CLIMATE CHANGE

Since 2005, the State of California has responded to growing concerns over the effects of climate change and has been a leader in adopting important policies, guidelines, and regulations to address climate change, including the key initiatives below.

Executive Order S-3-05: In 2005, Governor Arnold Schwarzenegger issued EO S-3-05, which established the following greenhouse gas (GHG) emission reduction targets for the state:

- By 2010, reduce GHG emissions to 2000 levels,
- By 2020, reduce GHG emissions to 1990 levels, and
- By 2050, reduce GHG emissions to 80% below 1990 levels.

This order directed the California EPA; the Business, Transportation, and Housing Agency; the California Air Resources Board (CARB); the California Energy Commission; and the Public Utilities Commission to work together to develop a Climate Action Plan and report back on progress on meeting the statewide targets.

Assembly Bill 32: In 2006, California adopted AB 32, the Global Warming Solutions Act. SB 32 required the California Air Resources Board to develop a Scoping Plan to outline how the state will reduce statewide GHG emissions to 1990 levels by the year 2020.

Senate Bill 375: In 2008, California adopted SB 375, the Sustainable Communities and Climate Protection Act. The bill builds on AB 32 by setting regional GHG emissions targets and calls for regional planning agencies to prepare a "sustainable communities' strategy" (SCS) as an integral part of its regional transportation plan.

LOCAL CLIMATE CHANGE IMPACTS

How climate change affects a specific community depends on its location, natural resources, built environment, and, most importantly, the varying degrees to which community members can respond and adapt to its impacts. The following section describes climate change impacts that may affect Orland in the future, and the populations that will be most vulnerable to them. The hazards discussed in this section are based on projections provided by Cal-Adapt, the California Fourth Climate Change Assessment, the Federal Emergency Management Agency (FEMA), and scholarly research.

In climate research, emission scenarios are used to provide plausible descriptions of how the future climate may change with respect to a range of variables including socio-economic change, technological change, energy and land use, and emissions of

greenhouse gases and air pollutants (van Vuuren et al., 2011). The goal of working with scenarios is not to predict the future, but to better understand uncertainties and alternative futures, in order to consider how to plan for a wide range of possible futures. Over time, a variety of approaches to climate modelling scenarios have been used. In order to avoid inconsistencies between climate modelling groups, researchers use the same type of scenario when they are conducting studies. Currently, climate scientists use emissions scenarios based on the concept of Representative Concentration Pathways, or RCPs. A Representative Concentration Pathway (RCP) is a greenhouse gas concentration trajectory adopted by the Intergovernmental Panel on Climate Change (IPCC). The pathways describe different climate futures, all of which are considered possible depending on the volume of greenhouse gases (GHG) emitted in the years to come. For each category of emissions, an RCP contains a set of starting values and the estimated emissions up to the year 2100, based on assumptions about economic activity, energy sources, population growth and other socio-economic factors (Bjørnæs, 2015). Also included in the data is historic, real-world information.

The emission scenarios identified in this General Plan span from a low-end scenario that requires significant emissions reductions resulting in zero global emissions by 2080 (RCP 2.5) to a high-end, "business-as-usual," fossil-fuel-intensive emissions scenario (RCP 8.5). RCP 4.5 is described by the IPCC as an intermediate scenario. Emissions in RCP 4.5 peak around 2040, then decline (IPCC, 2014). In RCP 8.5, emissions continue to rise throughout the 21st century (IPCC, 2014).

Rising Temperature

Annual average temperatures in Orland are projected to increase steadily. Orland's historical average annual maximum temperature, based on data from 1961 to 1990, was 74.9°F (Cal-Adapt, 2017). Under a medium emissions scenario (RCP 4.5), Orland's average annual maximum temperature will rise from 74.9°F to 78.8°F by 2064 and to 79.9°F by 2099 (Cal-Adapt, 2017). Under a high emissions scenario (RCP 8.5), Orland's average annual maximum temperature will rise from the historical average baseline of 74.9°F to 79.6°F by 2064 and to 83.1°F by 2099 (Cal-Adapt, 2017).

Increased average temperatures are expected to lead to secondary climate change impacts, including increases in the frequency, intensity, and duration of extreme heat days and multi-day heat waves in California. Cal-Adapt defines the extreme heat day threshold for Orland as 105°F or higher. Orland has a historical average of four extreme heat days a year. Under a medium emissions scenario (RCP 4.5), Orland is expected to experience 16 extreme heat days annually by 2064 and 23 a year by 2099 (Cal-Adapt, 2017). Under a high-emissions scenario (RCP 8.5), Cal-Adapt predicts that Orland will experience 22 extreme heat days annual by 2064 46 extreme heat days per year by 2099 (Cal-Adapt, 2017).

Increased Precipitation Variability

As described in the North Coast Region Report from the California Fourth Climate Change Assessment, future trends in precipitation are uncertain, with some models suggesting modest increases in annual precipitation while others suggest lower precipitation relative to recent historical conditions (Grantham, 2018). California's climate

varies between wet and dry years. Dry years are also likely to be followed by dry years, increasing the risk of drought. While California does not see the average annual precipitation changing significantly in the next 50-75 years, precipitation will likely be delivered in more intense storms and within a shorter wet season (Grantham, 2018).

On average, the state receives 75 percent of its annual precipitation from November through March, with 50 percent occurring from December through February (OEHHA, CalEPA, 2018). As the winter months have become warmer in recent years, more precipitation has been falling as rain instead of snow over the watersheds that provide a large percentage of the state's water supplies.

The state relies on winter snowpack storing water during the cold months as runoff from melting snowpack in the warmer months supplies the water needed by the state for municipal uses and agriculture (OEHHA, CalEPA, 2018).

Between the period of 1961 to 1990, Orland experienced an average rainfall of approximately 21.3 inches per year (Cal-Adapt, 2017). No clear trend is evident in the amount of yearly precipitation Orland will experience in the future. It is estimated that years with extremely low and extremely high precipitation will become more frequent as the climate continues to warm (Cal-Adapt, 2017).

Drought

A drought occurs when conditions are drier than normal for an extended period of time, making less water available for people and ecosystems. Droughts are a regular occurrence in California; however, scientists expect that climate change will lead to more frequent and more intense droughts statewide (Grantham, 2018). Drought severity depends on numerous factors, including duration, intensity, and geographic extent. The severity of drought can be aggravated by other climatic factors, such as prolonged high winds and low relative humidity. As noted in the Glenn County MJHMP, drought is a regional hazard with no defined boundaries; thus, the drought conditions in Orland are on par with those of the rest of Glenn County.

Severe drought can reduce agricultural production, increase the threat of wildfires, and increase the demand for energy used for cooling. The high annual variability in California's precipitation means that each year could hold the possibility of either record wet or record dry conditions (DWR, 2020). In the absence of the ability to reliably predict seasonal precipitation, Orland must be prepared for the possibility of extreme wet or dry conditions in any year. Actions like conserving water, enhancing water efficiency throughout landscapes, identifying alternative water supplies, and emergency planning for drought conditions can be taken to prepare for future conditions.

VULNERABLE POPULATIONS

Climate change creates significant and evolving challenges to the health and well-being of the entirety of California's population; however, some Californians are particularly vulnerable. There is a broad range of environmental hazards attributed to climate change including heat waves, wildfires and wildfire smoke, air pollution, sea

level rise and inland flooding. Some of the public health risks posed by climate change include risks related to heat, outdoor and indoor air quality, water quality and availability, extreme weather events, flooding, infectious diseases, limitations on health services, and food safety and food security (CRNA, 2014).

Populations considered most vulnerable to climate change impacts are children, pregnant women, older adults, and those with pre-existing conditions (Maizlish et al., 2017). In addition, social and demographic factors and inequities affect individual and community vulnerability to the health impacts of climate change. Individuals with fewer economic resources, limited mobility or access to transportation, lower English language proficiency and education, and uncertain citizenship status are at a greater risk as they have fewer resources to adapt, evacuate, or access information (Maizlish et al., 2017).

Public health adaptation strategies can help to minimize the negative health impacts of climate change. Some of these strategies include providing community education and engagement opportunities, identifying vulnerable segments of the population, and providing public resources such as cooling shelters and emergency response programs (Maizlish et al., 2017).

LOCAL ADAPTATION STRATEGIES

In many instances, responding to climate change does not require large scale changes to municipal operations, but only requires adapting existing plans and policies to incorporate knowledge about changing levels of risk across key areas such as public health, infrastructure planning and emergency management.

Incorporating this knowledge not only protects our communities from growing risk, but climate adaptation strategies can also increase jobs, improve public health and the overall livability of our communities. Strategies which strengthen resilience in time of emergency also help communities thrive even more during good times.

GOALS, POLICIES, AND PROGRAMS

GOAL 4.7: MINIMIZE THE RISKS TO LIFE, PROPERTY, THE ECONOMY, AND THE ENVIRONMENT RESULTING FROM CLIMATE CHANGE.

Policy 4.7.A: Consider and monitor the effects of climate change in Orland and the associated levels of risk in order to adapt to changing climate conditions and be resilient to negative changes and impacts associated with climate change.

Program 4.7.A.1: Monitor federal, state, and regional plans and programs to stay informed on emerging information, practices, and strategies to address climate change.

Program 4.7.A.2: When updating master plans for infrastructure, including water supply, flood control, and drainage, and critical facilities, review relevant climate change scenarios and ensure that the plans consider the

potential effects of climate change and include measures to provide resilience.

Program 4.7.A.3: Support public education, adaptation, and emergency response services in response to the potential long-term impacts of climate change.

Program 4.7.A.4: Seek to provide the community with information relating to sustainability, climate change, and innovative development strategies.

Program 4.7.A.5: In the event of severe weather conditions such as excessive heat, provide response services including the deployment of emergency services, opening of local cooling shelters, and community notifications.

Program 4.7.A.6: Participate in regional activities and initiatives to help reduce risks and economic impacts of potential disasters related to extreme weather.

Program 4.7.A.7: Ensure resilience to the impacts of global climate change by considering the effects (including but not limited to increasing temperatures, heavier storms and other weather events, increased fire risk) as part of best practices in all aspects of City functions.

Program 4.7.A.8: Where funding allows, work to reinforce critical infrastructure to ensure resilience to the potential negative impacts of climate change.

4.7 4.8 HAZARDOUS MATERIALS AND WASTE MANAGEMENT

The City of Orland relies on the Glenn County Hazardous Waste Management Plan to direct hazardous waste management activities throughout the county and within the City of Orland.

According to OSHA requirements under 29 Code of Federal Regulations (CFR) 1910.120 and the California Code of Regulations Title 8 Section 5192, anyone who may discover or respond to a hazardous materials incident (i.e., fire, law, health, transportation, public works, private industry) must have a minimum of Hazardous Materials First Responder Operational (HMFRO) training. The HMFRO certification should be renewed every year.

TRANSPORT OF HAZARDOUS MATERIALS

The location of Interstate 5 and State Route 32 through the Planning Area raises concerns of accidents with vehicles carrying hazardous materials. Transportation of hazardous materials is strictly regulated by state and federal agencies.

GOALS, POLICIES, AND PROGRAMS

GOAL 4.7: MINIMIZE THE RISK OF PERSONAL INJURY, PROPERTY DAMAGE, AND ENVIRONMENTAL DEGRADATION RESULTING FROM THE USE, TRANSPORT, DISPOSAL, AND RELEASE/DISCHARGE OF HAZARDOUS MATERIALS.

Policy 4.7.A: The City shall continue to work with Glenn County to manage

hazardous waste.

Program 4.7.A.1: Continue to coordinate hazardous waste management programs with the Glenn County Hazardous Waste Management Plan and the Glenn County Emergency Operations Plan.

Program 4.7.A.2: Refer all permits for new projects or major additions to existing uses located on sites identified by the State as having or containing likely hazardous substances or materials to the Glenn County Health Department to ensure compliance with applicable state and local regulations.

Program 4.7.A.3: Any use which uses or manufactures hazardous substances within one-quarter mile of any existing or proposed school shall only be permitted when authorized by a conditional use permit, with ample assurances that the students will not be placed in a hazardous environment.

Policy 4.7.B: The City shall encourage HMFRO training and certification for appropriate public safety personnel.

4.8 RAIL-RELATED HAZARDS

Hazardous materials are also regularly shipped via the rail line and, while unlikely, an incident involving a rail accident within the City could have serious effects. Unfortunately, the City has little control over the types of materials that are shipped via the rail line. With regard to government activities, the content of shipments may be confidential for reasons of security.

While the City has little influence over the types of material transported via the rail line, ensuring that at-grade crossings within the City are operating in a safe and effective manner can reduce the potential for rail incidents.

GOALS, POLICIES, AND PROGRAMS

GOAL 4.8: MINIMIZE THE POTENTIAL FOR HAZARDS RELATED TO RAIL SERVICE IN AND AROUND THE CITY OF ORLAND.

Policy 4.8.1: Rail-related hazards shall be considered prior to approval of new development projects and roadway improvements in the immediate vicinity of the Union Pacific Railroad tracks.

Program 4.8.A.1: Consult with the Union Pacific Railroad Company to determine ways to minimize hazards related to at-grade rail crossings within Orland.

Program 4.8.A.2: Endeavor to monitor the operation of at-grade crossings within the city limits and shall immediately report any problems with gate function to the rail line operator.

4.9 AIRPORT-RELATED HAZARDS

There are two publicly owned airports in Glenn County: Haigh Field, located in Orland, and the Willows-Glenn Airport. Haigh Field is the only airport within the Planning Area. It is located approximately 3 miles southeast of the City of Orland's central business district, and approximately three-quarters of a mile from the City Limits at its nearest distance. Specifically, the airport is located at the southwest corner of County Roads P and 200, south of State Highway 32. The airport covers approximately 300 acres and has one runway which is approximately 5,160 feet long and 50 feet 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.

The airport is currently located within the jurisdiction of and is managed by the County of Glenn, but is within the City of Orland Sphere of Influence. It was constructed by the U.S. Army during World War II as an auxiliary training field for the Chico Army Airfield. The facility was turned over to the County for general aviation use after World War II and named in honor of a County Supervisor.

The airport is located approximately 1.5 miles south of SR 32. It is located in an undeveloped, primarily agricultural area, with residential uses scattered on all sides with the highest density located north of the airport. Residences, businesses and other activities located adjacent to or near the airport could be exposed to hazards arising from airport operations. Land use activities located within the flight path of aircraft could be exposed to potential incidents involving aircraft. Nearby buildings could interfere with airport operations as well as be exposed to additional risk.

Comprehensive Airport Land Use Plan

The Glenn County Airport Land Use Commission adopted the Comprehensive Airport Land Use Plan (CLUP) for Orland Haigh Field Airport on February 27, 1991. The CLUP provides the land use compatibility guidelines on which compatibility of land uses with airport operations are determined. It also establishes the planning boundaries around the airport. These boundaries are established for height, noise and safety. Following adoption by the Airport Land Use Commission, a CLUP is transmitted to all jurisdictions affected by the plan.

Under California Government Code Section 65302.3, a local jurisdiction must take action within 180 days to assure that its land use regulations are consistent with CLUP provisions. In addition to the provisions of the adopted Airport Land Use Plan and the provisions of Government Code Section 65302.3, Sections 11010.13(b) and 1102.6a of the California Civil Code establish additional notification requirements for land uses applications occurring within an "Airport Influence Area." An Airport Influence Area is defined as a radius area approximately 2 statute miles beyond an active airport inside of which a formal "Notice of Airport in the Vicinity" is required.

Concerns of airport land use planning, as defined and described in the adopted CLUP, fall into three primary categories: height restrictions, noise compatibility, and safety of persons on the ground. The CLUP evaluates all three categories. Since the Noise

Element discusses airport noise issues, this Safety Element will focus on the first and third categories.

Structure Height

Height restrictions are necessary to ensure that objects will not impair flight safety or decrease the operational capacity of the airport. Federal Aviation Regulation (FAR) Part 77 defines a series of imaginary surfaces surrounding airports. Any object or structure that would penetrate any of these imaginary surfaces is considered by the FAA to be an obstruction to air navigation. Applicants for projects that penetrate certain imaginary surfaces are required to notify the FAA of their intent. The FAA then initiates an aeronautical study to analyze if the project would be a hazard to air navigation. While the FAA can determine that a project would constitute a hazard to air navigation, it cannot prohibit construction. However, California law does prohibit the construction of any structure that would constitute an air navigation hazard as defined in FAR Part 77, unless a permit is issued by the California Department of Transportation, Aeronautics Program.

The CLUP for Haigh Field has adopted the imaginary surfaces defined in FAR Part 77. In general, to determine if a project would constitute a hazard to air navigation, notice is required to be given to the FAA if construction or alteration penetrates these imaginary surfaces or is more than 200 feet in height above the ground level at the project site. Most of the structures within the Orland city limits that are in the vicinity of the airport are single-family residences no higher than two stories. These structures do not penetrate the imaginary surfaces defined in FAR Part 77, and therefore present no hazard to air navigation nor are they exposed to air hazards due to height.

Safety Zones

Areas around airports are exposed to the possibility of aircraft accidents, even with well-maintained aircraft and highly trained pilots. Airport safety areas are established to minimize the number of people exposed to aircraft crash hazards. This is accomplished by placing restrictions on land uses in various designated safety areas.

The CLUP for Haigh Field designates three safety areas: the clear zone, the approach zone, and the overflight zone. The clear zone is near the end of the runway and is the most restrictive of the safety areas. The approach zone is located under the takeoff and landing slopes and is less restrictive. The overflight zone is the area under the air traffic pattern and is the least restrictive of the safety areas. As designated by the Glenn County Airport Land Use Commission, the safety areas are as follows:

- Clear zone – Trapezoidal (fan-shaped) areas which lie on the ground underneath the imaginary runway approach surfaces and include all of the area out to a point where the approach surface reaches 50 feet above the ground level. The clear zone has an inner width of 250 feet, an outer width of 450 feet, and a length of 1,000 feet.
- Approach zone – Beginning at the outer end of the clear zone and centered along the extended runway centerline. County Road 200 at the runway's north end lies within the primary surface which extends 200 feet beyond the runway

end. Power lines 30 feet high along County Road 24 are the critical obstacles within the approach, but are some 30 feet below the approach surface.

- **Overflight zone** – Generally coincides with the area overflowed by aircraft during normal traffic pattern procedures, but outside of the clear and the approach zones.

According to the land use compatibility guidelines in the CLUP, virtually all land uses are incompatible in the clear zone, except for roadways, open space and natural areas, pastures, and agricultural row crops. None of the land currently within the Orland city limits is located within the clear zone.

The approach zone allows for some commercial and industrial uses, but it prohibits almost all residential uses, except those which meet strict guidelines. Most of the approach zone that is within the Planning Area covers land designated for agricultural uses.

The overflight zone appears to cover part of the Planning Area in the southeast. According to the Land Use Diagram, most of the land within the overflight zone that is within the Planning Area is designated Low Density Residential, which allows for mainly single-family residences. The CLUP indicates that single-family detached residences are a compatible land use in the overflight zone, provided that the density is five acres or more per single-family residence.

GOALS, POLICIES, AND PROGRAMS

GOAL 4.9: ENSURE PUBLIC SAFETY DURING AIRPORT OPERATIONS.

Policy 4.9.A: The City shall require development projects within the overflight zone of the Haigh Field Airport to consider all applicable safety policies, City standards, and land use compatibility guidelines.

Program 4.9.A.1: Refer all development projects within the overflight zone of the Haigh Field Airport to the Glenn County Airport Land Use Commission for its review and comment. As part of the development review process for projects within the overflight zone of the airport, the City should apply airport/land use safety compatibility criteria to site design review to ensure compatibility between the airport operations and proposed land uses.

Program 4.9.A.2: The City should work with the Glenn County Airport Land Use Commission to assist with the updating of the airport's Comprehensive Land Use Plan.

Program 4.9.A.3: Inform applicants whose projects fall within the Airport Influence Area that disclosure statements regarding the presence of an active airport are required.

4.10 HEALTH AND ENVIRONMENTAL JUSTICE

In 2016, Senate Bill (SB) 1000 amended California Government Code Section 65302(h) to include requirements related to incorporating environmental justice into the General Plan. SB 1000 requires local governments to address pollution and other hazards that disproportionately impact low-income communities and communities of color within their jurisdiction as a way to proactively plan for and address environmental concerns when developing and updating components of the General Plan.

"Environmental Justice" is defined by California Government Code (Section 65040.12) as the "fair treatment and meaningful participation of people of all races, cultures, and incomes with respect to the development, adoption, implementation, and enforcement of environmental laws, regulations, and policies." Environmental justice also aims to ensure the availability of a healthy environment for all people; reducing pollution burdens for populations and communities experiencing adverse effects; promote meaningful participation of populations and communities most impacted through accessible engagement and technical assistance; and consideration of recommendations from populations and communities most impacted by pollution into environmental and land use decisions (California Government Code Section 65040.12). Environmental justice policies seek to minimize the effects of environmental hazards and foster a healthy community for all people.

The concept of environmental justice began as a movement in the 1980s due to the recognition that a disproportionate number of polluting industries, power plants, and waste disposal areas were located near low-income or minority communities. The movement was set in place to ensure fair distribution of environmental burdens among all people regardless of their background.

State Legislation

The first State environmental justice legislation was passed in 1999, when Senate Bill (SB) 115 was signed into law, defining environmental justice in statute and establishing the Governor's Office of Planning and Research (OPR) as the coordinating agency for State environmental justice programs (Gov. Code, § 65040.12). Assembly Bill (AB) 1553 subsequently required OPR to develop guidance for general plans by 2003. Since 2003, the General Plan Guidelines have provided guidance on incorporation of environmental justice considerations for local jurisdictions pursuant to Government Code section 65040.12(c)-(d). With the passage of SB 1000 in 2016, environmental justice is now a mandatory topic that must be addressed in jurisdictions with disadvantaged communities, either through integration into the seven mandatory elements, or as an optional element (Gov. Code, § 65302).

The purpose of addressing the topic of environmental justice in the General Plan is to bring awareness to the concept as well as to help reduce any unique or compounded health risks in identified disadvantaged communities by decreasing pollution exposure, increasing community assets, improving overall health and ensuring that all people have equal ability to participate in, and influence, the decision-making process regarding environmental regulations.

Disadvantaged Communities

Cities and counties are required to address environmental justice concerns of designated disadvantaged communities in the general plan. Disadvantaged communities are those identified by the California Environmental Protection Agency (EPA) as low income and which are disproportionately affected by environmental pollution, stressors, and social vulnerabilities that can lead to negative health effects, exposure, or environmental degradation.

The California EPA assists cities in identifying disadvantaged communities within their jurisdiction through a mapping tool called CalEnviroScreen 3.0. CalEnviroScreen 3.0 uses environmental, health, and socioeconomic information to produce scores for every census tract in the state. The scores are mapped so that different communities can be compared. An area with a high score is one that experiences a much higher pollution burden than areas with low scores. CalEnviroScreen ranks communities based on data that are available from state and federal government sources and is an instrumental tool in locating and understanding disadvantaged communities.

Per analysis conducted by the City using CalEnviroScreen 3.0 and local data, there are no designated disadvantaged communities in the Orland Planning Area.

While Orland does not have any areas with significant environmental equity concerns, it is nevertheless important that the City continually consider the effects of planning and land use decisions on the lives of residents and ensure that no area or population is disproportionately affected. For this reason, the City has chosen to include Environmental Justice policies in the General Plan.

GOAL 4.10: TREAT ALL SEGMENTS OF THE COMMUNITY FAIRLY IN THE PROCESS OF CREATING A HEALTHY ENVIRONMENT AND STRIVE TO EQUALLY SHARE THE BENEFITS AND THE BURDENS ASSOCIATED WITH PUBLIC SERVICES, FACILITIES, AMENITIES, AND DECISIONS ACROSS ALL MEMBERS OF THE COMMUNITY.

Policy 4.10.A: The City shall work to reduce potential environmental health risks by promoting public facilities, food access, safe and sanitary homes, physical activity, and civic engagement while reducing pollution exposure and other environmental hazards.

Program 4.10.A.1: The City should consider environmental justice issues as they pertain to the fair and equal distribution of public services, housing, amenities, and environmental quality.

Program 4.10.A.2: Apply environmental protection measures equally among geographic and socioeconomic sectors of the City.

Program 4.10.A.3: The City should encourage all members of the community to meaningfully participate in any civic public decision-making process.