Annex B City of Wheatland

B.1 Introduction

This Annex details the hazard mitigation planning elements specific to the City of Wheatland, a previously participating jurisdiction to the 2015 Yuba County Local Hazard Mitigation Plan (LHMP) Update. This Annex is not intended to be a standalone document, but appends to and supplements the information contained in the Base Plan document. As such, all sections of the Base Plan, including the planning process and other procedural requirements apply to and were met by the City. This Annex provides additional information specific to Wheatland, with a focus on providing additional details on the risk assessment and mitigation strategy for this community.

B.2 Planning Process

As described above, Wheatland followed the planning process detailed in Chapter 3 of the Base Plan. In addition to providing representation on the Yuba County Hazard Mitigation Planning Committee (HMPC), the City formulated their own internal planning team to support the broader planning process requirements. Internal planning participants, their positions, and how they participated in the planning process are shown in Table B-1. Additional details on Plan participation and City representatives are included in Appendix A.

Table B-1 City of Wheatland – Planning Team

Name	Position/Title	How Participated
Damian Sylvester	Police Chief	Informed hazard ID table. Assisted with past occurrences. Attended meetings.
Art Paquette	Fire Chief	Informed hazard ID table. Assisted with past occurrences. Attended meetings.
Dale Klever	Public Works Director	Informed hazard ID table. Assisted with past occurrences. Attended meetings.
Dane Schilling	Engineer (Contractor)	Assisted with past occurrences and hazard ID table.
Tim Raney	Community Development	Assisted with past occurrences and hazard ID table. Attended meetings

Coordination with other community planning efforts is paramount to the successful implementation of this LHMP Update. This section provides information on how the City integrated the previously approved 2015 Plan into existing planning mechanisms and programs. Specifically, the City incorporated into or implemented the 2015 LHMP through other plans and programs shown in Table B-2.

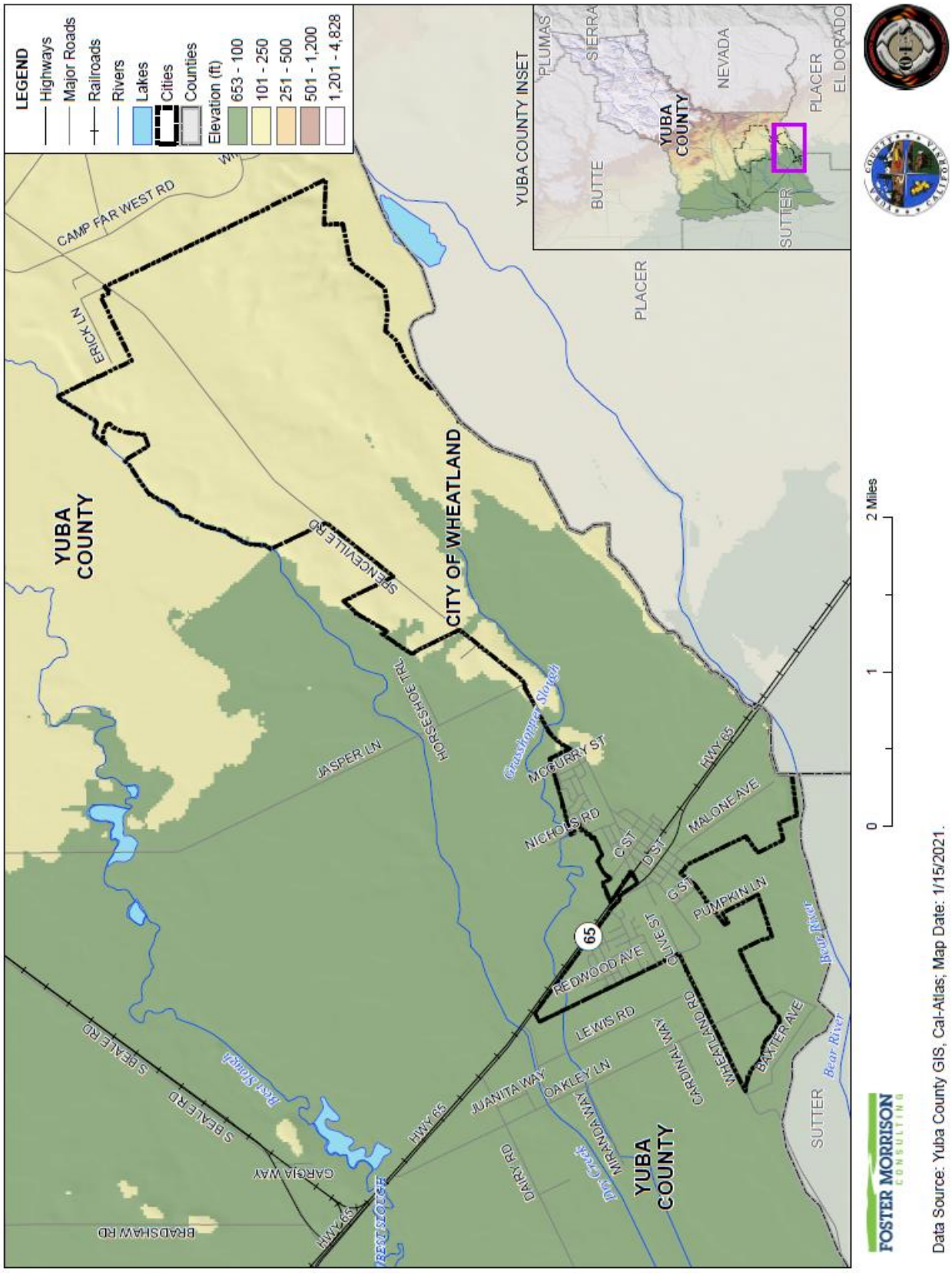
Table B-2 2015 LHMP Incorporation

Planning Mechanism 2015 LHMP Was Incorporated/Implemented In.	Details: How was it incorporated?
Not Incorporated	2015 LHMP never utilized to the extent it should be. It was not incorporated into other planning mechanisms.

B.3 Community Profile

The community profile for the City of Wheatland is detailed in the following sections. Figure B-1 displays a City map and the location of Wheatland within Yuba County.

Figure B-1 City of Wheatland



B.3.1. Geography and Climate

The City of Wheatland is located approximately one mile north of the Bear River and the tri-county line of Sutter, Placer and Yuba Counties. Wheatland's City limits are bounded by Dry Creek on the north, running south to the Bear River and from Baxter Slough on the west, and east to the Wheatland Ranch subdivision. Sacramento is located forty miles south. The City lies 87 feet above sea level and covers 1.5 square miles of land.

Wheatland is located twelve miles southwest of the City of Wheatland, the county seat, and 8 miles southwest of Beale Air Force Base. The base covers nearly 23,000 acres (10.09 sq. miles), and is home to the 9th Reconnaissance Wing with over 5,000 military personnel and dependents.

The topography of the valley floor is generally flat with the Bear River, Dry Creek, and Grasshopper Slough all located within the Wheatland area. The Feather River is located five miles to the west of the City at the confluence of the Bear River. Wheatland has a climate that is characterized by hot dry summers and cool moist winters. The coldest months are December and January, with highs in the 50's and lows in the mid to upper 30's. Most of the rain falls between December and March; average annual precipitation is 21.04 inches. July and August are the hottest months with highs in the 90's and nighttime lows around 60.

The Bear River, Dry Creek and Grasshopper Slough are all located within the sphere of influence of the City, with the Feather River about five miles west. The City is protected by levees maintained by Reclamation Districts 2103 and 817. Camp Far West Dam and Reservoir, located northeast of the City of Wheatland, is a source of recreation and a potential hazard. The City lies within the Dam's inundation area. A groundwater aquifer underlies Wheatland and serves the City's Municipal Water supply. Most of these resources are regional, and Wheatland is part of the Yuba County Integrated Regional Water Management Plan through the Yuba County Water Agency.

Wheatland's agricultural surroundings play a central role in its history and the character of the community. The continued growth of Wheatland will inevitably convert agricultural land to urban development. However, Wheatland has sought to maintain agricultural land uses as long as possible.

B.3.2. History

Wheatland was incorporated by an act of the Legislature on April 13, 1874. Daniel Fraser is credited with naming the City of Wheatland, having suggested it because of the vast amount of wheat raised in the area. Downtown Wheatland is an important part of Wheatland's small-town character and community heritage. Downtown is centrally located in the community with access to State Route 65, and includes over twenty-five historically significant buildings.

Wheatland has a long, rich history as one of the oldest settlements in California, starting with the Johnson Ranch. The Johnson Ranch was part of the Don Pablo Gutierrez land grant of 1844 sold in 1845 to William Johnson. Johnson's Ranch was the first settlement reached in California by wagon trains traveling the Overland Emigrant Trail. The track, laid down by the Stevens Party late in 1844, continued in use for at least eight years. It is estimated to have guided 10,000 wagons into the Great Valley of California. In

January 1847 two men and five women made it to the Johnson Ranch from the ill-fated Donner Party. A rescue party was formed, and the surviving emigrants were brought to the ranch.

A section of the ranch was set aside in 1849 as a government reserve, Camp Far West, and the town of Wheatland was created out of a portion of the grant in 1866. The first building in town was a saloon, built in 1866, before the town was surveyed. Wheatland was laid out in town lots by George Holland, under the management of C. L. Wilson, in 1866. That same year the first post office was established, and the railroad came to Wheatland.

Camp Far West, a military post, was established on September 28, 1849 on the Bear River near present day Wheatland. The post was strategically placed to safeguard travel routes to the area's mines. Despite the post's mission to protect the emigrant trails and wagon roads to the mines, Capt. Hannibal Day reported, "So far as the defense of the territory is concerned, no better force could be needed than the present population of the mines, armed and equipped as they very generally are." Every fort in California in 1850 faced constant desertion by the enlisted men leaving for the gold fields. The post commander complained further in 1851 that he could not reenlist soldiers because the local justice of the peace was "obliged to run from the sheriff under an indictment of the grand jury." Camp Far West was abandoned on May 4, 1852. Camp Beale opened in October 1942, as a training site for the 13th Armored and the 81st and 96th Infantry Divisions. During World War II, Camp Beale's 86,000 acres were home to more than 60,000 soldiers, a prisoner-of-war encampment, and a 1,000-bed hospital. In 1948, the Camp transferred from the Army to the Air Force. The Air Force conducted bombardier and navigator training at Beale and in 1951 reactivated the Beale Bombing and Gunnery Range for aviation engineer training. The Base has been under several commands, including Air Training Command, Continental Air Command, Aviation Engineer Force, the Strategic Air Command, and, since June 1, 1992, Air Combat Command.

B.3.3. Economy and Tax Base

US Census estimates show economic characteristics for the City of Wheatland. These are shown in Table B-3 and Table B-4. Mean household income in the City was $94,384. Median household income in the City was $75,066.

Table B-3 City of Wheatland – Civilian Employed Population 16 years and Over

Industry	Estimated Employment	Percent
Agriculture, forestry, fishing and hunting, and mining	22	1.2%
Construction	44	2.4%
Manufacturing	71	3.9%
Wholesale trade	71	3.9%
Retail trade	242	13.5%
Transportation and warehousing, and utilities	185	10.3%
Information	56	3.1%
Finance and insurance, and real estate and rental and leasing	134	7.4%

Industry	Estimated Employment	Percent
Professional, scientific, and management, and administrative and waste management services	197	11.0%
Educational services, and health care and social assistance	410	22.8%
Arts, entertainment, and recreation, and accommodation and food services	133	7.4%
Other services, except public administration	90	5.0%
Public administration	144	8.0%

Source: US Census Bureau American Community Survey 2013-2017 Estimates

Table B-4 City of Wheatland – Income and Benefits

Income Bracket	Percent
<$10,000	0.9%
$10,000 – $14,999	1.5%
$15,000 - $24,9999	1.8%
$25,000 – $34,999	7.4%
$35,000 – $49,999	13.6%
$50,000 – $74,999	24.7%
$75,000 – $99,999	17.7%
$100,000 – $149,999	19.3%
$150,000 – $199,999	6.5%
$200,000 or more	6.6%

Source: US Census Bureau American Community Survey 2013-2017 Estimates

According to the California Employment Development Department and City staff, large employers in the City include:

- Bear River School
- Bishop's Pumpkin Farm
- Wheatland Elementary and High School Districts
- Yuba County Office of Education
- City of Wheatland

B.3.4. Population

The California Department of Finance estimated the January 1, 2020 total population for the City of Wheatland was 3,641.

B.4 Hazard Identification

Wheatland identified the hazards that affect the City and summarized their location, extent, likelihood of future occurrence, potential magnitude, and significance specific to Wheatland (see Table B-5).

Table B-5 City of Wheatland—Hazard Identification Assessment

Hazard	Geographic Extent	Likelihood of Future Occurrences	Magnitude/ Severity	Significance	Climate Change Influence
Climate Change	Extensive	Highly	Negligible	Low	–
Dam Failure	Limited	Unlikely	Catastrophic	High	Medium
Drought & Water Shortage	Limited	Likely	Negligible	Low	High
Earthquake	Significant	Unlikely	Catastrophic	High	Low
Floods: 1%/0.5%/0.2% annual chance	Limited	Unlikely	Limited	Medium	Medium
Floods: Localized Stormwater	Limited	Occasional	Limited	Medium	Medium
Levee Failure	Limited	Occasional	Limited	Low	Medium
Pandemic	Limited	Occasional	Catastrophic	Medium	Medium
Severe Weather: Extreme Cold and Freeze	Limited	Unlikely	Limited	Low	Medium
Severe Weather: Extreme Heat	Limited	Occasional	Limited	Medium	High
Severe Weather: Heavy Rains and Storms	Limited	Occasional	Limited	Medium	Medium
Severe Weather: High Winds and Tornadoes	Limited	Unlikely	Negligible	Low	Low
Wildfire	Significant	Occasional	Limited	Medium	High

Geographic Extent
Limited: Less than 10% of planning area
Significant: 10-50% of planning area
Extensive: 50-100% of planning area

Likelihood of Future Occurrences
Highly Likely: Near 100% chance of occurrence in next year, or happens every year.
Likely: Between 10 and 100% chance of occurrence in next year, or has a recurrence interval of 10 years or less.
Occasional: Between 1 and 10% chance of occurrence in the next year, or has a recurrence interval of 11 to 100 years.
Unlikely: Less than 1% chance of occurrence in next 100 years, or has a recurrence interval of greater than every 100 years.

Magnitude/Severity
Catastrophic—More than 50 percent of property severely damaged; shutdown of facilities for more than 30 days; and/or multiple deaths
Critical—25-50 percent of property severely damaged; shutdown of facilities for at least two weeks; and/or injuries and/or illnesses result in permanent disability
Limited—10-25 percent of property severely damaged; shutdown of facilities for more than a week; and/or injuries/illnesses treatable do not result in permanent disability
Negligible—Less than 10 percent of property severely damaged, shutdown of facilities and services for less than 24 hours; and/or injuries/illnesses treatable with first aid

Significance
Low: minimal potential impact
Medium: moderate potential impact
High: widespread potential impact

Climate Change Influence
Low: minimal potential impact
Medium: moderate potential impact
High: widespread potential impact

B.5 Hazard Profile and Vulnerability Assessment

The intent of this section is to profile Wheatland's hazards and assess the City's vulnerability separate from that of the Yuba County Planning Area as a whole, which has already been assessed in Section 4.3 Hazard Profiles and Vulnerability Assessment in the Base Plan. The hazard profiles in the Base Plan discuss overall impacts to the Yuba County Planning Area and describes the hazard problem description, hazard location and extent, magnitude/severity, previous occurrences of hazard events and the likelihood of future occurrences. Hazard profile information specific to the City is included in this Annex. This vulnerability assessment analyzes the property, population, critical facilities, and other assets at risk to hazards ranked of medium or high significance specific to the City (as identified in the Significance column of Table B-5) and also includes a vulnerability assessment to the three primary hazards to the State of California: earthquake, flood, and wildfire. For more information about how hazards affect the County as a whole, see Chapter 4 Risk Assessment in the Base Plan.

B.5.1. Hazard Profiles

Each hazard vulnerability assessment in Section B.5.3, includes a hazard profile/problem description as to how each medium or high significant hazard affects the City and includes information on past hazard occurrences and the likelihood of future hazard occurrence. The intent of this section is to provide jurisdictional specific information on hazards and further describes how the hazards and risks differ across the Planning Area.

B.5.2. Vulnerability Assessment and Assets at Risk

This section identifies Wheatland's total assets at risk, including values at risk, populations at risk, critical facilities and infrastructure, natural resources, and historic and cultural resources. Growth and development trends are also presented for the community. This data is not hazard specific, but is representative of total assets at risk within the community.

Values at Risk

The following data from the Yuba County Assessor's Office is based on the 2020 Assessor's data. The methodology used to derive property values is the same as in Section 4.3.1 of the Base Plan. This data should only be used as a guideline to overall values in the County, as the information has some limitations. The most significant limitations are created by Proposition 13 as detailed in the Base Plan. With respect to Proposition 13, instead of adjusting property values annually, the values are not adjusted or assessed at fair market value until a property transfer occurs. As a result, overall value information is most likely low and does not reflect current market value of properties within the County. It is also important to note, in the event of a disaster, it is generally the value of the infrastructure or improvements to the land that is of concern or at risk. Generally, the land itself is not a loss. However, depending on the type of hazard and impact of any given hazard event, land values may be adversely affected; thus, land values are included as appropriate. Table B-6 shows the 2020 Assessor's values and content replacement values (e.g., the values at risk) broken down by property use for the City.

Table B-6 City of Wheatland – Total Values at Risk by Property Use

Property Use	Total Parcel Count	Improved Parcel Count	Total Land Value	Improved Structure Value	Estimated Contents Value	Total Value
Agricultural	48	10	$33,808,132	$5,351,935	$5,351,935	$44,512,002
Commercial	52	48	$5,736,734	$16,204,927	$16,204,927	$38,146,588
Government-Owned / Non-Taxable Property	42	-	$14,371	$0	$0	$14,371
Industrial	5	5	$406,943	$960,639	$1,440,958	$2,808,540
Miscellaneous	15	0	$0	$0	$0	$0
Residential	1,270	1,103	$45,165,052	$204,017,489	$102,008,730	$351,191,271
City of Wheatland Total	**1,432**	**1,166**	**$85,131,232**	**$226,534,990**	**$125,006,550**	**$436,672,772**

Source: Yuba County 2020 Parcel/Assessor's Data

Critical Facilities and Infrastructure

Critical facilities and infrastructure are those buildings and infrastructure that are crucial to a community. Should these be damaged, it makes it more difficult for the community to respond to and recover from a disaster. For purposes of this Plan:

> ***Critical Infrastructure describes the physical and cyber systems and assets that are so vital to the County of Yuba that their incapacity or destruction would have a debilitating impact on our physical or economic security or public health or safety. Critical infrastructure includes any location, facility, or infrastructure that are necessary to maintain normalcy in daily life, and that are essential for the delivery of vital services and for the protection of the community. Critical Facilities are further broken out into three Categories: 1) Essential Services Facilities, 2) Large Group and Vulnerable Populations Facilities, and 3) Infrastructure Facilities.***

An inventory of critical facilities in the City of Wheatland from Yuba County GIS is shown on Figure B-2 summarized in Table B-7, and detailed in Table B-8. Details of critical facility definition, type, name, address, and jurisdiction by hazard zone are listed in Appendix F.

Figure B-2 City of Wheatland Critical Facilities

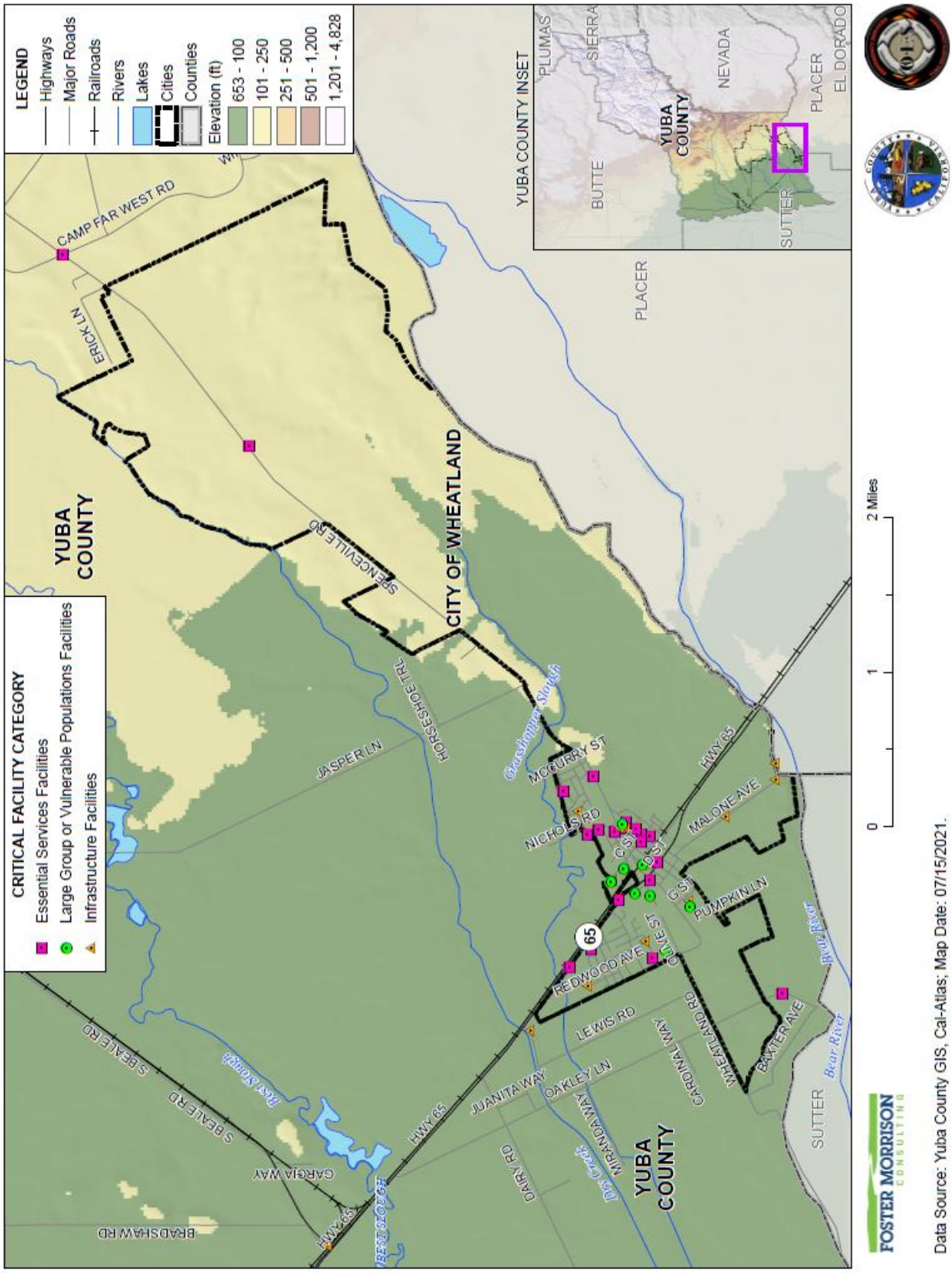


Table B-7 City of Wheatland – Summary of Critical Facilities by Class

Jurisdiction/Critical Facility Class	Facility Count
City of Wheatland	
Essential Services Facilities	18
Large Group or Vulnerable Populations Facilities	9
Infrastructure Facilities	14
City of Wheatland Total	**41**

Source: Yuba County GIS

Table B-8 City of Wheatland – Detailed Critical Facilities by Class and Name

Critical Facility Class	Critical Facility Name	Facility Count
City of Wheatland		
Essential Services Facilities	AT&T Mobility LLC	1
	AT&T Services INC	1
	City Of Wheatland	1
	Comcast Cable Communications Management, LLC	1
	Comcast Fresno LLC	6
	Sprint Corporation	1
	Sprint Nextel Corporation	1
	T-Mobile West LLC	1
	Walker Telecomm Inc	2
	Wheatland City Hall	1
	Wheatland Fire Authority	2
	Total	**18**
Large Group or Vulnerable Populations Facilities	Bear River Middle School	1
	CITY OF WHEATLAND	3
	City of Wheatland Community Center	1
	District Office	1
	Virginia School - Merged	1
	Wheatland Elementary School	1
	Wheatland Union High School	1
	Total	**9**
Infrastructure Facilities	CITY OF WHEATLAND	12
	City of Wheatland Public Works Yard	1
	Wheatland Water Tank	1
	Total	**14**
City of Wheatland Total		**125**

Source: Yuba County GIS

Natural Resources

Natural resources are unique to each area and are difficult to replace. Should a natural disaster occur, these species and locations are at risk.

The General Plan Background Report from 2006 noted that wetlands in the area provide critical habitat for fish and wildlife, including migrating waterfowl using the Pacific Flyway. Plant communities found in or near Wheatland include non-native grassland, riparian woodland, and several varieties of Great Valley riparian forest. Each of these plant communities provides habitat for various special-status species which occur, or have the potential to occur, in the Wheatland area.

The local Class II and Class IV soils, contribute to agriculture's status as the most important component of the area's economy. Class II soils are designated Prime Agricultural Soils by the USDA and are typically used for field crops and orchards. Class IV soils are best suited to hay production or livestock grazing. In addition, the agricultural lands surrounding Wheatland provide open space and wildlife habitat, and preserve the landscape's aesthetic qualities.

The City is located in the Bear River watershed, between Dry Creek and Grasshopper Slough to the north, and the Bear River to the south. Surface water in the area's major drainages typically originates from snowmelt runoff produced in the Sierra Nevada and Cascades mountain ranges to the east and north, respectively. The natural hydrology of the area has been extensively altered by human land use practices, beginning during the Gold Rush era. Siltation caused by hydraulic mining in the foothills raised streambeds by as much, as 70 feet in the Wheatland vicinity, causing widespread flooding. Construction of flood control levees and agricultural canals have further affected the local hydrology. Currently, water quality in the Study Area is a function of surrounding land uses. Agricultural practices contribute sediment, fertilizer, and pesticide residue, and other pollutants, to the waterways. Wheatland's domestic water supply source is groundwater and is generally of high quality.

The habitat communities occurring in the Study Area are discussed below as defined by the California Department of Fish and Game's Wildlife Habitat Relationship System (WHR). Common plant and wildlife species occurring. or expected to occur, within these habitats are addressed for each habitat type. Habitat communities observed within the Study Area include man-made/urbanized, annual grassland, cropland/orchard, valley foothill riparian, riverine, lacustrine, irrigated pastures, and seasonal wetlands.

Seasonal wetland habitat is typically associated with shallow drainages and swales (riverine features) or depressions, that inundate long enough to support hydric soils and hydrophytic vegetation such as vernal pools. Riverine seasonal wetlands are characterized by the seasonal flow of water induced by the onset of the rainy season and are typically vegetated with hydropathic species. These features can be supported by ground water and surface water sources, and therefore are typically more expansive than other seasonal wetlands, often flowing linearly across the landscape. A depressional seasonal wetland is characterized by shallow land depressions that are inundated or saturated by water often enough to support hydrophytic plant species.

Vernal pools are a unique type of seasonal wetland located within annual grassland habitats. Vernal pools are shallow depressions underlain by an impermeable layer, such as clay hardpan or bedrock, that fills with

water seasonally, providing habitat for various plant and animal species. Vernal pools occur within the Study Area where the topography of the landscape is gently sloping to nearly level. Annual herbs and grasses adapted to the unique seasonal conditions dominate vernal pool communities. Dominant plant species typically found within the vernal pools include coyote thistle (*Eryngium vaseyi*), annual hairgrass (*Deschampsia danthonioides*), popcorn-flower (*Plagiobothrys* sp.), spikerush (*Eleocharis macrostachya*), and western manna grass (*Glyceria occidentaliis*).

Seasonal wetlands including vernal pools are used by resident and migratory animal species. The Central Valley is part of the pacific flyway, a migratory route for waterfowl species extending from Alaska to South America. In the spring, migrating waterfowl are often observed foraging and resting in Central Valley seasonal wetlands. Resident invertebrates and crustaceans, as well as the roots and leaves of vernal pool plants, provide an important seasonal food source for waterfowl and other non-migratory bird species. In addition, vernal pool habitat is vital to the life cycle of special-status crustaceans such as vernal pool fairy shrimp (*Branchinecta lynchi*).

Historic and Cultural Resources

Historic and cultural resources are difficult to replace. Should a natural disaster occur, these properties and locations can be at risk.

The City of Wheatland has a stock of historically significant homes, public buildings, and landmarks. To inventory these resources, the HMPC collected information from a number of sources. The California Department of Parks and Recreation Office of Historic Preservation (OHP) was the primary source of information. OHP administers the National Register of Historic Places, the California Register of Historical Resources, California Historical Landmarks, and the California Points of Historical Interest programs. Each program has different eligibility criteria and procedural requirements. These requirements are detailed in Section 4.3.1 of the Base Plan. Table B-9 lists the historical buildings in the City.

Table B-9 City of Wheatland – Historical Resources

Resource Name (Plaque Number)	National Register	State Landmark	California Register	Point of Interest	Date Listed	City/ Community
Camp Far West Cemetery (P376)				X	1/17/1975	Wheatland
Chinese Cemetery and Funeral Pyre (P467)				X	12/22/1975	Wheatland
Grace Episcopal Church (P377)				X	1/17/1975	Wheatland
Johnson Ranch and Burtis Hotel Sites (N1704)	X				7/22/1991	Wheatland
Johnson's Crossing (P375)				X	1/17/1975	Wheatland
Johnson's Ranch (493)		X			10/10/1951	Wheatland
Muck Home (P378)				X	1/17/1975	Wheatland
Overland Emigrant Trail (799)		X			9/16/1964	Wheatland
Site of The Wheatland Hop Riot Of 1913 (1003)		X			5/8/1991	Wheatland

Resource Name (Plaque Number)	National Register	State Landmark	California Register	Point of Interest	Date Listed	City/ Community
Temporary Detention Camps for Japanese Americans-Wheatland Assembly Center (934)		X			5/13/1980	Wheatland
Us Post Office--Wheatland Main (N1341)	X				1/11/1985	Wheatland
Wheatland Masonic Temple (P379)	X			X	1/17/1975	Wheatland

Source: California Department of Parks and Recreation Office of Historic Preservation, http://ohp.parks.ca.gov/

It should be noted that these lists may not be complete, as they may not include those currently in the nomination process and not yet listed. Additionally, as defined by the California Environmental Quality Act (CEQA) and the National Environmental Policy Act (NEPA), any property over 50 years of age is considered a historic resource and is potentially eligible for the National Register. Thus, in the event that the property is to be altered, or has been altered, as the result of a major federal action, the property must be evaluated under the guidelines set forth by CEQA and NEPA. Structural mitigation projects are considered alterations for the purpose of this regulation.

Growth and Development Trends

As part of the planning process, the HMPC looked at changes in growth and development, both past and future, and examined these changes in the context of hazard-prone areas, and how the changes in growth and development affect loss estimates and vulnerability over time. Information from the City of Wheatland General Plan Housing Element, the California Department of Finance, the US Census Bureau form the basis of this discussion.

Historic Population Trends and Current Population

Population growth can increase the number of people living in hazard prone areas. Wheatland has generally seen steady growth. Wheatland has seen growth rates as shown in Table B-10.

Table B-10 City of Wheatland – Population Changes Since 1950

Year	Population	Change	% Change
1950	581	–	-
1960	813	232	39.9%
1970	1,280	467	57.4%
1980	1,474	194	15.2%
1990	1,631	157	10.7%
2000	2,275	644	39.5%
2010[1]	3,456	1,181	51.9%
2020[2]	3,641	185	5.4%

Source: [1]US Census Bureau, [2]California Department of Finance

Special Populations and Disadvantaged Communities

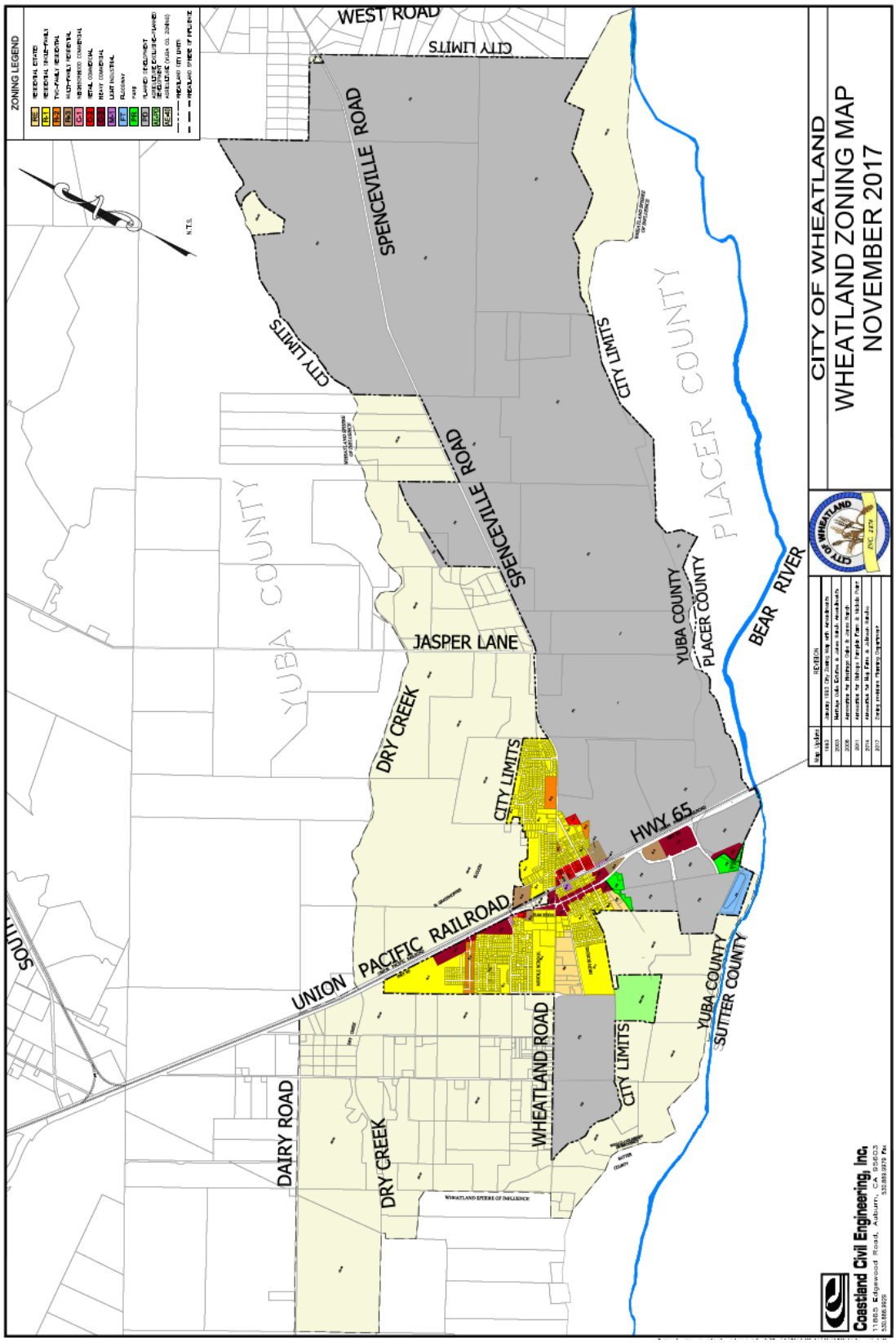
The City has an area that is generally low income with a significant number of senior citizens. This area is called the Donner Trail Manor, 121 B Street, and is located next to City Hall in the northeast corner of the City. There is another lower income area of the City located on Evergreen Street in the northwest side of town. The residents speak predominantly Cambodian and Vietnamese. Individuals living in these areas would likely need special assistance evacuating during a hazard event.

Land Use

State planning law requires that the land use element of a general plan include a statement of the standard population density, building intensity, and allowed uses for the various land use designations in the plan (Government Code Section 65302(a)). The City's land use designations are generally described below and mapped on the Land Use Diagram (Figure B-3). The Wheatland Municipal Code provides detailed land use and development standards for development.

With this General Plan, a variety of new land use designations have been established to reflect the more mixed and, in some cases, more intense land uses envisioned for Wheatland. New mixed-use designations provide the opportunity for a combination of residential, commercial, and office uses on a single site, depending on the designation. Land use for the City of Wheatland from the City of Wheatland Community Development Department is shown on Figure B-3.

Figure B-3 City of Wheatland – Land Use Diagram



Source: City of Wheatland Community Development Department

Development since 2015 Plan

As discussed in Section 4.3.1 of the Base Plan, future development has occurred in the County since the last plan. Some of this has occurred in hazard prone areas. The City Building Department tracked total building permits issued since 2015 for the City. These are tracked by total development, property use type, and hazard risk area. These are shown in Table B-11 and Table B-12.

Table B-11 City of Wheatland – Total Development Since 2015

Property Use	2015	2016	2017	2018	2019	2020
Agricultural	0	0	0	0	0	0
Commercial	0	0	0	0	0	0
Industrial	0	0	0	0	0	0
Residential	0	0	0	0	0	0
Unknown	0	0	0	0	0	0
Total	**0**	**0**	**0**	**0**	**0**	**0**

Source: City of Wheatland Building Department

Table B-12 City of Wheatland – Development in Hazard Areas since 2015

Property Use	1% Annual Chance Flood	Levee Protected Area	Wildfire Risk Area[1]	Other
Agricultural	0	0	0	0
Commercial	0	0	0	0
Industrial	0	0	0	0
Residential	0	0	0	0
Unknown	0	0	0	0
Total	**0**	**0**	**0**	**0**

Source: City of Wheatland Building Department

[1]Moderate or higher wildfire risk area

Notes: Per flood ordinance, no structures are permitted within the 1% Annual Chance Flood Zone, unless elevated per requirements.

While the data shows no changes in development in the City since the 2015 Plan, including development in mapped hazard areas, all development is subject to current building standards to include any requirements for building in hazard areas which act to mitigate hazard exposure. Further development in hazard areas is only one factor of many that contribute to an overall change in hazard vulnerability. Based on these considerations, it cannot be definitively stated as to whether the development or even lack of development contributed to an increase or decrease in vulnerability for Wheatland.

Future Development

The City of Wheatland currently has one single-family and two multi-family projects in development.

- Caliterra Ranch – The approximately 190-acre vacant property located on Wheatland Road in western Wheatland (APNs 015-180-074-000 and 015-180-079) is proposed for the construction of 552 single-

family units, 4.0 acres of commercial, and 5.0-acres of park to be developed over several phases. The project includes an approved Tentative Subdivision Map and a Final Map for the first phase of development.

- First Street Senior Housing Project – The approximately 2.0-acre vacant property located at the corner of First Street and E Street (APN 015-350-012-000) is proposed for the construction of a 32-unit senior living development.
- Spenceville Road Apartments – The approximately 9.0-acre vacant property located along Spenceville Road, east of Main Street and west of McCurry Street, (APN 015-360-001-000) is proposed to include two phases of approximately 48 multi-family apartments (approximately 100 total multi-family units).

Wheatland Development Potential (Five Year Timeline)

The City of Wheatland currently has several vacant in-fill sites that include develop potential in the next five years, but currently do not have a project application submitted.

C Street Multi-Family Zoned Property

The approximately 2.25-acre vacant property located at the northern end of C Street (APN 015-500-018-000) is currently zoned R-3 (multi-family). The maximum allowable density is 30 dwelling units per acre (du/ac); however, using a reasonable buildout density potential of 20 du/ac, this vacant property could be expected to develop approximately 45 multi-family units.

Meadow Way Multi-Family Zoned Property

The approximately 11.75-acre vacant property located north of Meadow Way (APN 015-500-008-000) is currently zoned R-3 (multi-family). The maximum allowable density is 30 du/ac; however, using a reasonable buildout density potential of 20 du/ac, this vacant property could be expected to develop approximately 235 multi-family units.

D Street Heavy Commercial Zoned Property

The approximately 1.85-acre vacant property located on State Route 65 (D Street) south of Main Street and east of Malone Avenue (APN 015-490-018-000) is currently zoned C-3 (heavy commercial). The City has discussed potential commercial uses at this location (i.e., self-storage, gas station, and fast food restaurant), but the City does not have a project application submitted.

D Street and Olive Street Heavy Commercial Zoned Property

The approximately 1.63-acre vacant property located on State Route 65 (D Street) north of Olive Street (APN 015-260-004-000) is currently zoned C-3 (heavy commercial). The City has discussed potential commercial uses at this location (i.e., gas station and fast food restaurant), but the City does not have a project application submitted.

Formerly Known as the Almond Estates Project

The approximately 43-acre vacant property located on State Route 65 (D Street) in northern Wheatland (APN 015-140-046) is currently zoned R-1 (single-family). The property owner has expressed interest in

rezoning the property to Planned Development (PD) include single-family uses, multi-family uses, and commercial uses.

Formerly Known as the Tower Property

The approximately 8-acre vacant property located on State Route 65 (D Street) in northern Wheatland (APN 015-140-048) is currently zoned C-3 (heavy commercial). The City has discussed potential commercial uses at this location (i.e., gas station and truck stop), but the City does not have a project application submitted.

Bishops Pumpkin Farm

The Bishop Pumpkin Farm currently operates a 40-acre Agritourism operation in the City of Wheatland (APN 015-180-109). The Bishop Pumpkin Farm has recently purchased additional property (formerly known as Roddan Ranch) consisting of approximately 100 acres for future expansion opportunities (APN 015-490-014).

Wheatland Development Potential (Ten Year Plus Timeline)

The City of Wheatland includes additional development potential areas.

Hop Farm and Johnson Rancho Development Potential

In 2014, the City of Wheatland annexed 4,500 acres extending the City limit line east. The annexation area is expected to develop in the near future. This area is zoned PD and was identified as Tier 1 zoning, which provides only basic zoning information related to capacities of development and basic design guidelines. Each of the PD zones require Tier 2 zoning approval to provide the details of the approved development prior to any additional mapping.

Ultimate buildout of the Hop Farm and Johnson Rancho Annexation Area could include up to the following uses:

- 13,330 single-family units;
- 566 multi-family units;
- 500 mixed use dwelling units;
- 131 acres of commercial;
- 274 acres of employment generating uses;
- 55 acres of elementary schools;
- 40 acres of middle schools;
- 24 acres of civic center;
- 50 acres of parks;
- 57 acres of linear parkway;
- 238 acres of open space/drainage; and
- 31 acres for the future Wheatland Expressway (i.e., the "SR 65 Bypass").

More general information on growth and development in Yuba County as a whole can be found in "Growth and Development Trends" in Section 4.3.1 Yuba County Vulnerability and Assets at Risk of the Base Plan.

GIS Analysis

Using GIS, the following methodology was used in determining parcel counts and acreages with future development projects in the City of Wheatland. Future development areas in the City were provided in mapped format by the City. 3 area types were provided. Using the GIS parcel spatial file for each of these areas, the 3 areas and 106 parcels associated with future development projects for which the analysis was to be performed were identified. Utilizing the future development project spatial layer, the parcel centroid data was intersected to determine the parcel counts within each area. Figure B-4 shows the locations of future development areas the City is planning to develop. Table B-13 summarizes and Table B-14 details the parcels and acreages of each future development area in the City.

Figure B-4 City of Wheatland Future Development Areas

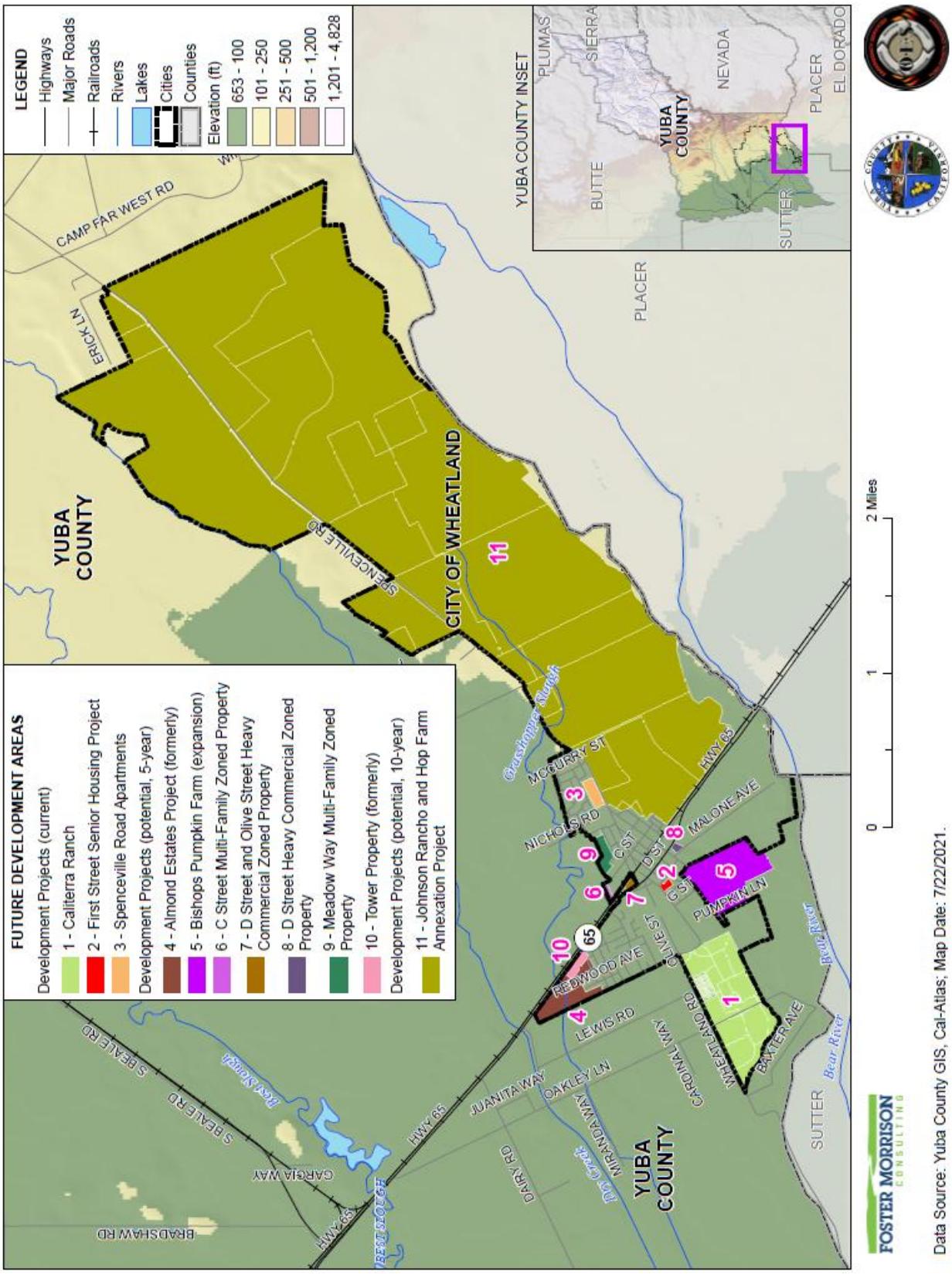


Table B-13 City of Wheatland – Summary of Future Development Parcels and Acres

Future Development Type	Total Parcel Count	Improved Parcel Count	Total Acres
Development Projects (current)	76	2	196.80
Development Projects (potential, 5-year)	7	0	174.23
Development Projects (potential, 10-year)	23	9	4,027.56
Grand Total	**106**	**11**	**4,398.58**

Source: City of Wheatland GIS

Table B-14 City of Wheatland – Detail of Future Development Parcels and Acres

Future Development Type/ Future Development Area	Total Parcel Count	Improved Parcel Count	Total Acres
Development Projects (current)			
Caliterra Ranch	74	1	186.06
First Street Senior Housing Project	1	0	2.36
Spenceville Road Apartments	1	1	8.38
Development Projects (current) Total	**76**	**2**	**196.80**
Development Projects (potential, 5-year)			
Almond Estates Project (formerly)	1	0	48.90
Bishops Pumpkin Farm (expansion)	1	0	99.01
C Street Multi-Family Zoned Property	1	0	2.54
D Street and Olive Street Heavy Commercial Zoned Property	1	0	2.22
D Street Heavy Commercial Zoned Property	1	0	1.73
Meadow Way Multi-Family Zoned Property	1	0	11.92
Tower Property (formerly)	1	0	7.91
Development Projects (potential, 5-year) Total	**7**	**0**	**174.23**
Development Projects (potential, 10-year)			
Johnson Rancho and Hop Farm Annexation Project	23	9	4,027.56
Development Projects (potential, 10-year) Total	**23**	**9**	**4,027.56**
Grand Total	**106**	**11**	**4,398.58**

Source: City of Wheatland GIS

B.5.3. Vulnerability to Specific Hazards

This section provides the vulnerability assessment, including any quantifiable loss estimates, for those hazards identified above in Table B-5 as high or medium significance hazards. Impacts of past events and vulnerability of the City to specific hazards are further discussed below (see Section 4.1 Hazard Identification in the Base Plan for more detailed information about these hazards and their impacts on the

Yuba County Planning Area). Methodologies for evaluating vulnerabilities and calculating loss estimates are the same as those described in Section 4.3 of the Base Plan.

An estimate of the vulnerability of the City to each identified priority hazard, in addition to the estimate of likelihood of future occurrence, is provided in each of the hazard-specific sections that follow. Vulnerability is measured in general, qualitative terms and is a summary of the potential impact based on past occurrences, spatial extent, and damage and casualty potential. It is categorized into the following classifications:

- **Extremely Low**—The occurrence and potential cost of damage to life and property is very minimal to nonexistent.
- **Low**—Minimal potential impact. The occurrence and potential cost of damage to life and property is minimal.
- **Medium**—Moderate potential impact. This ranking carries a moderate threat level to the general population and/or built environment. Here the potential damage is more isolated and less costly than a more widespread disaster.
- **High**—Widespread potential impact. This ranking carries a high threat to the general population and/or built environment. The potential for damage is widespread. Hazards in this category may have occurred in the past.
- **Extremely High**—Very widespread with catastrophic impact.

Depending on the hazard and availability of data for analysis, this hazard specific vulnerability assessment also includes information on values at risk, populations at risk, critical facilities and infrastructure, and future development.

Power Outage/Power Failure

An impact of almost all hazards below relates to power shortage and/or power failures. The US power grid crisscrosses the country, bringing electricity to homes, offices, factories, warehouses, farms, traffic lights and even campgrounds. According to statistics gathered by the Department of Energy, major blackouts are on the upswing. Incredibly, over the past two decades, blackouts impacting at least 50,000 customers have increased 124 percent. The electric power industry does not have a universal agreement for classifying disruptions. Nevertheless, it is important to recognize that different types of outages are possible so that plans may be made to handle them effectively. In addition to blackouts, brownouts can occur. A brownout is an intentional or unintentional drop in voltage in an electrical power supply system. Intentional brownouts are used for load reduction in an emergency. Electric power disruptions can be generally grouped into two categories: intentional and unintentional. More information on types of power disruptions can be found in Section 4.3.3 of the Base Plan.

Public Safety Power Shutoff (PSPS)

A new intentional disruption type of power shortage/failure event has recently occurred in California. In recent years, several wildfires have started as a result of downed power lines or electrical equipment. This was the case for the Camp Fire in 2018. As a result, California's three largest energy companies (including PG&E), at the direction of the California Public Utilities Commission (CPUC), are coordinating to prepare all Californians for the threat of wildfires and power outages during times of extreme weather. To help protect customers and communities during extreme weather events, electric power may be shut off for

public safety in an effort to prevent a wildfire. This is called a PSPS. More information on PSPS criteria can be found in Section 4.3.3 of the Base Plan. The City has not experienced a PSPS event that adversely affected the City. While PSPS events have occurred within City limits, the affected areas were in newly annexed areas near the Camp Far West area where there is no development to be impacted.

Dam Failure

Likelihood of Future Occurrence–Unlikely
Vulnerability–High

Hazard Profile and Problem Description

Dams are manmade structures built for a variety of uses including flood protection, power generation, agriculture, water supply, and recreation. When dams are constructed for flood protection, they are usually engineered to withstand a flood with a computed risk of occurrence. For example, a dam may be designed to contain a flood at a location on a stream that has a certain probability of occurring in any one year. If prolonged periods of rainfall and flooding occur that exceed the design requirements, that structure may be overtopped or fail. Overtopping is the primary cause of earthen dam failure in the United States.

Location and Extent

Dam failure is a natural disaster from two perspectives. First, the inundation from released waters resulting from dam failure is related to naturally occurring floodwaters. Second, a total dam failure would most probably happen as a consequence of the natural disaster triggering the event, such as an earthquake. There is no scale with which to measure dam failure. However, Cal DWR Division of Safety of Dams (DOSD) assigns hazard ratings to dams within the State that provides information on the potential impact should a dam fail. The following two factors are considered when assigning hazard ratings: existing land use and land use controls (zoning) downstream of the dam. Dams are classified in four categories that identify the potential hazard to life and property: Low, Significant, High, and Extremely High. These were discussed in more detail in Section 4.3.7 of the Base Plan.

While a dam may fill slowly with runoff from winter storms, a dam break has a very quick speed of onset. The duration of dam failure is generally not long – only as long as it takes to empty the reservoir of water the dam held back. The City would be affected for as long as the flood waters from the dam failure took to drain downstream.

Based on available data, the City falls within the inundation areas of multiple dams:

- Camp Far West (Extremely High Hazard Dam Inside the County) as shown in Figure B-5.
- Rollins (Extremely High Hazard Dam Outside the County) as shown in Figure B-6.
- Combie (High Hazard Dam Outside the County) as shown in Figure B-7.

No high hazard dams from inside the County have inundation areas that affect the City of Wheatland. Geographic flood extent from the DWR DSOD and Cal OES dam inundation areas is shown in Table B-15.

Note, the Cal OES and DSOD dam inundation data may not have included inundation mapping of all dams that could affect the Yuba County Planning Area and the City; thus, the below analysis reflects information based on available data.

Figure B-5 City of Wheatland – Extremely High Hazard Dam Inundation Areas from Dams within the County

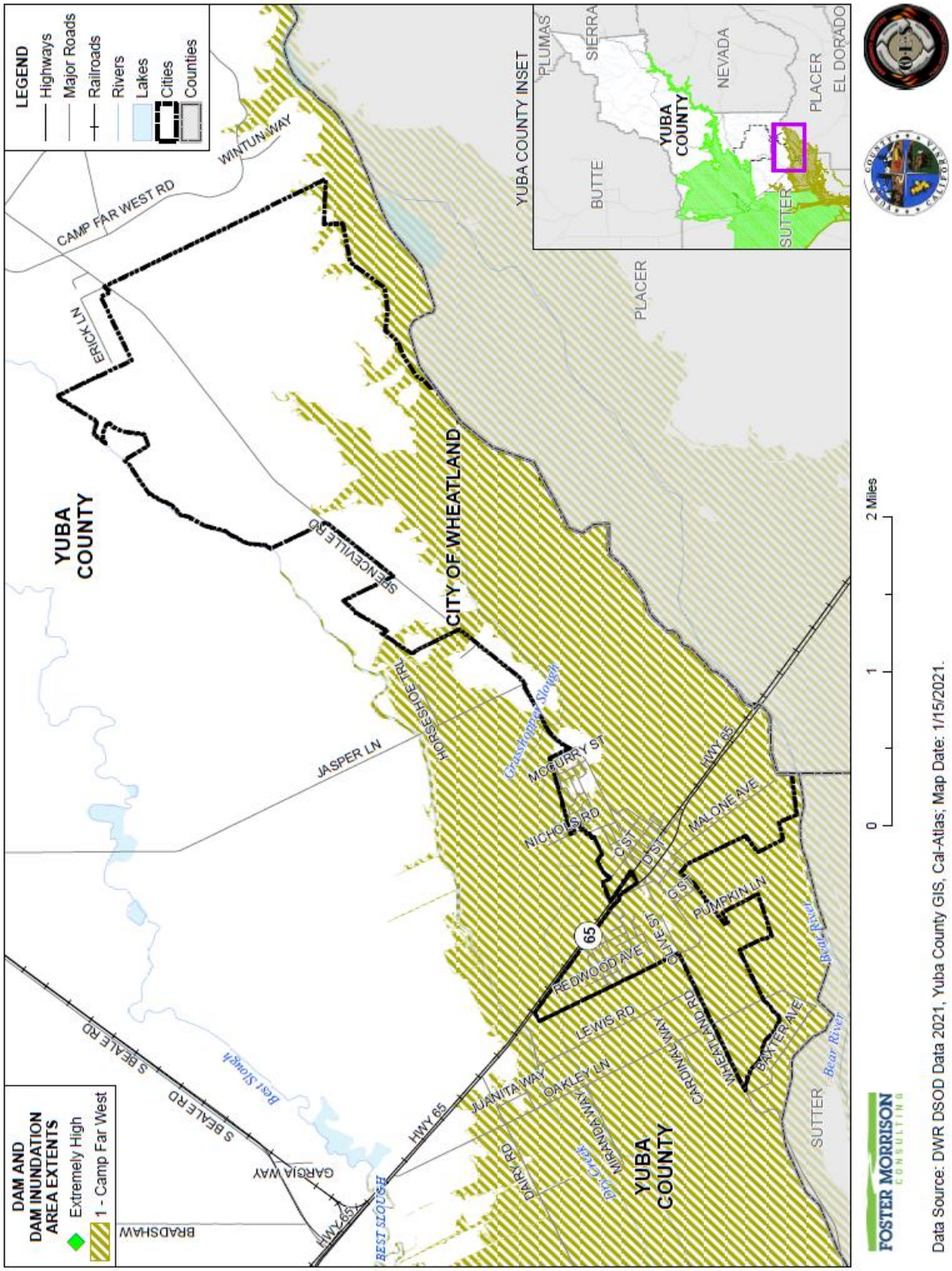


Figure B-6 City of Wheatland – Extremely High Hazard Dam Inundations from Dams Outside the County

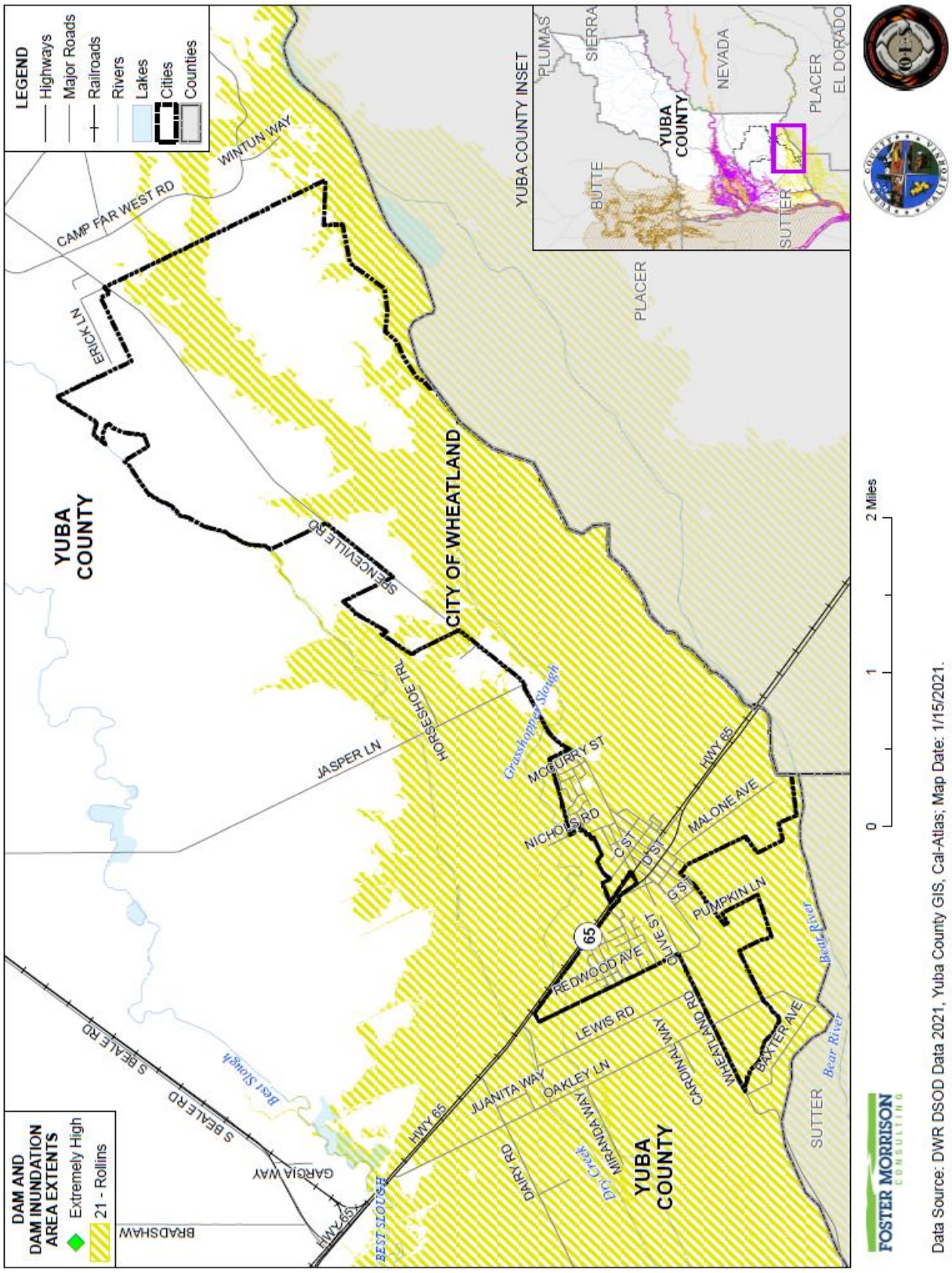


Figure B-7 City of Wheatland – High Hazard Dam Inundations from Dams Outside the County

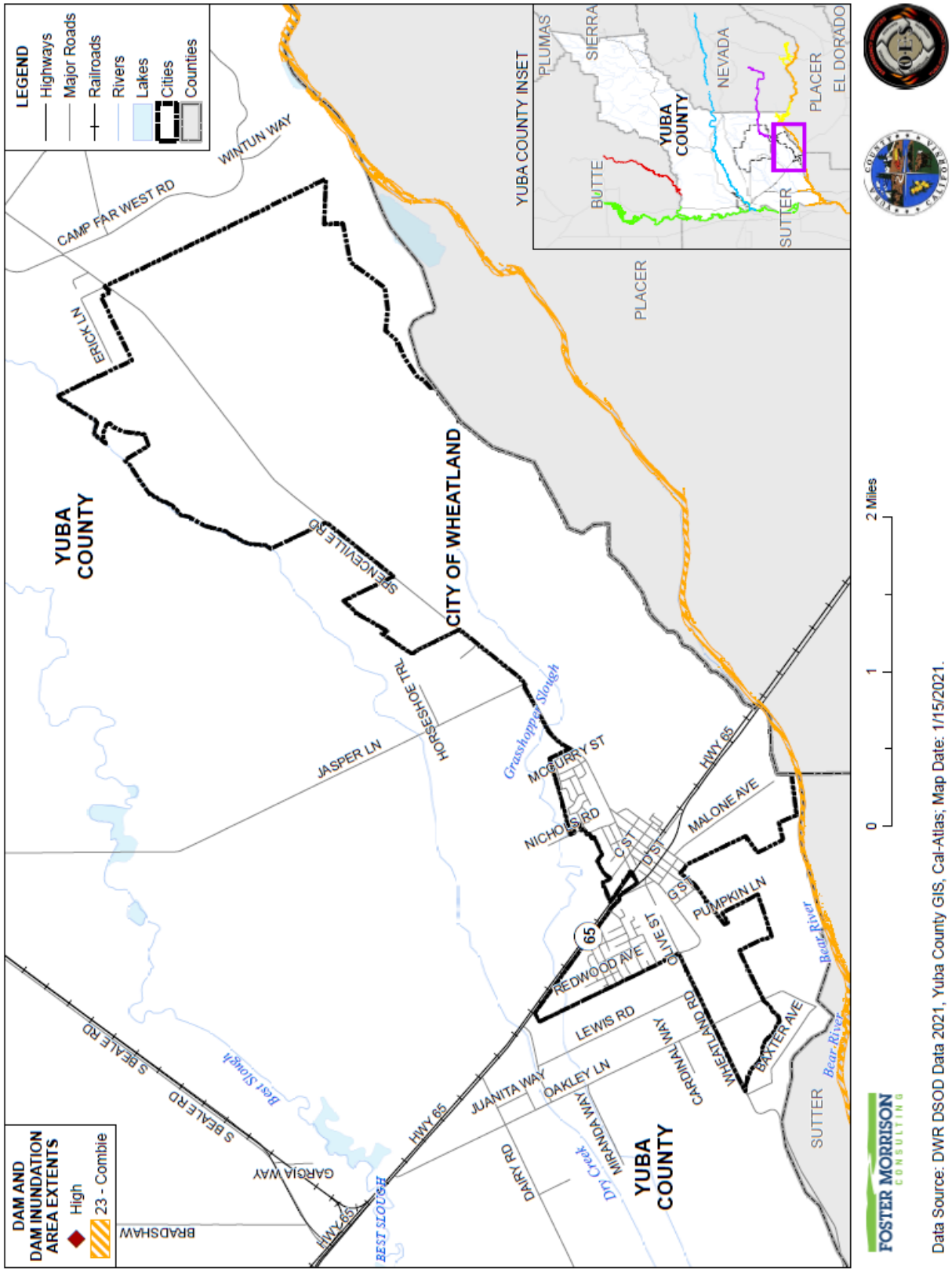


Table B-15 City of Wheatland – Geographical Dam Inundation Extents

Dam Inundation Area	Total Acres	% of Total Acres	Improved Acres	% of Total Improved Acres	Unimproved Acres	% of Total Unimproved Acres
Camp Far West	2,822	0.7%	1,843	1.2%	979	0.4%
Rollins	3,343	0.8%	1,929	1.3%	1,414	0.6%
Combie	1	0.0%	0	0.0%	1	0.0%

Source: Cal OES, DSOD

Past Occurrences

There has been no state and one federal (for the Oroville Dam spillway incident) disaster declarations for dam failure in the County. This can be seen in Table B-16. The City noted no other dam failure occurrences that have affected the City.

Table B-16 Yuba County – State and Federal Disaster Declarations Summary 1950-2021

Disaster Type	State Declarations		Federal Declarations	
	Count	Years	Count	Years
Dam Failure	0	–	1	2017

Source: Cal OES, FEMA

During the Oroville incident, the Bear River did start to experience a backup and there were concerns for the levee. However, no impacts occurred. The City erroneously was part of an initial evacuation order during the early stages of the incident, but was able to stop the evacuation when the risk was reevaluated. It was determined that Wheatland was actually an area of high ground for people evacuating from elsewhere. The City opened a temporary shelter at the High School.

Vulnerability to and Impacts from Dam Failure

Dam failure flooding would vary by community depending on which dam fails and the nature and extent of the dam failure and associated flooding. Impacts to the City from a dam failure flood include loss of life and injury, flooding and damage to property and structures, damage to critical facilities and infrastructure, loss of natural resources, and all other flood related impacts. Additionally, mass evacuations and associated economic losses can also be significant.

Should a breach occur in the Camp Far West Dam, the water release would flow southwest along the Bear River. The key affected areas would be residents and businesses located immediately downstream of the dam and the City of Wheatland; all are located in the direct path of the flood wave, within areas of high velocity flow, maximum depth, and shortest travel time. The flood wave would reach Wheatland in approximately 25- 30 minutes.

With respect to a breach of the Combie and Rollins dams located outside of the County, the City was unaware of the time it would take for the flood wave to reach the City. Based on the inundation data, a failure of Rollins would significantly affect the City, with an inundation of Combie being limited to a single

parcel. A Rollins breach would cause substantial flooding and associated impacts throughout the City of Wheatland.

Assets at Risk

Based on the vulnerability of Wheatland to the dam failure hazard, the sections that follow describes significant assets at risk in the City of Wheatland. This section includes the values at risk, inundated acres, population at risk, and critical facilities at risk.

Values at Risk

GIS was used to determine the possible impacts of flooding within the City of Wheatland. The methodology described in Section 4.3.7 of the Base Plan was followed in determining structures and values at risk to dam failure. Table B-17 shows the property use, improved parcel count, improved values, estimated contents, and total values that fall in dam inundation areas in the City.

Table B-17 City of Wheatland – Count and Values of Parcels at Risk by Dam Inundation Area and Property Use

Dam Inundation/ Property Use	Total Parcel Count	Improved Parcel Count	Total Land Value	Improved Structure Value	Estimated Contents Value	Total Value
Camp Far West – Extremely High Hazard Dam Inside the County						
Agricultural	47	10	$30,372,261	$5,351,935	$5,351,935	$41,076,131
Commercial	52	48	$5,736,734	$16,204,927	$16,204,927	$38,146,588
Government-Owned / Non-Taxable Property	44	0	$24,701	$0	$0	$24,701
Industrial	5	5	$406,943	$960,639	$1,440,958	$2,808,540
Miscellaneous	17	0	$0	$0	$0	$0
Residential	1,230	1,067	$43,668,412	$195,761,304	$97,880,637	$337,310,353
City of Wheatland Total	**1,395**	**1,130**	**$80,209,051**	**$218,278,805**	**$120,878,457**	**$419,366,313**
Rollins Dam – Extremely High Hazard Dam Outside the County						
Agricultural	48	10	$33,220,561	$5,351,935	$5,351,935	$43,924,431
Commercial	52	48	$5,736,734	$16,204,927	$16,204,927	$38,146,588
Government-Owned / Non-Taxable Property	44	0	$24,701	$0	$0	$24,701
Industrial	5	5	$406,943	$960,639	$1,440,958	$2,808,540
Miscellaneous	17	0	$0	$0	$0	$0
Residential	1,269	1,102	$45,112,088	$203,803,619	$101,901,795	$350,817,502

Dam Inundation/ Property Use	Total Parcel Count	Improved Parcel Count	Total Land Value	Improved Structure Value	Estimated Contents Value	Total Value
City of Wheatland Total	**1,435**	**1,165**	**$84,501,027**	**$226,321,120**	**$124,899,615**	**$435,721,762**
Combie Dam - High Hazard Dam Outside the County						
Agricultural	0	0	$0	$0	$0	$0
Commercial	0	0	$0	$0	$0	$0
Government-Owned / Non-Taxable Property	0	0	$0	$0	$0	$0
Industrial	0	0	$0	$0	$0	$0
Miscellaneous	1	0	$0	$0	$0	$0
Residential	1	0	$759,112	$0	$0	$759,112
City of Wheatland Total	2	**0**	**$759,112**	**$0**	**$0**	**$759,112**

Source: CAL OES, DSOD, Yuba County 2020 Parcel/Assessor's Data

Population at Risk

The DSOD and Cal OES dam inundation areas were overlayed on the parcel layer. Those residential parcel centroids that intersect the dam inundation areas were counted and multiplied by the Census Bureau average household factors for Wheatland – 2.69. This is shown in Table B-29.

Table B-18 City of Wheatland – Count of Improved Residential Parcels and Population by Dam Inundation Area

Dam	City of Wheatland	
	Improved Res. Parcels	Pop. At Risk
Extremely High Hazard Dams Outside County		
Rollins	1,102	2,964
High Hazard Dams Outside County		
Combie	0	0
Extremely High Hazard Dams Inside County		
Camp Far West	1,067	2,870

Source: Cal OES, DSOD, Yuba County 2020 Parcel/Assessor's Data, US Census Bureau

Critical Facilities at Risk

An analysis was performed on the critical facility inventory in Wheatland in identified dam inundation areas. GIS was used to determine whether the critical facility locations intersect a DSOD or Cal OES dam inundation area. Details of critical facilities in mapped dam inundation areas in the City of Wheatlands are shown in Figure B-8 (for extremely high hazard dams in the County), Figure B-11 (for extremely high

hazard dams in the County), and detailed in Table B-20. There are no high hazard dam inundations from dams inside or outside the County that affect critical facilities in the City of Wheatland. Details of critical facility definition, type, name and address and jurisdiction by dam inundation area are listed in Appendix F.

Figure B-8 City of Wheatland – Critical Facilities in Extremely High Hazard Dam Inundation Areas from Dams Inside the County

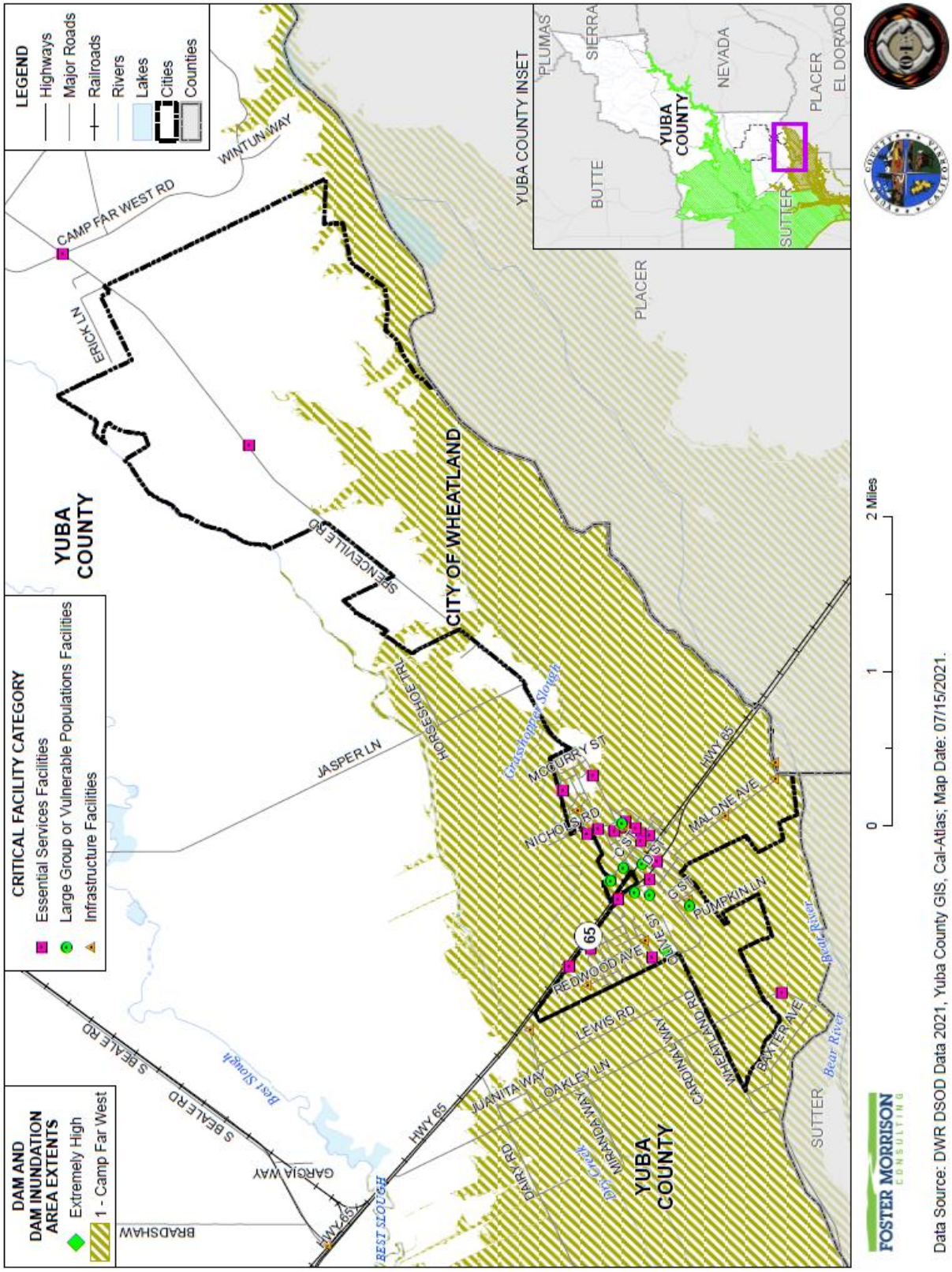


Table B-19 City of Wheatland – Critical Facilities in Extremely High Hazard Dam Inundation Areas from Dams Outside the County

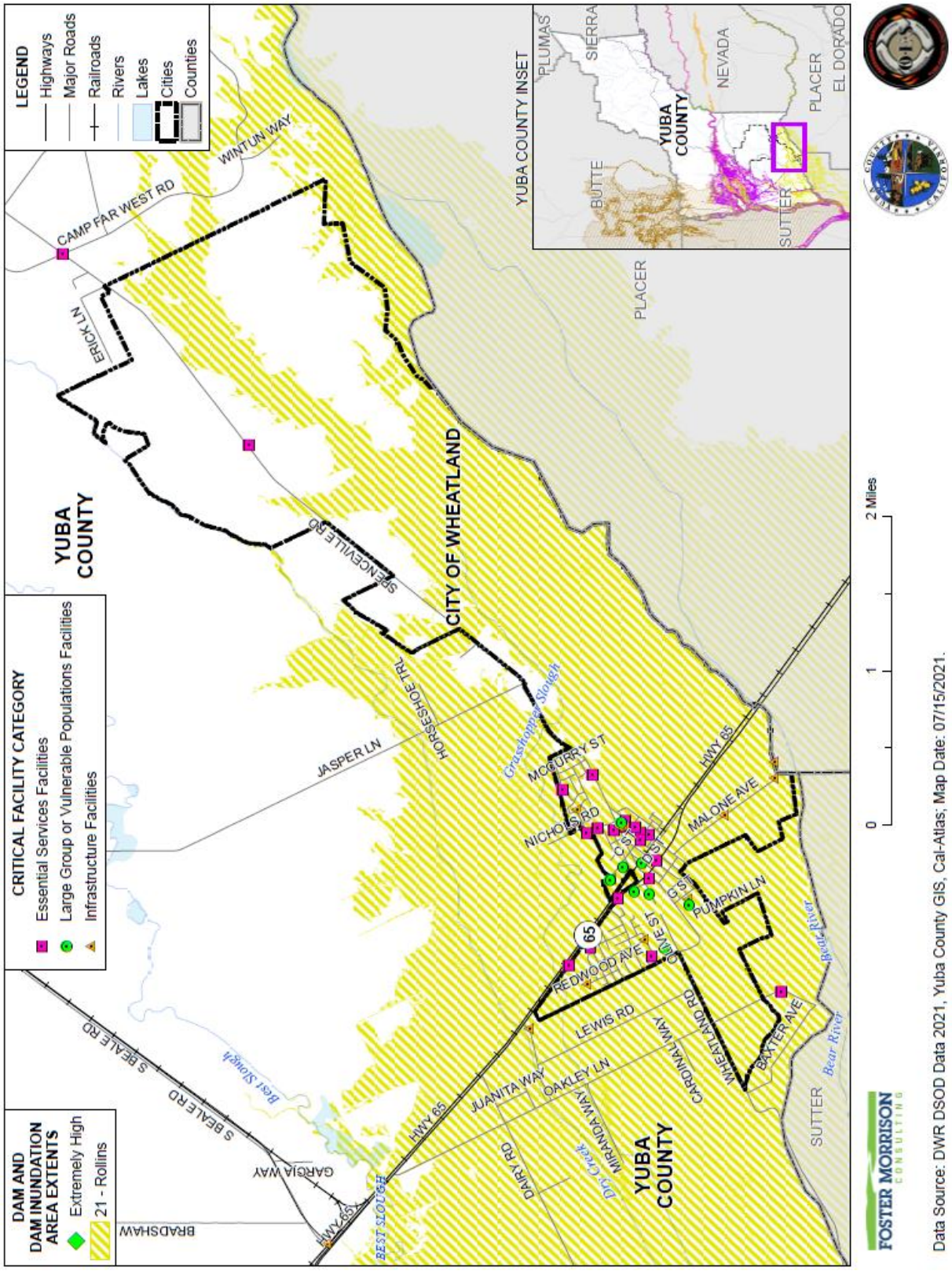


Table B-20 City of Wheatland – Critical Facilities in Dam Inundation Areas

Critical Facility Category/Dam Inundation Area	Facility Count
Camp Far West Dam (Extremely High Hazard Dam Inside the County)	
Essential Services	
AT&T Mobility LLC	1
AT&T Services Inc	1
City Of Wheatland	1
Comcast Cable Communications Management, LLC	1
Comcast Fresno LLC	5
Sprint Nextel Corporation	1
T-Mobile West LLC	1
Walker Telecomm Inc	2
Wheatland City Hall	1
Wheatland Fire Authority	1
Essential Services Total	**15**
Large Group or Vulnerable Populations Facilities	
Bear River Middle School	1
CITY OF WHEATLAND	3
City of Wheatland Community Center	1
District Office	1
Virginia School - Merged	1
Wheatland Elementary School	1
Wheatland Union High School	1
Large Group or Vulnerable Populations Facilities Total	**9**
Infrastructure Facilitie	
CITY OF WHEATLAND	12
City of Wheatland Public Works Yard	1
Wheatland Water Tank	1
Infrastructure Facilities Total	**14**
Camp Far West Inundation Total	**38**
Rollins Dam (Extremely High Hazard Dam Inside the County)	
Essential Services	
AT&T Mobility LLC	1
AT&T Services Inc	1
City Of Wheatland	1
Comcast Cable Communications Management, LLC	1
Comcast Fresno LLC	6
Sprint Corporation	1

Critical Facility Category/Dam Inundation Area	Facility Count
Sprint Nextel Corporation	1
T-Mobile West LLC	1
Walker Telecomm Inc	2
Wheatland City Hall	1
Wheatland Fire Authority	1
Essential Services Total	**17**
Large Group or Vulnerable Populations Facilities	
Bear River Middle School	1
CITY OF WHEATLAND	3
City of Wheatland Community Center	1
District Office	1
Virginia School - Merged	1
Wheatland Elementary School	1
Wheatland Union High School	1
Large Group or Vulnerable Populations Facilities Total	**9**
Infrastructure Facilities	
CITY OF WHEATLAND	12
City of Wheatland Public Works Yard	1
Wheatland Water Tank	1
Infrastructure Facilities Total	**14**
Rollins Dam Inundation Total	**40**

Source: Cal OES, DSOD, Yuba County GIS

Future Development

Future dam failures are considered unlikely. However, given the high number of affected parcels, future development in the City could be affected by dam failures and associated flooding. The City enforces it floodplain ordinance, which helps to reduce risk to flooding by requiring structures in the 1% annual chance floodplains to be above the base flood elevation, which depending on inundation depths and affected areas may provide some relief. Siting of future development areas should take dam failure flooding into account.

GIS Analysis

The City provided future development areas were used as the basis for the inventory of future development areas for the City. Utilizing the future development project spatial layer, the parcel centroid data was intersected to determine the parcel counts within each individual mapped dam inundation area. Figure B-9 and Figure B-10 shows the locations of future development areas the City is planning to develop and the extremely high hazard dam inundation area that they intersect from dams inside and outside the County, respectively. Table B-21 shows the parcels and acreages of each future development area in the City by extremely high hazard dam inundation area. It should be noted that there are no future development areas

in high hazard dam inundation areas from dams inside or outside the County; as such, no map or tabular analysis is shown.

Figure B-9 City of Wheatland – Future Development in Extremely High Hazard Dam Inundation Areas from Dams Inside the County

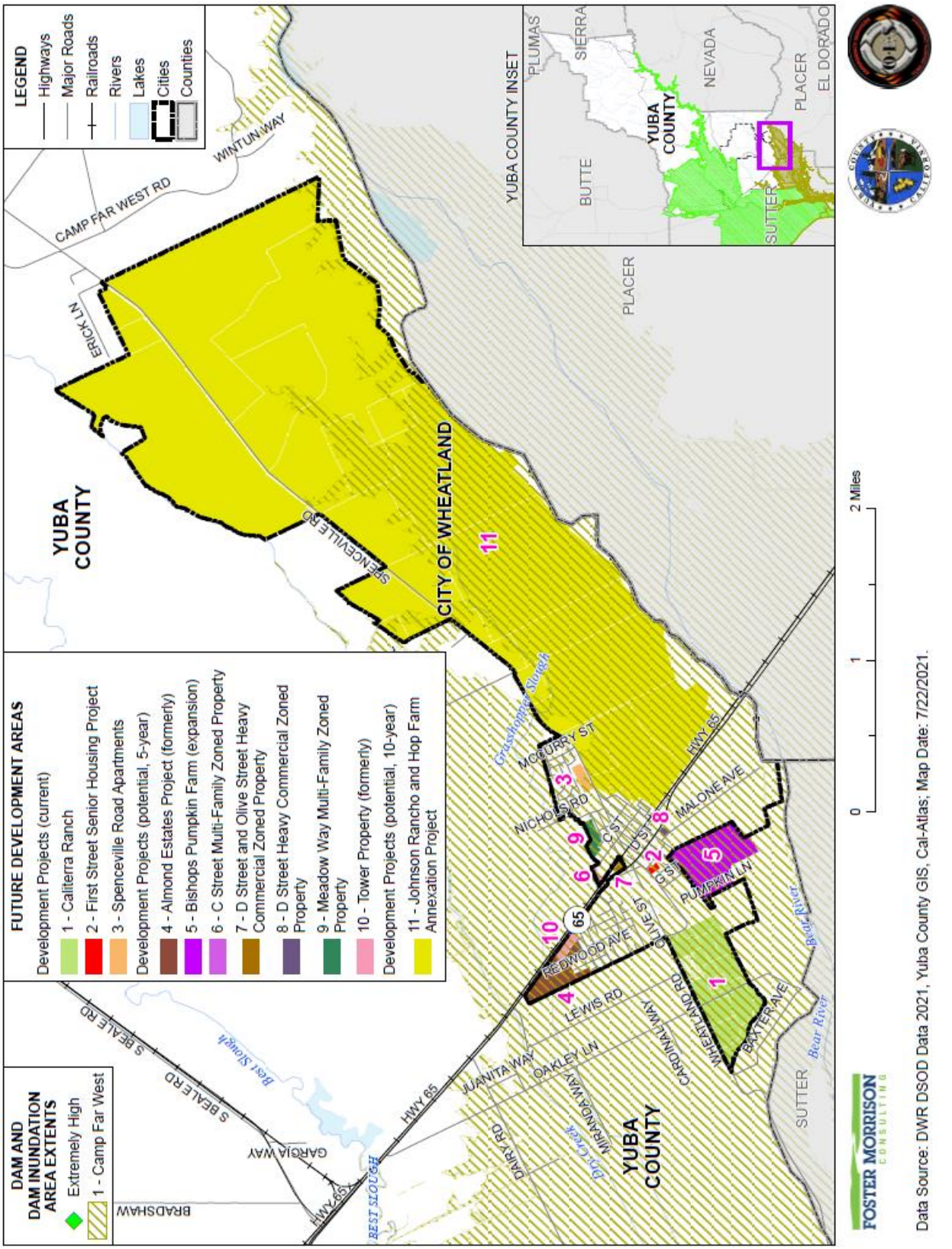


Figure B-10 City of Wheatland – Future Development in Extremely High Hazard Dam Inundation Areas from Dams Outside the County

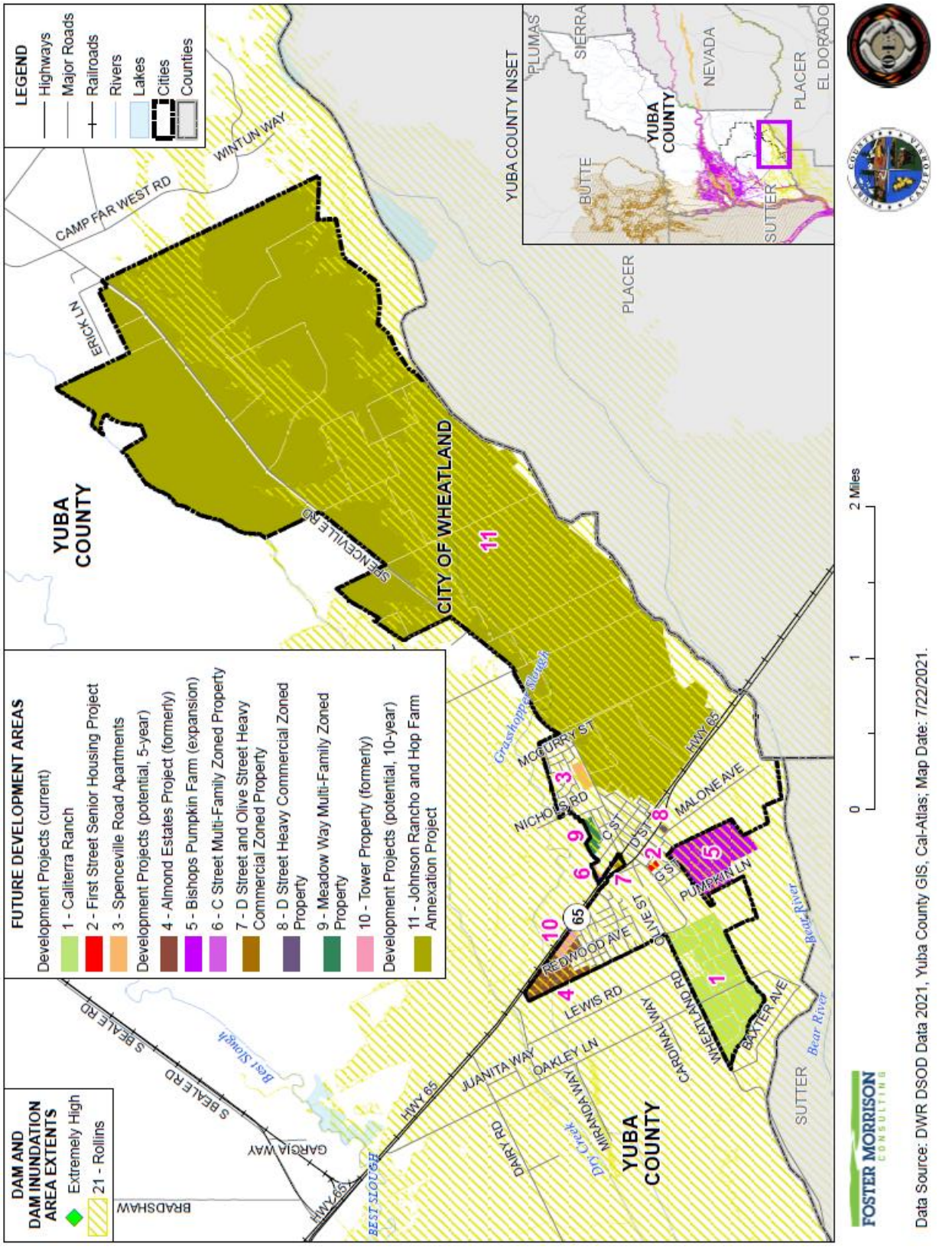


Table B-21 City of Wheatland – Future Development in Dam Inundation Areas

Dam Inundation Area/Future Development Type / Future Development Area	Total Parcel Count	Improved Parcel Count	Total Acres
Camp Far West			
Development Projects (current)			
First Street Senior Housing Project	1	0	2.36
Caliterra Ranch	74	1	186.06
Development Projects (current) Total	**75**	**1**	**188.42**
Development Projects (potential, 5-year)			
Meadow Way Multi-Family Zoned Property	1	0	11.92
Almond Estates Project (formerly)	1	0	48.90
C Street Multi-Family Zoned Property	1	0	2.54
D Street Heavy Commercial Zoned Property	1	0	1.73
D Street and Olive Street Heavy Commercial Zoned Property	1	0	2.22
Tower Property (formerly)	1	0	7.91
Bishops Pumpkin Farm (expansion)	1	0	99.01
Development Projects (potential, 5-year) Total	**7**	**0**	**174.23**
Development Projects (potential, 10-year)			
Johnson Rancho and Hop Farm Annexation Project	10	7	1,602.82
Development Projects (potential, 10-year) Total	**10**	**7**	**1,602.82**
Camp Far West Total	**92**	**8**	**1,965.47**
Rollins			
Development Projects (current)			
First Street Senior Housing Project	1		2.36
Spenceville Road Apartments	1	1	8.38
Caliterra Ranch	74	1	186.06
Development Projects (current) Total	**76**	**2**	**196.80**
Development Projects (potential, 5-year)			
Meadow Way Multi-Family Zoned Property	1	0	11.92
Almond Estates Project (formerly)	1	0	48.90
C Street Multi-Family Zoned Property	1	0	2.54
D Street Heavy Commercial Zoned Property	1	0	1.73
D Street and Olive Street Heavy Commercial Zoned Property	1	0	2.22
Tower Property (formerly)	1	0	7.91
Bishops Pumpkin Farm (expansion)	1	0	99.01
Development Projects (potential, 5-year) Total	**7**	**0**	**174.23**
Development Projects (potential, 10-year)			

Dam Inundation Area/Future Development Type / Future Development Area	Total Parcel Count	Improved Parcel Count	Total Acres
Johnson Rancho and Hop Farm Annexation Project	13	9	1,931.80
Development Projects (potential, 10-year) Total	**13**	**9**	**1,931.80**
Rollins Total	**96**	**11**	**2,302.83**

Source: City of Wheatland GIS, Cal OES, DSOD

Earthquake

Likelihood of Future Occurrence–Unlikely
Vulnerability–High

Hazard Profile and Problem Description

An earthquake is caused by a sudden slip on a fault. Stresses in the earth's outer layer push the sides of the fault together. Stress builds up, and the rocks slip suddenly, releasing energy in waves that travel through the earth's crust and cause the shaking that is felt during an earthquake. Earthquakes can cause structural damage, injury, and loss of life, as well as damage to infrastructure networks, such as water, power, gas, communication, and transportation. Earthquakes may also cause collateral emergencies including dam and levee failures, seiches, hazmat incidents, fires, avalanches, and landslides. The degree of damage depends on many interrelated factors. Among these are: the magnitude, focal depth, distance from the causative fault, source mechanism, duration of shaking, high rock accelerations, type of surface deposits or bedrock, degree of consolidation of surface deposits, presence of high groundwater, topography, and the design, type, and quality of building construction.

Location and Extent

Since earthquakes are regional events, the whole of the City is at risk to earthquake. The 2006 City of Wheatland General Plan Safety Element noted that the City of Wheatland is located within the northeastern portion of the Sacramento Valley, which is within the Great Valley geomorphic province. The Great Valley, an elongated lowland, extends 500 miles north and south, separating the Sierra Nevada from the Coast Ranges. This elongated asymmetric structural basin or trough was formed by the westward tilting of the Sierra Nevada block against the eastern flank of the Coast Ranges. The basement rock complex of the Sierra extends westward, beneath the valley, on a gentle slope reaching points near the Coast Ranges. Elevation in the valley is generally several hundred feet above sea level, but ranges from a low point below sea level to approximately 1,000 feet above sea level. The Great Valley is filled with thick sedimentary rock sequences or strata which began deposition approximately 200 million years ago. Large alluvial fans have developed on each side of the Valley. The larger and more gently sloping fans are located on the east side of the Valley and overlie metamorphic and igneous basement rocks. This basement rock is exposed in the Sierra Nevada Foothills and consists of metasediments, volcanics, and granites. The sediments that form the Valley floor were largely derived by erosion of the Sierra Nevada. The smaller and steeper slopes on the west side of the Valley overlie sedimentary rocks more closely related to the Coast Ranges.

The Great Valley is generally considered less seismically active than other areas of California. The majority of significant, historic faulting (and ground shaking) within the City of Wheatland has been generated along distant faults, within a l00-mile radius of the City. Minor seismicity bas been noted along the Foothills Fault System east of the site that may align with that fault system to some degree. The nearest significant earthquake was the Oroville earthquake of 1975. The epicenter for this earthquake (Richter magnitude of 5.7) was located approximately 30 miles north of the site and is generally associated with the Cleveland Hill fault, a portion of the Foothills Fault System.

The City of Wheatland is not located within an Alquist-Priolo Special Study Zone (AP Zone) nor is any active fault near the City. The closest AP Zone is the Bangor Quadrangle, including the AP Zone for the Cleveland Hill Fault, again to which the 1975 Oroville earthquake is attributed. This zone is located 27 miles north of the City. The next nearest active fault is the Dunnigan Hills fault, located 35 miles southwest of the City. The closest branches of the seismically active San Andreas Fault system are the Green Valley and Rodgers Creek faults located approximately 60 to 70 miles southwest of the City. The San Andreas Fault is located approximately 100 miles to the west. Faults typically considered inactive in the vicinity of the project area include the Willow fault zone, which traverses Yuba County from north to south and is located approximately 12 miles to the west of Wheatland, and the Spenceville fault in the Foothill Fault System (located in eastern Yuba County) approximately 10 miles east of Wheatland.

The amount of energy released during an earthquake is usually expressed as a magnitude and is measured directly from the earthquake as recorded on seismographs. An earthquake's magnitude is expressed in whole numbers and decimals (e.g., 6.8). Seismologists have developed several magnitude scales, as discussed in Section 4.3.9 of the Base Plan.

Another measure of earthquake severity is intensity. Intensity is an expression of the amount of shaking at any given location on the ground surface. Seismic shaking is typically the greatest cause of losses to structures during earthquakes. The City is located in an area where few earthquakes of significant magnitude occur, so both magnitude and intensity of earthquakes are expected to remain low. Seismic shaking maps for the area show Yuba County and the City fall within a low to moderate shake risk.

Past Occurrences

The City noted no past occurrences of earthquakes or that affected the City in any meaningful way.

Vulnerability to and Impacts from Earthquake

The combination of plate tectonics and associated California coastal mountain range building geology generates earthquake as a result of the periodic release of tectonic stresses. Yuba County and the City of Wheatland lie in the center of the North American and Pacific tectonic plate activity. There have been earthquakes as a result of this activity in the historic past, and there will continue to be earthquakes in the future.

Fault ruptures itself contributes very little to damage unless the structure or system element crosses the active fault; however, liquefaction can occur further from the source of the earthquake. In general, newer construction is more earthquake resistant than older construction due to enforcement of improved building codes. Manufactured housing is very susceptible to damage because their foundation systems are rarely

braced for earthquake motions. Locally generated earthquake motions and associated liquefaction, even from very moderate events, tend to be more damaging to smaller buildings, especially those constructed of unreinforced masonry (URM) and soft story buildings. The City noted that the Fire Station and elevated water tower are two structures vulnerable to an earthquake

The Uniform Building Code (UBC) identifies four seismic zones in the United States. The zones are numbered one through four, with Zone 4 representing the highest level of seismic hazard. The UBC establishes more stringent construction standards for areas within Zones 3 and 4. All of California lies within either Zone 3 or Zone 4. The City of Wheatland is within the less hazardous Zone 3. Earthquake vulnerability is primarily based on population and the built environment. Urban areas in high seismic hazard zones are the most vulnerable, while uninhabited areas are less vulnerable. The City of Wheatland General Plan Safety Element noted that the City of Wheatland is located in an area rated as a low-intensity earthquake zone.

Impacts from earthquake in the City will vary depending on the fault that the earthquake occurs on, the depth of the earthquake strike, and the intensity of shaking. Large events could cause damages to infrastructure, critical facilities, residential and commercial properties, and possible injuries or loss of life.

Earthquake Analysis

Due to the regional effects of an earthquake, a Hazus earthquake analysis was performed on a countywide basis. This can be found in Section 4.3.9 of the Base Plan. While these runs were not done specific to the City, maps showing damage in the County show greater areas of damage near the cities in the County. Note damage is directly related to the level of development in an area, with the developed areas most likely to experience the greatest loss. The 7.0 Probabilistic Hazus earthquake runs showed minimal damage City of Wheatland.

Future Development

Although new growth and development corridors would fall in the area affected by earthquake, given the small chance of major earthquake and the building codes in effect, development in areas prone to earthquakes will continue to occur. The City enforces the state building code, which mandates construction techniques that minimize seismic hazards. Future development in the City is subject to these building codes.

Flood: 1%/0.2% Annual Chance

Likelihood of Future Occurrence–Occasional/Unlikely
Vulnerability–Medium

Hazard Profile and Problem Description

This hazard analyzes the FEMA DFIRM 1% and 0.2% annual chance floods. These tend to be the larger floods that can occur in the County or in the City, and have caused damages in the past. Flooding is a significant problem in Yuba County and the City of Wheatland. Historically, the City has been at risk to flooding primarily during the winter and spring months when river systems in the County swell with heavy

rainfall and snowmelt runoff. Normally, storm floodwaters are kept within defined limits by a variety of storm drainage and flood control measures. Occasionally, extended heavy rains result in floodwaters that exceed normal high-water boundaries and cause damage. Flooding has occurred both within the 1% and 0.2% annual chance floodplains and in other localized areas.

As previously described in Section 4.3.10 of the Base Plan, the Yuba County Planning Area and the City of Wheatland have been subject to historical flooding. Wheatland is traversed by several stream systems and is at risk to the 1% flood. The Bear River, Dry Creek and Grasshopper Slough are all located within the sphere of influence of the City, with the Feather River about five miles west. A groundwater aquifer underlies Wheatland and serves the City's Municipal Water supply. Most of these resources are regional, and Wheatland is part of the Yuba County Integrated Regional Water Management Plan through the Yuba County Water Agency.

Location and Extent

The City of Wheatland has areas located in the 1% annual chance flood zones. This is seen in Figure B-11.

Figure B-11 City of Wheatland – FEMA DFIRM Flood Zones

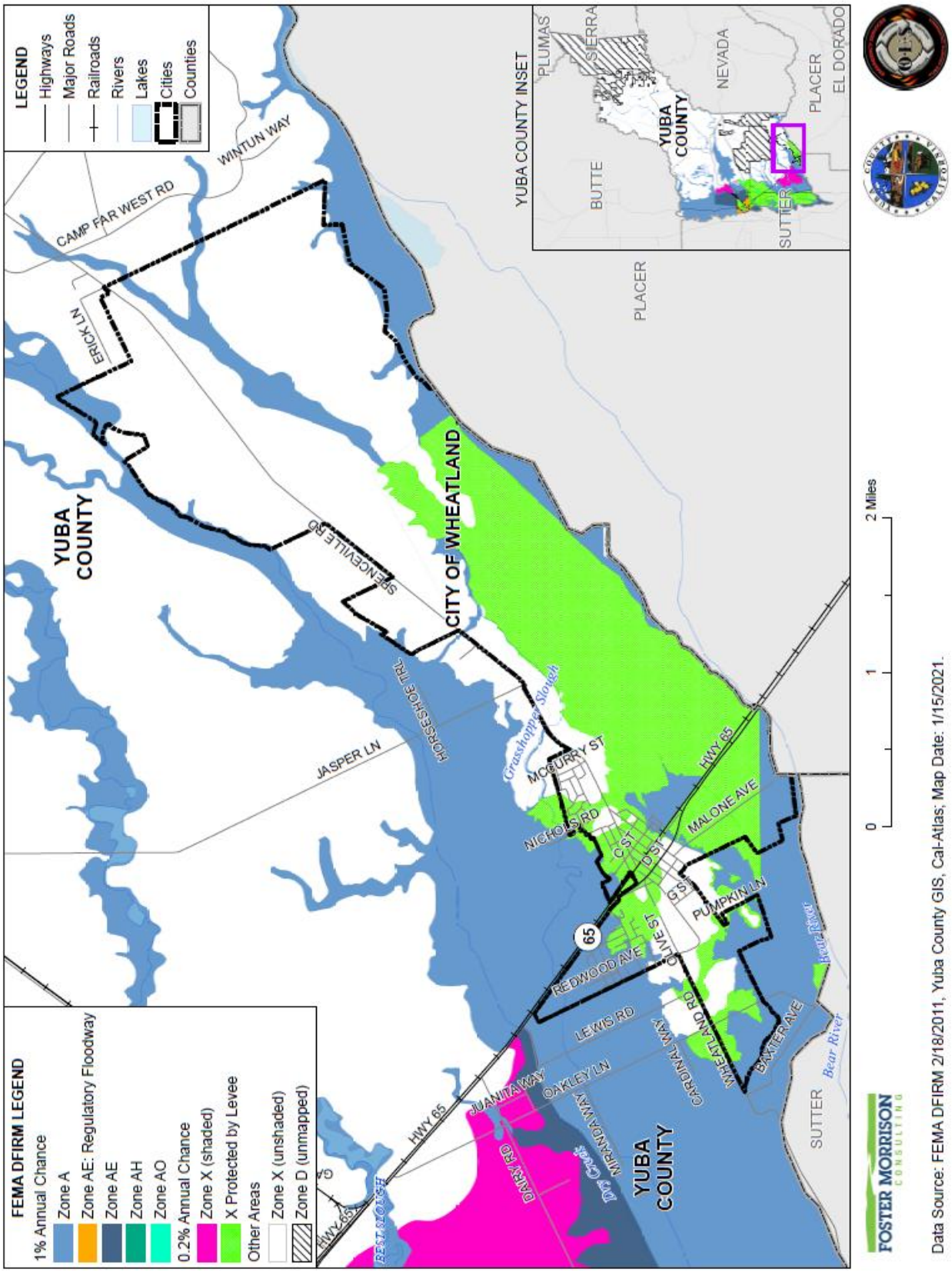


Table B-22 details the DFIRM mapped flood zones located within the City.

Table B-22 City of Wheatland– DFIRM Flood Hazard Zones

Flood Zone	Description	Flood Zone Present in City of Wheatland
A	1% annual chance flooding: No base flood elevations provided	X
AE	1% annual chance flooding: Base flood elevations provided	
AE Floodway	1% annual chance flood: Regulatory floodway; Base flood elevations provided	
AH	1% annual chance flood areas of shallow flooding between one to three feet deep. Regulatory floodway; Base flood elevations provided	
AO	1% annual chance flooding: sheet flow areas. BFEs derived from detailed hydraulic analyses are shown in this zone.	
Shaded X	0.2% annual chance flooding: The areas between the limits of the 1% annual chance flood and the 0.2-percent-annual-chance (or 500-year) flood	
X Protected by Levee	Areas protected by levees from 1% annual chance flood event. Levee protection places these areas in the 0.2% annual chance flood zone.	X
X (unshaded)	No flood hazard	X

Source: FEMA

Additionally, flood extents can generally be measured in volume, velocity, and depths of flooding. Expected flood depths in the City vary, depending on the nature and extent of a flood event; specific depths are unknown. Flood durations in the City tend to be short to medium term, or until either the storm drainage system can catch up or flood waters move downstream. Flooding in the City tends to have a shorter speed of onset, due to the amount of water that flows through the City.

Geographical flood extents for the City from the FEMA DFIRMs are shown in Table B-23.

Table B-23 City of Wheatland – Geographical DFIRM Flood Zone Extents

Flood Zone	Total Acres	% of Total Acres	Improved Acres	% of Total Improved Acres	Unimproved Acres	% of Total Unimproved Acres
1% Annual Chance	770	0.19%	273	0.18%	496	0.19%
0.2% Annual Chance	1,755	0.43%	1,351	0.88%	404	0.16%
Other Areas	2,641	0.64%	370	0.24%	2,271	0.89%
Total	5,167	1.26%	1,995	1.29%	3,172	1.24%

Source: FEMA DFIRM 11/2/2018

Past Occurrences

A list of state and federal disaster declarations for Yuba County from flooding is shown on Table B-24. These events also likely affected the City to some degree.

Table B-24 Yuba County – State and Federal Disaster Declarations from Flood 1950-2020

Disaster Type	Federal Declarations		State Declarations	
	Count	Years	Count	Years
Flood (including heavy rains and storms)	16	1950, 1955, 1958, 1962, 1963 (twice), 1969, 1973, 1982, 1983, 1986, 1995 (twice), 1997, 2008, 2017	15	1955, 1962, 1963, 1964, 1969, 1970, 1983, 1986, 1995 (twice), 1997, 1998, 2006, 2017 (twice)

Source: Cal OES, FEMA

1997 Dry Creek Levee Failure – the RD 2103 Dry Creek Levee failed during the January 1997 flood event in Yuba County. The failure mechanisms are not well documented and there was no litigation associated with this failure. The failure resulted in flooding of portions of the rural area north of Wheatland. Also affected during this event was the City's Wastewater Treatment Plant (WWTP). Flood waters inundated portions of the plant resulting in the only Notice of Violation (NOV) received for this facility.

On December 31, 2005, during the 2005-2006 Winter Storm event, a boil was discovered at the site of the 1997 Dry Creek Levee Failure. The boil was successfully contained and repaired by the United States Army Corps of Engineers as part of its PL 84-99 funding of critical levee erosion sites. In conjunction with the 2005-2006 Winter Storm event, 72,000 gallons of treated wastewater was accidentally discharged into the Bear River as a result of excessive rainfall.

In 2017, the City was evacuated due to the Oroville Dam flooding, there was a shelter set up at the local high school. There was a backup on the Bear River, and was one foot from going over into the wastewater ponds.

Vulnerability to and Impacts from Flood

Floods have been a part of the City's historical past and will continue to be so in the future. During winter months, long periods of precipitation and the timing of that precipitation are critical in determining the threat of flood, and these characteristics further dictate the potential for widespread structural and property damages. Predominantly, the effects of flooding are generally confined to areas near the waterways of the County. As waterways grow in size from local drainages, so grows the threat of flood and dimensions of the threat. This threatens structures in the floodplain. Structures can also be damaged from trees falling as a result of water-saturated soils. Electrical power outages happen, and the interruption of power causes major problems. Loss of power is usually a precursor to closure of governmental offices and community businesses. Public schools may also be required to close or be placed on a delayed start schedule. Roads can be damaged and closed, causing safety and evacuation issues. People may be swept away in floodwaters, causing injuries or deaths.

More information on flood and drainage issues in the City can be found in the Flood: Localized Stormwater Flooding discussion in the next section of this Annex.

Flood control systems are typically designed to provide protection against 25-year to 200-year flood events. Flood control for the City of Wheatland and their General Plan Area is provided by a series of levees. These levees are intended to protect the City of Wheatland and adjacent areas from the following sources of flooding:

- North Bear River Levee – Located south of the study area with flows from east to west
- South Dry Creek Levee – Located north of the study area with flows from east to west
- West San Joaquin Drainage Canal Levee – Located east of the study area with flows from south to north and into Dry Creek northeast of study area.

Reclamation District 2103 is responsible for maintenance and operation of the Dry Creek levees, Bear River levee and the San Joaquin drainage canal that are in the closest proximity to the City. These three channels are outside of the existing City limits, but are within the area of interest. Reclamation District 817 is responsible for maintenance and operation of the western portions of the Dry Creek and Bear River levees. These Reclamation Districts lie within Yuba County. However, portions of the Bear River levee system east of Highway 65 are located in Placer County and west of Highway 65 are located in Sutter County.

The levee systems are under the jurisdiction of each Reclamation District in which the levee or portion of the levee is located. Any improvements to the levee systems or other types of improvements to remove areas from the floodplain are the responsibility of the Reclamation Districts and will require an adequate comprehensive financing system to provide system maintenance to FEMA required standards.

Floods are among the costliest natural disasters in terms of human hardship and economic loss nationwide. Floods can cause substantial damage to structures, landscapes, and utilities as well as life safety issues. Floods can be extremely dangerous, and even six inches of moving water can knock over a person given a strong current. During a flood, people can also suffer heart attacks or electrocution due to electrical equipment short outs. Floodwaters can transport large objects downstream which can damage or remove stationary structures. Ground saturation can result in instability, collapse, or other damage. Objects can also be buried or destroyed through sediment deposition. Floodwaters can also break utility lines and interrupt services. Standing water can cause damage to crops, roads, foundations, and electrical circuits. Direct impacts, such as drowning, can be limited with adequate warning and public education about what to do during floods. Other problems connected with flooding and stormwater runoff include erosion, sedimentation, degradation of water quality, loss of environmental resources, and economic impacts.

Of significant concern to the City during high water events is the WWTP. The WWTP's infiltration basins and percolation ponds are located on the river side of the levee, outside the main levee, on the river bed. During flood and high water events, these areas can be breached causing a release of raw sewage.

Assets at Risk

Based on the vulnerability of Wheatland to the flood hazard, the sections that follow describes significant assets at risk in the City of Wheatland. This section includes the values at risk, flooded acres, population at risk, and critical facilities at risk.

Values at Risk

GIS was used to determine the possible impacts of flooding within the City of Wheatland. The methodology described in Section 4.3.10 of the Base Plan was followed in determining structures and values at risk to the 1% (100-year) and 0.2% (500-year) annual chance flood event. Table B-25 is a summary table for the City of Wheatland. Parcel counts, values, estimated contents, and total values in the City are shown for the 1% and 0.2% annual chance flood zones, as well as for those properties that fall outside of the mapped FEMA DFIRM flood zones. Table B-26 breaks down Table B-25 and shows the property use, improved parcel count, improved values, estimated contents, and total values that fall in FEMA flood zones in the City.

Table B-25 City of Wheatland – Count and Value of Parcels at Risk in Summary DFIRM Flood Zones

Flood Zone	Total Parcel Count	Improved Parcel Count	Total Land Value	Improved Structure Value	Estimated Contents Value	Total Value
1% Annual Chance Flood Hazard	362	289	$19,010,460	$70,663,519	$38,600,736	$128,274,715
0.2% Annual Chance Flood Hazard	612	489	$37,986,565	$86,994,070	$49,153,803	$174,134,438
Other Areas	458	388	$28,134,207	$68,877,401	$37,252,011	$134,263,619
City of Wheatland Total	**1,432**	**1,166**	**$85,131,232**	**$226,534,990**	**$125,006,550**	**$436,672,772**

Source: FEMA 11/2/2018 DFIRM, Yuba County 2020 Parcel/Assessor's Data

*With respect to improve parcels within the floodplain, the actual structures on the parcels may not be located within the actual floodplain, may be elevated and or otherwise outside of the identified flood zone

**This parcel count only includes those parcels in the 0.2% annual chance flood zone, exclusive of the 1% annual chance flood zone. The 0.2% annual chance flood, in actuality, also includes all parcels in the 1% annual chance flood zone.

Table B-26 City of Wheatland – Count and Values of Parcels at Risk by Detailed Flood Zone and Property Use

Flood Zone / Property Use	Total Parcel Count	Improved Parcel Count	Total Land Value	Improved Structure Value	Estimated Contents Value	Total Value
1% Annual Chance Flood Hazard						
Zone A						
Agricultural	17	2	$4,799,347	$29,685	$29,685	$4,858,717
Commercial	5	4	$1,748,114	$6,158,410	$6,158,410	$14,064,934
Government-Owned / Non-Taxable Property	11	0	$14,371	$0	$0	$14,371
Industrial	1	1	$13,177	$174,943	$262,414	$450,534
Miscellaneous	1	0	$0	$0	$0	$0
Residential	327	282	$12,435,451	$64,300,481	$32,150,227	$108,886,159
Zone A Total	**362**	**289**	**$19,010,460**	**$70,663,519**	**$38,600,736**	**$128,274,715**

Flood Zone / Property Use	Total Parcel Count	Improved Parcel Count	Total Land Value	Improved Structure Value	Estimated Contents Value	Total Value
1% Annual Chance Flood Hazard Total	**362**	**289**	**$19,010,460**	**$70,663,519**	**$38,600,736**	**$128,274,715**
0.2% Annual Chance Flood Hazard						
X Protected by Levee						
Agricultural	13	6	$16,393,188	$5,183,160	$5,183,160	$26,759,508
Commercial	38	35	$2,200,507	$4,558,988	$4,558,988	$11,318,483
Government-Owned / Non-Taxable Property	25	0	$0	$0	$0	$0
Industrial	4	4	$393,766	$785,696	$1,178,544	$2,358,006
Miscellaneous	8	0	$0	$0	$0	$0
Residential	524	444	$18,999,104	$76,466,226	$38,233,111	$133,698,441
X Protected by Levee Total	**612**	**489**	**$37,986,565**	**$86,994,070**	**$49,153,803**	**$174,134,438**
0.2% Annual Chance Flood Hazard Total	**612**	**489**	**$37,986,565**	**$86,994,070**	**$49,153,803**	**$174,134,438**
Other Areas						
Zone X (unshaded)						
Agricultural	18	2	$12,615,597	$139,090	$139,090	$12,893,777
Commercial	9	9	$1,788,113	$5,487,529	$5,487,529	$12,763,171
Government-Owned / Non-Taxable Property	6	0	$0	$0	$0	$0
Industrial	0	0	$0	$0	$0	$0
Miscellaneous	6	0	$0	$0	$0	$0
Residential	419	377	$13,730,497	$63,250,782	$31,625,392	$108,606,671
Zone X (unshaded) Total	**458**	**388**	**$28,134,207**	**$68,877,401**	**$37,252,011**	**$134,263,619**
Other Areas Total	**458**	**388**	**$28,134,207**	**$68,877,401**	**$37,252,011**	**$134,263,619**
City of Wheatland Total	**1,432**	**1,166**	**$85,131,232**	**$226,534,990**	**$125,006,550**	**$436,672,772**

Source: FEMA 11/2/2018 DFIRM, Yuba County 2020 Parcel/Assessor's Data

*With respect to improve parcels within the floodplain, the actual structures on the parcels may not be located within the actual floodplain, may be elevated and or otherwise outside of the identified flood zone

**This parcel count only includes those parcels in the 0.2% annual chance flood zone, exclusive of the 1% annual chance flood zone. The 0.2% annual chance flood, in actuality, also includes all parcels in the 1% annual chance flood zone.

Table B-27 summarizes Table B-26 above and shows City of Wheatland loss estimates and improved values at risk by FEMA 1% and 0.2% annual chance flood zones.

Table B-27 City of Wheatland – Flood Loss Estimates

Flood Zone	Total Parcel Count	Improved Parcel Count	Improved Structure Value	Estimated Contents Value	Total Value	Loss Estimate	Loss Ratio
1% Annual Chance Flood Hazard	362	289	$70,663,519	$38,600,736	$109,264,255	$21,852,851	0.33%
0.2% Annual Chance Flood Hazard	612	489	$86,994,070	$49,153,803	$136,147,873	$27,229,575	0.41%
Grand Total	**974**	**778**	**$157,657,589**	**$87,754,539**	**$245,412,128**	**$49,082,426**	**0.74%**

Source: FEMA 11/2/2018 DFIRM, Yuba County 2020 Parcel/Assessor's Data

*With respect to improve parcels within the floodplain, the actual structures on the parcels may not be located within the actual floodplain, may be elevated and or otherwise outside of the identified flood zone

**This parcel count only includes those parcels in the 0.2% annual chance flood zone, exclusive of the 1% annual chance flood zone. The 0.2% annual chance flood, in actuality, also includes all parcels in the 1% annual chance flood zone.

According to Table B-26 and Table B-27, the City of Wheatland has 289 parcels and $109.3 million of structure and contents values or values in the 1% annual chance flood zone, and 489 improved parcels and $113 million of structure and contents values in the 0.2% annual chance flood zone. These values can be refined a step further. Applying the 20 percent damage factor as previously described in Section 4.3.10 of the Base Plan, there is a 1% chance in any given year of a flood event causing $21.9 million in damage and a 0.2% chance in any given year of a flood event causing $27.2 million in damage in the City of Wheatland. The loss ratio of 0.33% and 0.41% indicates that flood losses for 1% and 0.2% annual chance flooding, respectively, would be minor, and the City should be able to recover.

Flooded Acres

Also of interest is the land area affected by the various flood zones. The following is an analysis of flooded acres in the City in comparison to total area within the City limits. The same methodology, as discussed in Section 4.3.10 of the Base Plan, was used for the City of Wheatland as well as for the County as a whole. Table B-28 represents a detailed and summary analysis of total acres for each FEMA DFIRM flood zone in the City.

Table B-28 City of Wheatland – Flooded Acres by Flood Zone

Flood Zone	Total Acres	% of Total Acres	Improved Acres	% of Total Improved Acres	Unimproved Acres	% of Total Unimproved Acres
1% Annual Chance Flood Hazard						
Zone A						

Flood Zone	Total Acres	% of Total Acres	Improved Acres	% of Total Improved Acres	Unimproved Acres	% of Total Unimproved Acres
Agricultural	594	0.145%	185	0.120%	409	0.160%
Commercial	44	0.011%	36	0.023%	8	0.003%
Government-Owned / Non-Taxable Property	25	0.006%	0	0.000%	25	0.010%
Industrial	1	0.000%	1	0.000%	0	0.000%
Miscellaneous	22	0.005%	0	0.000%	22	0.009%
Residential	85	0.021%	52	0.034%	32	0.013%
Zone A Total	**770**	**0.188%**	**273**	**0.177%**	**496**	**0.194%**
1% Annual Chance Flood Hazard Total	**770**	**0.188%**	**273**	**0.177%**	**496**	**0.194%**
0.2% Annual Chance Flood Hazard						
Zone X (shaded)						
Agricultural	0	0.000%	0	0.000%	0	0.000%
Commercial	0	0.000%	0	0.000%	0	0.000%
Government-Owned / Non-Taxable Property	0	0.000%	0	0.000%	0	0.000%
Industrial	0	0.000%	0	0.000%	0	0.000%
Miscellaneous	0	0.000%	0	0.000%	0	0.000%
Residential	0	0.000%	0	0.000%	0	0.000%
Zone X (shaded) Total	**0**	**0.000%**	**0**	**0.000%**	**0**	**0.000%**
X Protected by Levee						
Agricultural	1,372	0.334%	1,246	0.808%	126	0.049%
Commercial	16	0.004%	15	0.009%	2	0.001%
Government-Owned / Non-Taxable Property	49	0.012%	0	0.000%	49	0.019%
Industrial	2	0.000%	2	0.001%	0	0.000%
Miscellaneous	55	0.013%	0	0.000%	55	0.021%
Residential	261	0.064%	90	0.058%	172	0.067%
X Protected by Levee Total	**1,755**	**0.428%**	**1,351**	**0.876%**	**404**	**0.158%**
0.2% Annual Chance Flood Hazard Total	**1,755**	**0.428%**	**1,351**	**0.876%**	**404**	**0.158%**
Other Areas						
Zone X (unshaded)						

Flood Zone	Total Acres	% of Total Acres	Improved Acres	% of Total Improved Acres	Unimproved Acres	% of Total Unimproved Acres
Agricultural	2,411	0.587%	260	0.169%	2,151	0.839%
Commercial	15	0.004%	15	0.010%	0	0.000%
Government-Owned / Non-Taxable Property	56	0.014%	0	0.000%	56	0.022%
Industrial	0	0.000%	0	0.000%	0	0.000%
Miscellaneous	41	0.010%	0	0.000%	41	0.016%
Residential	118	0.029%	95	0.062%	22	0.009%
Zone X (unshaded) Total	**2,641**	**0.643%**	**370**	**0.240%**	**2,271**	**0.886%**
Zone D						
Agricultural	0	0.000%	0	0.000%	0	0.000%
Commercial	0	0.000%	0	0.000%	0	0.000%
Government-Owned / Non-Taxable Property	0	0.000%	0	0.000%	0	0.000%
Industrial	0	0.000%	0	0.000%	0	0.000%
Miscellaneous	0	0.000%	0	0.000%	0	0.000%
Residential	0	0.000%	0	0.000%	0	0.000%
Zone D Total	**0**	**0.000%**	**0**	**0.000%**	**0**	**0.000%**
Other Areas Total	**2,641**	**0.643%**	**370**	**0.240%**	**2,271**	**0.886%**
City of Wheatland Total	**5,167**	**1.258%**	**1,995**	**1.294%**	**3,172**	**1.237%**

Source: FEMA 11/2/2018 DFIRM

Population at Risk

The DFIRM flood zones were overlayed on the parcel layer. Those residential parcel centroids that intersect the flood zones were counted and multiplied by the 2010 Census Bureau average household factors for Wheatland – 2.69. According to this analysis, there is a total population of 759 and 1,194 residents of the City at risk to flooding in the 1% and 0.2% annual chance floodplains, respectively. This is shown in Table B-29.

Table B-29 City of Wheatland – Count of Improved Residential Parcels and Population by Flood Zone

Jurisdiction	1% Annual Chance		0.2% Annual Chance**	
	Improved Residential Parcels*	Population at Risk	Improved Residential Parcels*	Population at Risk
Wheatland	282	759	444	1,194

Source: FEMA DFIRM 11/2/2018, Yuba County 2020 Parcel/Assessor's Data, US Census Bureau

*With respect to improve parcels within the floodplain, the actual structures on the parcels may not be located within the actual floodplain, may be elevated and or otherwise outside of the identified flood zone

**This parcel count only includes those parcels in the 0.2% annual chance flood zone, exclusive of the 1% annual chance flood zone. The 0.2% annual chance flood, in actuality, also includes all parcels in the 1% annual chance flood zone.

Critical Facilities at Risk

An analysis was performed on the critical facility inventory in Wheatland in identified flood zones. GIS was used to determine whether the critical facility locations intersect a FEMA DFIRM flood zone. Details of critical facilities in DFIRM flood zones in the City of Wheatland are shown in Figure B-12 and detailed in Table B-30. Details of critical facility definition, type, name and address and jurisdiction by DFIRM flood zone are listed in Appendix F.

Figure B-12 City of Wheatland – Critical Facilities in DFIRM Flood Zones

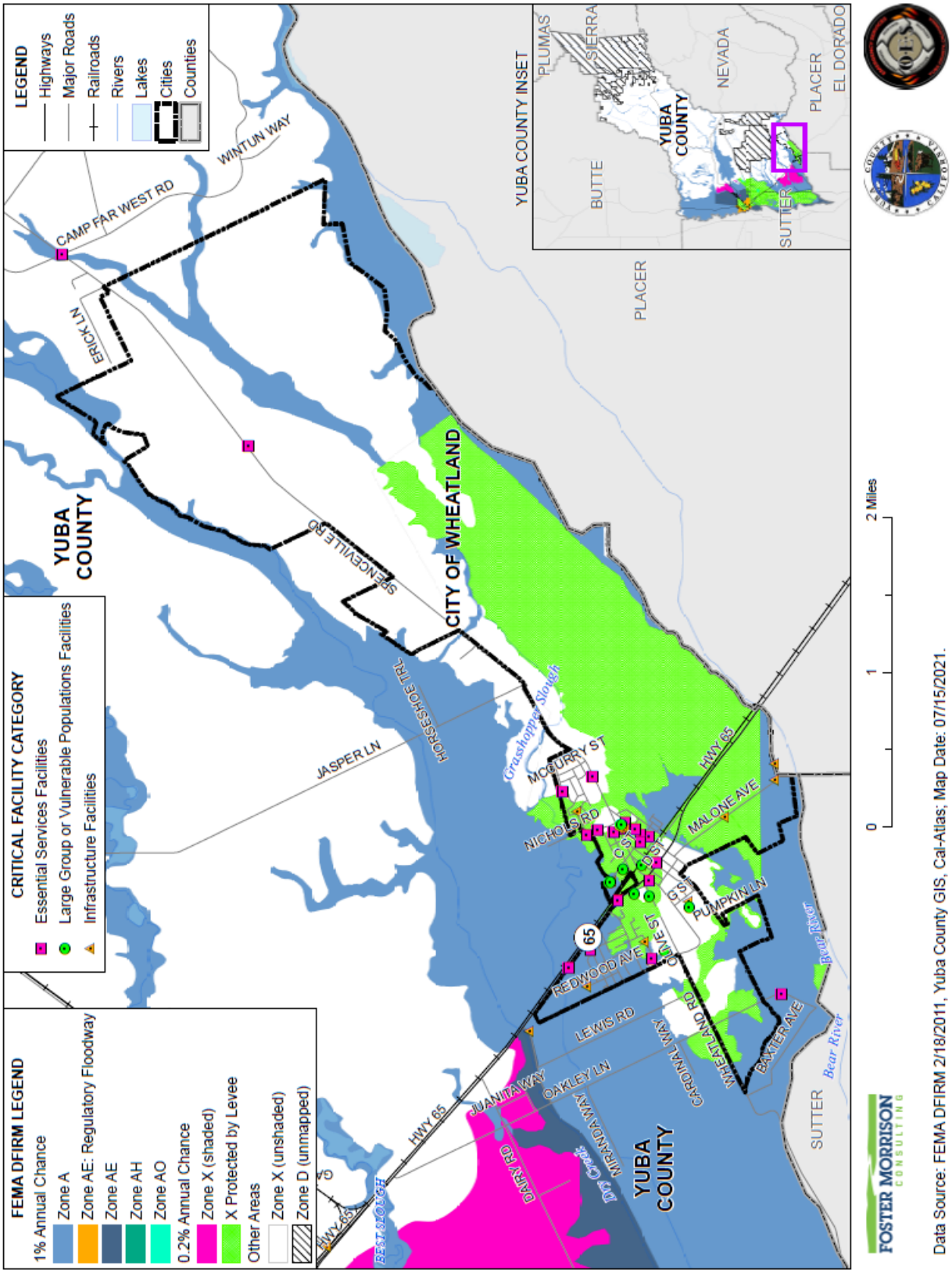


Table B-30 City of Wheatland– Critical Facilities in DFIRM Flood Zones

Critical Facility Class	Critical Facility Name	Facility Count
1% Annual Chance Flood Hazard		
Zone A		
Essential Services Facilities	Comcast Fresno LLC	2
	Walker Telecomm Inc	1
	Total	**3**
Large Group or Vulnerable Populations Facilities	City Of Wheatland	2
	Total	**2**
Infrastructure Facilities	City Of Wheatland	6
	Total	**6**
Zone A Total		**11**
1% Annual Chance Flood Hazard Total		**11**
0.2% Annual Chance Flood Hazard		
X Protected by Levee		
Essential Services Facilities	AT&T Mobility LLC	1
	AT&T Services Inc	1
	Comcast Fresno LLC	3
	Sprint Nextel Corporation	1
	T-Mobile WEST LLC	1
	Walker Telecomm Inc	1
	Wheatland City Hall	1
	Wheatland Fire Authority	1
	Total	**10**
Large Group or Vulnerable Populations Facilities	City Of Wheatland	1
	City of Wheatland Community Center	1
	District Office	1
	Virginia School - Merged	1
	Wheatland Elementary School	1
	Total	**5**
Infrastructure Facilities	City Of Wheatland	5
	City of Wheatland Public Works Yard	1
	Wheatland Water Tank	1
	Total	**7**
X Protected by Levee Total		**22**
0.2% Annual Chance Flood Hazard Total		**22**

Critical Facility Class	Critical Facility Name	Facility Count
Other Areas		
Zone X (unshaded)		
Essential Services Facilities	City Of Wheatland	1
	Comcast Cable Communications Management, LLC	1
	Comcast Fresno LLC	1
	Sprint Corporation	1
	Wheatland Fire Authority	1
	Total	**5**
Large Group or Vulnerable Populations Facilities	Bear River Middle School	1
	Wheatland Union High School	1
	Total	**2**
Infrastructure Facilities	CITY OF WHEATLAND	1
	Total	**1**
Zone X (unshaded) Total		**8**
Other Areas Total		**8**
City of Wheatland Total		**41**

Source: Yuba County GIS, FEMA 2/18/2011 DFIRM

Insurance Coverage, Claims Paid, and Repetitive Losses

The City of Wheatland joined the National Flood Insurance Program (NFIP) on September 29, 1986. The City does not participate in CRS program. NFIP data indicates that as of July 19, 2018, there were 177 flood insurance policies in force in the City with $56,720,800.00 of coverage. Of the 177 policies, 175 were residential (single-family homes), and 2 were non-residential properties. Of the 177 policies, 12 were in A zones, while 165 in B, C, and X zones. There have been 3 historical claims for flood losses totaling $0.00. NFIP data further indicates that there are no repetitive loss (RL) or severe repetitive loss (SRL) buildings in Wheatland. There have also been no substantial damage claims in the City since 1978.

Based on this analysis of insurance coverage, the City has values at risk to the 1% annual chance and greater floods. Of the 289 improved parcels within the 1% annual chance flood zone, only 12 (or 4.2 percent) of those parcels maintain flood insurance. This can be seen on Table B-31.

Table B-31 City of Wheatland – Percentage of Policy Holders to Improved Parcels in the 1% Annual Chance Floodplain

Jurisdiction	Improved Parcels in SFHA (1% Annual Chance) Floodplain*	Insurance Policies in the SFHA (1% Annual Chance) Floodplain	Percentage of 1% Annual Chance Floodplain Parcels Currently Insured
City of Wheatland	289	12	4.2%

Source: FEMA DFIRM 11/2/2018, Yuba County 2020 Parcel/Assessor's Data, NFIP CIS data 3/2020.

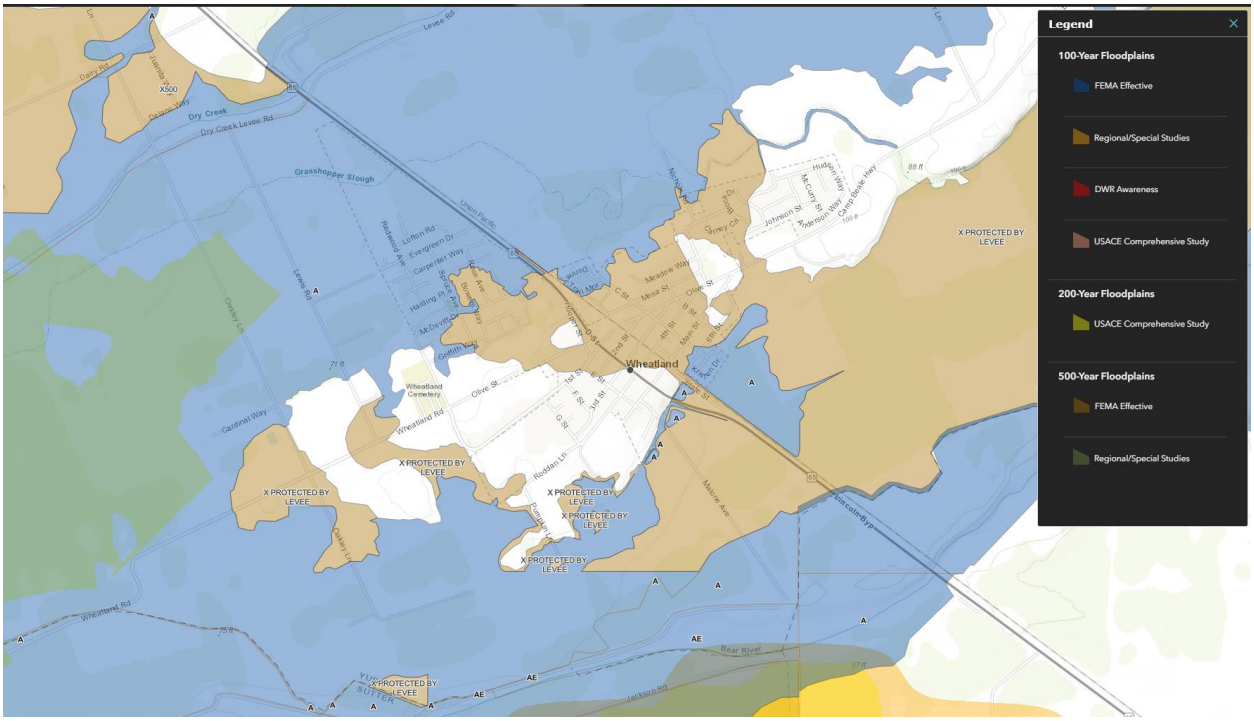
California Department of Water Resources Best Available Maps (BAM)

The FEMA regulatory maps provide just one perspective on flood risks in Yuba County. Senate Bill 5 (SB 5), enacted in 2007, authorized the California DWR to develop the Best Available Maps (BAM) displaying 100- and 200-year floodplains for areas located within the Nevada-San Joaquin (SAC-SJ) Valley watershed. This effort was completed by DWR in 2008. DWR has expanded the BAM to cover all counties in the State and to include 500-year floodplains.

Different than the FEMA DFIRMs which have been prepared to support the NFIP and reflect only the 100-year event risk, the BAMs are provided for informational purposes and are intended to reflect current 100-, 200-(as applicable), and 500-year event risks using the best available data. The 100-year floodplain limits on the BAM are a composite of multiple 100-year floodplain mapping sources. It is intended to show all currently identified areas at risk for a 100-year flood event, including FEMA's 100-year floodplains. The BAM are comprised of different engineering studies performed by FEMA, Corps, and DWR for assessment of potential 100-, 200-, and 500-year floodplain areas. These studies are used for different planning and/or regulatory applications, and for each flood frequency may use varied analytical and quality control criteria depending on the study type requirements.

The value in the BAMs is that they provide a bigger picture view of potential flood risk to the City than that provided in the FEMA DFIRMs. The BAM map for Wheatland is shown in Figure B-13.

Figure B-13 City of Wheatland – Best Available Map



Source: California DWR, retrieved 4/1/2021

Legend explanation: Blue - FEMA 1%, Orange – Local 1% (developed from local agencies), Red – DWR 1%r (Awareness floodplains identify the 1% annual chance flood hazard areas using approximate assessment procedures.), Pink – USACE 1% (2002 Sac and San Joaquin River Basins Comp Study), Yellow – USACE 0.5% (2002 Sac and San Joaquin River Basins Comp Study), Tan

– FEMA 0.2%, Grey – Local 0.2% (developed from local agencies), Purple – USACE 0.2% (2002 Sac and San Joaquin River Basins Comp Study).

Future Development

The potential for flooding may increase as floodwaters are channeled due to land development. Such changes can exacerbate flooding problems inside and outside of natural floodplains by altering or confining natural drainage channels. Floodplain modeling and master planning should be based on build out property use to ensure that all new development remains safe from future flooding. While local floodplain management, stormwater management, and water quality regulations and policies address these changes on a site-by-site basis, their cumulative effects can have a negative impact on the overall floodplain.

Presently, the existing levee system does not provide adequate flood protection for development around the City of Wheatland and adjacent areas. However, the City has placed restrictions on building in those areas pending repair and certification of the levees that protect the area. City staff makes sure pad elevations are above flood levels to develop in these areas.

The City enforces the floodplain ordinance, which helps to keep future development out of or above the floodplain. The City requires engineering drainage studies to include all new development plans. The studies are to identify existing onsite and offsite conditions, storm water flows, capacities of existing onsite and offsite inlets, culverts, ditches, canals, detention basins, and pump systems. The studies must then determine if the proposed development would result in increased storm water runoff from the site or result in restricting flow from existing upstream uses under existing conditions. Any individual developing or improving land is required to mitigate all potential drainage impacts to upstream or downstream users which could result from the development.

GIS Analysis

The City provided Future Development Areas were used as the basis for the inventory of future development areas for the City. Utilizing the future development project spatial layer, the parcel centroid data was intersected to determine the parcel counts within each area. Figure B-14 shows the locations of future development areas the City is planning to develop on the FEMA DFIRM. Table B-32 shows the parcels and acreages of each future development area in the City by DFIRM flood zone.

Figure B-14 City of Wheatland – Future Development in FEMA DFIRM Flood Zones

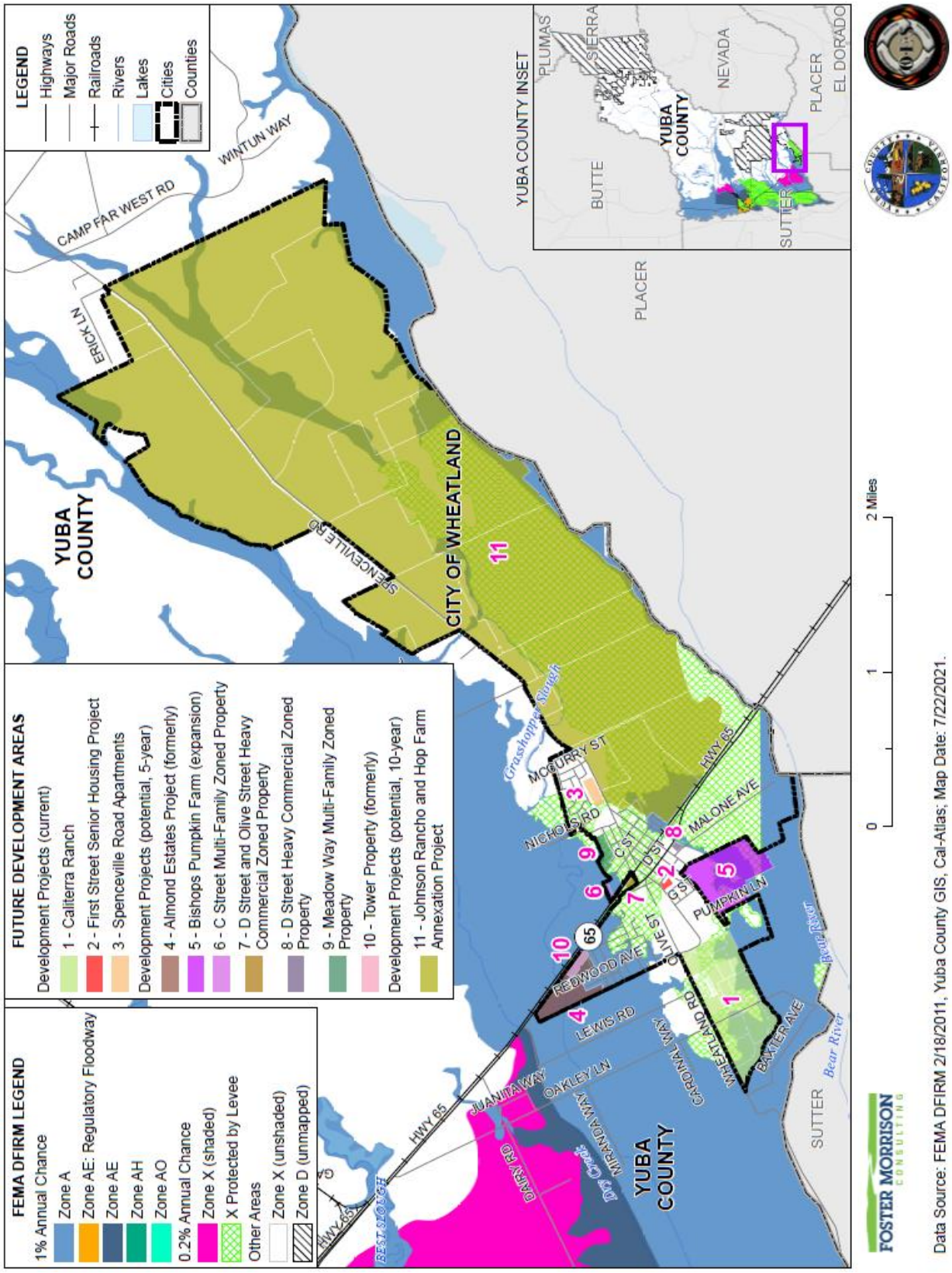


Table B-32 City of Wheatland – Future Development in FEMA DFIRM Flood Zones

Flood Zones/ Future Development Type / Future Development Area	Total Parcel Count	Improved Parcel Count	Total Acres
1% Annual Chance Flood Hazard			
Zone A			
Development Projects (current)			
Caliterra Ranch	9	1	110.86
Development Projects (current) Total	***9***	***1***	***110.86***
Development Projects (potential, 5-year)			
Almond Estates Project (formerly)	1	0	48.90
Bishops Pumpkin Farm (expansion)	1	0	99.01
C Street Multi-Family Zoned Property	1	0	2.54
Tower Property (formerly)	1	0	7.91
Development Projects (potential, 5-year) Total	***4***	***0***	***158.36***
Development Projects (potential, 10-year)			
Johnson Rancho and Hop Farm Annexation Project	3	1	225.14
Development Projects (potential, 10-year) Total	***3***	***1***	***225.14***
Zone A Total	**16**	**2**	**494.36**
1% Annual Chance Flood Hazard Total	**16**	**2**	**494.36**
0.2% Annual Chance Flood Hazard			
X Protected by Levee			
Development Projects (current)			
Caliterra Ranch	38	0	22.27
Development Projects (current) Total	***38***	***0***	***22.27***
Development Projects (potential, 5-year)			
D Street and Olive Street Heavy Commercial Zoned Property	1	0	2.22
Meadow Way Multi-Family Zoned Property	1	0	11.92
Development Projects (potential, 5-year) Total	**2**	**0**	**14.14**
Development Projects (potential, 10-year)			
Johnson Rancho and Hop Farm Annexation Project	7	6	1,499.16
Development Projects (potential, 10-year) Total	7	6	1,499.16
X Protected by Levee Total	**47**	**6**	**1,535.56**
0.2% Annual Chance Flood Hazard Total	**47**	**6**	**1,535.56**
Other Areas			
Zone X (unshaded)			
Development Projects (current)			
Caliterra Ranch	27	0	52.93
First Street Senior Housing Project	1	0	2.36

Flood Zones/ Future Development Type / Future Development Area	Total Parcel Count	Improved Parcel Count	Total Acres
Spenceville Road Apartments	1	1	8.38
Development Projects (current) Total	***29***	***1***	***63.67***
Development Projects (potential, 5-year)			
D Street Heavy Commercial Zoned Property	1	0	1.73
Development Projects (potential, 5-year) Total	***1***	***0***	***1.73***
Development Projects (potential, 10-year)			
Johnson Rancho and Hop Farm Annexation Project	13	2	2,303.26
Development Projects (potential, 10-year) Total	***13***	***2***	***2,303.26***
Zone X (unshaded) Total	**43**	**3**	**2,368.66**
Other Areas Total	**43**	**3**	**2,368.66**
Grand Total	**106**	**11**	**4,398.58**

Source: City of Wheatland GIS, FEMA 2/18/2011 DFIRM

Flood: Localized Stormwater Flooding

Likelihood of Future Occurrence–Occasional
Vulnerability–Medium

Hazard Profile and Problem Description

Flooding occurs in areas other than the FEMA mapped 1% and 0.2% annual chance floodplains. Flooding may be from drainages not studied by FEMA, lack of or inadequate drainage infrastructure, or inadequate maintenance. Localized, stormwater flooding occurs throughout the County during the rainy season from November through April. Prolonged heavy rainfall contributes to a large volume of runoff resulting in high peak flows of moderate duration.

Location and Extent

The City of Wheatland is subject to localized flooding throughout the City. Flood extents are usually measured in areas affected, velocity of flooding, and depths of flooding. Expected flood depths in the City vary by location. Flood durations in the City tend to be short to medium term, or until either the storm drainage system can catch up or flood waters move downstream. Localized flooding in the City tends to have a shorter speed of onset, especially when antecedent rainfall has soaked the ground and reduced its capacity to absorb additional moisture.

The City tracks localized flooding areas. Affected localized flood areas identified by the City of Wheatland are summarized in Table B-33.

Table B-33 City of Wheatland – List of Localized Flooding Problem Areas

Area Name	Flooding	Pavement Deterioration	Washout	High Water	Landslide/ Mudslide	Debris	Downed Trees
WWTP	X		X	X		X	X
North Strom Station	X		X	X		X	X
State Street south of Main Street	X					X	
Spenceville Road (various roadside ditches overflow)	X	X					
North Grasshopper Slough at Hwy-65	X					X	
South Grasshopper Slough at Wheatland Road	X	X				X	

Source: City of Wheatland

Past Occurrences

The City noted the following past occurrences of localized flooding:

- Localized roadway flooding on Spenceville Road at various locations over 2-miles.
- Localized roadway flooding on Wheatland Road at South Grasshopper Slough.
- North Grasshopper Slough backed-up and flooded to top of banks at Hwy-65 bridge.

Vulnerability to and Impacts from Localized Flooding

Historically, much of the growth in the City and County has occurred adjacent to streams, resulting in significant damages to property, and losses from disruption of community activities when the streams overflow. Additional development in the watersheds of these streams affects both the frequency and duration of damaging floods through an increase in stormwater runoff.

Primary concerns associated with stormwater flooding include impacts to infrastructure that provides a means of ingress and egress throughout the community. Ground saturation can result in instability, collapse, or other damage to trees, structures, roadways and other critical infrastructure. Objects can also be buried or destroyed through sediment deposition. Floodwaters can break utility lines and interrupt services. Standing water can cause damage to crops, roads, and foundations. Other problems connected with flooding and stormwater runoff include erosion, sedimentation, degradation of water quality, losses of environmental resources, and certain health hazards.

Wheatland is located near the Bear River and Dry Creek. Local flooding generally occurs during heavy rain events because of inadequate sized facilities or deteriorated facilities such as drainage inlets, pipes, drainage ditches and related facilities that transport water to the Bear River, Dry Creek, or the San Joaquin Drainage canal. The Public Works Department operates and maintains the local drainage system within the City, as well as the two facilities outside the City limits consisting of the northwest detention pond and discharge pumps located west of SR 65 and south of Dry Creek, and partial maintenance of the east side ditch that connects the Wheatland Ranch Subdivision detention basin to Dry Creek.

Existing drainage system deficiencies include undersized or deteriorated drain lines and ditches, inadequate inlets or capacity, some broken and offset gutters, and valley gutters. In addition to these physical needs, the City's Public Works Improvement Standards relative to water systems was last updated in 1992 and needs revision to make the standards consistent with current industry practice.

Outside the City limits, the Yuba County Public Works Department operates the County local drainage systems which consist primarily of county roadway drain lines and side ditches. All other drainage facilities are maintained by the local property owners. The existing City is separated into four general drainage areas. The areas are separated by a higher east-west area through the approximate middle of town and the Union Pacific Railroad /SR 65 north-south line/road.

The northeast City drainage area drains through the Wheatland Ranch Subdivision into a detention basin constructed in 2002. The detention basin discharges into an existing ditch, outside the City limits to the northwest into Dry Creek. The flap valve closes when the water level is higher in Dry Creek than in the local discharge canal. The flap valve prevents the Dry Creek water from back flowing into areas south of the Dry Creek levee.

The northwest City drainage area drains through a system of pipes, open ditches, and a major north draining channel that discharges into the detention. When the northwest side of the City is removed from the FEMA 100-year floodplain, a berm around the detention basin must be raised one to three feet to maintain adequate freeboard. The detention basin berm cannot be raised at this time because the berm would restrict the flow of the existing flood control system. This detention basin also receives storm water from under SR 65 from the bridge area described in the northeast drainage.

The southeast City drainage area drains through a system of pipes and open ditches to a small 24" diameter concrete culvert that crosses to the west under the UPRR into the south fork of Grasshopper Slough. This pipe also drains a large area outside the city limits. Periodically flows are restricted at this point, resulting in water ponding on the east side of the UPRR and north of the Bear River. The natural ground slope outside the City limits is generally downhill from the land side of the Bear River levee north toward the City. Possible solutions to drain this area are installing a detention basin/pump station on the east side of SR 65 with a discharge to the Bear River, or enlarging the east-west culvert under the UPRR and SR 65 and associated channel west of SR 65.

The southwest City drainage area drains through a system of pipes and open ditches and discharges into the south fork of Grasshopper Slough. This slough also receives storm water runoff from the east as noted in the southeast drainage area description. The natural ground slope outside the City limits in this area is generally downhill from the land side of the Bear River levee north toward the City. The City's wastewater treatment is uphill from the south fork of Grasshopper Slough. The Grasshopper Slough south fork drains toward the west. This slough has been the subject of a preliminary drainage study by the proposed Heritage Oaks Estates and Jones Ranch projects. This slough crosses Wheatland Road west of the existing city limits and becomes a small ditch with limited capacity. Solutions to local drainage problems have been partially addressed by the Jones Ranch and Heritage Oaks Estates projects, which propose a series of detention basins and pumps to discharge storm water to the Bear River. The City noted that one storm drain pipe was replaced, which helped the problem.

When the flap valve is closed, local storm water cannot be discharged into Dry Creek and can puddle on the land side of the levee. In addition, the northeast area has an east to west ditch that discharges storm water to the west under a UPRR trestle and SR 65 bridge. The westerly discharge capacity is restricted because the downstream channel is confined and has limited capacity for carrying runoff west of SR 65.

Future Development

Internal drainage issues in the area need to be addressed, both in the existing built out areas containing aging infrastructure and in the areas of proposed development. Catastrophic flooding in Yuba County impacted Wheatland in 2005/2006 when the City provided shelter during the massive evacuation, areas west and east of the City limits. Reclamation District 817 and 2103 protect areas where residential growth is projected. Many of the levee repairs are completed. Presently, the existing levee system does not provide adequate flood protection for development around the City of Wheatland and adjacent areas. However, the City has placed restrictions on building in those areas pending repair and certification of the levees that protect the area. The City noted that some studies have been completed and one is in progress to address these issues.

Future development in the City will add more impervious surfaces causing an increase in stormwater runoff and the continued need to drain these waters. The City will need to be proactive to ensure that increased development has proper siting and drainage for stormwaters. The risk of localized flooding to future development can also be minimized by accurate recordkeeping of repetitive localized storm activity. Mitigating the root causes of the localized stormwater flooding will reduce future risks of losses

Levee Failure

Likelihood of Future Occurrence–Unlikely
Vulnerability–High

Hazard Profile and Problem Description

A levee is a raised area that runs along the banks of a stream or canal. Levees reinforce the banks and help prevent flooding by containing higher flow events to the main channel of a stream. By confining the flow to a narrower steam channel, levees can also increase the speed of the water. Levees can be natural or man-made.

Levees provide strong flood protection, but they are not failsafe. Levees are designed to protect against a specific flood level and could be overtopped during severe weather events or dam failure. For example, levees can be certified to provide protection against the 1% annual chance flood. Levees reduce, not eliminate, the risk to individuals and structures located behind them. A levee system failure or overtopping can create severe flooding and high water velocities. Levee failure can occur through overtopping or from seepage issues resulting from burrowing rodents, general erosion, excessive vegetation and root systems and other factors that compromise the integrity of the levee. No levee provides protection from events for which it was not designed, and proper operation and maintenance are necessary to reduce the probability of failure.

The City owns no levees, but is surrounded by levees and have levee protected areas inside the City. The City relies on other agencies to maintain levees that protect the City.

Location and Extent

There is not a scientific scale or measurement system in place for levee failure. Expected flood depths from a levee failure in the City are not known. The speed of onset is slow as the river rises, but if a levee fails the warning times are generally short for those in the inundation area. The duration of levee failure risk times can be hours to weeks, depending on the river flows that the levee holds back. The HMPC noted that when northern California reservoirs are nearing maximum capacity, they release water through the river systems, causing additional burdens on County levees.

Figure B-11 in the Flood section above showed the FEMA DFIRM X Protected by Levee areas in the City. Geographical levee failure flood extent for the City from the FEMA DFIRMs is shown in Table B-34.

Table B-34 City of Wheatland – Geographical Levee Failure Extents

X Protected by Levee/ Jurisdiction	Total Acres	% of Total Acres*	Improved Acres	% of Total Improved Acres*	Unimproved Acres	% of Total Unimproved Acres*
City of Wheatland	1,775	0.43%	1,351	.88	404	0.16%

Source: FEMA DFIRM 7/19/2018

*Percentage of total acres is the percent of total acres of the entire County Planning Area, not the total acres of the jurisdiction

Past Occurrences

There have been two state and two federal disaster declaration from levee failure. This can be seen in Table B-35.

Table B-35 Yuba County – State and Federal Levee Failure Disaster Declarations 1950-2020

Disaster Type	State Declarations		Federal Declarations	
	Count	Years	Count	Years
Levee Break	2	1972, 1980	2	1972, 1980

Source: Cal OES, FEMA

Wheatland has a long history of catastrophic flooding events involving both the Yuba and Feather Rivers. Major floods since the area's settlement in the mid-1800's have resulted in loss of life, significant property damage, and constrained economic development. Recent catastrophic flooding in Yuba County resulted in evacuations, which included Wheatland. High water events in 1955, 1986, and 1997 led to the evacuation of the City and concerns about the possibility of a levee failure.

1997 Dry Creek Levee Failure – The RD 2103 Dry Creek Levee failed during the January 1997 flood event in Yuba County. The failure mechanisms are not well documented and there was no litigation associated with this failure. The failure resulted in flooding of portions of the rural area north of Wheatland.

In **2017**, During the Oroville incident, the Bear River did start to experience a backup and there were concerns for the levee. However, no impacts occurred. The City erroneously was part of an initial evacuation order during the early stages of the incident, but was able to stop the evacuation when the risk was reevaluated. It was determined that Wheatland was actually an area of high ground for people evacuating from elsewhere. The City opened a temporary shelter at the High School.

In **2019** the Yuba and Feather river water levels raised, but not to a point which required us to enact any of emergency protocols.

Vulnerability to and Impacts from Levee Failure

A levee failure can range from a small, uncontrolled release to a catastrophic failure. Levee failure flooding can occur as the result of prolonged rainfall and flooding. The primary danger associated with levee failure is the high velocity flooding of those properties outside and downstream of the breach.

Should a levee fail, some or all of the area protected by the levees would be at risk to flooding. Impacts from a levee failure include property damage, critical facility damage, and life safety issues. Business and economic losses could be large as facilities could be flooded and services interrupted. School and road closures could occur. Road closures would impede both evacuation routes and ability of first responders to quickly respond to calls for aid. Other problems connected with levee failure flooding include erosion, sedimentation, degradation of water quality, losses of environmental resources, and certain health hazards.

As stated above, the City owns no levees, though it is protected by them. Levees near the City are owned by RD 817 and RD 2103.

- Reclamation District (RD) 817 encompasses approximately 2,600 acres of primarily agricultural land directly west of Wheatland, which consists of two levee reaches of 7.7 miles. RD 817 is adjacent to and west of RD 2103, which provides protection to Wheatland. Levee failures that occur in RD 2103 will allow flows to proceed west and will eventually pond on, and flood the lands in RD 817. Thus RD 817 is subject to flooding from levees that are not in their district. Failures of RD 817 levees will not pond flood waters high enough to flood Wheatland.
- Reclamation District 2103 is responsible for the maintenance and operation of the Dry Creek levees, Bear River levee, and the San Joaquin drainage canal. These three channels are outside the existing city limits, but are within the City's sphere of influence. In addition to Yuba County, portions of the Bear River levee system east of State Highway 65 are located in Placer County, and west of State Highway 65 the levees are located in Sutter County. Other Reclamation Districts within which these levee systems are located include Reclamation District 817.

Assets at Risk

Based on the vulnerability of Wheatland to the levee failure hazard, the sections that follow describes significant assets at risk in the City of Wheatland. This section includes the values at risk, population at risk, and critical facilities at risk.

Values at Risk

GIS was used to determine the possible impacts of levee failure flooding within the City of Wheatland. The methodology described in Section 4.3.14 of the Base Plan was followed in determining structures and values at risk to the levee failure flooding. Table B-36 shows the property use, improved parcel count, improved values, estimated contents, and total values that fall in FEMA X Protected by Levee flood zones in the City.

Table B-36 City of Wheatland – Count and Values of Parcels at Risk in X Protected by Levee Flood Zone and Property Use

Flood Zone / Property Use	Total Parcel Count	Improved Parcel Count	Total Land Value	Improved Structure Value	Estimated Contents Value	Total Value
X Protected by Levee						
Agricultural	13	6	$16,393,188	$5,183,160	$5,183,160	$26,759,508
Commercial	38	35	$2,200,507	$4,558,988	$4,558,988	$11,318,483
Government-Owned / Non-Taxable Property	25	0	$0	$0	$0	$0
Industrial	4	4	$393,766	$785,696	$1,178,544	$2,358,006
Miscellaneous	8	0	$0	$0	$0	$0
Residential	524	444	$18,999,104	$76,466,226	$38,233,111	$133,698,441
X Protected by Levee Total	**612**	**489**	**$37,986,565**	**$86,994,070**	**$49,153,803**	**$174,134,438**

Source: FEMA 11/2/2018 DFIRM, Yuba County 2020 Parcel/Assessor's Data

*With respect to improve parcels within the floodplain, the actual structures on the parcels may not be located within the actual floodplain, may be elevated and or otherwise outside of the identified flood zone

**This parcel count only includes those parcels in the 0.2% annual chance flood zone, exclusive of the 1% annual chance flood zone. The 0.2% annual chance flood, in actuality, also includes all parcels in the 1% annual chance flood zone.

Table B-37 shows City of Wheatland levee failure flood loss estimates and improved values at risk by FEMA X Protected by Levee flood zones.

Table B-37 City of Wheatland – X Protected by Levee Flood Loss Estimates

Flood Zone	Total Parcel Count	Improved Parcel Count	Improved Structure Value	Estimated Contents Value	Total Value	Loss Estimate	Loss Ratio
X Protected by Levee	612	489	$86,994,070	$49,153,803	$136,147,873	$27,229,575	6.23%

Source: FEMA 11/2/2018 DFIRM, Yuba County 2020 Parcel/Assessor's Data

*With respect to improve parcels within the floodplain, the actual structures on the parcels may not be located within the actual floodplain, may be elevated and or otherwise outside of the identified flood zone

**This parcel count only includes those parcels in the 0.2% annual chance flood zone, exclusive of the 1% annual chance flood zone. The 0.2% annual chance flood, in actuality, also includes all parcels in the 1% annual chance flood zone.

According to Table B-37, the City of Wheatland has 612 parcels and $136.15 million of structure and contents values or values in the X Protected by Levee flood zone. These values can be refined a step further. Applying the 20 percent damage factor as previously described in Section 4.3.11 of the Base Plan, two feet of flooding would cause $27.23 million in flood damages in the City.

Structures protected by levees that fail are often total losses. The analysis above assumes all levees in the City break at one time, which is unlikely. The extent and depth of actual flooding and associated damage will vary depending on the location, nature, depth, and extent of any levee break.

Population at Risk

The DFIRM flood zones were overlayed on the parcel layer. Those residential parcel centroids that intersect the levee failure flood zones were counted and multiplied by the 2010 Census Bureau average household factors for Wheatland – 2.47. According to this analysis, there is a total population of 8,089 residents of the City at risk to levee failure flooding. This is shown in Table B-29.

Table B-38 City of Wheatland – Count of Improved Residential Parcels and Population by Flood Zone

Jurisdiction	X Protected by Levee	
	Improved Residential Parcels	Population at Risk
City of Wheatland	444	1,097

Source: FEMA DFIRM 11/2/2018, Yuba County 2020 Parcel/Assessor's Data, US Census Bureau

Critical Facilities at Risk

An analysis was performed on the critical facility inventory in Wheatland in identified flood zones. GIS was used to determine whether the critical facility locations intersect a FEMA DFIRM X Protected by Levee flood zone. Details of critical facilities in DFIRM X Protected by Levee flood zones in the City of Wheatland are shown in Figure B-15 and detailed in Table B-39. Details of critical facility definition, type, name and address and jurisdiction by X Protected by Levee flood zone are listed in Appendix F.

Figure B-15 City of Wheatland – Critical Facilities in DFIRM X Protected by Levee Flood Zones

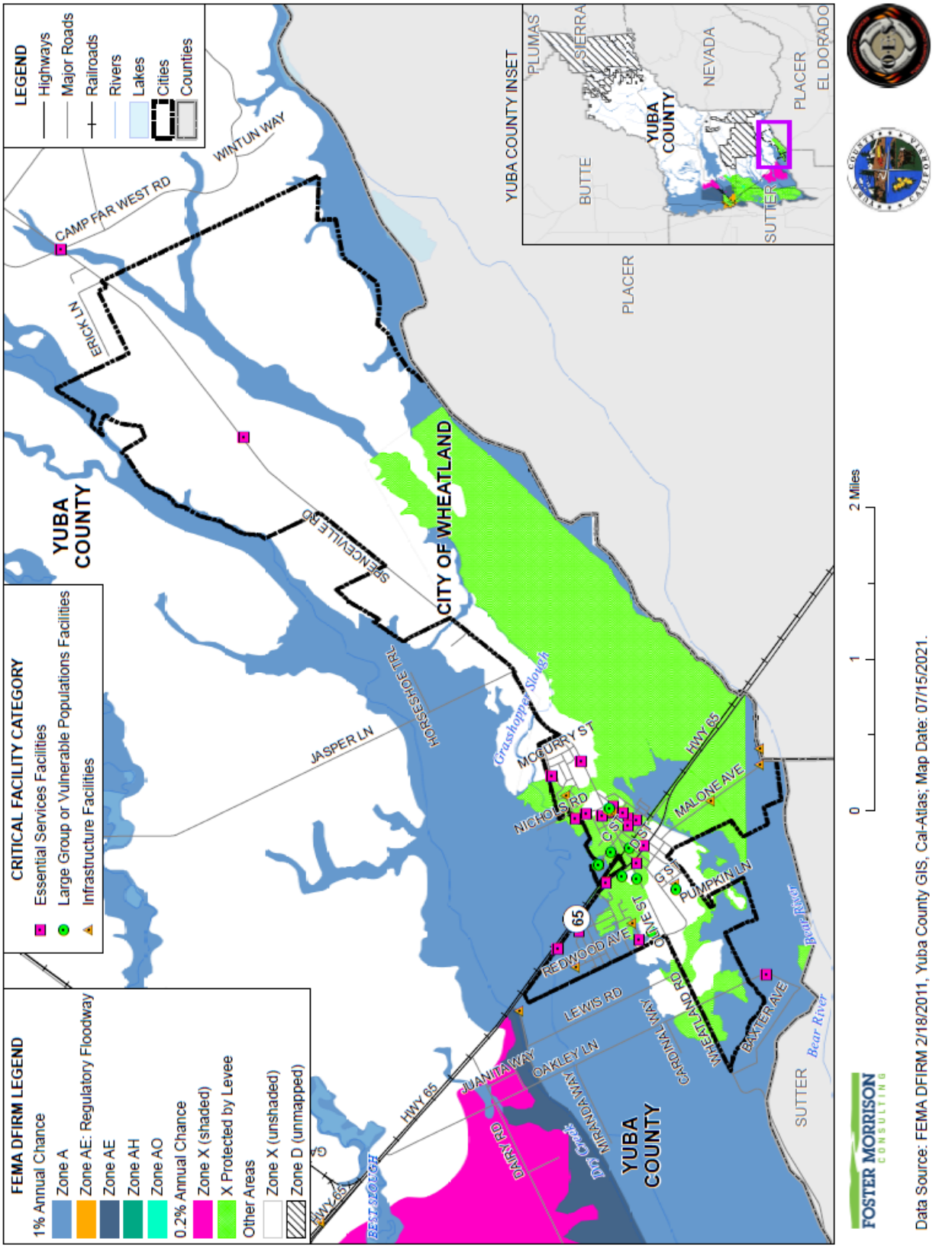


Table B-39 City of Wheatland – Critical Facilities in DFIRM X Protected by Levee Flood Zones

Critical Facility Class	Critical Facility Name	Facility Count
0.2% Annual Chance Flood Hazard		
X Protected by Levee		
Essential Services Facilities	AT&T MOBILITY LLC	1
	AT&T SERVICES INC	1
	COMCAST FRESNO LLC	3
	SPRINT NEXTEL CORPORATION	1
	T-MOBILE WEST LLC	1
	WALKER TELECOMM INC	1
	Total	**10**
Large Group or Vulnerable Populations Facilities	CITY OF WHEATLAND	1
	City of Wheatland Community Center	1
	District Office	1
	Virginia School - Merged	1
	Wheatland Elementary School	1
	Total	**5**
Infrastructure Facilities	CITY OF WHEATLAND	5
	City of Wheatland Public Works Yard	1
	Wheatland Water Tank	1
	CITY OF WHEATLAND	5
	Total	**7**
X Protected by Levee Total		**22**
City of Wheatland Total		**125**

Source: Yuba County GIS, FEMA 2/18/2011 DFIRM

Future Development

Future development built in the areas protected by levees is subject to being built to the standards in the City of Wheatland Floodplain Ordinance. Whether a levee is certified as providing protection from the 1% annual chance flood will also factor into development requirements. Future development in levee protected areas may be affected by this hazard, thus there will always be some level of concern.

GIS Analysis

The City provided Future Development Areas were used as the basis for the inventory of future development areas for the City. Utilizing the future development project spatial layer, the parcel centroid data was intersected to determine the parcel counts within each area. Figure B-16 shows the locations of future development areas the City is planning to develop on the FEMA DFIRM X Protected by Levee

zones. Table B-40 shows the parcels and acreages of each future development area in the City by DFIRM flood zone.

Figure B-16 City of Wheatland – Future Development in FEMA DFIRM X Protected by Levee Flood Zones

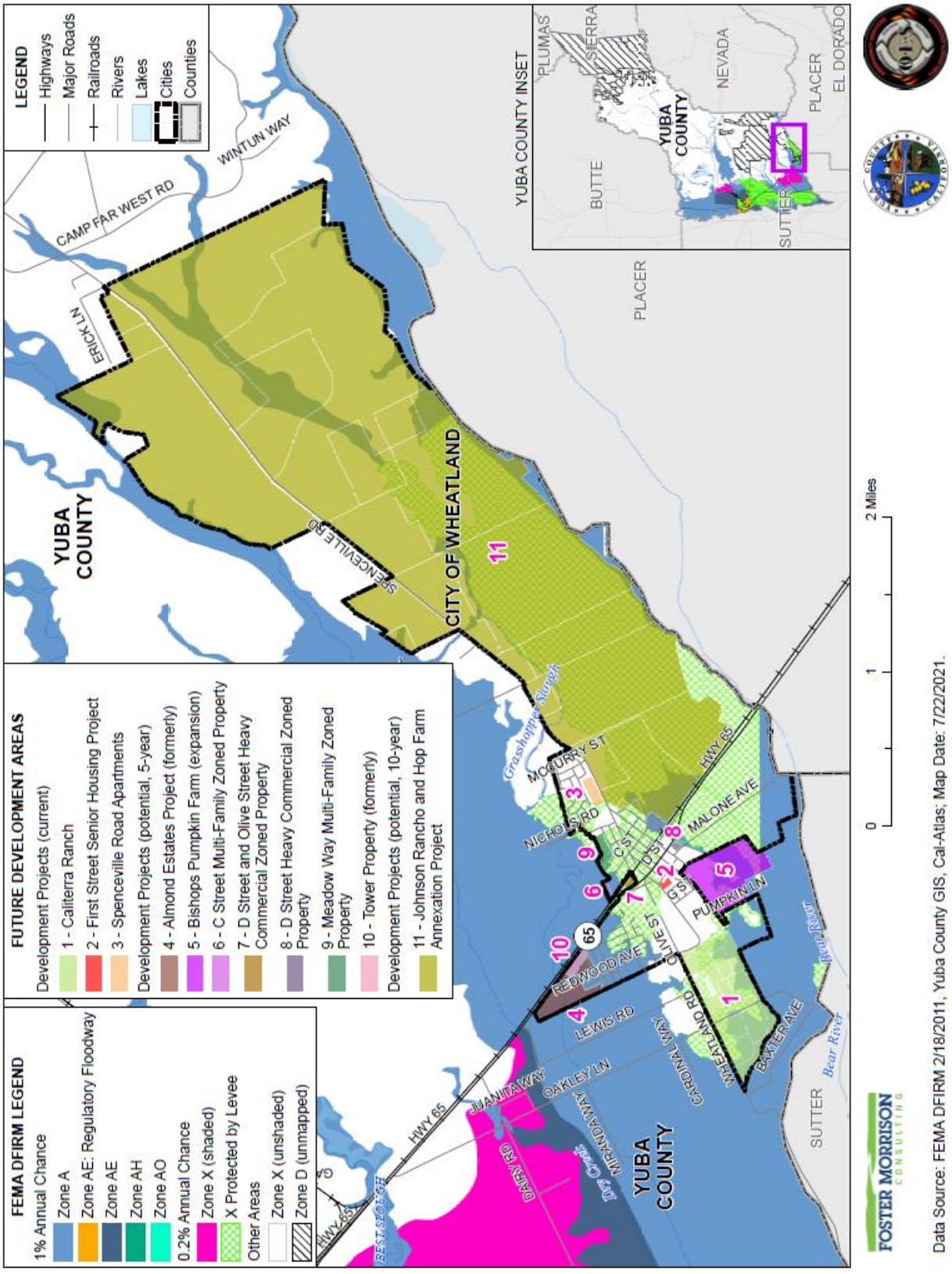


Table B-40 City of Wheatland – Future Development in FEMA DFIRM X Protected by Levee Flood Zones

Flood Zones/ Future Development Type / Future Development Area	Total Parcel Count	Improved Parcel Count	Total Acres
X Protected by Levee			
Development Projects (current)			
Caliterra Ranch	38	0	22.27
Development Projects (current) Total	***38***	***0***	***22.27***
Development Projects (potential, 5-year)			
D Street and Olive Street Heavy Commercial Zoned Property	1	0	2.22
Meadow Way Multi-Family Zoned Property	1	0	11.92
Development Projects (potential, 5-year) Total	**2**	**0**	**14.14**
Development Projects (potential, 10-year)			
Johnson Rancho and Hop Farm Annexation Project	7	6	1,499.16
Development Projects (potential, 10-year) Total	7	6	1,499.16
X Protected by Levee Total	**47**	**6**	**1,535.56**
0.2% Annual Chance Flood Hazard Total	**47**	**6**	**1,535.56**

Source: City of Wheatland GIS, FEMA 2/18/2011 DFIRM

Pandemic

Likelihood of Future Occurrence–Occasional
Vulnerability–Medium

Hazard Profile and Problem Description

According to the World Health Organization (WHO), a disease epidemic occurs when there are more cases of that disease than normal. A pandemic is a worldwide epidemic of a disease. A pandemic may occur when a new virus appears against which the human population has no immunity. A pandemic occurs when a new virus emerges for which people have little or no immunity, and for which there is no vaccine. This disease spreads easily person-to-person, causes serious illness, and can sweep across the country and around the world in a very short time. The U.S. Centers for Disease Control and Prevention has been working closely with other countries and the WHO to strengthen systems to detect outbreaks of that might cause a pandemic and to assist with pandemic planning and preparation. An especially severe a pandemic could lead to high levels of illness, death, social disruption, and economic loss.

Location and Extent

During a pandemic, the whole of the City, County, and surrounding region is at risk, as pandemic is a regional, national, or international event. The speed of onset of pandemic is usually short, while the duration is variable, but can last for more than a year as shown in the 1918/1919 Spanish Flu. There is no scientific scale to measure the magnitude of pandemic. Pandemics are usually measured in numbers affected by the pandemic, and by number who die from complications from the pandemic.

Past Occurrences

There has been one state and federal disaster declaration due to pandemic, as shown in Table B-41.

Table B-41 Yuba County – State and Federal Pandemic Disaster Declarations 1950-2020

Disaster Type	Federal Declarations		State Declarations	
	Count	Years	Count	Years
Pandemic	1	2020	1	2020

Source: Cal OES, FEMA

The 20th century saw three outbreaks of pandemic flu.

- The **1918-1919 Influenza Pandemic (H1N1)**
- The **February 1957-1958 Influenza Pandemic (H2N2)**
- The **1968 Influenza Pandemic (H3N2)**

To date, the 21st century has seen two acknowledged pandemics.

- **2009 Swine Flu (H1N1**)
- **2019/2020 COVID 19**

Vulnerability to and Impacts from Pandemic

Pandemic has and will continue to have impacts on human health in the region. A pandemic occurs when a new virus emerges for which there is little or no immunity in the human population; the virus causes serious illness and spreads easily from person-to-person worldwide. There are several strategies that public health officials can use to combat a pandemic. Constant surveillance regarding current pandemic, use of infection control techniques, and administration of vaccines once they become available. Citizens can help prevent spread of a pandemic by staying home, or "self-quarantining," if they suspect they are infected. Pandemic does not affect the buildings, critical facilities, and infrastructure in the City. Pandemic can have varying levels of impact to the citizens of the City and greater County, depending on the nature of the pandemic.

Impacts could range from school and business closings to the interruption of basic services such as public transportation, health care, and the delivery of food and essential medicines. Hospitalizations and deaths can occur, especially to the elderly or those with pre-existing underlying conditions. As seen with Covid-19, multiple businesses were forced to close temporarily (some permanently) an unemployment rose significantly. Supply chains for food can be interrupted. Prisons may need to release prisoners to comply with social distance standards.

In the City, the schools closed and were forced to conduct distance learning. Local businesses saw a large drop in revenue, leading to less sales tax collection for the City.

Future Development

Future development is not expected to be significantly impacted by this hazard, though population growth in the City could increase exposure to a pandemic, and increase the ability of each disease to be transmitted among the population of the City. If the median age of City residents continues to increase, vulnerability to pandemic diseases may increase, due to the fact that these diseases are often more deadly to senior citizens.

Severe Weather: Extreme Heat

Likelihood of Future Occurrence–Occasional
Vulnerability–Medium

Hazard Profile and Problem Description

According to FEMA, extreme heat is defined as temperatures that hover 10 degrees or more above the average high temperature for the region and lasts for several weeks. Heat kills by taxing the human body beyond its abilities. In extreme heat and high humidity, evaporation is slowed, and the body must work extra hard to maintain a normal temperature." Most heat disorders occur because the victim has been overexposed to heat or has over-exercised for his or her age and physical condition. Older adults, young children, and those who are sick or overweight are more likely to succumb to extreme heat.

In addition to the risks faced by citizens of the City, there are risk to the built environment from extreme heat. While extreme heat on its own does not usually affect structures, extreme heat during times of drought can cause wildfire risk to heighten. Extreme heat can lead to power outages and when combined with high winds, to (PSPS events, creating significant issues in the City.

Location and Extent

Heat is a regional phenomenon and affects the whole of the City. Heat emergencies are often slower to develop, taking several days of continuous, oppressive heat before a significant or quantifiable impact is seen. Heat waves do not strike victims immediately, but rather their cumulative effects slowly affect vulnerable populations and communities. Heat waves do not generally cause damage or elicit the immediate response of floods, fires, earthquakes, or other more "typical" disaster scenarios.

The NWS has in place a system to initiate alert procedures (advisories or warnings) when extreme heat is expected to have a significant impact on public safety. The expected severity of the heat determines whether advisories or warnings are issued. The NWS HeatRisk forecast provides a quick view of heat risk potential over the upcoming seven days. The heat risk is portrayed in a numeric (0-4) and color (green/yellow/orange/red/magenta) scale which is similar in approach to the Air Quality Index (AQI) or the UV Index. This can be seen in Section 4.3.3 of the Base Plan.

Past Occurrences

The City Planning Team noted that since extreme heat is a regional phenomenon, events that affected the County also affected the City. Those past occurrences were shown in the Base Plan in Section 4.3.3.

Vulnerability to and Impacts from Extreme Heat

The City experiences temperatures in excess of 100°F during the summer and fall months. The temperature moves to 105-115°F in rather extreme situations. During these times, drought conditions may worsen, and the City may see an increase in dry fuels. Also, power outage and PSPS events may occur during these times as well. Health issues are the primary concern with this hazard, although economic impacts can also be an issue.

The elderly and individuals below the poverty level are the most vulnerable to extreme temperatures. Nursing homes and elder care facilities are especially vulnerable to extreme heat events if power outages occur and air conditioning is not available. In addition, individuals below the poverty level may be at increased risk to extreme heat if use of air conditioning is not affordable. This is especially true of homeless people and the transient population.

Days of extreme heat have been known to result in medical emergencies, and unpredictable human behavior. Periods of extended heat and dryness (droughts) can have major economic, agricultural, and water resources impacts. Extreme heat can also dry out vegetations, making it more vulnerable to wildfire ignitions.

Future Development

Future development of new buildings in the City will likely not be affected by extreme heat. Extreme heat is more likely to affect vulnerable populations. Vulnerability to extreme heat will increase as the average age of the population in each City shifts. It is encouraged that nursing homes and elder care facilities have emergency plans or backup power to address power failure during times of extreme heat and in the event of power outages including a PSPS. Low income residents can also be vulnerable. Cooling centers for these populations should be utilized when necessary.

Severe Weather: Heavy Rains and Storms

Likelihood of Future Occurrence–Occasional
Vulnerability–Medium

Hazard Profile and Problem Description

Storms in the City occur annually and are generally characterized by heavy rain often accompanied by strong winds and sometimes lightning and hail. Approximately 10 percent of the thunderstorms that occur each year in the United States are classified as severe. A thunderstorm is classified as severe when it contains one or more of the following phenomena: hail that is three-quarters of an inch or greater, winds in excess of 50 knots (57.5 mph), or a tornado. Heavy precipitation in the City falls mainly in the fall, winter, and spring months. Wind often accompanies these storms; hail and lightning are rare in the City.

Location and Extent

Heavy rain events occur on a regional basis. Rains and storms can occur in any location of the City. All portions of the City are at risk to heavy rains. Most of the severe rains occur during the fall, winter, and

spring months. There is no scale by which heavy rains and severe storms are measured. Magnitude of storms is measured often in rainfall and damages. The speed of onset of heavy rains can be short, but accurate weather prediction mechanisms often let the public know of upcoming events. Hail and lightning are rare in the City and Yuba County. Duration of severe storms in California, Yuba County, and the City can range from minutes to hours to days. Information on precipitation extremes can be found in Section 4.3.4 of the Base Plan.

Past Occurrences

According to historical hazard data, severe weather, including heavy rains and storms, is an annual occurrence in the City. This is the cause of many of the federal disaster declarations related to flooding. The City noted that Oroville Dam flooding caused flood preparation and staff overtime. Little League lights were damaged and needed replacement due to heavy rain in 2021 storm.

Vulnerability to and Impacts from Heavy Rain and Storms

Heavy rain and severe storms are the most frequent type of severe weather occurrences in the City. These events can cause significant and localized flooding. Elongated events, or events that occur during times where the ground is already saturated can cause 1% and 0.2% annual chance flooding and can lead to levee failures. Wind often accompanies these storms and has caused damage in the past. Hail and lightning are rare in the City, but also can cause damage, with lightning occasionally igniting wildfires.

Actual damage associated with the effects of severe weather include impacts to property, critical facilities (such as utilities), and life safety. Power outages may also occur. Heavy rains and storms often result in flooding creating significant issues. Roads can become impassable and ground saturation can result in instability, collapse, or other damage to trees, structures, roadways and other critical infrastructure. Floodwaters and downed trees can break utilities and interrupt services.

The City noted that local flooding from heavy rains and storms can compromise Malone Dump Station, down trees, and cause road closures - especially Spenceville Rd that leads to the Air Force Base.

Future Development

Building codes in the City ensure that new development is built to current building standards, which should reduce the risk to future development in the City from heavy rains and storms. New critical facilities such as communications towers and others should be built to withstand hail damage, lightning, and thunderstorm winds. With adherence to development standards, future losses to new development should be minimal.

Wildfire

Likelihood of Future Occurrence–Occasional
Vulnerability–Medium

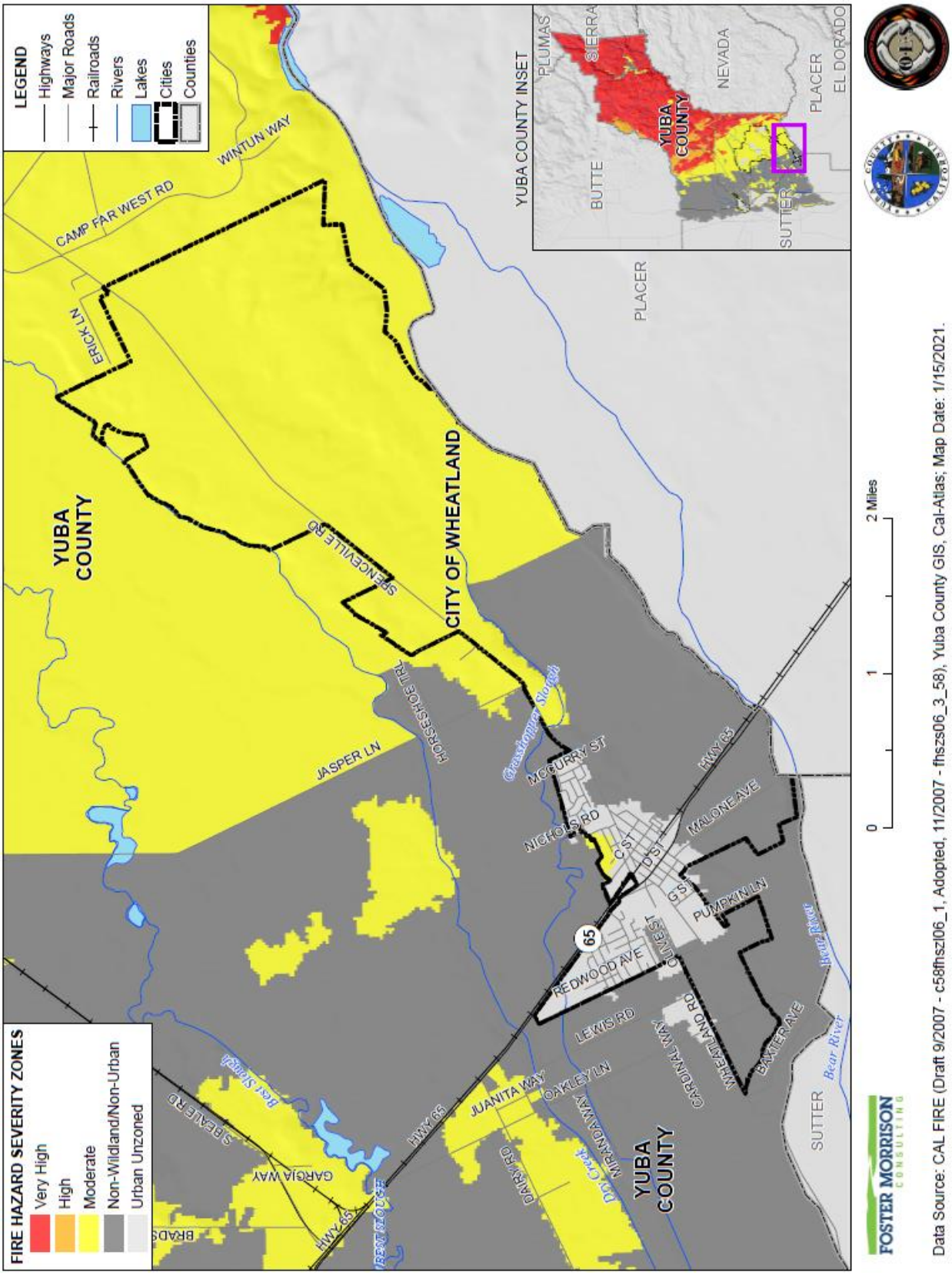
Hazard Profile and Problem Description

Wildland fire and the risk of a conflagration is an ongoing concern for the City of Wheatland. Throughout California, communities are increasingly concerned about wildfire safety as increased development in the foothills and mountain areas and subsequent fire control practices have affected the natural cycle of the ecosystem. Wildland fires affect grass, forest, and brushlands, as well as any structures located within them. Where there is human access to wildland areas the risk of fire increases due to a greater chance for human carelessness and historical fire management practices. Historically, the fire season extends from early spring through late fall of each year during the hotter, dryer months; however, in recent years, the risk of wildfire has become a year around concern. Fire conditions arise from a combination of high temperatures, low moisture content in the air and fuel, accumulation of vegetation, and high winds. These high winds can result in red flag days, and can result in PSPS events in the City. While wildfire risk has predominantly been associated with more remote forested areas and wildland urban interface (WUI) areas, significant wildfires can also occur in more populated, urban areas.

Location and Extent

Wildfire can affect all areas of the City. CAL FIRE has estimated that the risk varies across the City and has created maps showing risk variance. Following the methodology described in Section 4.3.14 of the Base Plan, wildfire maps for the City of Wheatland were created. Figure B-17 shows the CAL FIRE Fire Hazard Severity Zone (FHSZ) in the City. As shown on the maps, FHSZs within the City range from Urban Unzoned to Moderate.

Figure B-17 City of Wheatland – Fire Hazard Severity Zones



Wildfires tend to be measured in structure damages, injuries, and loss of life as well as on acres burned. Fires can have a quick speed of onset, especially during periods of drought or during hot dry summer months. Fires can burn for a short period of time, or may have durations lasting for a week or more. Geographical FHSZ extent from CAL FIRE is shown in Table B-42.

Table B-42 City of Wheatland – Geographical FHSZ Extents

Fire Hazard Severity Zones	Total Acres	% of Total Acres	Improved Acres	% of Total Improved Acres	Unimproved Acres	% of Total Unimproved Acres
Very High	0	0.00%	0	0.00%	0	0.00%
High	0	0.00%	0	0.00%	0	0.00%
Moderate	3,073	0.749%	650	0.422%	2,423	0.945%
Non-Wildland/Non-Urban	1,590	0.387%	1,096	0.711%	494	0.193%
Urban Unzoned	505	0.123%	249	0.162%	256	0.100%
Total	**5,168**	**1.259%**	**1,996**	**1.295%**	**3,172**	**1.237%**

Source: CAL FIRE

Past Occurrences

There has been three state and seven federal disaster declaration due to fire, as shown in Table B-43.

Table B-43 Yuba County – State and Federal Wildfire Disaster Declarations 1950-2020

Disaster Type	Federal Declarations		State Declarations	
	Count	Years	Count	Years
Wildfire	3	1997, 2010, 2017	7	1988, 1999, 2009, 2017 (twice), 2020 (twice)

Source: Cal OES, FEMA

Even though the potential is there for a major fire event to occur, there hasn't been any sizable wildfire event of this type since 2015. It was noted that in 2018-2019 there was poor air quality due to wildfires.

Vulnerability to and Impacts from Wildfire

Fuel loads in the County and Cities, along with geographical and topographical features, create the potential for both natural and human-caused fires that can result in loss of life and property. These factors, combined with natural weather conditions common to the area, including periods of drought, high temperatures, low relative humidity, and periodic winds, can result in frequent and sometimes catastrophic fires. The more urbanized areas within the County are not immune from fire. The dry vegetation and hot and sometimes windy weather, combined with continued growth in the WUI areas, results in an increase in the number of ignitions. Any fire, once ignited, has the potential to quickly become a large, out-of-control fire. As development continues throughout the County and City, especially in these interface areas, the risk and vulnerability to wildfires will likely increase.

Wheatland is not immune to numerous types of grass and brush fires and any one of them may accelerate into an urban interface wildfire. Such a situation could lead to evacuation of large portions of the population and the potential for significant loss of personal property, structures, and rangeland. The 2006 City of Wheatland General Plan Safety Element noted that vegetation is a primary fuel source for wildland fires. Three vegetation categories are recognized in terms of fuel capacity: grass, brush, and timberland. Grasslands, the lightest fuel group, provide from one to three tons of fuel per acre and are easily ignited when dry. Of the three fuel types, grasslands are the easiest in which to suppress fires. Heavy brush and timberlands represent the heaviest fuel loading. Agricultural areas on the Valley floor are the least fire-prone areas of the county. The most serious problems in the valley relate to structural fires and grass fires.

While vegetation provides fuel for fires, the Mediterranean climate of Yuba County helps fires to start and spread rapidly. During the annual dry season, from about May to October, vegetation becomes very dry. Hot, dry conditions increase the combustibility of fuels. Although the valley has a hotter, drier climate than the foothills and mountains, the presence of croplands, orchards, and irrigation makes the wildland fire danger less critical in the valley.

The third component of the fire hazard rating system is topography. Steepness of terrain can contribute to the outbreak, spread, and severity of fires in several ways. The relatively flat terrain in the Wheatland area makes wildland fire danger less critical. The City of Wheatland is within the lower grasslands and is therefore among the most fire secure areas in Yuba County.

Potential impacts from wildfire include loss of life and injuries; damage to structures and other improvements, natural and cultural resources, croplands, and timber; and loss of recreational opportunities. Wildfires can cause short-term and long-term disruption to the City. Fires can have devastating effects on watersheds through loss of vegetation and soil erosion, which may impact the City by changing runoff patterns, increasing sedimentation, reducing natural and reservoir water storage capacity, and degrading water quality. Fires can also affect air quality in the City; smoke and air pollution from wildfires can be a severe health hazard.

Although the physical damages and casualties arising from wildland-urban interface fires may be severe, it is important to recognize that they also cause significant economic impacts by resulting in a loss of function of buildings and infrastructure. Economic impacts of loss of transportation and utility services may include traffic delays/detours from road and bridge closures and loss of electric power, potable water, and wastewater services. Schools and businesses can be forced to close for extended periods of time. Recently, the threat of wildfire, combined with the potential for high winds, heat, and low humidity, has caused PG&E to initiate a PSPS which can also significantly impact a community through loss of services, business closures, and other impacts associated with loss of power for an extended period. In addition, catastrophic wildfire can create favorable conditions for other hazards such as flooding, landslides, and erosion during the rainy season.

Due to the age and the proximity of structures to each other, the risk of a major fire destroying the City of Wheatland is very high. The other main concerns is the bedroom style of the homes in the City. If/when an major event occurs, the evacuation of the older citizens will be dramatically be altered. PSPS events are a concern to the City, and were discussed at the beginning of Section B.5.3.

Assets at Risk

Based on the vulnerability of Wheatland to the wildfire hazard, the sections that follow describes significant assets at risk in the City of Wheatland. This section includes the values at risk, population at risk, and critical facilities at risk.

Values at Risk in Fire Hazard Severity Zones

GIS was used to determine the possible impacts of wildfire within the City of Wheatland. The methodology described in Section 4.3.14 of the Base Plan was followed in determining structures and values at risk in fire hazard severity zones. Summary analysis results for Wheatland are shown in Table B-44, which summarizes total parcel counts, improved parcel counts and their structure values by fire hazard severity zone. Table B-45 breaks out the Table B-44 by adding the property use details by fire hazard severity zone for the City.

Table B-44 City of Wheatland – Count and Value of Parcels by Fire Hazard Severity Zone

Fire Hazard Severity Zone	Total Parcel Count	Improved Parcel Count	Total Land Value	Improved Structure Value	Estimated Contents Value	Total Value
Moderate	36	21	$14,679,448	$3,515,125	$2,055,248	$20,249,821
Non-Wildland/Non-Urban	124	11	$22,140,904	$7,068,771	$6,900,831	$36,110,506
Urban Unzoned	1,272	1,134	$48,310,880	$215,951,094	$116,050,471	$380,312,445
City of Wheatland Total	**1,432**	**1,166**	**$85,131,232**	**$226,534,990**	**$125,006,550**	**$436,672,772**

Source: Yuba County 2020 Parcel/Assessor's Data, CAL FIRE

Table B-45 City of Wheatland – Count and Value of Parcels by Fire Hazard Severity Zone and Property Use

Fire Hazard Severity Zone / Property Use	Total Parcel Count	Improved Parcel Count	Total Land Value	Improved Structure Value	Estimated Contents Value	Total Value
Moderate						
Agricultural	15	3	$14,069,960	$595,375	$595,375	$15,260,710
Commercial	0	0	$0	$0	$0	$0
Government-Owned / Non-Taxable Property	0	0	$0	$0	$0	$0
Industrial	0	0	$0	$0	$0	$0
Miscellaneous	2	0	$0	$0	$0	$0
Residential	19	18	$609,488	$2,919,750	$1,459,873	$4,989,111
Moderate Total	**36**	**21**	**$14,679,448**	**$3,515,125**	**$2,055,248**	**$20,249,821**

Fire Hazard Severity Zone / Property Use	Total Parcel Count	Improved Parcel Count	Total Land Value	Improved Structure Value	Estimated Contents Value	Total Value
Non-Wildland/Non-Urban						
Agricultural	30	7	$18,680,131	$4,756,560	$4,756,560	$28,193,251
Commercial	1	1	$58,619	$1,976,331	$1,976,331	$4,011,281
Government-Owned / Non-Taxable Property	11	0	$14,371	$0	$0	$14,371
Industrial	0	0	$0	$0	$0	$0
Miscellaneous	8	0	$0	$0	$0	$0
Residential	74	3	$3,387,783	$335,880	$167,940	$3,891,603
Non-Wildland/Non-Urban Total	**124**	**11**	**$22,140,904**	**$7,068,771**	**$6,900,831**	**$36,110,506**
Urban Unzoned						
Agricultural	3	0	$1,058,041	$0	$0	$1,058,041
Commercial	51	47	$5,678,115	$14,228,596	$14,228,596	$34,135,307
Government-Owned / Non-Taxable Property	31	0	$0	$0	$0	$0
Industrial	5	5	$406,943	$960,639	$1,440,958	$2,808,540
Miscellaneous	5	0	$0	$0	$0	$0
Residential	1,177	1,082	$41,167,781	$200,761,859	$100,380,917	$342,310,557
Urban Unzoned Total	**1,272**	**1,134**	**$48,310,880**	**$215,951,094**	**$116,050,471**	**$380,312,445**
City of Wheatland Total	**1,432**	**1,166**	**$85,131,232**	**$226,534,990**	**$125,006,550**	**$436,672,772**

Source: Yuba County 2020 Parcel/Assessor's Data, CAL FIRE

Population at Risk

The FHSZ dataset was overlayed on the parcel layer. Those residential parcel centroids that intersect the FHSZs were counted and multiplied by the 2010 Census Bureau average household factors for the City of Wheatland – 2.69. According to this analysis, there is a total population of 51 residents of Wheatland at risk to moderate or higher FHSZs. This is shown in Table B-46.

Table B-46 City of Wheatland – Count of Improved Residential Parcels and Population by Fire Hazard Severity Zone

Jurisdiction	Very High		High		Moderate	
	Improved Residential Parcels	Population at Risk	Improved Residential Parcels	Population at Risk	Improved Residential Parcels	Population at Risk
City of Wheatland	0	0	0	0	18	51

Source: CAL FIRE, US Census Bureau Average Household Sizes: Wheatland (2.69)

Critical Facilities at Risk

An analysis was performed on the critical facility inventory in Wheatland in identified FHSZs. Critical facilities in a FHSZ in the City of Wheatland are shown in Figure B-18 and detailed in Table B-47. Details of critical facility definition, type, name and address and jurisdiction by fire hazard severity zone are listed in Appendix F.

Figure B-18 City of Wheatland – Critical Facilities in Fire Hazard Severity Zones

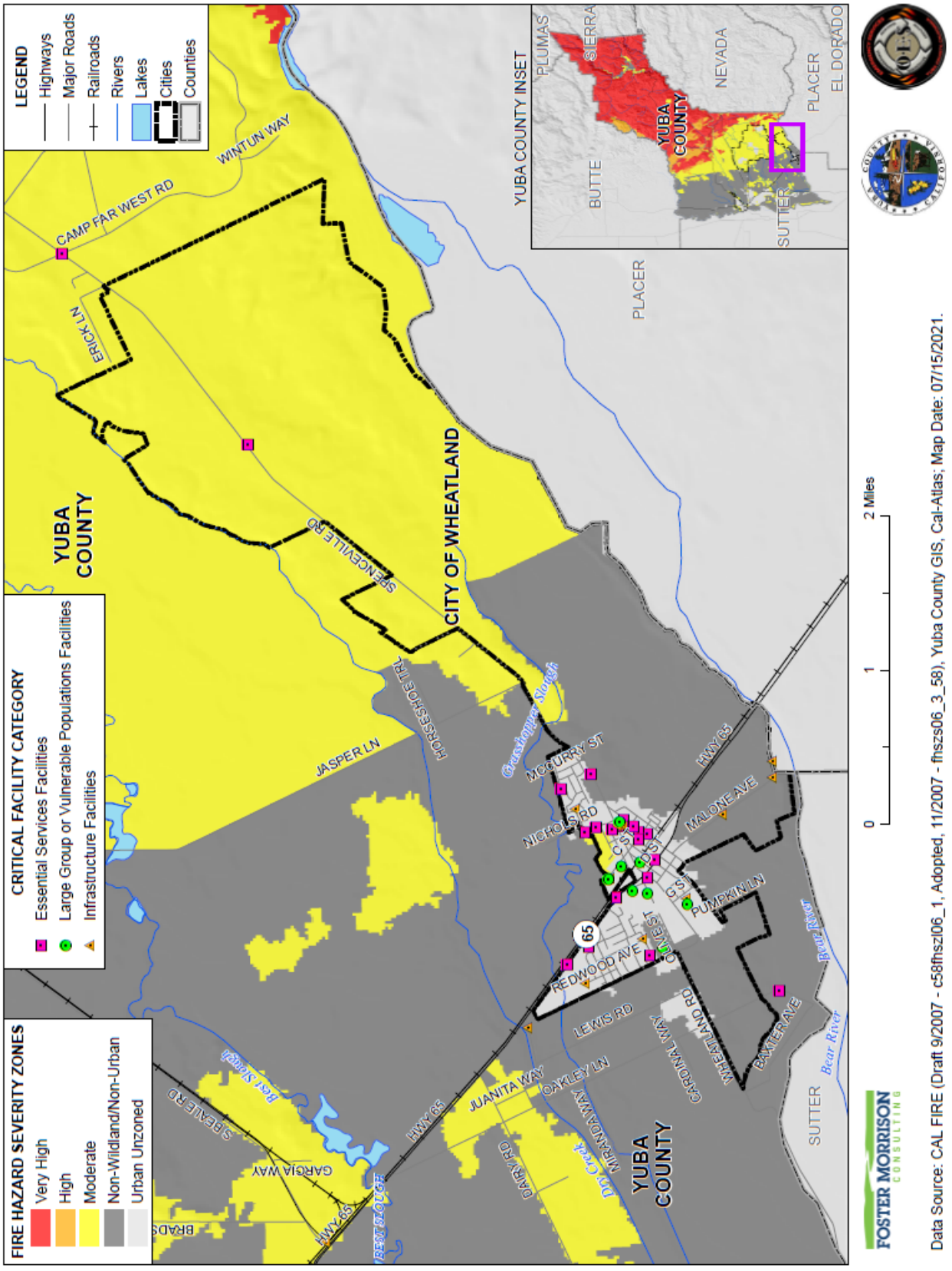


Table B-47 City of Wheatland – Critical Facilities by Fire Hazard Severity Zone

FHSZ/Critical Facility Class	Critical Facility Name	Facility Count
Moderate		
Essential Services Facilities	Wheatland Fire Authority	1
	Total	**1**
Moderate Total		**1**
Non-Wildland/Non-Urban		
Essential Services Facilities	WALKER TELECOMM INC	1
	Total	**1**
Large Group or Vulnerable Populations Facilities	Bear River Middle School	1
	Total	**1**
Infrastructure Facilities	City Of Wheatland	3
	Total	**3**
Non-Wildland/Non-Urban Total		5
Urban Unzoned		
Essential Services Facilities	AT&T Mobility LLC	1
	AT&T Services INC	1
	City Of Wheatland	1
	Comcast Cable Communications Management, LLC	1
	Comcast Fresno LLC	6
	Sprint Corporation	1
	Sprint Nextel Corporation	1
	T-Mobile West LLC	1
	Walker Telecomm Inc	1
	Wheatland City Hall	1
	Wheatland Fire Authority	1
	Total	**16**
Large Group or Vulnerable Populations Facilities	City Of Wheatland	3
	City of Wheatland Community Center	1
	District Office	1
	Virginia School - Merged	1
	Wheatland Elementary School	1
	Wheatland Union High School	1
	Total	**8**
Infrastructure Facilities	City Of Wheatland	9
	City of Wheatland Public Works Yard	1
	Wheatland Water Tank	1
	Total	**11**

FHSZ/Critical Facility Class	Critical Facility Name	Facility Count
Urban Unzoned Total		**35**
City of Wheatland Total		**41**

Source: CAL FIRE, Yuba County

Future Development

Additional growth and development within moderate or higher fire hazard severity zones in the City would place additional values at risk to wildfire. City building codes are in effect and should continue to be updated as appropriate to reduce this risk.

GIS Analysis

The City provided Future Development Areas were used as the basis for the inventory of future development areas for the City. Utilizing the future development project spatial layer, the parcel centroid data was intersected to determine the parcel counts within each area. Figure B-19 shows the locations of future development areas the City is planning to develop on the CAL FIRE FHSZs. Table B-48 shows the parcels and acreages of each future development area in the City by CAL FIRE FHSZ.

Figure B-19 City of Wheatland – Future Development in FHSZs

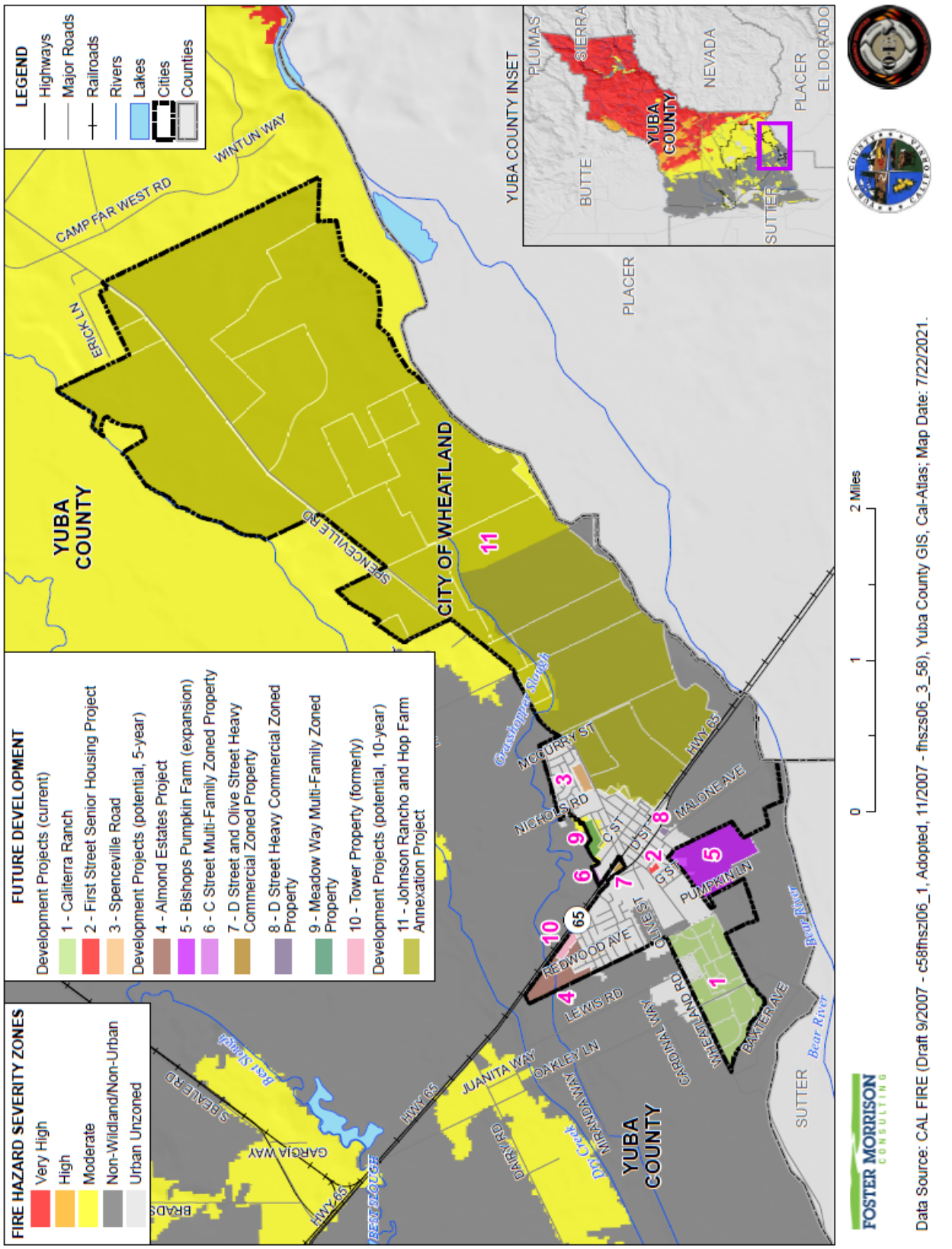


Table B-48 City of Wheatland – Future Development in FHSZs

Fire Hazard Severity Zones/Future Development Type / Future Development Area	Total Parcel Count	Improved Parcel Count	Total Acres
Moderate			
Development Projects (potential, 5-year)			
Meadow Way Multi-Family Zoned Property	1	0	11.92
Development Projects (potential, 5-year) Total	**1**	**0**	**11.92**
Development Projects (potential, 10-year)			
Johnson Rancho and Hop Farm Annexation Project	16	3	2,888.13
Development Projects (potential, 10-year) Total	**16**	**3**	**2,888.13**
Moderate Total	**17**	**3**	**2,900.05**
Non-Wildland/Non-Urban			
Development Projects (current)			
Caliterra Ranch	74	1	186.06
Spenceville Road Apartments	1	1	8.38
Development Projects (current) Total	**75**	**2**	**194.44**
Development Projects (potential, 5-year)			
Bishops Pumpkin Farm (expansion)	1	0	99.01
Development Projects (potential, 5-year) Total	**1**	**0**	**99.01**
Development Projects (potential, 10-year)			
Johnson Rancho and Hop Farm Annexation Project	5	5	1,135.10
Development Projects (potential, 10-year) Total	**5**	**5**	**1,135.10**
Non-Wildland/Non-Urban Total	**81**	**7**	**1,428.55**
Urban Unzoned			
Development Projects (current)			
First Street Senior Housing Project	1	0	2.36
Development Projects (current) Total	**1**	**0**	**2.36**
Development Projects (potential, 5-year)			
Almond Estates Project (formerly)	1	0	48.90
C Street Multi-Family Zoned Property	1	0	2.54
D Street and Olive Street Heavy Commercial Zoned Property	1	0	2.22
D Street Heavy Commercial Zoned Property	1	0	1.73
Tower Property (formerly)	1	0	7.91
Development Projects (potential, 5-year) Total	**5**	**0**	**63.30**
Development Projects (potential, 10-year)			
Johnson Rancho and Hop Farm Annexation Project	2	1	4.33
Development Projects (potential, 10-year) Total	**2**	**1**	**4.33**

Fire Hazard Severity Zones/Future Development Type / Future Development Area	Total Parcel Count	Improved Parcel Count	Total Acres
Urban Unzoned Total	**8**	**1**	**69.99**
Grand Total	**106**	**11**	**4,398.58**

Source: City of Wheatland GIS, CAL FIRE

B.6 Capability Assessment

Capabilities are the programs and policies currently in use to reduce hazard impacts or that could be used to implement hazard mitigation activities. This capabilities assessment is divided into five sections: regulatory mitigation capabilities, administrative and technical mitigation capabilities, fiscal mitigation capabilities, and mitigation education, outreach, and partnerships.

B.6.1. Regulatory Mitigation Capabilities

Table B-49 lists regulatory mitigation capabilities, including planning and land management tools, typically used by local jurisdictions to implement hazard mitigation activities and indicates those that are in place in the City of Wheatland.

Table B-49 City of Wheatland Regulatory Mitigation Capabilities

Plans	Y/N Year	Does the plan/program address hazards? Does the plan identify projects to include in the mitigation strategy? Can the plan be used to implement mitigation actions?
Comprehensive/Master Plan/General Plan	Y 2006	General Plan addresses hazards and identifies project to include in the mitigation strategy. Plan can be used to implement mitigation actions.
Capital Improvements Plan	NA	
Economic Development Plan	Y	Doesn't address any hazards
Local Emergency Operations Plan	Y	This document and adopted Yuba County Pan
Continuity of Operations Plan	N	
Transportation Plan	N	
Stormwater Management Plan/Program	Y	
Engineering Studies for Streams	N	
Community Wildfire Protection Plan		
Other special plans (e.g., brownfields redevelopment, disaster recovery, coastal zone management, climate change adaptation)	Y	Climate Action Plan contains a plan to address climate change and associated hazards. Plan can be used to implement mitigation actions.
Building Code, Permitting, and Inspections	**Y/N**	**Are codes adequately enforced?**
Building Code	Y	Version/Year: 2019 CBC

Building Code Effectiveness Grading Schedule (BCEGS) Score	N	Score:
Fire department ISO rating:	Y	Rating: 6
Site plan review requirements	Y	
Land Use Planning and Ordinances	**Y/N**	**Is the ordinance an effective measure for reducing hazard impacts? Is the ordinance adequately administered and enforced?**
Zoning ordinance	Y	
Subdivision ordinance	Y	
Floodplain ordinance	Y	
Natural hazard specific ordinance (stormwater, steep slope, wildfire)	Y	Vegetation management ordinance.
Flood insurance rate maps	Y	
Elevation Certificates	N	
Acquisition of land for open space and public recreation uses	N	
Erosion or sediment control program	N	City needs to establish an ordinance
Other		
How can these capabilities be expanded and improved to reduce risk?		
The City needs to update to include ordinance revisions and evacuation planning in the future. These will expand City capabilities. The City will continue to update the Safety Element of the General Plan, which will address hazards.		

Source: City of Wheatland

B.6.2. Administrative/Technical Mitigation Capabilities

Table B-50 identifies the City department(s) responsible for activities related to mitigation and loss prevention in Wheatland.

Table B-50 City of Wheatland's Administrative and Technical Mitigation Capabilities

Administration	**Y/N**	**Describe capability Is coordination effective?**
Planning Commission	Y	Not engaged in coordination of hazard mitigation
Mitigation Planning Committee	N	
Maintenance programs to reduce risk (e.g., tree trimming, clearing drainage systems)	Y	We clear drainages and remove debris in advance of storms
Mutual aid agreements	N	
Other		
Staff	**Y/N FT/PT**	**Is staffing adequate to enforce regulations? Is staff trained on hazards and mitigation? Is coordination between agencies and staff effective?**
Chief Building Official	Y	City Engineering Department; Community Development – Contracted Services

Floodplain Administrator	Y	City Engineering Department; Community Development – Contracted Services
Emergency Manager	Y	Police Chief
Community Planner	Y	City Engineering Department; Community Development – Contracted Services
Civil Engineer	Y	City Engineering Department; Community Development; Public Works – Contracted Services
GIS Coordinator	N	
Other	Y	Administrative Services; City Manager's office; Wheatland Fire Authority
Technical		
Warning systems/services (Reverse 911, outdoor warning signals)	N	
Hazard data and information	N	
Grant writing	Y	Various departments
Hazus analysis	N	
Other		
How can these capabilities be expanded and improved to reduce risk?		
The City will seek to expand mitigation related training to all relevant departments. The City will seek to pursue mutual aid agreements in the future.		

Source: City of Wheatland

B.6.3. Fiscal Mitigation Capabilities

Table B-51 identifies financial tools or resources that the City could potentially use to help fund mitigation activities.

Table B-51 City of Wheatland's Fiscal Mitigation Capabilities

Funding Resource	Access/ Eligibility (Y/N)	Has the funding resource been used in past and for what type of activities? Could the resource be used to fund future mitigation actions?
Capital improvements project funding	N	
Authority to levy taxes for specific purposes	N	
Fees for water, sewer, gas, or electric services	N	
Impact fees for new development	Y	AB 1600 impact fees and external funding sources
Storm water utility fee	N	
Incur debt through general obligation bonds and/or special tax bonds	N	
Incur debt through private activities	N	
Community Development Block Grant	Y	

Funding Resource	Access/ Eligibility (Y/N)	Has the funding resource been used in past and for what type of activities? Could the resource be used to fund future mitigation actions?
Other federal funding programs	Y	City has access, but has used seldom for mitigation in the past. The City is seeking to pursue these type of funds in the future.
State funding programs	Y	We have two USDA loans
Other		
How can these capabilities be expanded and improved to reduce risk?		
Street maintenance, gas tax and SB 1 will help the City. The City is also looking to pursue Cal OES, DWR, FEMA (PDM, FMA, BRIC, and other sources) grant funds in the future to expand mitigation and reduce risk.		

Source: City of Wheatland

B.6.4. Mitigation Education, Outreach, and Partnerships

Table B-52 identifies education and outreach programs and methods already in place that could be/or are used to implement mitigation activities and communicate hazard-related information.

Table B-52 City of Wheatland's Mitigation Education, Outreach, and Partnerships

Program/Organization	Yes/No	Describe program/organization and how relates to disaster resilience and mitigation. Could the program/organization help implement future mitigation activities?
Local citizen groups or non-profit organizations focused on environmental protection, emergency preparedness, access and functional needs populations, etc.	N	
Ongoing public education or information program (e.g., responsible water use, fire safety, household preparedness, environmental education)	Y	The City of Wheatland Community Development Department and Engineering Department provides public outreach activities which include map information services, public awareness, public hazard disclosure, and flood protection information. This information is readily available to the public and consists of current and accurate flood mapping. In addition, the Community Development Department and Engineering Department provides information about the stormwater management program and up-to-date information related to the maintenance of our drainage system.
Natural disaster or safety related school programs	N	
StormReady certification	N	
Firewise Communities certification	N	
Public-private partnership initiatives addressing disaster-related issues	N	

Program/Organization	Yes/No	Describe program/organization and how relates to disaster resilience and mitigation. Could the program/organization help implement future mitigation activities?
Other	Y	City partner with Wheatland Fire Authority and Beale Air Force Base on hazard related activities.
How can these capabilities be expanded and improved to reduce risk?		
All of these programs and organizations can be expanded with additional funding. The City would pursue additional public education programs if funding were available.		

Source: City of Wheatland

Wheatland Fire Authority

Wheatland Fire Authority (WFA) is the legal entity serving the Plumas Brophy Fire District and the City of Wheatland. The WFA provides a variety of emergency public safety services that are not law enforcement related. Those services include the response to and mitigation of fires (structure, wildland, and other fires), medical emergencies (generally called Emergency Medical Services or EMS), rescue from vehicle accidents and other trapped spaces, some "other types of emergencies", and mutual aid to neighboring agencies.

Reclamation Districts

The Reclamation District 2103 is responsible for maintenance and operation of the Dry Creek levees, Bear River levee, and the San Joaquin drainage canal that are near the city. These three channels are outside of the existing city limits, but are within the area of interest. Reclamation District 817 operates on a small annual budget and is overseen by volunteers. RD 817 encompasses approximately 2,600 acres of primarily agricultural land directly west of Wheatland, California. It consists of two levee reaches of 7.7 miles. RD 817 is adjacent to and west of RD 2103, which provides protection to Wheatland. Levee failures that occur in RD 2103 will allow flows to proceed west and will eventually pond on, and flood, the lands in RD 817. Thus RD 817 is subject to flooding from levees that are not in their district. Failure of RD 817 levees will not pond floodwaters high enough to flood Wheatland. This district has no permanent staff and relies on volunteers. Maintenance is accomplished by using the farm crews of the farms protected. The farmers donate their management and equipment time but are reimbursed for the labor costs of the farm crews.

Beale Air Force Base

Beale AFB is located in Yuba County approximately thirteen miles east of Wheatland and eight miles northeast of Wheatland. Created in 1942 as an army training base, today the base is under the authority of the Air Force's Strategic Air Command (SAC). The base is the only location for the nation's U2 and TR-1 reconnaissance aircrafts, and was the base for the now decommissioned SR-71. In addition, the base operates Global Hawk reconnaissance aircrafts, NASA T-38 chase/trainer jets, and KC-135 jet tankers. Aside from reconnaissance aircrafts, the base is also the home to various missile warning and information/intelligence systems such as the DGS-2 and Pave Paws.

B.7 Mitigation Strategy

B.7.1. Mitigation Goals and Objectives

The City of Wheatland adopts the hazard mitigation goals and objectives developed by the HMPC and described in Chapter 5 Mitigation Strategy.

B.7.2. NFIP Mitigation Strategy

The City of Wheatland joined the National Flood Insurance Program (NFIP) on September 29, 1986. As a participant of the NFIP, the City of Wheatland has administered floodplain management regulations that meet the minimum requirements of the NFIP. The management program objective is to protect people and property within the City. The City of Wheatland will continue to comply with the requirements of the NFIP in the future.

In addition, the City of Wheatland actively participates with Yuba County to address local NFIP issues through a regional approach. Many of the program activities are the same for the City of Wheatland as for Yuba County since participation at the County level includes all local jurisdictions.

The City of Wheatland Community Development Department and Engineering Department provides public outreach activities which include map information services, public awareness, public hazard disclosure, and flood protection information. This information is readily available to the public and consists of current and accurate flood mapping. In addition, the Community Development Department and Engineering Department provides information about our stormwater management program and up-to-date information related to the maintenance of our drainage system.

The NFIP's Community Rating System (CRS) is a voluntary incentive program that recognizes and encourages community floodplain management activities that exceed the minimum NFIP requirements. As a result, flood insurance premium rates are discounted to reflect the reduced flood risk resulting from the community actions meeting the three goals of the CRS which are to reduce flood losses, facilitate accurate insurance rating, and promote the awareness of flood insurance. The City of Wheatland is not a current participant in the CRS program.

More information about the floodplain administration in the City of Wheatland can be found in Table B-53.

Table B-53 City of Wheatland Compliance with NFIP

NFIP Topic	Comments
Insurance Summary	
How many NFIP policies are in the community? What is the total premium and coverage?	177 policies $107,114 in premiums $56,720,800 in coverage
How many claims have been paid in the community? What is the total amount of paid claims? How many of the claims were for substantial damage?	13 claims $0.00 in claims paid 0 substantial damage claims

NFIP Topic	Comments
How many structures are exposed to flood risk within the community?	289 in 1% annual chance 489 in 0.2% annual chance
Repetitive Loss (RL) and Severe Repetitive Loss Properties (SRL)	0 RL properties 0 SRL properties (post-FIRM)
Describe any areas of flood risk with limited NFIP policy coverage	N/W area of the City
Staff Resources	
Is the Community Floodplain Administrator or NFIP Coordinator certified?	No
Provide an explanation of NFIP administration services (e.g., permit review, , , inspections, engineering capability)	Review engineer studies by others
What are the barriers to running an effective NFIP program in the community, if any?	Funding and staffing
Compliance History	
Is the community in good standing with the NFIP?	Y
Are there any outstanding compliance issues (i.e., current violations)?	N
When was the most recent Community Assistance Visit (CAV) or Community Assistance Contact (CAC)?	CAV 4/25/2007
Is a CAV or CAC scheduled or needed?	N
Regulation	
When did the community enter the NFIP?	9/29/1986
Are the FIRMs digital or paper?	Digital
Do floodplain development regulations meet or exceed FEMA or State minimum requirements? If so, in what ways?	Meets min requirement
Provide an explanation of the permitting process.	Building plans are reviewed to see if the building is in the floodplain. If so, the Community Development Department and Engineering Department staff review plans to ensure that the structure proposed will be built to the standards of the City floodplain ordinance.
Community Rating System	
Does the community participate in CRS?	N
What is the community's CRS Class Ranking?	N/A
What categories and activities provide CRS points and how can the class be improved?	Funding
Does the plan include CRS planning requirements?	N/A

B.7.3. Mitigation Actions

The planning team for the City of Wheatland identified and prioritized the following mitigation actions based on the risk assessment. Background information and information on how each action will be implemented and administered, such as ideas for implementation, responsible office, potential funding, estimated cost, and timeline are also included. The following hazards were considered a priority for purposes of mitigation action planning:

- Dam Failure
- Earthquake
- Floods: 1%/0.2% annual chance
- Floods: Localized Stormwater
- Pandemic
- Severe Weather: Extreme Heat
- Severe Weather: Heavy Rains and Storms
- Wildfire

After review of possible mitigation alternatives, the following were dropped to low significance hazards for mitigation planning purposes.

- Earthquake
- Pandemic

It should be noted that many of the projects submitted by each jurisdiction in Table 5-4 in the Base Plan benefit all jurisdictions whether or not they are the lead agency. Further, many of these mitigation efforts are collaborative efforts among multiple local, state, and federal agencies. In addition, the countywide public outreach action, as well as many of the emergency services actions, apply to all hazards regardless of hazard priority. Collectively, this multi-jurisdictional mitigation strategy includes only those actions and projects which reflect the actual priorities and capacity of each jurisdiction to implement over the next 5-years covered by this plan. It should further be noted, that although a jurisdiction may not have specific projects identified for each priority hazard for the five year coverage of this planning process, each jurisdiction has focused on identifying those projects which are realistic and reasonable for them to implement and would like to preserve their hazard priorities should future projects be identified where the implementing jurisdiction has the future capacity to implement.

Multi-Hazard Actions

Action 1. Integrate Local Hazard Mitigation Plan into Safety Element of General Plan

Hazards Addressed: Multi-hazard (Dam Failure; Floods: 1%/0.2% annual chance; Floods: Localized Stormwater; Severe Weather: Extreme Heat; Severe Weather: Heavy Rains and Storms; Wildfire)

Goals Addressed: 1, 2, 3, 4, 5, 6

Issue/Background: Local jurisdictional reimbursement for mitigation projects and cost recovery after a disaster is guided by Government Code Section 8685.9 (AB 2140). Specifically, this section requires that each jurisdiction adopt a local hazard mitigation plan (LHMP) in accordance with the federal Disaster

Mitigation Act of 2000 as part of the Safety Element of its General Plan. Adoption of the LHMP into the Safety Element of the General Plan may be by reference or incorporation.

Other Alternatives: No action

Existing Planning Mechanisms through which Action will be Implemented: Safety Element of General Plan

Responsible Office: City of Wheatland Community Development Department

Priority (H, M, L): High

Cost Estimate: Jurisdictional board/staff time

Potential Funding: Local budgets

Benefits (avoided Losses): Incorporation of an adopted LHMP into the Safety Element of the General Plan will help jurisdictions maximize the cost recovery potential following a disaster.

Schedule: As soon as possible

Action 2. Enhance Public Education and Awareness of Natural Hazards and Public Understanding of Disaster Preparedness

Hazards Addressed: Multi-hazard (Dam Failure; Floods: 1%/0.2% annual chance; Floods: Localized Stormwater; Severe Weather: Extreme Heat; Severe Weather: Heavy Rains and Storms; Wildfire)

Goals Addressed: 1, 2, 3, 4, 5, 6

Issue/Background: The City and County play a key role in public outreach/education efforts to communicate the potential risk and vulnerability of their community to the effects of natural hazards. A comprehensive multi-hazard public education program will better inform the community of natural hazards of concern and actions the public can take to be better prepared for the next natural disaster event.

Project Description: A comprehensive multi-hazard outreach program will ascertain both broad and targeted educational needs throughout the community. The City will work with the County and other agencies as appropriate to develop timely and consistent annual outreach messages in order to communicate the risk and vulnerability of natural hazards of concern to the community. This includes measures the public can take to be better prepared and to reduce the damages and other impacts from a hazard event.

Other Alternatives: Continue public information activities currently in place.

Existing Planning Mechanism(s) through which Action Will Be Implemented: Existing County outreach programs will be reviewed for effectiveness and leveraged and expanded upon to reach the broader region.

Responsible Office: City of Wheatland in partnership with the County

Participating Jurisdictions: County and all cities.

Priority (H, M, L): High

Cost Estimate: Annual costs to be determined, and will depend on the scope and frequency of activities and events as well as volunteer participation

Benefits (Losses Avoided): Increase residents' knowledge of potential hazards and activities required to mitigate hazards and be better prepared. Protect lives and reduce damages, relatively low cost to implement.

Potential Funding: Local budgets, grant funds

Timeline: Ongoing/Annual public awareness campaign.

Action 3. Development & Implementation of Community Wildfire Prevention/Risk Management Plan

Hazards Addressed: Wildfires, especially in wildland interface areas.

Goals Addressed: 1, 2, 3, 4, 5, 6

Issue/Background: The Wheatland Fire Authority within the last month has been assigned the responsibility for all wildland, weed abatement, and fire prevention for wildland interface areas. The City of Wheatland has early 1900 residential and commercial structures. Within these structures there are heavy inundated vegetation with ladder fuels that will carry fire from building to building and potentially causes massive destruction to the City.

Project Description: Development and implementation of a community wildfire prevention, risk management plan. This plan will assess the risk and vulnerability of the City to wildland fires and identify and prioritize risk reduction measures to address the wildfire hazard in the City. The following areas, at a minimum, will be addressed in this plan:

- Creation of a public outreach program. Among other things, this program would instill the knowledge and resources to the citizens on the vegetation management of their structures
- Identify and prioritize areas for vegetation management of public areas
- Evaluation of possible options for hardening and ignition-resistant retrofitting of critical and public facilities
- Evaluation and improvements to water supply sources for fire suppression
- Other opportunities for wildfire mitigation within the City.

Other Alternatives: No Action

Existing Planning Mechanism(s) through which Action Will Be Implemented: Due to the City of Wheatland assigning the Wheatland Fire Authority the wildland, weed abatement and all fire prevention responsibilities for wildland fire issues within the last month, there is no current program in place. Once this plan is developed, implementation of wildfire mitigation measures will be conducted through this plan

Responsible Office/Partners: City of Wheatland, Plumas-Brophy Fire Protection Dist.

Cost Estimate: $50.000 annually

Benefits (Losses Avoided): Life and Property safety is the utmost primary concern for wildland fire incidents. Benefits also include those related to pre-planning and public education to establish procedures for the City residents in the event of a wildfire.

Potential Funding: General Fund, FEMA and other wildfire related grant mechanisms

Timeline: Starting now and to be conducted throughout every year

Project Priority (H, M, L): High

Action 4. Annual Coordination with Dam Owners

Hazards Addressed: Dam Failure, Flood, Levee Failure, Heavy Rain and Storms

Goals Addressed: 1, 2, 3, 4, 5, 6

Issue/Background: Two dams, Camp Far West and Rollins, both Extremely High Hazard Dams, have the potential to significantly inundate the City of Wheatland should a failure occur. The Camp Far West Dam located outside of the City limits in Yuba County, is projected to flood the City of Wheatland within 3 minutes. Failure of either dam could cause significant impacts to the City. Both dams currently have an EAP in place.

Project Description: This project entails meeting annually with both dam owners, South Sutter Water District (Camp Far West) and Nevada Irrigation District (Rollins) to discuss communication and coordination issues to prevent losses to the City, including ways to alert the community in case of a failure.

Other Alternatives: No action

Existing Planning Mechanism(s) through which Action Will Be Implemented: There is a current Emergency Action Plan in place for both dams that will form the basis of these meetings.

Responsible Office/Partners: City of Wheatland, South Sutter Water District, Nevada Irrigation District

Cost Estimate: Costs are expected to be minimal and include staff time for coordination meetings.

Benefits (Losses Avoided): Life Safety is the primary concern in the event of a dam failure. Pre-planning and annual coordination will help establish better communication and coordination procedures for evacuation of City residents in the event of a failure.

Potential Funding: City Budgets

Timeline: To be conducted on an annual basis.

Project Priority (H, M, L): Medium

Action 5. Annual Storm Drain and Storm Ditches Cleaning

Hazards Addressed: Flood, Localized Flooding, Levee Failure, Dam Failure, Severe Weather: Heavy Rains and Storms

Goals Addressed: 1, 2, 3, 4, 5, 6

Issue/Background: Prevent and/or correct flow avenues into and through storm collection facilities to prevent flooding of streets and properties within the City.

Project Description: Remove debris and vegetation from drop-inlets (DI's), open ditches and structures.

Other Alternatives: No Action

Existing Planning Mechanism(s) through which Action Will Be Implemented: Annual Recurring Work Program

Responsible Office/Partners: Department of Public Works

Cost Estimate: $49,165 for labor and vehicles

Benefits (Losses Avoided): Keep roads, streets and highways open for proper traffic flow and preventing flood damage to properties/improvements.

Potential Funding: Various street/highway funds and/or gas tax; State and Federal grants

Timeline: Conducted on an annual basis: Fall and Winter – before and during the "wet season" – when leaves fall and debris flows.

Project Priority (H, M, L): H

Action 6. Emergency Generators at all Critical Facilities

Hazards Addressed: Multi-Hazard (Dam Failure, Earthquake, Flood, Localized Flood, Severe Weather: Extreme Heat, Heavy Rains and Storms) including electrical power outages (power), flooding, sewage spill, drinking water.

Goals Addressed: 1, 2, 3, 4, 5, 6

Issue/Background: Most of the Critical Facilities that require power have an emergency generator (Genset) to supply power during short-term or intermittent power outages. If a disaster caused an extended power outage, then the "remaining" critical facilities quickly become an issue and are unable to stay online creating significant issues during a hazard event.

Project Description: Add gensets to "remaining" critical facilities. Currently identified are:

- North Storm Station – duplex pump station – APN Yuba 15-010-084
- 2- Sewer Lift Stns – 111 C St. and "Forest Glen" 826 Redwood Ave.
- 2- Wells – Well 4, 409 2nd St. and Well 6, 1010 Wheatland Rd.
- City Hall
- Community Center
- Others to be identified over the next five years of this LHMP

Other Alternatives: No Action

Existing Planning Mechanism(s) through which Action Will Be Implemented: No planning mechanism currently exists for the implementation of backup power at critical facilities

Responsible Office/Partners: Department of Public Works, Engineering, and Office of City Manager

Cost Estimate: $ 320,000

Benefits (Losses Avoided): This project will help ensure that all critical facilities will function in a major disaster and prevent flooding, loss of drinking water and/or a sanitary sewer overflow. Depending on the critical facility, this may also prevent significant property damage to structures and other infrastructure and prevent loss of life and public health concerns.

Potential Funding: State and federal grants to include FEMA grants

Timeline: Within one year and ongoing – based on available funding

Project Priority (H, M, L): H

Action 7. Regional Wastewater Pipeline

Hazards Addressed: Flood, Levee Failure, Dam Failure, Severe Weather: Heavy Rains and Storms

Goals Addressed: 1, 2, 3, 4, 5, 6

Issue/Background: The City discharges its treated wastewater to an infiltration basin that is located along the Bear River. The City's wastewater treatment plant (WWTP) is protected by the levee; however the infiltration basin is not protected by the levee and is subject to damage during high flows in the river. The City has received a Notice of Violation from the State regarding the condition.

Project Description: Due to the WWTP's location and proximity to the Bear River, the City is pursuing a regional solution that would eliminate the potential for flood damage by decommissioning and removing the WWTP, and then convey wastewater to an adjacent wastewater plant.

Other Alternatives: Buy additional land and construct a new infiltration basin to the safe side of the levee.

Existing Planning Mechanism(s) through which Action Will Be Implemented:

- Basis of Design Report (BODR) Wheatland Regional Sewer Pipeline Project, dated 4/23/2021 and accepted by City Council 4/27/2021.

- Environmental and Engineering for the Wheatland Regional Sewer Pipeline Project (on-going, August 2021)

Responsible Office/Partners: Engineering Department

Cost Estimate: $44.2M

Benefits (Losses Avoided):

- Remove wastewater pollution source from Bear River and riparian habitat.
- Prevent lengthy suspension of sewer service to 3,700 residents.

Potential Funding: Yuba Water Agency, State and Federal grants, City fees

Timeline: Design, environmental and right of way complete by 2022. Construction depends on unknown, outside funding.

Project Priority (H, M, L): H

Action 8. Comprehensive Drinking Water Project - Phase 1

Hazards Addressed: Drought, Severe Weather: Extreme Heat

Goals Addressed: 1, 2, 3, 4, 5, 6

Issue/Background: The City currently does not have the ability to accurately track its water usage or to identify system or customer leaks in a timely way. The City loses an unknown amount of water annually to system and customer leaks. Also, the City depends solely on a single groundwater aquifer and has no surface water sources to back-up its supply.

Project Description: The Project replaces old and inaccurate meters (supply meters and customer meters) with new ultrasonic or magmeters and Advanced Metering Infrastructure (AMI). The new system provides accurate and real-time consumption data for customers and the City. Telemetry allows for remote monitoring from any device, automated warnings/alarms, and automated billing which allows staff to focus more time on maintenance.

Other Alternatives: None

Existing Planning Mechanism(s) through which Action Will Be Implemented:

- Yuba County Integrated Regional Water Management Plan
- Yuba County Groundwater Sustainability Plan
- City Budget and CIP

Responsible Office/Partners: Engineering Department

Cost Estimate: $840,000

Benefits (Losses Avoided):

- Reduction in drinking water losses in the municipal system and on private properties.
- Water conservation through timely and accurate awareness of water usage.

Potential Funding: Yuba Water Agency, State and Federal grants

Timeline:

- Design and environmental complete 2021
- Construction complete 2023

Project Priority (H, M, L): M

Action 9. Comprehensive Drinking Water Project - Phase 2

Hazards Addressed: Drought, Earthquake, Severe Weather: Extreme Heat, Severe Weather: Heavy Rains and Storms

Goals Addressed: 1, 2, 3, 4, 5, 6

Issue/Background: The City's water system has a 17,000-gallon elevated tank that's over 100-yrs old, that is the City's single source of continuous water system pressure. A structural review of the tank structure revealed that its subject to failure in a seismic event (code earthquake) and subject to failure in high winds.

The City's water system control building, Public Works office, Police Station, a 600,000-gallon water storage tank, Well #3 and a residence are all within the fall zone of the elevated tank.

Project Description: The Project would remove the elevated tank from service and perform minor structural repairs to reduce the seismic hazard. Water system pumps, motors and SCADA controls must be upgraded to replace the elevated tank's function as the City's pressure source.

Other Alternatives: None

Existing Planning Mechanism(s) through which Action Will Be Implemented:

- Yuba County Integrated Regional Water Management Plan
- City Budget and CIP

Responsible Office/Partners: Engineering Department

Cost Estimate: $700,000

Benefits (Losses Avoided):

- Removes hazardous situation that compromises multiple city functions.
- Preserves historic/iconic water tower structure.

Potential Funding: Yuba Water Agency, State and Federal grants

Timeline:

- Design and environmental complete 2022
- Construction 2023

Project Priority (H, M, L): H