Annex B City of Williams

B.1 Introduction

This Annex details the hazard mitigation planning elements specific to the City of Williams, a previously participating jurisdiction to the 2018 Colusa 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 the City of Williams, with a focus on providing additional details on the planning process, risk assessment, and mitigation strategy for this jurisdiction.

B.2 Planning Process

As described above, the City of Williams followed the planning process detailed in Chapter 3 of the Base Plan. In addition to providing representation on the Colusa 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 Williams – Planning Team

Name	Position/Title	How Participated
Katheryn Ramsaur	City Planner	Completed and returned all requested forms. Took the lead on Annex development. Attended Meetings. Reviewed and provided comments on Plan Drafts.

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 2018 LHMP into existing planning mechanisms and programs. Specifically, the City incorporated into or implemented the 2018 LHMP through other plans and programs shown in Table B-2.

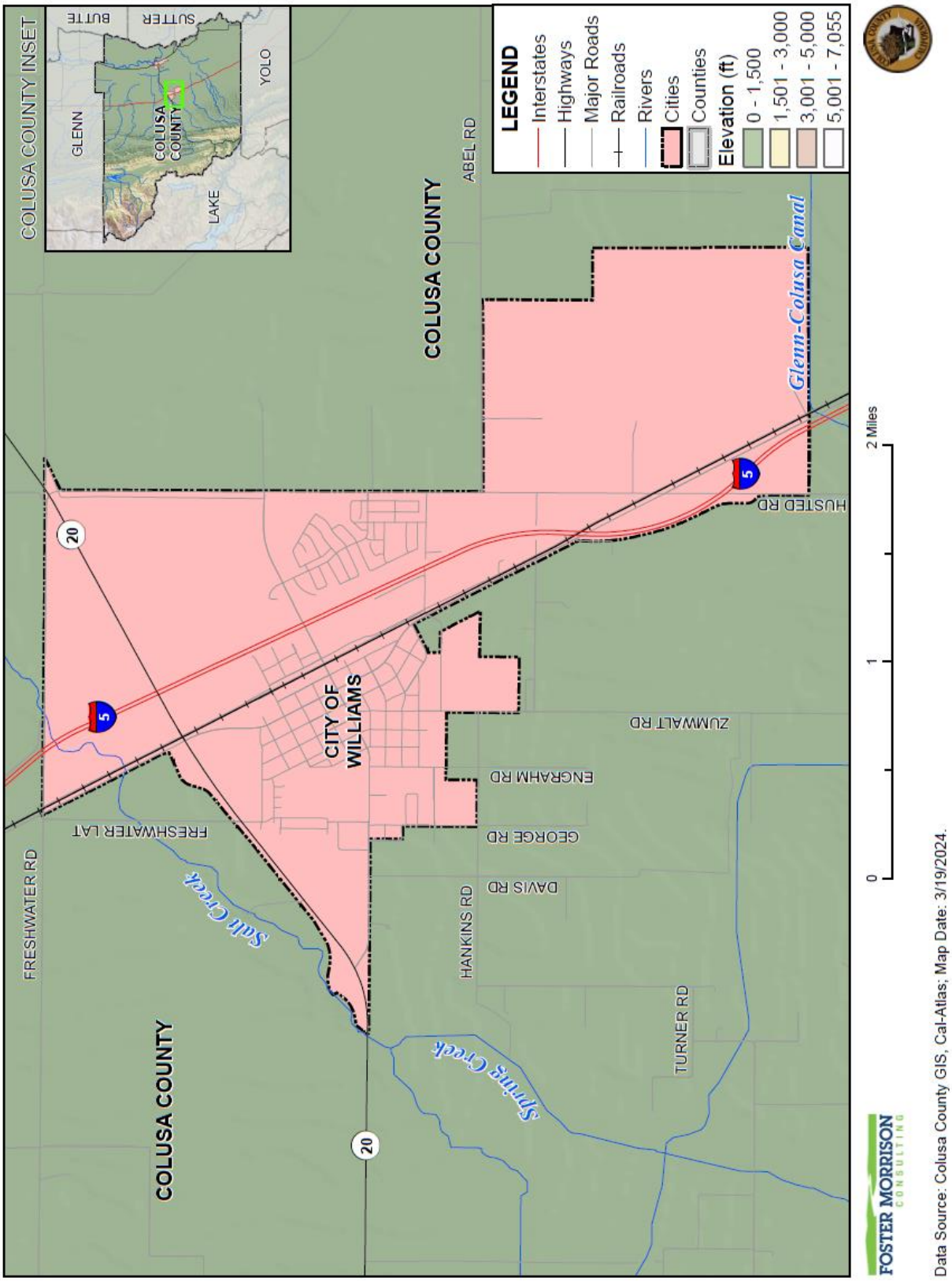
Table B-2 2018 LHMP Incorporation

Planning Mechanism 2018 LHMP Was Incorporated/Implemented In.	Details: How was it incorporated?
General Plan: Public Safety Element	Incorporated by reference into the Safety Element of the General Plan in 2023. The LHMP was used as a basis for mitigation priorities. The key issues addressed were Flooding, Fire, Police, Hazardous Waste, and Climate Change

B.3 Community Profile

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

Figure B-1 City of Williams



B.3.1. Geography and Climate

The 2010 City of Williams General Plan noted that the City is Williams is a community located at the crossroads of Interstate 5 and State Route 20, 60 miles north of Sacramento and mid-way between the Sierras and the Pacific Coast. The City of Williams is the gateway to the Northern California hunting and fishing mecca. The nearby foothill regions and the proximity to the Sacramento River, are within easy driving distance. Located in the Sacramento Valley, Williams is an agriculturally oriented community. Summers are typically hot and dry with little or no rainfall between May and September. More than 80% of the annual precipitation occurs between November and March. Winter temperatures are generally mild with frost and freezing temperatures infrequent.

The ground in and around the City of Williams is composed of a mixture of upland and valley soils. The upper watershed of the west end of the City is composed of soils found predominately throughout the Coast Range, while the agricultural lowlands contain terrace soils and valley deposits consistent with its history of outwash and floodplain activity. The topography is generally hills, valleys, and agricultural plains. The City sits at an elevation of 82' above mean sea level.

B.3.2. History

According to the City of Williams 2010 General Plan, Williams was founded in 1874 and was first known as Central. In 1876, it was later renamed Williams to honor William Williams, who gave much of the land for the townsite. The gold rush triggered not only the rapid expansion of agriculture, but also the development of manufacturing and commerce. The major development of the immediate post-gold rush era was the conception of a transcontinental railroad. The first passenger service was offered by the Sacramento Valley Railroad, a short line between Sacramento and Folsom. In 1863, the Central Pacific was under construction as part of an ambitious plan to link the West Coast with the East.

Construction of the Northern Railway would link agricultural communities on the west side of Sacramento Valley. Knowing of the railroads' plans, Williams advertised town lots of 125 by 150 feet with 32 lots per block. In 1876, Williams circulated maps showing the advantages of living here. The first train arrived in Williams on June 23, 1877.

In 1912, C.K. Sweet established the Williams water works. By 1918, Williams was the second largest city in Colusa County, with a population of 1,000. The town boasted of electricity, its new water works, and more paved streets than any town its size in the State. George C. Comstock, Inc. located one of its largest department stores here. Williams was made a General Law City on May 20, 1920.

Despite the depression of the 1930's, the older residential blocks in Williams continued to gradually fill. In 1938, construction of the new city hall was completed. During this time, talks at the Williams Farm Center meetings revolved around the shortage of farm machinery. Other concerns of the time included water purification in the event the town's water supply was cut off.

In 1955, construction began on the new Williams high school. Californian experienced unparalleled prosperity during that decade. Highway 99W in Williams was lined with motels, gas stations, repair

facilities, and drive-ins. By the early 1960's, it was lined with store fronts advertising A&W Root Beer, 7UP, Mobil, Shell, Standard Oil, Bank of America, cafes, motels, and bowling.

Later growth in Williams has not proven entirely beneficial for the City's historical resources, especially for the buildings that are 50 years or older. The route through town of old Highway 99W is largely stripped of its once familiar landmarks. Construction of Interstate 5 probably had much to do with the demise of many businesses associated with the car culture along Highway 99W.

B.3.3. Economy and Tax Base

Williams' economy ties into a regional network of producers, consumers, and the organizations and agencies that represent them. More than 60 percent of Williams' economy is tied up in agriculture; educational, health, and social services; and entertainment, accommodation, and food services. (2010 General Plan)

US Census estimates (from 2022) show economic characteristics for the City of Williams. These are shown in Table B-3 and Table B-4. Mean household income in the City was $94,753. Median household income in the City was $84,457.

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

Industry	Estimated Employment	Percent
Agriculture, forestry, fishing and hunting, and mining	476	19.3%
Construction	85	3.4%
Manufacturing	235	9.5%
Wholesale trade	108	4.4%
Retail trade	194	7.9%
Transportation and warehousing, and utilities	376	15.3%
Information	0	0.0%
Finance and insurance, and real estate and rental and leasing	0	0.0%
Professional, scientific, and management, and administrative and waste management services	47	1.9%
Educational services, and health care and social assistance	358	14.5%
Arts, entertainment, and recreation, and accommodation and food services	324	13.1%
Other services, except public administration	97	3.9%
Public administration	164	6.7%

Source: US Census Bureau American Community Survey 2022 Estimates

Table B-4 City of Williams – Income Brackets and Percentages

Income Bracket	Percent
<$10,000	1.1%
$10,000 – $14,999	2.5%

Income Bracket	Percent
$15,000 - $24,9999	9.3%
$25,000 – $34,999	7.8%
$35,000 – $49,999	10.7%
$50,000 – $74,999	12.3%
$75,000 – $99,999	21.9%
$100,000 – $149,999	12.9%
$150,000 – $199,999	11.9%
$200,000 or more	9.5%

Source: US Census Bureau American Community Survey 2022 Estimates

The City's largest employers include:

- Granzella's
- Morning Star
- Vann Brothers
- Du Pue Warehouse
- Bar Ale
- Valley West Care Center
- Williams Unified School District
- City of Williams

B.4 Risk Assessment

As defined by FEMA, risk is a combination of hazard, vulnerability, and exposure. "It is the impact that a hazard would have on people, services, facilities, and structures in a community and refers to the likelihood of a hazard event resulting in an adverse condition that causes injury or damage."

The City of Williams risk assessment identifies and profiles relevant hazards and assesses the exposure of lives, property, infrastructure, and the environment to these hazards. The process allows for a better understanding of the City's potential risk to hazards and provides a framework for developing and prioritizing mitigation actions to reduce risk from future hazard events.

Building on the Community Profile above, a risk assessment was performed for the City. This includes the following sections:

- B.4.1 Assets Inventory and Growth and Development Trends
- B.4.2 Hazard Identification
- B.4.3 Hazard Profiles and Vulnerability to Specific Hazards

B.4.1. Assets Inventory and Growth and Development Trends

This section provides an inventory of the City of Williams's total assets potentially at risk to hazards and an overview of growth and development trends. This section is broken into two parts:

- **Asset Inventory** – The assets inventory identifies the City of Williams's total assets, including the people and populations; structures; critical facilities and infrastructure; community lifelines; natural, historic, and cultural resources; and economic assets and community activities of value. This data is not hazard specific, but is representative of total assets within the City, potentially at risk to identified hazards as discussed in Section B.4.3 Hazard Profiles and Vulnerability to Specific Hazards.
- **Growth and Development Trends** – A discussion of growth and development trends in the City, both current and future, is presented.

Assets Inventory

The City's asset inventory is detailed in the following sections:

- People and Populations
- Structures
- Critical Facilities and Infrastructure
- Community Lifelines
- Natural, Historic, and Cultural Resources
- Economic Assets and Community Activities of Value

A discussion of each of these assets follows and serves as the template for the asset discussion for each hazard in Section B.4.3.

People and Populations

The most important asset within any community are the people and populations that reside in the community. This section includes an inventory of past and current populations of the City and also discusses socially vulnerable populations and underserved communities as a subsection of people and populations located within the City and potentially at risk to hazards. Information from the City, US Census Bureau, California Department of Finance, and other sources as detailed below 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. The City has 5,528 residents, as of January 1, 2024. Population growth was sizable until 2010 when it levelled off. Williams has seen growth rates as shown in Table B-5.

Table B-5 City of Williams– Population Changes Since 1950

Year	Population	% Change
1950	1,134	–
1960	1,370	39.3%
1970	1,571	20.8%
1980	1,655	14.7%
1990	2,297	5.3%
2000	3,670	59.8%

Year	Population	% Change
2010	5,123	39.6%
2020	5,538	8.1%
2023	5,528	-0.1%

Source: US Census Bureau, California Department of Finance (2024)

Special Populations and Disadvantaged Communities

The City is a very socially and economically diverse community, and many residents that are socially or economically disadvantaged or vulnerable due to varying reasons reside within the City. The City and surrounding County are no strangers to large natural disasters which have had a direct impact on the populations of the area. Thus, it is important to consider the potential effects of hazard events and disasters on these more vulnerable populations. Socially vulnerable and disadvantaged communities in the City are discussed by the following sources:

- CDC Social Vulnerability Index
- California Department of Water Resources (CA DWR) Special Populations and Disadvantaged Community Mapping
- FEMA Community Disaster Resilience Zones
- City Planning Team Input

CDC Social Vulnerability Index

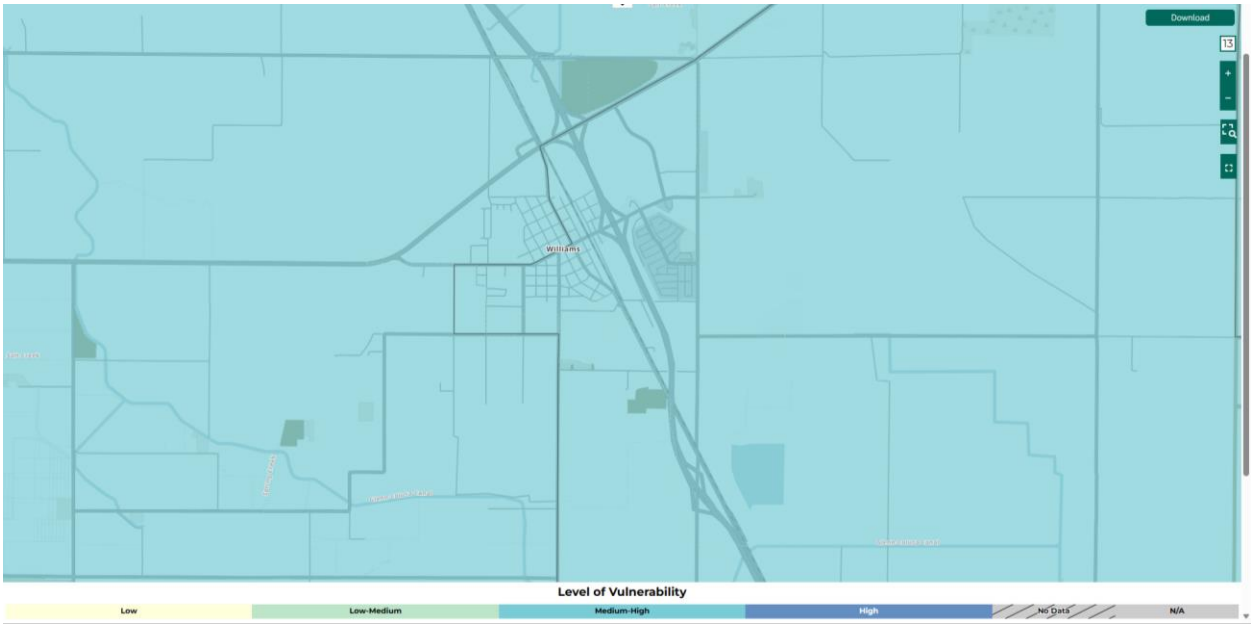
Every community must prepare for and respond to a hazard event, including the range of natural hazards addressed in this Plan, from severe weather extremes to large potentially catastrophic events such as wildfires or earthquakes. A number of factors, including poverty, lack of access to transportation, and crowded housing may weaken a community's ability to prevent human suffering and financial loss in a disaster. These factors are known as social vulnerability.

Social vulnerability refers to the potential negative effects on communities caused by external stresses on human health. Such stresses include natural or human-caused disasters, or disease outbreaks. Reducing social vulnerability can decrease both human suffering and economic loss. The Agency for Toxic Substances and Disease Registry (ATSDR) Geospatial Research, Analysis & Services Program (GRASP) created databases to help emergency response planners and public health officials identify and map communities that will most likely need support before, during, and after a hazardous event. The CDC used these databases to create the CDC Social Vulnerability Index (CDC SVI), which uses 15 U.S. census variables to help local officials identify communities that may need additional support before, during, or after disasters.

CDC SVI uses U.S. Census data to determine the social vulnerability of every census tract. Census tracts are subdivisions of counties for which the Census collects statistical data. The CDC SVI ranks each tract on 15 social factors, including poverty, lack of vehicle access, and crowded housing, and groups them into four related themes. Each tract receives a separate ranking for each of the four themes, as well as an overall ranking. Maps of the four themes for the City are shown in the figures below.

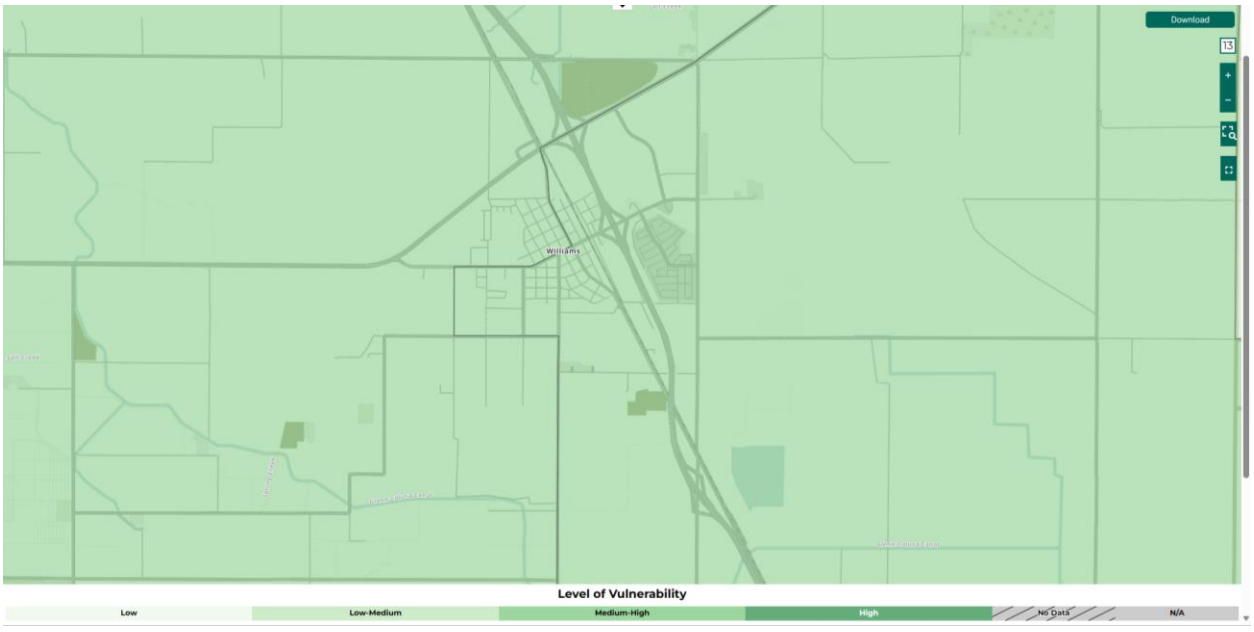
The overall SVI map is shown in Figure B-2; the socioeconomic SVI for the census tracts in and around the City are shown in Figure B-3; the household composition SVI is shown in Figure B-4; the minority and language SVI is shown in Figure B-5; and the housing and transportation SVI is shown in Figure B-6. Overall, the maps indicate that, in general, the City's social vulnerability is classified as medium high and sees little change in social vulnerability regardless of location.

Figure B-2 City of Williams – Overall Social Vulnerability



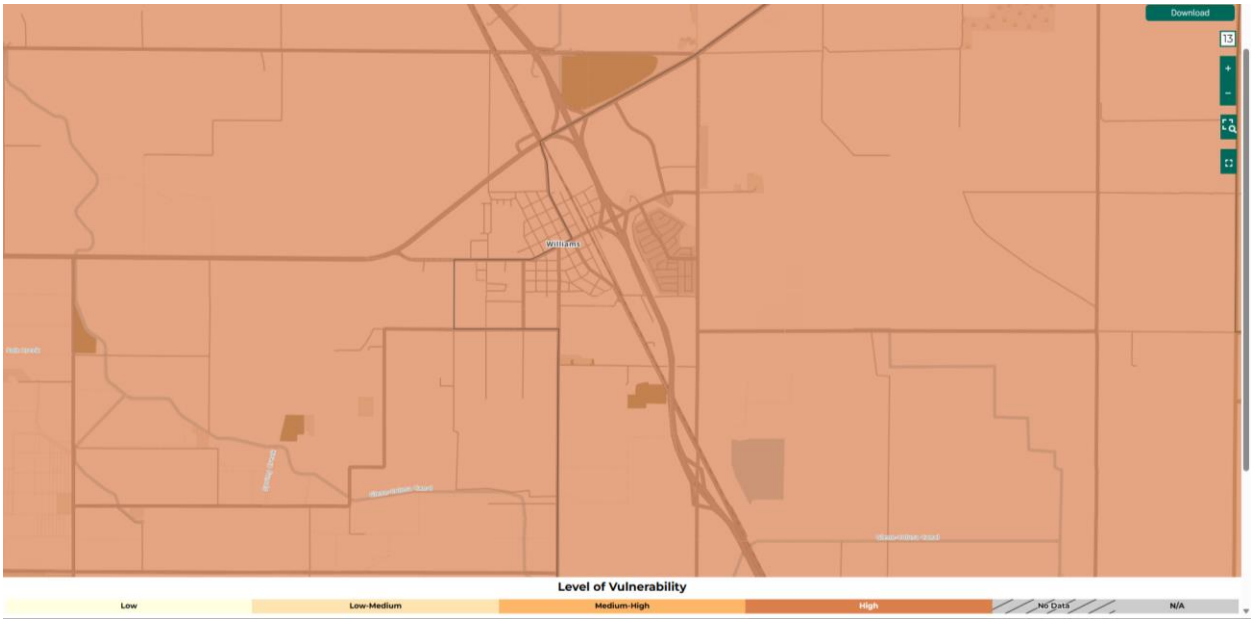
Source: CDC Social Vulnerability Index – map retrieved 3/14/2024
Level of Vulnerability Rating: **Yellow** – Low; **Green** – Low/Medium; **Aqua** – Medium/High; **Blue** – High; **Grey Hatched** – No Data; **Grey** – Not Available

Figure B-3 City of Williams – Socioeconomic Status Vulnerability



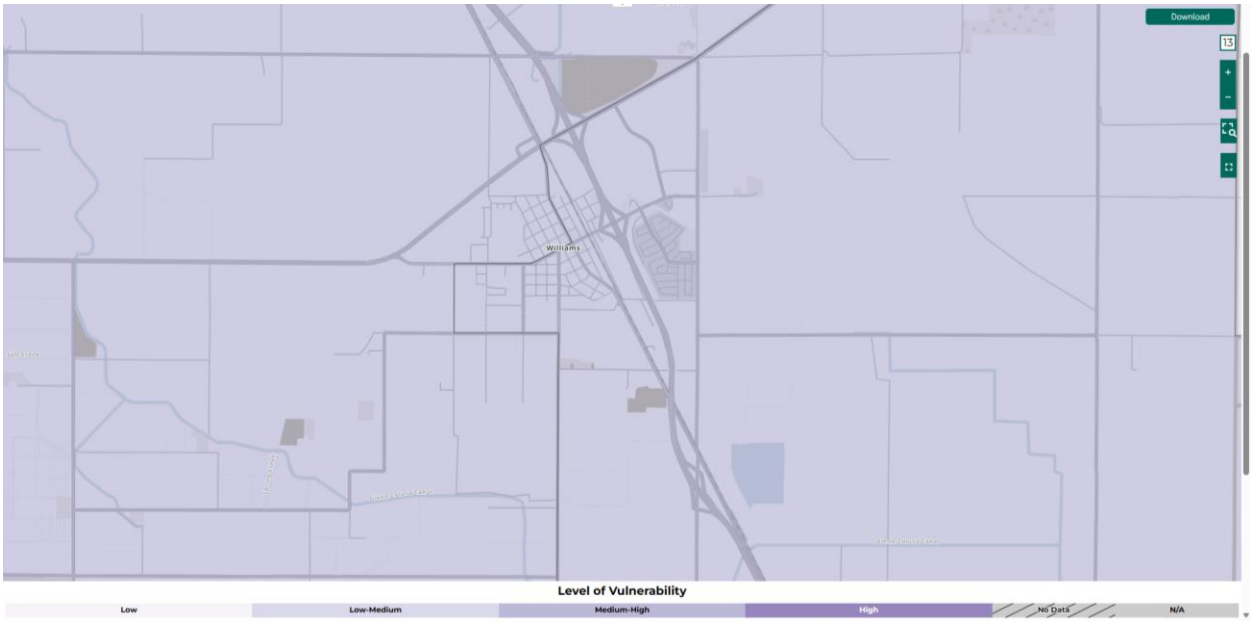
Source: CDC Social Vulnerability Index – map retrieved 3/14/2024
Level of Vulnerability Rating: **Faint Green** – Low; **Light Green** – Low/Medium; **Green** – Medium/High; **Dark Green** – High; **Grey Hatched** – No Data; **Grey** – Not Available

Figure B-4 City of Williams – Household Characteristics



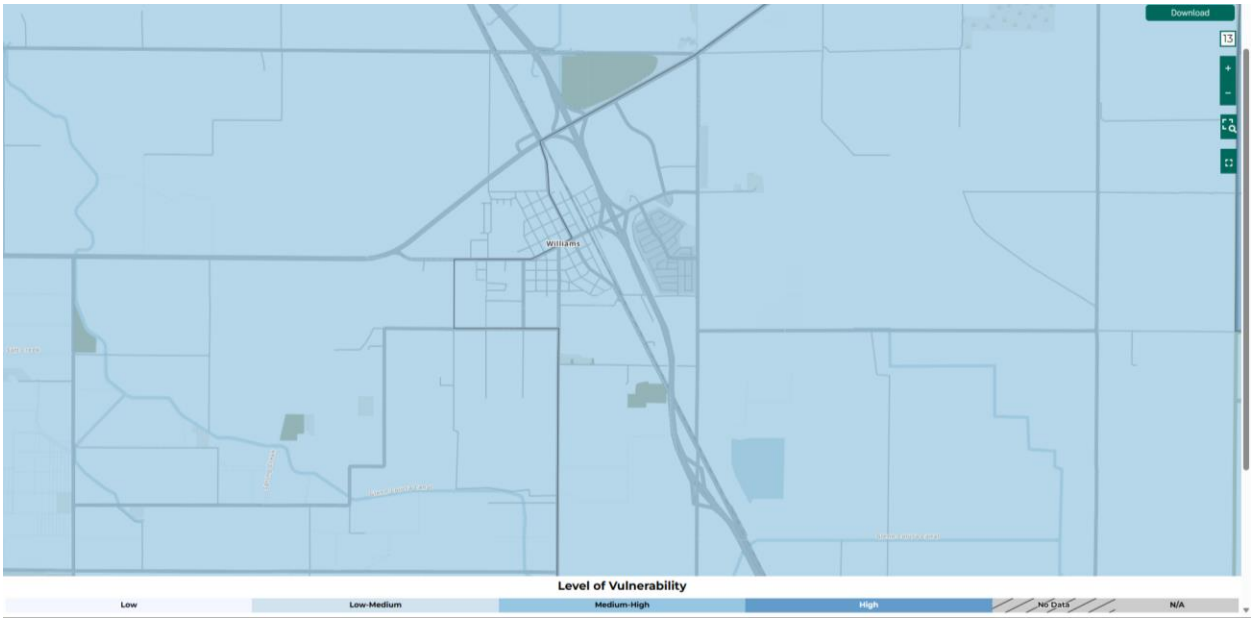
Source: CDC Social Vulnerability Index – map retrieved 3/14/2024
Level of Vulnerability Rating: **Faint Orange** – Low; **Light Orange**– Low/Medium; **Orange** – Medium/High; **Dark Orange** – High; **Grey Hatched** – No Data; **Grey** – Not Available

Figure B-5 City of Williams – Racial and Ethnic Minority Status



Source: CDC Social Vulnerability Index – map retrieved 3/14/2024
Level of Vulnerability Rating: **Faint Purple** – Low; **Light Purple** – Low/Medium; **Purple** – Medium/High; **Dark Purple** – High; **Grey Hatched** – No Data; **Grey** – Not Available

Figure B-6 City of Williams – Housing Type and Transportation

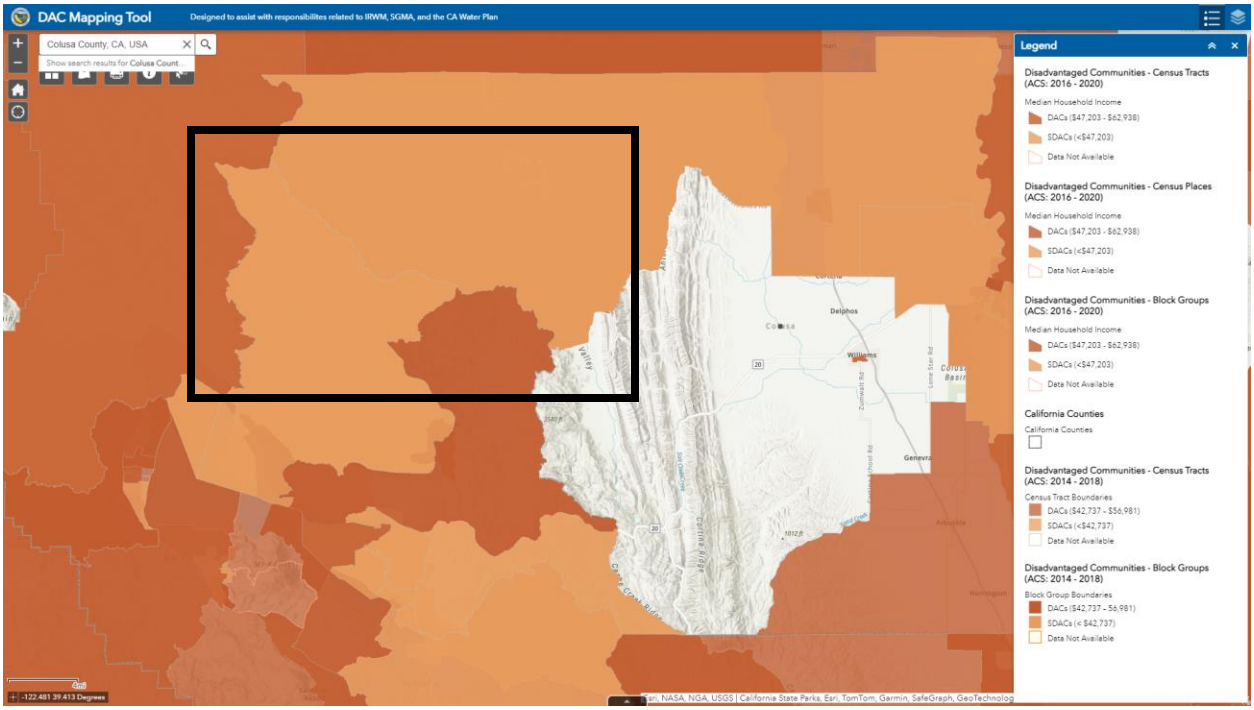


Source: CDC Social Vulnerability Index – map retrieved 3/14/2024
Level of Vulnerability Rating: **Faint Blue** – Low; **Light Blue** – Low/Medium; **Blue** – Medium/High; **Dark Blue** – High; **Grey Hatched** – No Data; **Grey** – Not Available

California DWR Disadvantaged Community Mapping Tool

The State of California's Proposition 1 Disadvantaged Community (DAC) Involvement Program is designated to ensure the involvement of DACs as well as Economically Distressed Areas and Underrepresented Communities, which DWR collectively refers to as DACs. The Cal DWR definition for a Disadvantaged Community is a community with an annual median household income (MHI) that is less than 80% of the Statewide annual MHI (PRC Section 75005(g)), and those census geographies with an annual MHI less than 60% of the Statewide annual MHI are considered "Severely Disadvantaged Communities". Those areas in the City of Willims considered disadvantaged are shown (by the black box) in Figure B-7.

Figure B-7 Colusa County Planning Area – Disadvantaged Areas

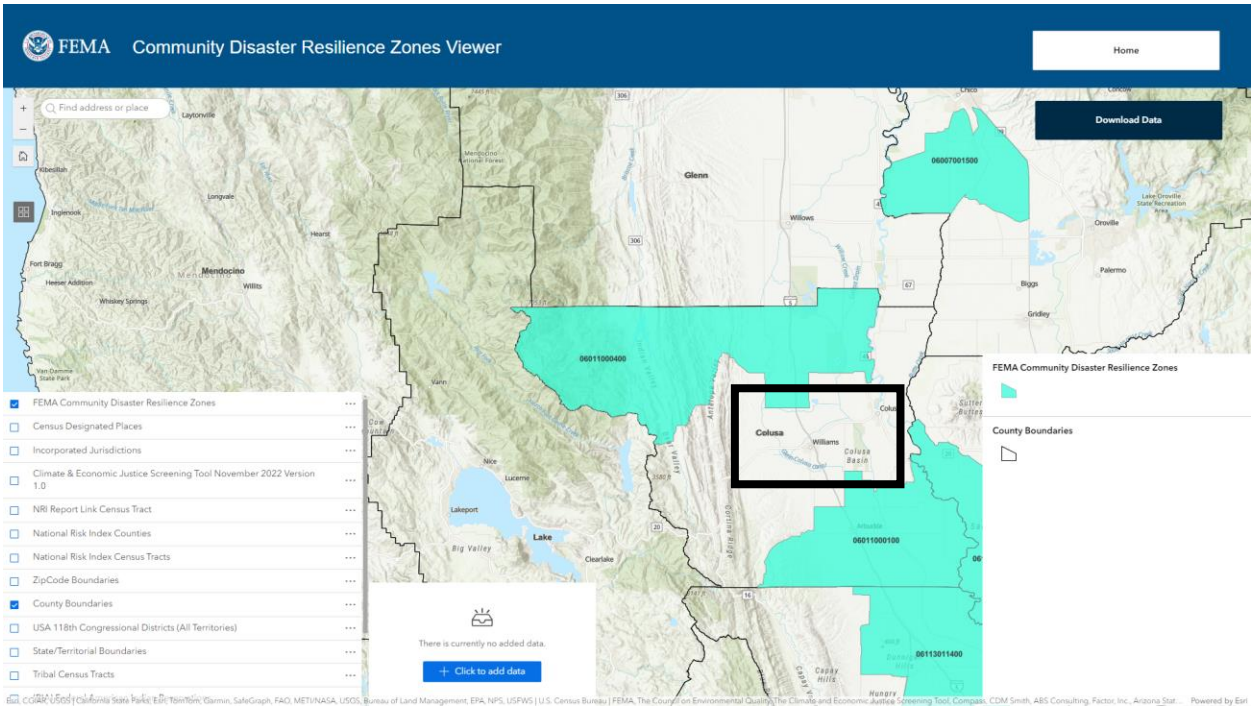


Source: Cal DWR DAC Mapping Tool – retrieved 3/14/2023

FEMA Community Disaster Resilience Zones

Community Disaster Resilience Zones aim to build and strengthen community resilience across the nation by driving federal, public, and private resources to the most at-risk and in-need communities. The Community Disaster Resilience Zones Act uses FEMA's National Risk Index to identify the most at-risk and in-need communities to identify resilience zones. Designated zones will be prioritized for targeted federal support, such as increased cost-share for resilience and mitigation projects, lessening the financial burden on communities to perform resilience-related activities. On September 6, 2023, FEMA announced the initial 483 designations in all 50 states and the District of Columbia. Figure B-8 shows these zones in teal green. As shown, the City of Williams is outside these zones, but adjacent to it.

Figure B-8 Colusa County Planning Area – FEMA Community Disaster Resilience Zones



Source: FEMA. Map retrieved 3/15/2024.

City Planning Team Input

The City noted that the Critical Facilities and Infrastructure section below includes the facilities used by At-Risk populations. While this is not specific to what special populations reside in the City, it does speak to facilities that area used to serve (portions) of this population.

The City noted two separate discussions on local populations: the City of Williams General Plan 2020-2028 Housing Element and the 2023 Environmental Justice Element. Information from those documents follows.

2020-2028 City of Williams Housing Element

Household groups with special needs include seniors, developmentally and physically disabled persons, large-family households, female-headed households, agricultural workers, and homeless persons. Households with special housing needs often have greater difficulty in finding decent and affordable housing. As a result, these households may experience a higher prevalence of overpaying, overcrowding, and other housing problems. Special housing needs are projected through 2028.

Lower Income Households

A Housing Income Survey was conducted by RCAC in 2015. The survey concluded that the City's Median Household Income was $33,419. This is significantly lower than estimated in the 2010 Census. Williams is therefore considered a severely disadvantaged community with over 50% of its households less than 60% of the State's median household income.

Extremely Low-Income Households

Extremely low-income households consist of those with incomes of between 0 and 30 percent of the County's median income. Based on 2019 Income Limits from HCD, the maximum income for an extremely low-income family of four would be $25,750. Extremely low-income households and very low-income households (particularly renters) experience the highest incidences of overpayment for housing and are most at risk of becoming homeless or temporarily homeless. These households can also consist of families of farmworkers/farm laborers. Based on 2012-2016 CHAS (Comprehensive Housing Affordability Strategy) data, about 80 households in the City are considered to be extremely low-income.

Homeless

Homeless individuals, generally in the extremely low-income category, include, but are not limited to victims of domestic violence, persons with mental illness, persons suffering from addiction, families with single heads-of-household and unaccompanied minors. Homeless also include individuals who have purchased parcels of land but are unable to afford site improvements or a home (and are often found living year-round in tents, small trailers or other permanent camp-type arrangements).

The Continuum of Care study, prepared by the U.S. Department of Housing and Urban Development (HUD) in 2019 indicates that the 5-county area, consisting of Colusa, Glenn, Tehama, Trinity and Lake Counties, estimated that there were 192 homeless individuals in this region. This is an increase of about 9% over the 2017 count. The 2019 count estimated that 57 of these individuals (about 30%) were located in Colusa County. However, the counts did not differentiate how many resided in Williams. Based on discussions with the City of Williams Chief of Police, James Saso, on April 2, 2020, there are no known homeless encampments in the City and few if any identifiable homeless in Williams other than the occasional person walking or hitchhiking through town. In accordance with SB 2, the City amended the Zoning Code (§ 17.01.030.4) to unconditionally allow homeless shelter uses on properties zoned Business Park (BP) District. Though there appears to be a presence of few homeless in Williams, some extremely low-income households are most at risk of becoming homeless.

Transitional, Supportive and Low Barrier Navigation Housing

Beginning in 2008 Colusa County established two transitional houses, one of which is located at 713 D Street adjacent to the City of Colusa and one of which is in the unincorporated area of Colusa. Both facilities provide services to homeless and potential homeless people in Colusa County, including those in Williams. Colusa County constructed and operates this transitional housing facility which provides temporary housing for adults and children with five units and 19 beds. The facility is intended to help recently homeless folks' transition back to independence. Individuals residing in transitional housing must participate in services, such as job counseling or behavioral health services. Residence in a transitional housing unit is limited to 18 months.

Seniors

Seniors are considered persons aged 65 or older in this housing element. Seniors have special housing needs primarily resulting from physical disabilities and limitations, fixed or limited income, and health care costs. Additionally, senior households also have other needs to preserve their independence including supportive

services to maintain their health and safety, in-home support services to perform activities of daily living, conservators to assist with personal care and financial affairs, public administration assistance to manage and resolve estate issues and networks of care to provide a wide variety of services and daily assistance.

Approximately 236 persons in Williams (16.3%) were 65 years and older in 2016. There was an overall increase of 62 people in this age group between 2011 and 2016. This resulted in an overall 3% increase in seniors as a proportion of the City overall population. The largest change in age group was in the 65 to 74 years category, which increased by 47 seniors. Also, noteworthy was that from the 85 years and over category at 20 seniors.

Large Households

Large households are defined as those households containing 5 or more persons. Income is a major factor that constrains the ability of households to obtain adequate housing. Larger units are more expensive and most units with over 3 bedrooms are typically single-family homes, instead of multi-family rental units. Large family households are considered a special needs group because there is limited supply of adequately sized housing to accommodate their needs. Between 2011 and 2016, the total number and percentage of large households in Williams decreased from 257 to 140. In 2016, there were no large ownership households, but large renter households increased by 42.

Female Headed (Woman) Households

There are about 292 female headed households (single without husbands) which consists of about 23% of all households in Williams. The number of woman households increased by 43 (17.6%) between 2011 and 2016. Over 58% of these woman households were below the poverty rate. 3.14% of the workforce are employed persons with a disability. It should also be pointed out that many of these who are employed are low wage earners.

Disabled Persons

A disability includes, but is not limited to, any physical or mental disability as defined in California Government Code § 12926. A mental disability involves having any mental or psychological disorder or condition, such as a mental retardation, organic brain syndrome, emotional or mental illness, or specific learning disabilities that limits a major life activity. A physical disability involves having any physiological disease, disorder, condition, cosmetic disfigurement, or anatomical loss that affects body systems including neurological, immunological, musculoskeletal, special sense organs, respiratory, speech organs, cardiovascular, reproductive, digestive, genitourinary, hemic and lymphatic, skin and endocrine.

The 2016 ACS reports that of the 414 disabilities in the City, over half of those (282) were ambulatory disabilities.

Persons with a Developmental Disability

Disability categories include persons with developmental disabilities. “Developmental disability” means a disability that originates before an individual attains age 18 years, continues, or can be expected to continue, indefinitely, and constitutes a substantial disability for that individual. The California Department of

Developmental Services (DDS) maintains data regarding people with developmental disabilities, defined as those with severe life-long disabilities attributable to mental and/or physical impairments. DDS data indicates that approximately 24 developmentally disabled persons reside in Williams. Of these persons, only 3 are living independently, while 18 live with a parent or guardian.

Farm Workers

Agriculture continues to be Colusa County's major producing industry. According to the 2013-2017 ACS, approximately 33% of all workers in unincorporated Colusa County were employed in occupations related to agriculture, forestry, fishing/hunting and mining. Census data does not identify how many of these workers are employed only in farm industries and not fishing/hunting, forestry or mining. These figures also do not indicate whether the employment is seasonal or permanent. There is a significant amount of agricultural production in Colusa County. According to the 2018 U.S. Census it was estimated that 715 people were employed in the agricultural sector.

2023 Williams General Plan - Environmental Justice Element

The purpose of the Environmental Justice (EJ) Element is to identify goals and policies that promote environmental justice citywide with a focus on reducing disproportionate impacts on the City's most vulnerable populations such as low-income residents, communities of color, and immigrant communities.

Senate Bill 1000 (SB 1000), the Planning for Healthy Communities Act, was signed into law by Governor Edmond G. Brown, Jr. on September 24, 2016. Per SB 1000, when a City revises two or more General Plan elements concurrently and has areas defined as "Disadvantaged Communities" (DACs), the City must address environmental justice (EJ) in their General Plan. The City can choose to either adopt a new, stand-alone element or integrate EJ policies and goals into existing elements of the General Plan. (Government Code Section 65302[h][2]).

The California Communities Environmental Health Screening Tool ("CalEnviroScreen") version 4.0, developed by the California Environmental Protection Agency (CalEPA), is the recommended method to identify DACs. CalEPA defines a DAC as a "low-income area that is disproportionately affected by environmental pollution and other hazards that can lead to negative health effects, exposure, or environmental degradation." CalEnviroScreen assigns composite scores to census tracts in California based on aggregate data from 21 indicators including potential exposures to pollutants, adverse environmental conditions, socioeconomic factors, and the prevalence of certain health conditions.

Census tracts with a composite CalEnviroScreen score of 75 or higher are considered DACs. The City of Williams is within one census tract (6011000300) which has a CalEnviroScreen 4.0 score of 54. Based on this score, *Williams is not considered a DAC*. However, the City elected to prepare a new, stand-alone EJ Element so that all existing EJ-related goals and policies are conveniently located in one document for easy reference. Additionally, the new EJ Element identifies new goals, policies, and programs relevant to the City of Williams.

Within the City, there are three low-income Senior Housing Apartment Complexes to help support this vulnerable population. A fourth location is currently in the building phase, with an expected completion

date of 2025. Also as noted in the critical facility analysis, other vulnerable populations in the City include those associated with the migrant housing, mobile home parks, and schools.

Structures

This section looks at the parcels (and associated structures) that make up the built environment of the City. The following data from the Colusa County Assessor's Office is based on the 2023 Assessor's data, and the associated parcel layer. The methodology used to derive the number of total and improved parcels (i.e., those with an improved structure value) and land and improved property values (as well as content replacement values), and other values is the same as in Section 4.2.1 of the Base Plan. This data should only be used as a guideline to overall values in the City, as the information has some limitations. The most significant limitations are created by Proposition 13. 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 City. 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 Colusa County Parcel/Assessor Data values and content replacement values (e.g., the values at risk) broken down by property use for the City.

Table B-6 City of Williams – Total Parcels (and Structures) by Property Use

Property Use	Total Parcel Count	Improved Parcel Count	Total Land Value	Improved Structure Value	Other Value	Estimated Contents Value	Total Value
Agricultural	64	13	$8,310,938	$2,022,288	$164,824	$2,022,288	$12,520,338
Commercial	203	122	$35,628,350	$68,288,498	$14,801,069	$68,288,498	$187,006,415
Government	86	22	$4,473,081	$31,675,235	$20,935,374	$31,675,235	$88,758,925
Industrial	14	11	$2,408,330	$24,689,619	$71,956,510	$37,034,430	$136,088,889
Institutional	16	11	$284,919	$3,853,811	$1,726,541	$3,853,811	$9,719,082
Miscellaneous	17	1	$389,391	$3,718,064	$0	$3,718,064	$7,825,519
Residential	1,355	1,297	$58,678,977	$215,215,035	$17,317,643	$107,607,514	$398,819,169
City of Williams Total	**1,755**	**1,477**	**$110,173,986**	**$349,462,550**	**$126,901,961**	**$254,199,840**	**$840,738,337**

Source: 2023 Colusa County Parcel/Assessor Data

Critical Facilities and Infrastructure

Beyond just the buildings and structures that comprise the built environment, it is important to identify the critical facilities and infrastructure that are critical for life safety and property protection. This is done for the City of Williams below.

For purposes of this plan, a critical facility is defined as:

Any facility, including without limitation, a structure, infrastructure, property, equipment or service, that if adversely affected during a hazard event may result in severe consequences to public health and safety or interrupt essential services and operations for the community at any time before, during and after the hazard event.

A critical facility is classified by the following categories: (1) Essential Services Facilities and (2) At-Risk Populations Facilities:

- **Essential Service Facility**: A facility in either the public or private sector that provides essential products and services to the general public, is otherwise necessary to preserve the welfare and quality of life in the County, or fulfills important public safety, emergency response, and/or disaster recovery functions.
- **At-Risk Populations**: Pre-schools, public and private primary and secondary schools, before and after school care centers, daycare centers, group homes, and assisted living residential or congregate care facilities with multiple residents.

Critical facilities in the City are shown on Figure B-9. A summary of critical facilities in the City is shown in Table B-7 and detailed in Table B-8. Additional details of individual critical facilities can be found in Appendix F of this Plan Update.

Figure B-9 City of Williams – Critical Facilities

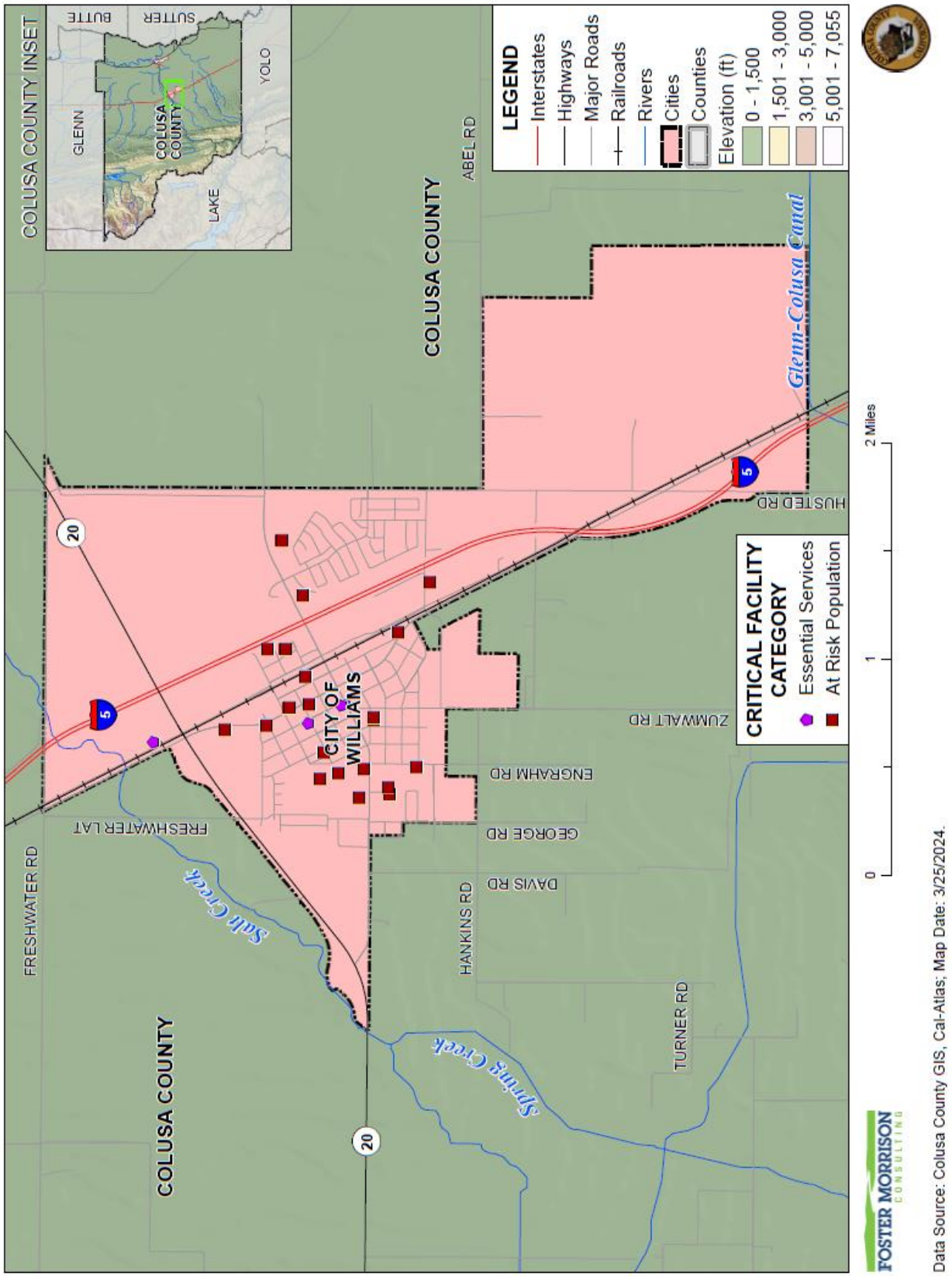


Table B-7 City of Williams – Critical Facilities by Category

Critical Facility Category	Facility Count
Essential Services Facilities	5
At Risk Population Facilities	22
City of Williams Total	**27**

Source: City of Williams GIS

Table B-8 City of Williams – Critical Facilities by Category and Type

Critical Facility Category	Facility Type	Facility Count
Essential Services Facilities	Emergency Response	2
	Fire Station	1
	Public Services	1
	Utility Facility	1
	Essential Services Facilities Total	**5**
At Risk Population Facilities	Apartment Complex	4
	Hotel or Motel	8
	Migrant Housing	1
	Mobile Home Park	2
	School	4
	Senior Living Facility	3
	At Risk Population Facilities Total	**22**
City of Williams Total		**27**

Source: Colusa County GIS

Community Lifelines

Assessing the vulnerability of the City of Williams to natural hazards and disasters also involves reviewing and inventorying the community lifelines in place that could be affected. It is important to include these items in hazard discussions as the continuous operation of critical government and business functions is essential to human health and safety, property protection, and economic security. The importance of community lifelines is discussed below:

- Lifelines are the most fundamental services in the community that, when stabilized, enable all other aspects of society to function.
- FEMA has developed a construct for objectives-based response that prioritizes the rapid stabilization of Community Lifelines after a disaster.
- The integrated network of assets, services, and capabilities that provide lifeline services are used day-to-day to support the recurring needs of the community and enable all other aspects of society to function.
- When disrupted, decisive intervention (e.g., rapid re-establishment or employment of contingency response solutions) is required to stabilize the incident.

Community lifelines, as defined by FEMA, include the following:

- **Safety and Security** – Law Enforcement/Security, Fire Service, Search and Rescue, Government Service, Community Safety
- **Food, Hydration, Shelter** – Food, Water, Shelter, Agriculture
- **Health and Medical –** Medical Care, Public Health, Patient Movement, Medical Supply Chain, Fatality Management
- **Energy –** Power Grid, Fuel
- **Communications** – Infrastructure, Responder Communications, Alerts Warnings and Messages, Finance, 911 and Dispatch
- **Transportation** – Highway/Roadway/Motor Vehicle, Mass Transit, Railway, Aviation, Maritime
- **Hazardous Material –** Facilities, HAZMAT, Pollutants, Contaminants
- **Water Systems** – Potable Water Infrastructure, Wastewater Management

It should be noted that these community lifelines are all in place and functional as part of regular government operations in the Colusa County Planning Area as a partnership between the cities, local special districts, and Colusa County. Due to its rural nature, there is an interplay in community lifelines between all jurisdictions in the County. In fact, most of the City's community lifelines overlap the County's. It should also be noted that these lifelines collectively include many of the critical facilities and infrastructure assets inventoried for this LHMP. Due to this fact, specific information on these community lifelines in the City and how they may be affected by a hazard event or disaster are discussed in each hazard section; however, many of these sections refer back to the detailed lists that are captured in Section 4.2.1 of the Base Plan.

Natural, Historic, and Cultural Resources

Assessing the vulnerability of the City of Williams to natural hazards and disasters also involves inventorying the natural, historic, and cultural assets of the area. This step is important for the following reasons:

- Environmental and natural resources add to a community's identity and quality of life. They also help the local economy through agriculture, tourism, and recreation. They support ecosystem services, such as clean air and water.
- Conserving the environment may help people mitigate risk. It can also protect sensitive habitats, develop parks and trails, and build the economy.
- The community may decide that these types of resources warrant a greater degree of protection due to their unique and irreplaceable nature and contribution to the overall economy.
- If these resources are impacted by a disaster, knowing so ahead of time allows for more prudent care in the immediate aftermath, when the potential for additional impacts are higher.
- The rules for reconstruction, restoration, rehabilitation, and/or replacement are often different for these types of designated resources.
- Natural resources can have beneficial functions that reduce the impacts of natural hazards, such as wetlands and riparian habitat, which help absorb and attenuate floodwaters.

Natural Resources

The City of Williams contains a variety of natural resources. Natural resources are unique to each area and are difficult to replace. Should a natural disaster occur, these species, resources, and locations are at risk.

The City is built on an alluvial floodplain formed from sedimentary igneous and metamorphic rocks deposited by the Sacramento River and various channels. The soil is primarily characterized by finely textured, clay soils with slow water infiltration and transmission rates. Rice production is common in these poor drainage conditions.

The soils have been assigned to Group D hydrologic group, or high runoff potential soils, which have a high clay content, high swelling potential, soils with a permanent high water table, soils with a clay pan or clay layer at or near the surface, and shallow soils over nearly impervious material. These attributes partly explain the area's flood frequency and agricultural practices.

Williams is primarily situated in the Freshwater Creek Basin. One of its tributaries, Salt Creek, runs through the City limits and flows into the Sacramento River, which drains in a southerly direction toward the San Francisco Bay. Spring Creek merges into Salt Creek to the southwest of the City, and Freshwater Creek merges into Salt Creek further downstream to the northeast of the City.

Groundwater for Williams' residents is drawn from the Sacramento River groundwater basin. The source has been historically reliable and of generally good quality, although groundwater closer to Salt Creek is sometimes affected by drainage from saline springs in the upper part of the watershed. The water is generally very shallow within the City's sphere of influence (SOI), with depths estimated to be as shallow as five or six feet below ground surface. The actual depth to groundwater varies across the sphere and is subject to seasonal fluctuation.

According to the California Natural Diversity Database (CNDD) and California Native Plant Society (CNPS), the Williams does not have any occurrences of special-status plants (i.e. endangered, threatened, or species of special importance) within the City limits.

Wetlands and their Natural and Beneficial Functions

Wetlands are habitats in which soils are intermittently or permanently saturated or inundated. Wetland habitats vary from rivers to seasonal ponding of alkaline flats and include swamps, bogs, marshes, vernal pools, and riparian woodlands. Wetlands are considered to be waters of the United States and are subject to the jurisdiction of the U.S. Army Corps of Engineers as well as the California Department of Fish and Wildlife. Where the waters provide habitat for federally endangered species, the U.S. Fish and Wildlife Service may also have authority.

Wetlands are a valuable natural resource for communities providing beneficial impact to water quality, wildlife protection, recreation, and education, and play an important role in hazard mitigation. Wetlands provide drought relief in water-scarce areas where the relationship between water storage and streamflow regulation is vital and reduce flood peaks and slowly release floodwaters to downstream areas. When surface runoff is dampened, the erosive powers of the water are greatly diminished. Furthermore, the

reduction in the velocity of inflowing water as it passes through a wetland helps remove sediment being transported by the water.

Wetlands are often found in floodplains and depressional areas of a watershed. Many wetlands receive and store floodwaters, thus slowing and reducing downstream flow. Wetlands perform a variety of ecosystem functions including food web support, habitat for insects and other invertebrates, fish and wildlife habitat, filtering of waterborne and dry-deposited anthropogenic pollutants, carbon storage, water flow regulation (e.g., flood abatement), groundwater recharge, and other human and economic benefits.

Wetlands, and other riparian and sensitive areas, provide habitat for insects and other invertebrates that are critical food sources to a variety of wildlife species, particularly birds. There are species that depend on these areas during all parts of their lifecycle for food, overwintering, and reproductive habitat. Other species use wetlands and riparian areas for one or two specific functions or parts of the lifecycle, most commonly for food resources. In addition, these areas produce substantial plant growth that serves as a food source to herbivores (wild and domesticated) and a secondary food source to carnivores.

Wetlands slow the flow of water through the vegetation and soil, and pollutants are often held in the soil. In addition, because the water is slowed, sediments tend to fall out, thus improving water quality and reducing turbidity downstream.

These natural floodplain functions associated with the natural or relatively undisturbed floodplain that moderates flooding, such as wetland areas, are critical for maintaining water quality, recharging groundwater, reducing erosion, redistributing sand and sediment, and providing fish and wildlife habitat. Preserving and protecting these areas and associated functions are a vital component of sound floodplain management practices for the City.

Wetlands in the City are shown in Section 4.2.1 and detailed in Table B-9.

The City of Williams does not have any lakes. The U.S. National Wetlands Inventory has incorrectly identified the cooling ponds for Morning Star as lakes which they most definitely are not. Based on this data it also appears that the sewer ponds at the Williams Sewer Plant are incorrectly labeled as freshwater ponds. That water is certainly not fresh and while they are ponds, they should be included in the below inventory. The US Fish and Wildlife inventory for the City has been modified to reflect the City's clarifying input.

Table B-9 City of Williams – Wetland Types and Acreages

Wetlands Area Type	Wetlands Count	Wetlands Area (in Acres)
Freshwater Emergent Wetland	1	1
Freshwater Forested/Shrub Wetland	0	0
Freshwater Pond	7	18
Lake	1	55
Riverine	102	27
Estuarine and Marine Wetland	0	0
City of Williams Total	**111**	**101**

Source: US Fish and Wildlife

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 Williams has a stock of historically significant homes, public buildings, and landmarks. 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 4.2.1 of the Base Plan. Table B-10 shows 1 historic building in the Williams in the OHP Database.

Table B-10 City of Williams – Historic Resources

Resource Name (Plaque Number)	National Register	State Landmark	Point of Interest	Date Listed	City/ Community
Original Williams High School, Sacramento Valley Museum (P550)			X	6/6/1980	Williams

Source: California Department of Parks and Recreation Office of Historic Preservation, http://ohp.parks.ca.gov/. Retrieved March 2024.

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.

According to the 2010 General Plan, the Information center staff identified 10 listings located in and around Williams on the State Office of Historic Preservation of Properties in the Historic Data File for Colusa County. These are:

- 39 10th Street: Residence constructed in 1925*
- 460 10th Street: Residence constructed in 1925*
- 441 9th Street: Residence constructed in 1900*
- 1491 E Street: Williams High School, constructed in 1911 834 North Street: Residence constructed in 1905*
- 1201 State Route 99W: Building constructed in 1889*
- Bridge #15C000; Wilbur Springs Road, constructed in 1910
- 3375 Wilbur Springs Road, Wilbur Hot Springs Resort, constructed in 1875*
- Bridge #15-1300, State Route 20, constructed in 1930*
- State Route 20/Salt Creek Road, constructed in 1920*

The eight structures marked with an asterisk above, were all determined not eligible for the National Register of Historic Places. However, these structures were not evaluated for the California Register of Historic Places for local listing as a significant historical resource.

In addition to these, the City noted that on the east side of town lies the Sacramento Valley Museum, an old High School, gymnasium, and agricultural barn constructed in 1911. The building and grounds are now owned and maintained by the City of Williams although the museum is run by local volunteers of the Sacramento Valley Museum Organization. In the heart of downtown is the old Odd Fellows lodge that was dedicated on February 19, 1904.

The City of Williams has preserved a diverse collection of landmarks and cultural resources that attract visitors. Although the City does not have any historic landmarks registered through the State of California's Office of Historic Preservation or the National Park Service of the U.S. Department of the Interior, the architecture, amenities, and historical remnants contribute to the community's present and future identity.

Prehistoric and historic Native American habitation sites are most often found along creeks and near other water sources. However, dry camp sites used during seasonal gathering and hunting activities also can be found away from water sources. Even though no Native American archeological sites have been documented within the planning area surrounding Williams, the most likely areas of sensitivity for such sites would be the original watershed areas of Salt Creek and Old Cortina Creek.

A number of buildings and structures dating back to the founding of Williams were destroyed by fire or simply removed. Historical archeology offers a means of filling in the gaps left in written history. While future development has the potential to disturb or destroy historic archeological resources, particularly sensitive areas would include the older residential, commercial, and industrial neighborhoods in use for 50 years or longer or were in use 50 or more years ago.

Economic Assets and Community Activities of Value

Assessing the vulnerability of the City of Williams to natural hazards and disasters also involves inventorying the economic assets and community activities of value in the City.

Economic Assets

After a disaster, economic resiliency is one of the major drivers of a speedy recovery. Each community has specific economic drivers. These include:

- Primary Economic Sectors
- Major employers
- Commercial Centers

In the City of Williams, this includes the following:

- Granzella's
- Local agricultural industries
- Bar Ale

- Seminis/Bayer
- Morning Star

Community Activities of Value

Inventorying economic assets in the City of Williams and their vulnerability to natural hazards and disasters also involves inventorying activities that have value to the community. This includes activities that are important to a community, like long-standing traditions such as a festival or fair. Some areas rely on seasonal industries to sustain them throughout the year. Many of these activities also provide economic benefits to the City. A hazard event that cancels or shortens these can affect a community's livelihood and can make disaster recovery more difficult or prolonged. This includes activities such as:

- Festivals and Fairs
- Sporting Events
- Tourism

The City noted the following community activities of value:

- Pioneer Day (first Saturday in June)
- Festival of Lights (first Saturday in December)

Growth and Development Trends

As part of the planning process, the City looked at changes in growth and development, both current 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.

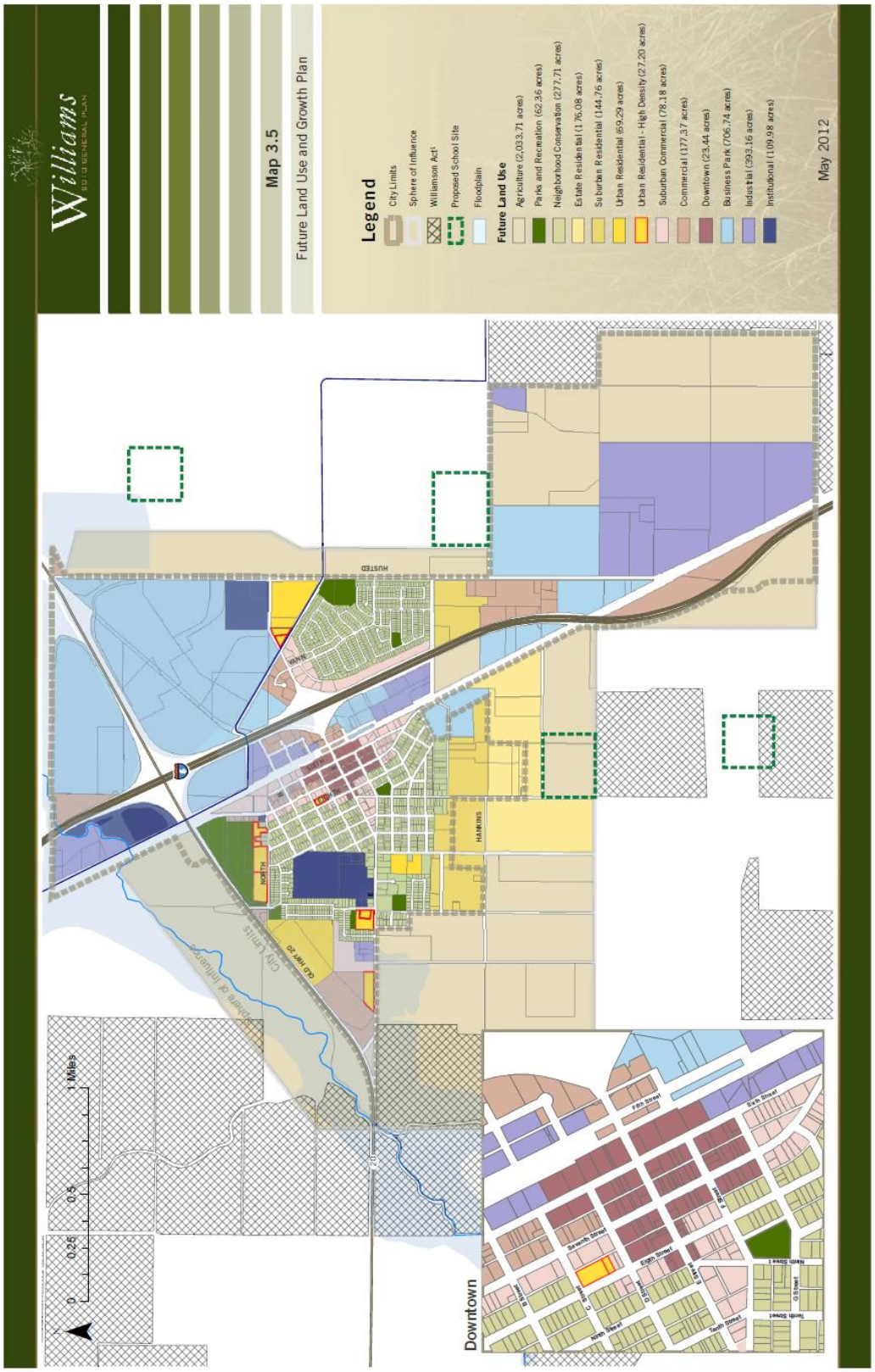
Land Use

State planning law requires that a 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)). William's land use designations are generally described below and mapped on the Land Use Diagram (Figure B-10). The City of Williams Municipal Code provides detailed land use and development standards for development.

The Municipal Code works hand in hand with the City's General Plan Land Use Element. The purpose of the Land Use Element is to provide goals, policies, actions diagrams and standards to guide future land use decisions in the City of Williams. While all elements of the General Plan have equal weight under California law, in some respects this Element is the most far-reaching. It informs all other elements of the General Plan, shaping the future transportation network and the location of future housing sites, and influencing public facility requirements and park and recreation needs. It defines the City's future open space system and responds to natural resource conservation issues and safety hazards. It establishes the basic pattern of development in the City for the next 20-25 years, including land uses and densities, and presents the policies and actions to ensure that future development will enhance the quality of life for all City of Williams residents.

Future land use for the City of Williams from the 2012 City of Williams General Plan Land Use Element is shown on Figure B-10.

Figure B-10 City of Williams – Land Use Diagram



Source: City of Williams 2012 General Plan Land Use Element

Population Trends and Projections

The City is expected to continue to increase in population. The 2020-2028 City of Williams Housing Element contained population projections for the City from 2020 to 2028. These are shown on Table B-11.

Table B-11 City of Williams – Future Population Projections

Forecast Factor	2020	2025	2045
Population	5,426	5,751	6,077

Source: 2020-2028 City of Williams Housing Element

Development since 2018 Plan

Development has occurred in the City since the last plan. Some of this has occurred in hazard prone areas. The City Building Department tracked total building permits issued since 2018 for the City. These are tracked by total development, property use type, and hazard risk area. These are shown in Table B-12 and Table B-13.

Table B-12 City of Williams – Total Development Since 2018

Property Use	2019	2020	2021	2022	2023
Residential	27	14	4	7	10
Commercial	2	1	0	1	1
Industrial					
Other					
Total	**29**	**15**	**4**	**8**	**11**

Source: City of Williams Building Department

Table B-13 City of Williams – Development in Hazard Areas since 2018

Property Use	1% Annual Chance Flood	Levee Protected Areas	Moderate or Higher Fire Hazard Severity Zones	Other
Residential	0	0	0	0
Commercial	1	0	0	0
Industrial	0	0	0	0
Other	0	0	0	0
Total	**1**	**0**	**0**	**0**

Source: City of Williams Building Department

[1]Moderate or higher wildfire risk area

One commercial property was built in the floodplain but was built to the existing floodplain ordinance standards to reduce flood risk. No development in levee protected areas or in moderate or higher wildfire risk areas occurred. If it were, it would be completed in accordance with all current and applicable development codes and standards and should be adequately protected. Thus, with the exception of more

people living in the area potentially exposed to natural hazards, this growth should not cause a significant change in vulnerability of the City to identified priority hazards.

Future Development Areas

It is important to review future development plans for the City. Future development should be sited in areas that are away from known hazard risks. If this is not possible, mitigation should be done to ensure that future development is protected against future hazards.

The City noted that in 2023 the Williams Planning Commission approved the Final Map for a 9-parcel commercial subdivision in the City's Business Park on the Northeast end of town. The location of the 9 commercial parcels is in flood zone.

GIS Analysis

The City provided 8 future development areas which were used as the basis for the inventory of future development for the City. These were mapped in GIS. Where multiple parcels are listed, the parcels are merged to form one polygon, and the hazards assigned are based on the centroid of the polygon. Figure B-11 show the locations of the future development areas in the City, while Table B-14 shows the details of the future development areas by acres and parcels.

Figure B-11 City of Williams – Future Development Areas

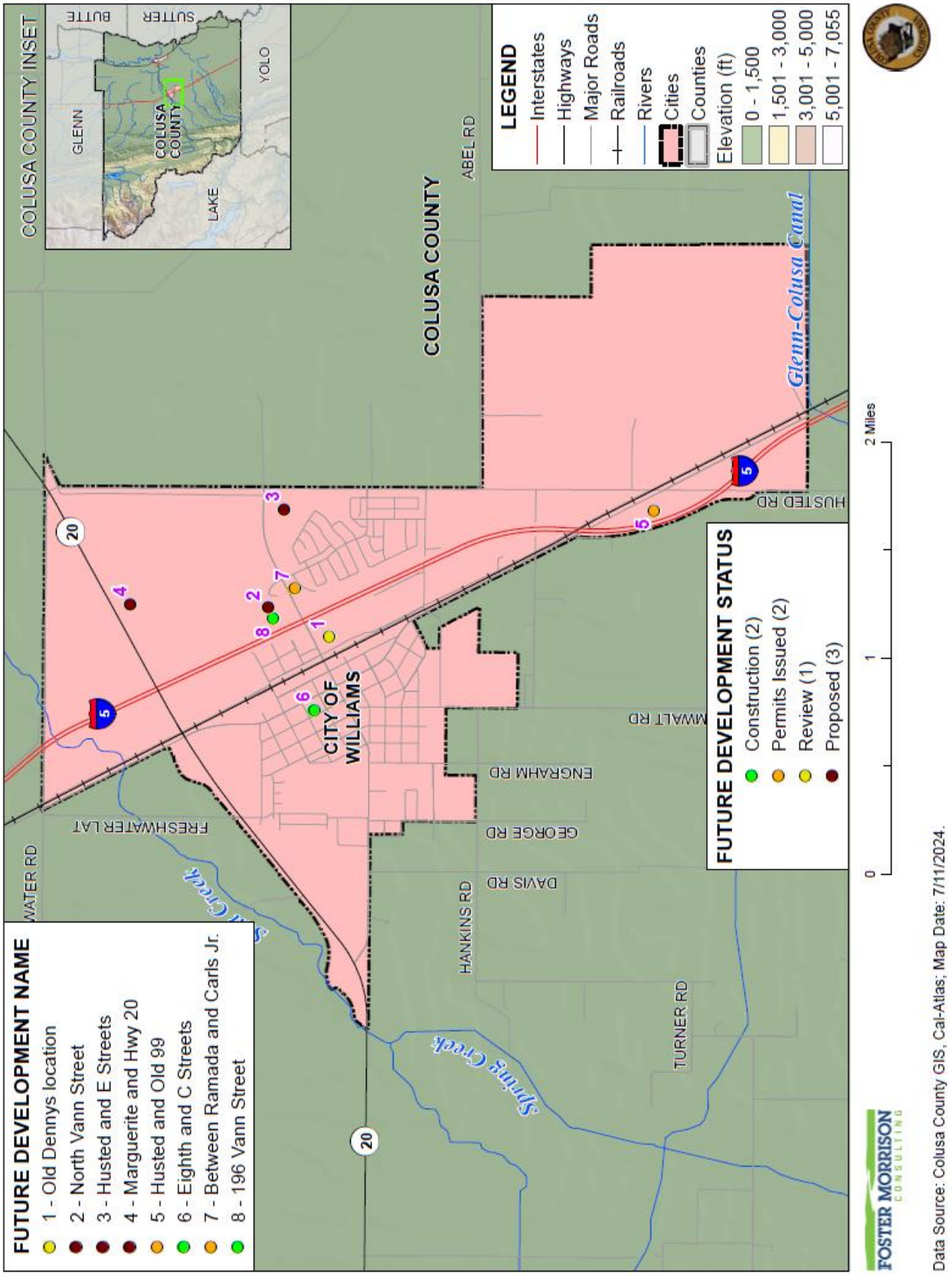


Table B-14 City of Williams – Future Development Areas by Acres, Development Type, and Units

Future Development Site Number	Future Development Name	Acres	Future Development Type	Units	Future Development Status
1	Old Dennys location	4.342	Commercial	1	Review
2	North Vann Street	14.15	Commercial	8	Proposed
3	Husted and E Streets	17.27	Single Family Homes	103	Proposed
4	Marguerite and Hwy 20	2.29	Commercial	1	Proposed
5	Husted and Old 99	9.09	Commercial	1	Permits Issued
6	Eighth and C Streets	1.08	Multi-family	31	Construction
7	Between Ramada and Carls Jr.	0.95	Commercial	1	Permits Issued
8	196 Vann Street	4.065	Commercial	1	Construction

Source: City of Williams

B.4.2. Hazard Identification

The City of Williams identified the hazards that affect the City and summarized their location, extent, likelihood of future occurrence, potential magnitude, and significance specific to the City (see Table B-15).

Table B-15 City of Williams—Hazard Identification Assessment

Hazard	Geographic Extent	Likelihood of Future Occurrences	Magnitude/ Severity	Significance	Climate Change Influence
Ag Hazards: Severe Weather/Invasive Species (Pests and Weeds)	Limited	Occasional	Limited	Low	Medium
Climate Change	Extensive	Highly Likely	Critical	Medium	–
Dam Failure	Extensive	Unlikely	Catastrophic	Low	Medium
Drought & Water shortage	Extensive	Likely	Catastrophic	Medium	High
Earthquake	Significant	Unlikely	Critical	Medium	Low
Floods: 1%/0.2% annual chance	Extensive	Occasional/ Unlikely	Catastrophic	High	Medium
Floods: Localized Stormwater	Significant	Likely	Critical	Medium	Medium
Landslide, Mudslide, and Debris Flow	Likely	Unlikely	Negligible	Low	Medium
Levee Failure	Likely	Unlikely	Negligible	Low	Medium
Severe Weather: Extreme Cold and Freeze	Extensive	Highly Likely	Critical	Low	Medium
Severe Weather: Extreme Heat	Extensive	Highly Likely	Critical	Low	High
Severe Weather: Heavy Rain and Storms (Wind, Hail, Lightning)	Extensive	Highly Likely	Critical	Medium	Medium
Severe Weather: High Winds and Tornados	Extensive	Highly Likely	Critical	Low	Low
Stream Bank Erosion	Extensive	Highly Likely	Catastrophic	High	Medium
Subsidence	Significant	Occasional	Critical	Low	Low
Wildfire	Significant	Occasional	Limited	Low	Medium

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.4.3. Hazard Profiles and Vulnerability to Specific Hazards

This section includes the hazard profiles and vulnerability assessment for hazards ranked of medium or high significance specific to the City of Williams (as identified in the Significance column of Table B-15) and also includes a hazard profile and vulnerability assessment to the four primary hazards to the State of California: dam failure, earthquake, flood, and wildfire, regardless of the significance ranking by the City. Chapter 4 of the Base Plan provides more detailed information about these hazards and their impacts on the Colusa County Planning Area. Methodologies for evaluating vulnerabilities and calculating loss estimates are the same as those described in Section 4.2 of the Base Plan.

Hazard Profiles and Vulnerability Assessment

Each hazard is profiled in the following format:

- **Hazard Profile** – A hazard profile is included for each hazard. This includes information on:
  - ✓ **Hazard Overview** - A general discussion of the hazard and related issues is detailed here.
  - ✓ **Location** and **Extent** - Location is the geographic area within the City that is affected by the hazard. Extent is the expected range of intensity for each hazard. These are discussed in specific detail for mapped hazards, and in more general detail for those hazards that do not have discrete mapped hazard areas.
  - ✓ **Past Occurrences** - Past occurrences are discussed for each hazard. A discussion of disaster declarations is included in each hazard section. NCDC events are also discussed. Other past occurrences data specific to the City follow the disaster declarations for each hazard.
  - ✓ **Climate Change**—This section contains the effects of climate change (as applicable). The possible influence of climate change on the hazard is discussed.

After the hazard profile, a vulnerability assessment is presented. As part of the vulnerability assessment, an estimate of the vulnerability of the City to each identified hazard, in addition to the estimate of risk 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.

After this classification, a general discussion of hazard vulnerabilities occurs. This is done in the following format:

- **Local Concerns** – This includes City provided information on how the City is uniquely affected by or vulnerable to each hazard.
- **Assets at Risk** – A discussion of the assets at risk follows, presented in the same format as in Section B.4.1 above. This includes sections on: People and Populations; Structures; Critical Facilities and Infrastructure, Community Lifelines; Natural, Historic, and Cultural Resources; and Economic Assets and Community Activities of Value. These are discussed in specific terms for mapped hazards, and in more general terms for those hazards that are unmapped.
- **Impacts** – A discussion on hazard impacts follows. Impacts describe how each hazard can affect the City and its assets. The type and severity of impacts reflect both the potential magnitude of the hazard and the vulnerability of the asset. Impacts are also affected by the community's ability to mitigate, prepare for, respond to, and recover from an event.
- **Future Conditions/Development** – A discussion of how future development will be affected by the hazard is also included. This is addressed specifically for mapped hazards, and in more general terms for those hazards that are unmapped.

Power Interruption/Power Failure: A Common Vulnerability of all Hazards

An impact of almost all hazards evaluated as part of this LHMP Update 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 U.S. 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 of the Base Plan.

Public Safety Power Shutoff (PSPS)

A new intentional disruption type of power shortage/failure event has been recently occurring 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 (fire) weather. To help protect customers and communities during extreme fire weather events, electric power may be shut off for public safety in an effort to prevent wildfire. This is called a PSPS. More information on PSPS criteria can be found in Section 4.3 of the Base Plan.

In addition to PSPSs, to help prevent wildfires, electric utilities have begun to evolve safety efforts. This includes installing safety settings on powerlines in and around high fire-risk areas. These are known as Enhanced Powerline Safety Settings (EPSS), and they help prevent falling tree branches, animals and other hazards from starting a wildfire. By stopping ignitions, it helps prevent wildfires from starting and spreading. According to PG&E, if ignitions occur, the size of fires are much smaller due to EPSS. In 2022,

there was a 99% decrease in acres impacted by ignitions (as measured by fire size from electric distribution equipment (compared to the 2018-2020 average). This decrease occurred despite dry conditions.

Local Concerns

The City noted that power in Williams will flicker or go out for short periods of time during high wind or high heat situations, in accordance with PSPS events. There have been three events in 2023 and three events in 2024 that have been of note for the City. Dates for these events are listed below:

- 1-15-2023
- 4-11-2023
- 10-28-2023
- 4-9-2024
- 5-16-2024
- 6-9-2024
- 7-15-2024

On June 15th, 2024, power went out on the West side of town during a City Council meeting. While City Staff were able to rely on a generator, the City expressed concerns that not all residents have that resource. Along with this, a high wind event in 2022 caused balloons to be caught in the power lines. This disrupted power to a section of town for hours.

Climate Change

Likelihood of Future Occurrence–Likely
Vulnerability–Medium

Hazard Profile

Climate change adaptation is a key priority of the State of California. The 2023 State of California Multi-Hazard Mitigation Plan noted that climate change is already affecting California. Sea levels have risen by as much as seven inches along the California coast over the last century, increasing erosion and pressure on the State's infrastructure, water supplies, and natural resources. The State has also seen increased average temperatures, more extreme hot days, fewer cold nights, a lengthening of the growing season, shifts in the water cycle with less winter precipitation falling as snow, and earlier runoff of both snowmelt and rainwater in the year. In addition to changes in average temperatures, sea level, and precipitation patterns, the intensity of extreme weather events is also changing.

California's Adaptation Planning Guide: Understanding Regional Characteristics (from 2017) has divided California into 11 different regions based on political boundaries, projected climate impacts, existing environmental setting, socioeconomic factors and regional designations. The City of Williams falls in the North Central Valley Region. A map and climate projections for this region are shown in Section 4.3.7 of the Base Plan and include an increase in temperatures, moderate changes in rainfall, and increased risk to wildfire.

Location and Extent

Climate change is a global phenomenon. It is expected to affect the whole of the City of Williams, the Colusa County Planning Area, surrounding counties, and State of California. There is no scale to measure the extent of climate change. Climate change exacerbates other hazards, such as drought, extreme heat, flooding, wildfire, and others. The speed of onset of climate change is very slow. The duration of climate change is not yet known but is feared to be tens to hundreds of years.

Past Occurrences

Disaster Declaration History

Climate change has never been directly linked to any declared disasters.

NCDC Events

NCDC does not track climate change events.

City of Williams Events

The City noted that drought and water shortage lower the groundwater tables. The decrease in available water causes impacts to the wastewater treatment plant as the ponds are a source of water for wildlife and insects, impacting the City's ability to treat wastewater. The City expressed concern about this water source as midge flies brought larva to wastewater basins. This upset the microbes and raised levels out of compliance, which significantly raised costs to treat the wastewater.

Vulnerability to Climate Change

The whole of the City is at some measure of vulnerability to climate change. The City Planning Team has concerns that the vulnerability of the City to climate change will continue to increase in the future. An assessment of a community's vulnerability to climate change begins with an understanding of local exposure to climate change. This is included in the Local Concerns section below followed by a discussion of the City's Assets at Risk, and Impacts to this hazard.

Local Concerns

The City has specific concerns and unique vulnerabilities regarding this hazard. These concerns form a portion of the basis for the mitigation strategy and mitigation actions that seek to reduce vulnerabilities to this hazard.

The City Planning Team noted that storms tend to have grown in intensity. The City is getting larger quantities of water in shorter periods of time and the City watershed flows are strained by the inability of the natural drainage system's ability to accept them.

Assets at Risk

Assets at risk from climate change include people and populations; structures; critical facilities and infrastructure; community lifelines; natural, historic, and cultural resources; economic assets; and community activities of value. These are discussed in the following sections.

People and Populations

Climate change affects people and populations within a community, especially those climate change issues related to increases in temperature over time. While all populations can be affected by temperature extremes, populations particularly vulnerable include the very old and very young, medically fragile people, people without means of shelter (and air conditioning or heat) or transportation, people who are socially isolated and other socially vulnerable or underserved populations (as shown in the Special Populations discussion in Section B.4.1). Acclimatization to extreme temperatures and other weather extremes may help reduce impacts from these extreme events, such as from heat waves, in the healthy general population but may not be sufficient to protect those with underlying medical conditions.

Structures

Climate change, on its own, does not generally impact structures. However, structures in areas of increased wildfire or flood areas exacerbated by the effects of climate change would be at increased risk, as described throughout this LHMP. More information on how structures may be affected by climate change can be found in Section 4.3.7 of the Base Plan.

Critical Facilities and Infrastructure

As with structures, critical facilities and infrastructure in areas of increased wildfire or flood areas due to the effects of climate change would be at increased risk. Climate change is expected to increase the vulnerability of critical facilities and infrastructure to many natural hazards.

Community Lifelines

Due to the slow onset of climate change, community lifelines in the City are expected to adapt over time to new climate normal. It is thought that community lifelines in the City would not be overwhelmed by climate change.

Natural, Historic, and Cultural Resources

The rivers, streams, agricultural areas, and open space areas of the City support rich biodiversity, including many special-status species and habitat areas. These are all at risk from the effects of climate change. In addition, if heat contributes to changes in wildfire patterns, all areas (on land) of the City are at increased risk from fire – including areas of natural, historic, and cultural resources. Furthermore, as climate change exacerbates the drought hazard, areas of wetlands in the City may be reduced or dry up temporarily, which could damage habitat areas for waterfowl and other species that depend on these areas.

Economic Assets and Community Activities of Value

All economic assets and community activities of value in the City are at some measure of risk to hazards exacerbated by climate change. Should storms or other climate-related hazard events occur, certain economic assets and activities could be adversely affected as described throughout this risk assessment.

Drought caused by climate change reduces the water resources available to the area, especially for farmers. In years with limited water, moratoriums are put on field watering essentially ending rice farming, a staple for the City and its residents.

Impacts from Climate Change

The California APG: Understanding Regional Characteristics identified the following impacts specific to the North Central Valley region in which the City of Williams is part of:

- Increased temperatures
- Reduced precipitation
- Public health – heat and air pollution
- Reduced agricultural productivity (e.g., wine grapes)
- Reduced tourism

In addition to these sources, the 2023 State of California Hazard Mitigation Plan noted that according to California's Fourth Climate Change Assessment, the state will experience the following climate impacts:

- Annual average daily high temperatures are expected to rise by 2.7° F by 2040, 5.8°F by 2070, and 8.8°F by 2100 compared to observed and modeled historical conditions. These changes are statewide averages.
- Heat waves are projected to become longer, more intense, and more frequent.
- Warming temperatures are expected to increase soil moisture loss and lead to drier conditions. Summer dryness may become prolonged, with soil drying beginning earlier in the spring and lasting longer into the fall and winter.
- Droughts are likely to become more frequent and persistent through 2100.
- The strength of the most intense precipitation and storm events affecting California is expected to increase.
- Snowpack levels are projected to decline significantly by 2100 due to reduced snowfall and faster snowmelt.
- Marine layer clouds are projected to decrease.
- Extreme wildfires (i.e., fires larger than 24,710 acres) would occur 50 percent more frequently. The maximum area burned statewide may increase 178 percent by the end of the century.

Impacts to identified assets at risk to this hazard and the overall vulnerability of the County may be affected in the future by climate change (which was discussed in the Likelihood of Future Occurrence discussion above), changes in population patterns (migration, density, or the makeup of socially vulnerable populations), and changes in land use and development. Changes in population patterns and land use, and the extent to which they affect this hazard, are discussed in the Future Conditions/Future Development discussion below.

Future Conditions/Future Development

Future development considerations need to be made, as having more or less people in a community affects the overall hazard vulnerability that can impact the City. Ensuring that regulatory requirements, such as building codes, are followed along with considering different demographic groups with intersecting identities that reside within the City can help to make a more resilient community. This resiliency will be achieved through connection with the community as well as through the mitigation actions presented in this document.

Climate change can influence development in the City of Williams over time. The City could see population fluctuations as a result of climate impacts relative to those experienced in other regions, and these fluctuations are expected to affect the City. While there are currently no formal studies of specific migration patterns expected to impact the City, climate-induced migration was recognized within the UNFCCC Conference of Parties Paris Agreement of 2022. Climate Change issues affecting future development in the City will likely include:

- **Climate change will stress water resources**. Water is an issue in every region, but the nature of the potential impacts varies. Drought, related to reduced precipitation, increased evaporation, and increased water loss from plants, is an important issue in many U.S. regions, especially in the West. Floods, water quality problems, and impacts on aquatic ecosystems and species are likely to be amplified by climate change. The ability to secure and provide water for new development requires on-going monitoring and assurances. It is recommended that the ability to provide a reliable water supply from the appropriate water purveyor continue to be in the conditions for project approval, and such assurances shall be verified and in place prior to issuing building permits.
- **Similarly, protecting and enhancing water supply will also need to be addressed**. California's Sustainable Groundwater Management Act (SGMA) will contribute to addressing groundwater and aquifer recharge needs. Good groundwater management by the City and the surrounding County will provide a buffer against drought and climate change and contribute to reliable water supplies regardless of weather patterns. California depends on groundwater for a major portion of its annual water supply, and sustainable groundwater management is essential to a reliable and resilient water system. Protection of critical recharge areas should be addressed across the City. Further, these plans should include provisions that guide development or curtail development in areas that would harm or compromise recharge areas.
- **Climate change will affect land uses and planning**. Climate change coupled with shifting demographics and market conditions, could impact both the location of desired developments and the nature of development. The value of open space, urban greening, green infrastructure, tree canopy expansion and pressure to preserve it will likely increase, due in part to its restorative, recreational, environmental, and habitat, and physical and mental health benefits but also for its ability to sequester carbon and cool the surrounding environment.

Drought & Water Shortage

Likelihood of Future Occurrence–Likely
Vulnerability–Medium

Hazard Profile

Drought and water shortage are complex issues involving many factors—it occurs when a normal amount of precipitation and snow is not available to satisfy an area's usual water-consuming activities. Drought is often defined regionally based on its effects. Drought is different than many of the other natural hazards in that it is not a distinct event and usually has a slow onset. Drought can severely impact a region both physically and economically. Drought affects different sectors in different ways and with varying intensities. Adequate water supply is the most significant issue and is critical for agriculture, manufacturing, tourism, recreation, and commercial and domestic use. Drought has also affected tree mortality in the area in the past. As the population in the area continues to grow, so will the demand for water.

Location and Extent

Drought and water shortage are regional phenomenon. The whole of the City and County is at risk. The US Drought Monitor categorizes drought conditions with the following scale:

- None
- D0 – Abnormally dry
- D1 – Moderate Drought
- D2 – Severe Drought
- D3 – Extreme drought
- D4 – Exceptional drought

Drought has a slow speed of onset and a variable duration. Drought can last for a short period of time (which does not usually affect water shortages) or for longer periods (which may challenge water supplies). Should a drought last for a long period of time, water shortage becomes a larger issue. Current drought conditions in the City are shown in Section 4.3.9 of the Base Plan.

Past Occurrences

Disaster Declaration History

There have been one federal and three state disaster declarations from drought. This can be seen in Table B-16.

Table B-16 Colusa County – State and Federal Drought Disaster Declarations 1950-2024

Disaster Type	Federal Declarations		State Declarations	
	Count	Years	Count	Years
Drought	1	1977	3	1976, 2014, 2021

Source: Cal OES, FEMA

NCDC Events

There have been 58 NCDC drought events in Colusa County. These most likely had some impact on the City.

City of Williams Events

In the most recent cycle of drought the water at Well # 8 dropped significantly and could do so again in another major drought and water shortage year.

The City also noted that during the recent drought, midge flies brought larva to the City's wastewater basins which upset the microbes and raised levels out of compliance which raised costs to treat the wastewater significantly.

Climate Change and Drought and Water Shortage

Climate scientists studying California find that drought conditions are likely to become more frequent and persistent over the 21st century due to climate change. The experiences of California during recent years underscore the need to examine more closely the state's water storage, distribution, management, conservation, and use policies. The 2021 CAS stresses the need for public policy development addressing long term climate change impacts on water supplies. The CAS notes that climate change is likely to significantly diminish California's future water supply, stating that: California must change its water management and uses because climate change will likely create greater competition for limited water supplies needed by the environment, agriculture, and cities.

A 2018 report from the Public Policy Institute of California noted that thousands of Californians – mostly in rural, small, disadvantaged communities – already face acute water scarcity, contaminated groundwater, or complete water loss. Climate change would make these effects worse.

Cal Adapt scenarios for modeled future drought scenarios were shown in Section 4.3.9 of the Base Plan and generally show drought conditions worsening over time.

It is likely that climate change will increase the chance of future occurrence as well as future impacts associated with drought and water shortage. More information on future impacts to the City can be found in the Future Conditions/Future Development section of the Vulnerability Assessment below.

Vulnerability to Drought and Water Shortage

Based on historical information, the occurrence of drought and water shortage in California, including the City, is cyclical, driven by weather patterns. Drought has occurred in the past and will occur in the future. Periods of actual drought with adverse impacts can vary in duration, and the period between droughts can be extended. Although an area may be under an extended dry period, determining when it becomes a drought is based on impacts to individual water users. The vulnerability of the City of Williams to drought may vary and include reduction in water supply, turf losses, impacts to natural resources, and an increase in dry fuels and tree dieback.

Tree Mortality and Drought

One of the specific impacts of drought in the City of Williams and the Colusa County Planning Area is the increased risk to trees from beetle kill and other insects, pathogens and parasites, and other tree mortality and die back issues. Drought weakens trees and makes them more susceptible to insect infestation and

other pathogens. Insects, such as bark beetles and others, frequently attack trees weakened by drought, disease, injuries, or other factors that may stress the tree. These insects and other pathogens can contribute to the decline and eventual death of trees throughout the City. The tree mortality and dieback problems are a high priority because of the issue of hazardous trees and an increased wildfire hazard. In addition to an increase in wildfire fuels, hazardous trees can fall onto structures causing damage and a result in a reduction on the tree canopy within the City that provides relief during extreme heat days.

The whole of the City is at some measure of vulnerability to drought and water shortage. An assessment of a community's vulnerability to drought and water shortage begins with an understanding of local exposure to drought. This is included in the Local Concerns section below followed by a discussion of the City's Assets at Risk to this hazard.

Local Concerns

The City has specific concerns and unique vulnerabilities regarding this hazard. These concerns form a portion of the basis for the mitigation strategy and mitigation actions that seek to reduce vulnerabilities to this hazard.

Drought and water shortage is a regional phenomenon, which affects the entirety of the City. The main water well for the City of Williams is Well # 8 and is located in the center of town. With the lowering of groundwater levels in Well #8 as evidenced during the most recent drought the City's water supply is at risk. The City noted that lowering groundwater tables present an ongoing concern. Impacts to the City's wastewater treatment plant are also a concern during periods of drought (as ponds seem to be a source of water for wildlife and insects) which impact the City's ability to treat wastewater.

The City received complaints in 2019, 2021, and 2022 due to falling limbs of City trees causing residential damage. These complaints occurred during strong wind events; however, the damage may have never occurred if the trees were not already weakened from the exacerbating effects of drought and water shortage.

Assets at Risk

Assets at risk from drought and water shortage include people and populations; structures; critical facilities and infrastructure; community lifelines; natural, historic, and cultural resources; economic assets; and community activities of value. These are discussed in the following sections.

People and Populations

The people and populations of the City are not directly affected by drought; although, their turfed areas, trees, and other water dependent resources can all be affected. In extreme drought conditions, however, residents and other populations within the City may be vulnerability to drought and water shortage issues. Water quality can be impacted causing health problems, especially to vulnerable populations. Drought and water shortage can lead to an increase in wildfires threatening City residents. Water shortages can have an effect on all of the population in the City, but often have a greater effect on the unhoused and other vulnerable populations that may be unable to access clean drinking water during shortages. During periods

of drought as the costs of water usage may increase, especially during mandated conservation times, those who are economically disadvantaged may be unable to afford the increased costs of potable water.

Structures

Structures have a limited vulnerability to drought and water shortage. It is the secondary hazard of drought (wildfire) which causes risks to structures. Drought can also stress trees, causing die off. These trees may fall on structures adjacent to them.

Critical Facilities and Infrastructure

Most critical facilities and infrastructure have a limited vulnerability to drought and water shortage. Should drought conditions be severe enough to cause water shortage reliability issues, some facilities and infrastructure may be affected. Water and wastewater systems may be impacted during times of reduced water supply and need to employ contingencies to remain functional and fully operational. Other water dependent systems may also be adversely affected. Further, the secondary hazard of drought (increased potential for spread of urban fires and wildfire) can pose a significant risk to critical facilities and infrastructure. Drought can also stress trees, causing die off. These trees may fall on critical infrastructure adjacent to them and impact power lines and other utilities.

Community Lifelines

While limited, community lifelines can have a vulnerability to drought and water shortage (like the wastewater treatment plant discussed above). Many of the City's community lifelines are the same as or similar to Colusa County's. Drought will most likely not overwhelm these community lifelines. This was discussed in greater detail in Section 4.3.9 of the Base Plan.

Natural, Historic, and Cultural Resources

Drought and water shortage can have a significant impact on natural resources. Water levels in reservoirs and lakes may be reduced and a loss of wetlands and coastal marsh areas may occur. Severe drought conditions can contribute to an increase in erosion of soils and lead to poor soil quality. Further, all of the trees in the City are at risk to drought impacts and a reduction in water supply. These trees provide a wealth of social and environmental benefits to City residents and visitors, from shade and beauty to air quality, carbon reduction and stormwater management. Drought can devastate crops and dry out pastures, dry out forests and critical habitat areas, and reduce food and water available for wildlife and livestock. Additionally, drought conditions can also cause soil to compact and not absorb water well, potentially making an area more susceptible to flooding. It is unlikely that drought and water shortage would have a significant impact on historic and cultural resources in the City.

Economic Assets and Community Activities of Value

Economic assets and community activities in the City of Williams generally have a limited vulnerability to drought and water shortage. The overall economic assets and community activities of value for the City were discussed in Section B.4.1. Drought affects rural small business owners such as farmers and agricultural contractors who rely on water for their crops. Given that agriculture is very important in the

County, this could have economic impacts in the City. Water supply issues can also affect businesses such as cafes and restaurants in more developed areas. Drought impacts to the agricultural industry can affect the supply chain and increase the cost of food and water, and adversely impact businesses tied to these industries. Reduction in or interruption of the water supply could also lead to lower productivity or closure of manufacturing facilities. Other economic sectors with a heavy reliance on water may also be affected. Depending upon how severe the conditions get and how long they last, drought and water shortage can restrict recreational and community activities, all of which can stress businesses and local economies over time.

Impacts from Drought and Water Shortage

The vulnerability of the City to drought is City-wide, but impacts may vary and include reduction in water supply and an increase in dry fuels. The potential for a reduction in water supply during drought conditions generally leads to both mandated and voluntary conservations measures during extended droughts. During these times, the costs of water can also increase. Also of concern, the increased dry fuels and fuel loads associated with drought conditions can result in an increased fire danger. In areas of extremely dry fuels, the intensity and speed of fires can be significant. Water supply and flows for fire suppression can also be an issue during extended droughts. Drought can also lead to turf losses and cause tree die off within the City.

Other qualitative impacts associated with drought in the City are those related to water intensive activities such as municipal usage, commerce, tourism, and recreation use. With more precipitation likely falling as rain instead of snow in the Sierra's, and warmer temperatures causing decreased snowfall to melt faster and earlier, water supply is likely to become more unreliable. In addition, drought and water shortage is predicted to become more common. This means less water available for use over the long run, and additional challenges for water supply reliability, especially during periods of extended drought.

Impacts to identified assets at risk to this hazard and the overall vulnerability of the City may be affected in the future by climate change (which was discussed in the Likelihood of Future Occurrence discussion above), changes in population patterns (migration, density, or the makeup of socially vulnerable populations), and changes in land use and development. Changes in population patterns and land use, and the extent to which they affect this hazard, are discussed in the Future Conditions/Future Development discussion below.

Future Conditions/Future Development

Future conditions may be affected by climate change, changes in population patterns (migration, density, or the makeup of socially vulnerable populations), and changes in land use and development. Findings on this for the City of Williams include the following:

- Climate change is likely to exacerbate future drought conditions and associated impacts and vulnerability of the City to drought and water shortage.
- Future population growth should be considered as having more or less people in a community affects the overall hazard vulnerability to the City. Population growth in the City has recently slowed. According to the HMPC, the City and Colusa County has access to large quantities of water through its groundwater as well as surface water. However, any future population growth in the City will add

additional pressure to water companies during periods of drought and water shortage. Water companies will need to continue to plan for and add infrastructure capacity for population growth. As the population grows, the nature and makeup of populations will shift and change along with it. Vulnerable and underserved populations, such as those with low incomes and the unhoused that might not always have access to clean water, will need to be considered as future development continues, since they may experience a disproportionate impact from drought and water shortage. Potential population growth will be a challenge not only with regard to the City's water access for agricultural production, but state- and nation-wide with regard to food production. Should the City see a growth in population, it will increase the vulnerability and impacts to the County from this hazard.

- Land use planning should be proactive to address future hazard conditions. As the City continues to grow, more cropland may be taken out of production to provide housing to accommodate for population growth. If agricultural lands are reduced, it seems likely that there would be less of a competing demand for water. However, more development will require an increase in water supply and associated infrastructure. Changes in land use and development may or may not increase the impacts and associated vulnerabilities of the City to this hazard.

As the community continues to grow, additional water storage and delivery infrastructure will be needed. This may include an additional ground storage tank, booster pumps, and other infrastructure. The City is working towards increasing efforts to reduce the demand for water, and to move toward more sustainable water use. The City continues to make efforts to be proactive on future drought and water supply issues.

Earthquake

Likelihood of Future Occurrence–Unlikely
Vulnerability–Extremely High

Hazard Profile

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 City of Williams, Colusa County, and surrounding areas have some level of risk from seismic and geologic hazards. Faults in and around the City were shown in Section 4.3.10 of the Base Plan. These include the Great Valley Fault, an inferred fault located within Colusa County, and the Sutter Buttes Fault and other faults located

in nearby Sutter and Lake counties. A significant seismic event on any of these major faults could cause serious damage in Williams.

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 4.3.10 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 earthquakes may occur, so both magnitude and intensity of earthquakes are expected to remain low to moderate. Seismic shaking maps for the area in Section 4.3.10 of the Base Plan show Colusa County and the City fall within a low to moderate shake risk.

Past Occurrences

Disaster Declaration History

The City noted that there has been no state or federal disaster declarations from earthquake.

NCDC Events

The NCDC does not track earthquake events.

City of Williams Events

The City noted that no damage from past earthquakes occurring in or near the Colusa County Planning Area could be recalled.

Climate Change and Earthquake

Climate change is unlikely to increase earthquake frequency or strength. More information on future impacts to the City can be found in the Future Conditions/Future Development section of the Vulnerability Assessment below.

Vulnerability to Earthquake

The combination of plate tectonics and associated California coastal mountain range building geology generates earthquakes as a result of the periodic release of tectonic stresses. Earthquake vulnerability is primarily based on population and the built environment. Urban areas in high seismic hazard zones are the most vulnerable, while uninhabited and more rural areas are less vulnerable. The primary impacts of concern are life safety and property damage. Although several faults are located in and near the Colusa County Planning Area, seismic hazard mapping indicates that the City of Williams has low to moderate seismic hazard potential. However, there is the potential for the City of Williams and Planning Area to be subject to some level of moderate or higher seismic shaking in future events. Some degree of structural

damage due to stronger seismic shaking could be expected in earthquakes occurring with an epicenter near the City.

The whole of the City is at some measure of vulnerability to earthquake. An assessment of a community's vulnerability to earthquakes begins with an understanding of local exposure to earthquakes. This is included in the Local Concerns section below. After that section, assets at risk are discussed.

Local Concerns

The City has specific concerns and unique vulnerabilities regarding this hazard. These concerns form a portion of the basis for the mitigation strategy and mitigation actions that seek to reduce vulnerabilities to this hazard.

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 Williams is within Zone 3.

The City Planning Team noted that in the heart of downtown is the old Odd Fellows Lodge; dedicated on February 19, 1904. This building is still standing albeit in an unimproved state. Without proper structural improvements, an earthquake of high magnitude nearby could conceivably cause irreparable damage to this and other vulnerable structures.

Assets at Risk

Many assets in the City are at risk to ground shaking. Assets at risk from earthquake include people and populations; structures; critical facilities and infrastructure; community lifelines; natural, historic, and cultural resources; economic assets; and community activities of value. These are discussed in the following sections.

People and Populations

All people and populations are at risk from earthquake shaking and surface fault. Those at heightened risk include:

- The unsheltered
- Infants and children under age five and their caregivers
- Elderly (65 and older)
- Individuals with disabilities
- Individuals dependent on medical equipment
- Individuals with impaired mobility

The greatest risk to people and populations from earthquake is death and injury. More information on people and populations at risk to earthquake shaking events can be seen in the Hazus scenarios developed for this LHMP and described below specific to the City of Williams. More information on the Hazus

scenarios and how the Colusa County Planning Area is affected is included in Section 4.3.10 of the Base Plan.

Structures

All structures in the City are vulnerable to earthquakes, depending on the severity and location of the event. Unreinforced masonry (URM) and other types of older buildings are at a much greater risk to earthquakes. Fault ruptures itself contributes very little to damage unless the structure or system element crosses the active fault. 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, even from very moderate events, tend to be more damaging to some buildings, especially those constructed of unreinforced masonry, as was seen in the Oroville, Coalinga, Santa Cruz, and Paso Robles earthquakes. There are less than 5 URM buildings withing the City of Williams and those are privately owned.

Critical Facilities and Infrastructure

Earthquake and its related hazards are a concern to the City. Earthquakes can damage critical facilities and infrastructure that provide vital services to the City. The critical facilities at risk to earthquake are presented in the Hazus analysis in Section 4.3.10 of the Base Plan.

Community Lifelines

All community lifelines in the City are vulnerable to earthquakes, depending on the severity and location of the shake. A major earthquake event could cause these lifelines to be overwhelmed. Some of these would be able to be restored to service quickly, while others would take more time having a prolonged impact on the people and structures within the City of Williams. More information on lifelines at risk can be seen in the Hazus scenarios in Section 4.3.10 of the Base Plan.

Natural, Historic, and Cultural Resources

The 2023 State Hazard Mitigation Plan noted that environmental problems from earthquakes can be numerous. It is possible for earthquakes to reroute streams, which can change the water quality, possibly damaging habitat and feeding areas. Streams fed by groundwater and/or springs may dry up because of changes in underlying geology. Another threat to the environment from earthquakes is the potential release of hazardous materials. Historical and cultural resources are at risk, often due to their age and construction types. The Hazus scenarios in Section 4.3.10 of the Base Plan and included below are relatively silent on the vulnerability to natural, historic, and cultural resources, but impacts to these resources could be long lasting.

Economic Assets and Community Activities of Value

All economic assets in the City are vulnerable to earthquakes, depending on the severity and location of the shake and associated cascading hazards and impacts. The overall economic assets and community activities of value for the City were discussed in Section B.4.1. Should an earthquake occur causing significant damages, the local economy can be affected for an extended period until recovery occurs and businesses

and other economic drivers are operational. More information on economic assets at risk can be seen in the Hazus scenarios in Section 4.3.10 of the Base Plan. All community activities of value would be affected by an earthquake if they were underway during an earthquake event and may be postponed or cancelled until the City has sufficiently recovered.

Impacts from Earthquake

Earthquakes can strike without warning and cause dramatic changes to the landscape of an area that can have devastating impacts on the built environment. The greatest impact is to life safety of City of Williams residents and visitors. Other impacts to the City would include damages to infrastructure such as roads, bridges, and dams; damages and loss of services to utilities and critical infrastructure, including those related to gas, power, water, wastewater and communication systems; damages to structures and other development; and possible loss of life and injuries.

Impacts that are not quantified, but can be anticipated in large future events, include:

- Injury and loss of life;
- Commercial and residential structural and property damage;
- Disruption of and damage to public infrastructure, utilities, and services;
- Damage to roads/bridges resulting in loss of mobility;
- Significant economic impact (jobs, sales, tax revenue) to the community; and
- Negative impact on commercial and residential property values

Impacts to identified assets at risk to this hazard and the overall vulnerability of the City may be affected in the future by climate change (which was discussed in the Likelihood of Future Occurrence discussion above), changes in population patterns (migration, density, or the makeup of socially vulnerable populations), and changes in land use and development. Changes in population patterns and land use, and the extent to which they affect this hazard, are discussed in the Future Conditions/Future Development discussion below.

Future Conditions/Future Development

Future conditions may be affected by climate change, changes in population patterns (migration, density, or the makeup of socially vulnerable populations), and changes in land use and development. Findings on this for the City of Williams include the following:

- Climate change is likely to have no effect on future earthquake conditions and associated impacts and vulnerability of the City.
- Population growth in the City of Williams has recently slowed. Any additional growth in the City would place additional populations at risk to earthquake. Additional population growth would likely bring continued diversity to the City. Vulnerable population groups could face disproportionate effects from an earthquake and should be planned for. Changes in population and population patterns may or may not increase the impacts and vulnerability of the City to this hazard depending on the location and nature of growth and continued planning for future hazard conditions.
- Land use planning should be proactive to address future hazard conditions. However, City building codes are in effect to reduce structure damage, including damage to critical facilities and infrastructure,

and should be updated as necessary to continue to address future earthquake conditions. Depending on the location of new development and adherence to protective building codes, changes in land use and development may or may not increase the impacts and associated vulnerabilities of the City to this hazard.

Although new growth and development corridors would fall in the area affected by earthquake, given the limited chance of major earthquake and the building codes in effect, development in areas prone to earthquakes will continue to occur. Those with AFN, the unhoused, the elderly, and the very young may experience disproportionate impacts if an earthquake were to occur. However, 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 (1%)/Unlikely (0.2%)
Vulnerability–High

Hazard Profile

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 City and may have caused damage in the past. Flooding can be a significant problem in the City. Historically, the City has been at risk to flooding primarily during the winter and spring months when river systems in the City 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 including the numerous levee systems located throughout the Colusa County Planning Area. 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.

Location and Extent

The City of Williams has areas located in the 1% and 0.2% annual chance flood zones. This is seen in Figure B-12. As shown, these areas fall on the northern side of the City.

Figure B-12 City of Williams – FEMA DFIRM Flood Zones

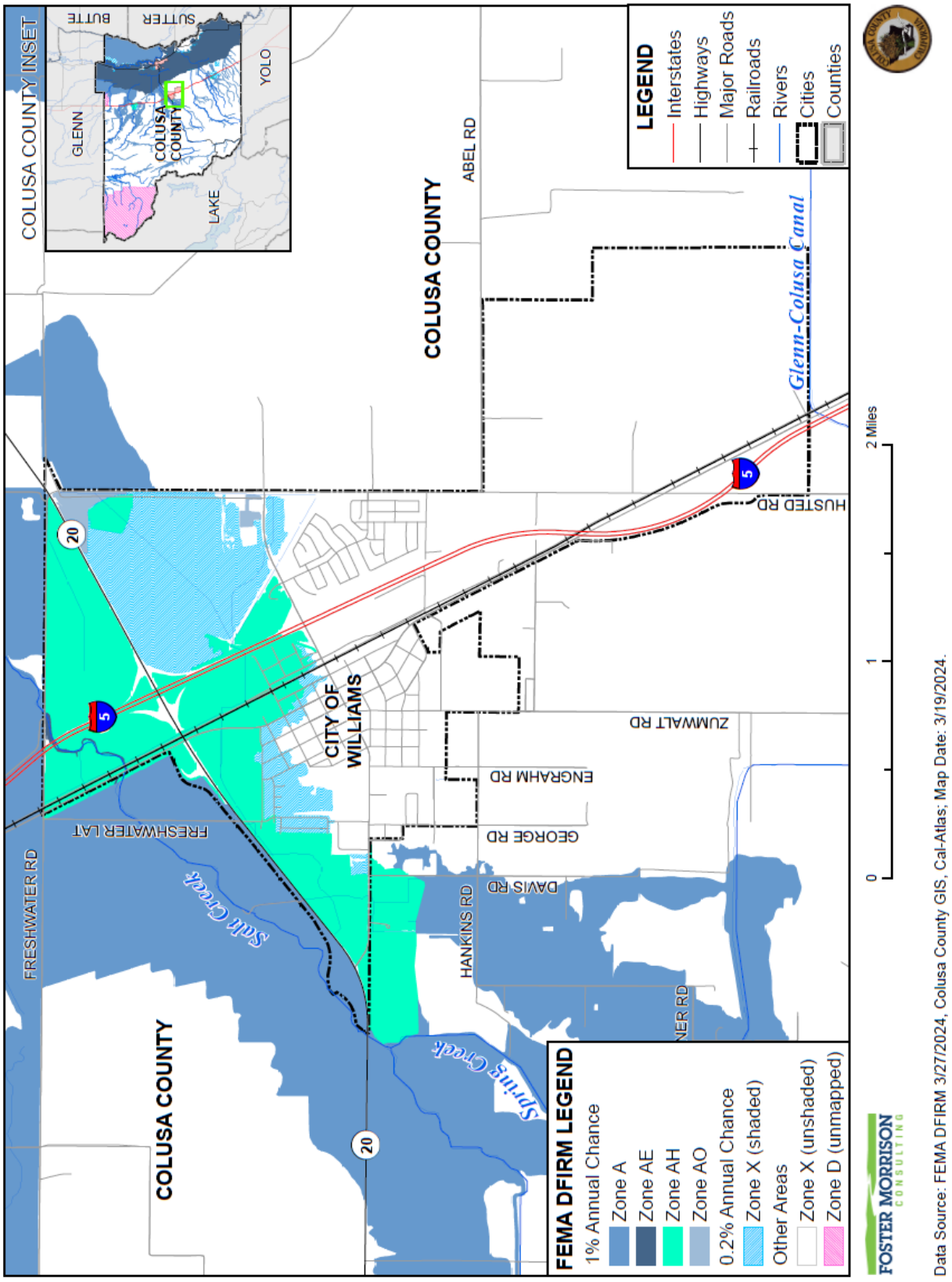


Table B-17 details the DFIRM mapped flood zones located within the City.

Table B-17 City of Williams– DFIRM Flood Hazard Zones

Flood Zone	Description	Flood Zone present in City of Williams
A	1% annual chance flooding: No base flood elevations provided	X
AE	1% annual chance flooding: 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	X
AO	1% annual chance flooding: sheet flow areas. BFEs derived from detailed hydraulic analyses are shown in this zone.	X
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
X (unshaded)	No flood hazard	X
D	Areas with a potentially moderate to high risk of flooding, but the probability has not been determined.	

Source: FEMA DFIRM 3/27/2024

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-18.

Table B-18 City of Williams – 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 Flood Hazard	1,866	27.72%	226	12.13%	1,640	33.67%
0.2% Annual Chance Flood Hazard	855	12.70%	245	13.19%	610	12.52%
Other Areas	4,010	59.57%	1,388	74.67%	2,621	53.81%
City of Williams Total	**6,731**	**100.00%**	**1,859**	**100.00%**	**4,871**	**100.00%**

Source: FEMA DFIRM 3/27/2024

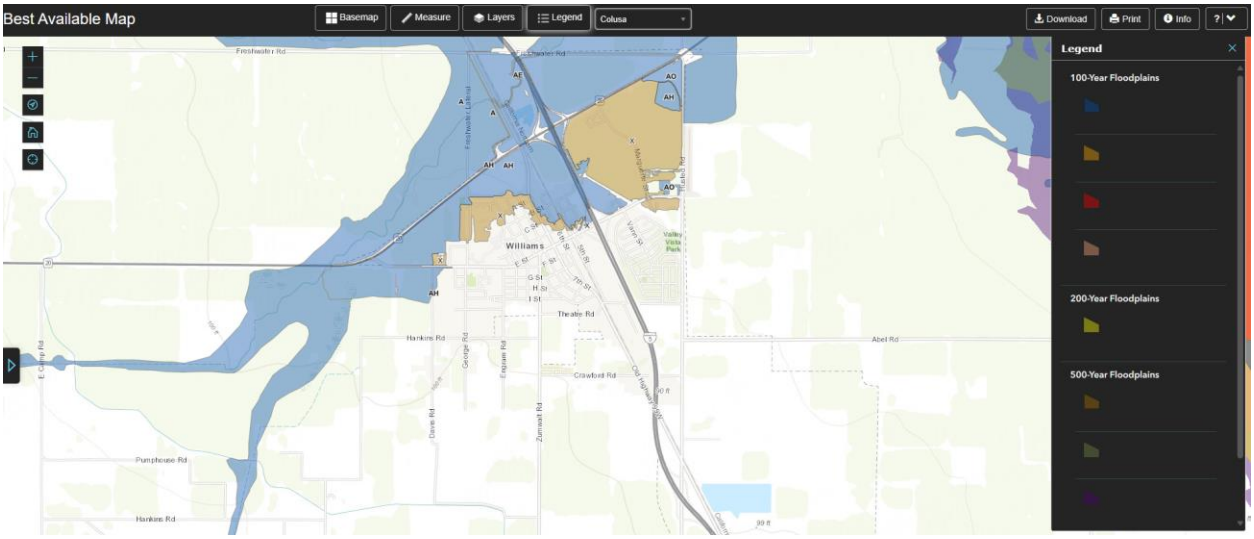
California Department of Water Resources Best Available Maps (BAM)

The FEMA regulatory maps provide just one perspective on flood risks in the City. 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 the City of Williams is shown in Figure B-13.

Figure B-13 City of Williams – Best Available Map



Source: California DWR. Retrieved 3/13/2024.
Legend explanation: **Blue** - FEMA 100-Year, **Orange** – Local 100-Year (developed from local agencies), **Red** – DWR 100-year (Awareness floodplains identify the 100-year flood hazard areas using approximate assessment procedures.), **Pink** – USACE 100-Year (2002 Sac and San Joaquin River Basins Comp Study), **Yellow** – USACE 200-Year (2002 Sac and San Joaquin River Basins Comp Study), **Tan** – FEMA 500-Year, Grey – Local 500-Year (developed from local agencies), **Purple** – USACE 500-Year (2002 Sac and San Joaquin River Basins Comp Study).

Past Occurrences

Disaster Declaration History

A list of state and federal disaster declarations for Colusa County from flooding is shown on Table B-19. These events also likely affected the City to some degree.

Table B-19 Colusa County – Federal and State Disaster Declarations from Flood 1950-2024

Disaster Type	Federal Declarations		State Declarations	
	Count	Years	Count	Years
Flood (including heavy rain and storms)	17	1955, 1958, 1963 (twice), 1970, 1983, 1986, 1995 (twice), 1997, 1998, 2005/2006, 2017, 2019 (twice), 2023 (twice)	19	1950, 1955, 1958 (twice), 1963 (twice), 1973, 1978, 1983, 1986, 1995 (twice), 1997, 1998, 2005/2006, 2008, 2017, 2019 (twice)

Source: Cal OES, FEMA

NCDC Events

The NCDC tracks flooding events for the County. Events have been tracked for flooding since 1993. Colusa County has seen 14 events. These events most likely had some impact on the City of Williams.

City of Williams Events

The City of Williams experiences flooding during periods of heavy rains and storms. Many of these flood events have caused damages as detailed below:

May 2024 – Heavy rains fell in and around the City of Williams. This caused flooding in the City as shown on Figure B-14 and Figure B-15.

Figure B-14 City of Williams – 2024 Flooding

Source: City of Williams Public Works

Figure B-15 City of Williams – 2024 Flooding

Source: City of Williams Public Works

2017 - In February of 2017, the flooding in the north end of town inundated twelve homes with 4-5 ft. depth near 6th and B Streets. Additionally in 2017, the City built a berm to protect the waters from slowly inundating the rest of the City from overflow of Salt Creek.

- Valley Ranch subdivision due to inundated stormwater conveyance systems
- Flooding in 2017 at the Wastewater Treatment Facility
- Flooding in January 2007 storms similar to the types of flooding in 2017
- In 1998 I-5 was closed for several miles both directions, the Water Treatment Facility was inundated by floodwaters and since then a small levee was erected to protect the facility from future flooding

Figure B-16 shows 2017 flooding near of Salt Creek at the Wastewater Treatment Plant.

Figure B-16 City of Williams – Flooding near Wastewater Treatment Plant

Source: City of Williams

The City noted that most of the recent flooding since the 2018 LHMP has been localized stormwater flooding. Flooding occurs annually in the area near Salt Creek and the Wastewater Treatment Plant.

Climate Change and Flood

It is likely that climate change will increase the chance of future occurrence as well future impacts associated with flood. More information on future impacts to the City can be found in the Future Conditions/Future Development section of the Vulnerability Assessment below.

According to the CAS, climate change may affect flooding in California, the Colusa County Planning Area, including the City of Williams. While average annual rainfall may increase or decrease slightly, the intensity of individual rainfall events is likely to increase during the 21st century. It is possible that average soil moisture and runoff could decline, however, due to increasing temperature, evapotranspiration rates, and spacing between rainfall events. Reduced snowpack and increased number of intense rainfall events are likely to put additional pressure on water infrastructure which could increase the chance of flooding associated with breaches or failures of flood control structures such as levees and dams. Cal Adapt future precipitation projections were shown in Section 4.3.4, and generally show worsening flooding.

Vulnerability to Flood: 1% and 0.2% Annual Chance

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 damage. Predominantly, the effects of 1% and 0.2% annual chance flooding are generally confined to areas near the waterways of the City of Williams.

Much of the City is at some measure of vulnerability to floods. An assessment of a community's vulnerability to flood begins with an understanding of local exposure to flood. This is included in the Local Concerns section below followed by a discussion of the City's Assets at Risk to this hazard.

Local Concerns

The City has specific concerns and unique vulnerabilities regarding this hazard. These concerns form a portion of the basis for the mitigation strategy and mitigation actions that seek to reduce vulnerabilities to this hazard.

The 2012 City of Williams General Plan Safety Element as well as the 2003 Flood Hazard Mitigation Study both noted that Williams is confronted with persistent flood hazards due largely to the upstream watershed. In general, there are approximately 125 square miles of mountains and farmland that drain into the network of creeks and drainage canals above the Williams. Rainfall events often exceed the capacity of the conveyance systems, which results in overflows of storm waters that flow into developed portions of the City. As a result, the City has had several disaster declarations, which has resulted in costly damages and emergency construction.

The 2023 General Plan Public Safety Element noted that the City lies mostly within the Freshwater Creek Basin. Two of the basin's tributaries include Salt Creek and Spring Creek, both of which flow through the

City and its sphere of influence. The northern portion of the community is subject to flooding from Salt Creek. Flowing from west to east, Salt Creek is the most significant drainage feature in the study area. During storms and high water events the culverts beneath the Union Pacific Railroad (UPRR) and north of SR 20 exceed capacity causing water to flow southward along the west side of the railroad tracks and inundating the area north of E Street.

Assets at Risk

Assets at risk from flood include people and populations; structures; critical facilities and infrastructure; community lifelines; natural, historic, and cultural resources; and economic assets and community activities of value. These are discussed in the following sections.

People and Populations

All people and populations located in the 1% and 0.2% annual chance floodplains are at some risk to flooding. Certain vulnerable populations located within areas prone to flooding may be at increased risk to this hazard, especially during a large event with minimal advance notice. These vulnerable populations include: the unsheltered, those with limited mobility, and those that lack the resources to leave the area. In addition, there is one mobile home park within the City that lies within the 1% annual chance floodplain that may also be more vulnerable to major flood events.

City residents that live in the 1% and 0.2% annual chance floodplains are often the most vulnerable. Not only are the residents at risk, but their homes and contents are all at risk, compounding the impacts associated with significant hazard events. To further evaluate the impact to the City of Williams's residential population residing within these hazard areas, 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 2022 Census Bureau average household factors for the City of Williams – 3.58. According to this analysis, there is a total population of 48 and 428 residents of the City at risk to flooding in the 1% and 0.2% annual chance floodplains, respectively. This is shown in Table B-20.

Table B-20 City of Williams – Improved Residential Parcels and Population by Summary FEMA DFIRM Flood Zone

Jurisdiction	1% Annual Chance		0.2% Annual Chance	
	Improved Residential Parcels	Population at Risk	Improved Residential Parcels	Population at Risk
City of Williams	19	48	168	428

Source: FEMA DFIRM 3/27/2024, Colusa County 2023 Parcel/Assessor Data, US Census Bureau American Community Survey 2022 Household Size Estimates.

The City noted that the Critical Facilities and Infrastructure section below includes the facilities used by At-Risk populations that are threatened by this hazard. While this is not specific to what special populations reside in the City, it does speak to facilities that area used to serve (portions) of this population.

Structures

Certain structures in the City of Williams are at risk of DFIRM flooding and primarily include those structures located within the 1% and 0.2% annual chance floodplains. GIS was used to determine the possible impacts of flooding on parcels and structures within the City of Williams. The methodology described in Section 4.3.11 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-21 is a summary table for the City of Williams. Parcel counts, land and improved values (i.e., those with a structure improvement on the parcel), other values, estimated content replacement values, 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-22 breaks down Table B-21 and shows the same analysis further broken out by detailed FEMA flood zone and property use.

Table B-21 City of Williams – Count and Value of Parcels (and Structures) at Risk in Summary DFIRM Flood Zone

Flood Zone	Total Parcel Count	Improved Parcel Count	Total Land Value	Improved Structure Value	Estimated Contents Value	Total Value
1% Annual Chance Flood Hazard	115	53	$9,814,990	$22,835,847	$3,087,632	$35,738,469
0.2% Annual Chance Flood Hazard	204	183	$17,819,160	$61,549,910	$26,998,809	$106,367,879
Other Areas	1,436	1,241	$82,539,836	$265,076,793	$96,815,520	$444,432,149
City of Williams Total	**1,755**	**1,477**	**$110,173,986**	**$349,462,550**	**$126,901,961**	**$586,538,497**

Source: FEMA DFIRM 3/27/2024, Colusa County 2023 Parcel/Assessor 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-22 City of Williams – Count and Values of Parcels (and Structures) at Risk by Detailed DFIRM Flood Zone and Property Use

Flood Zone / Property Use	Total Parcel Count	Improved Parcel Count	Total Land Value	Improved Structure Value	Other Value	Estimated Contents Value	Total Value
1% Annual Chance Flood Hazard							
Zone A							
Agricultural	0	0	$0	$0	$0	$0	$0
Commercial	0	0	$0	$0	$0	$0	$0
Government	2	0	$65,627	$0	$0	$0	$65,627
Industrial	0	0	$0	$0	$0	$0	$0

Flood Zone / Property Use	Total Parcel Count	Improved Parcel Count	Total Land Value	Improved Structure Value	Other Value	Estimated Contents Value	Total Value
Institutional	0	0	$0	$0	$0	$0	$0
Miscellaneous	1	0	$8,009	$0	$0	$0	$8,009
Residential	0	0	$0	$0	$0	$0	$0
Zone A Total	**3**	**0**	**$73,636**	**$0**	**$0**	**$0**	**$73,636**
Zone AH							
Agricultural	16	1	$1,316,219	$37,491	$0	$37,491	$1,391,201
Commercial	46	27	$7,117,957	$19,163,089	$2,926,495	$19,163,089	$48,370,630
Government	9	2	$214,992	$463,094	$2,197	$463,094	$1,143,377
Industrial	4	4	$273,106	$2,017,498	$158,940	$3,026,247	$5,475,791
Institutional	0	0	$0	$0	$0	$0	$0
Miscellaneous	6	0	$2,460	$0	$0	$0	$2,460
Residential	27	19	$798,223	$1,154,675	$0	$577,337	$2,530,235
Zone AH Total	**108**	**53**	**$9,722,957**	**$22,835,847**	**$3,087,632**	**$23,267,258**	**$58,913,694**
Zone AO							
Agricultural	3	0	$18,397	$0	$0	$0	$18,397
Commercial	0	0	$0	$0	$0	$0	$0
Government	1	0	$0	$0	$0	$0	$0
Industrial	0	0	$0	$0	$0	$0	$0
Institutional	0	0	$0	$0	$0	$0	$0
Miscellaneous	0	0	$0	$0	$0	$0	$0
Residential	0	0	$0	$0	$0	$0	$0
Zone AO Total	**4**	**0**	**$18,397**	**$0**	**$0**	**$0**	**$18,397**
1% Annual Chance Flood Hazard Total	**115**	**53**	**$9,814,990**	**$22,835,847**	**$3,087,632**	**$23,267,258**	**$59,005,727**
0.2% Annual Chance Flood Hazard							
Zone X (shaded)							
Agricultural	6	1	$840,345	$46,884	$0	$46,884	$934,113
Commercial	19	10	$9,633,788	$21,551,039	$5,212,288	$21,551,039	$57,948,154
Government	4	3	$610,661	$14,222,526	$14,317,132	$14,222,526	$43,372,845
Industrial	0	0	$0	$0	$0	$0	$0
Institutional	2	1	$58,075	$2,329,286	$22,755	$2,329,286	$4,739,402
Miscellaneous	0	0	$0	$0	$0	$0	$0
Residential	173	168	$6,676,291	$23,400,175	$7,446,634	$11,700,085	$49,223,185
Zone X (shaded) Total	**204**	**183**	**$17,819,160**	**$61,549,910**	**$26,998,809**	**$49,849,820**	**$156,217,699**

Flood Zone / Property Use	Total Parcel Count	Improved Parcel Count	Total Land Value	Improved Structure Value	Other Value	Estimated Contents Value	Total Value
0.2% Annual Chance Flood Hazard Total	**204**	**183**	**$17,819,160**	**$61,549,910**	**$26,998,809**	**$49,849,820**	**$156,217,699**
Other Areas							
Zone X (unshaded)							
Agricultural	39	11	$6,135,977	$1,937,913	$164,824	$1,937,913	$10,176,627
Commercial	138	85	$18,876,605	$27,574,370	$6,662,286	$27,574,370	$80,687,631
Government	70	17	$3,581,801	$16,989,615	$6,616,045	$16,989,615	$44,177,076
Industrial	10	7	$2,135,224	$22,672,121	$71,797,570	$34,008,183	$130,613,098
Institutional	14	10	$226,844	$1,524,525	$1,703,786	$1,524,525	$4,979,680
Miscellaneous	10	1	$378,922	$3,718,064	$0	$3,718,064	$7,815,050
Residential	1,155	1,110	$51,204,463	$190,660,185	$9,871,009	$95,330,092	$347,065,749
Zone X (unshaded) Total	**1,436**	**1,241**	**$82,539,836**	**$265,076,793**	**$96,815,520**	**$181,082,762**	**$625,514,911**
Other Areas Total	**1,436**	**1,241**	**$82,539,836**	**$265,076,793**	**$96,815,520**	**$181,082,762**	**$625,514,911**
City of Williams Total	**1,755**	**1,477**	**$110,173,986**	**$349,462,550**	**$126,901,961**	**$254,199,840**	**$840,738,337**

Source: FEMA DFIRM 3/27/2024, Colusa County 2023 Parcel/Assessor 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-23 summarizes Table B-22 and shows City of Williams loss estimates and improved values at risk by FEMA 1% and 0.2% annual chance flood zones. According to Table B-22 and Table B-23, the City of Williams has 53 parcels and $49.2 million of structure and contents values or values in the 1% annual chance flood zone, and 183 improved parcels and $138 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 4.3.11 of the Base Plan, there is a 1% chance in any given year of a flood event causing $9.84 million in damage and a 0.2% chance in any given year of a flood event causing $27.7 million in damage in the City of Williams. The loss ratio of 0.00% indicates that flood losses for 1% annual chance flooding would be relatively minor and the City would be able recover. The loss ratio of 0.01% indicates that flood losses for 0.2% annual chance flooding would be relatively minor and the City would be able recover relatively quickly.

Table B-23 City of Williams – Flood Loss Estimates

Flood Zone	Total Parcel Count	Improved Parcel Count	Total Land Value	Improved Structure Value	Other Value	Estimated Contents Value	Total Value	Loss Estimate	Loss Ratio
1% Annual Chance	115	53	$9,814,990	$22,835,847	$3,087,632	$23,267,258	$49,190,737	$9,838,147	0.00%
0.2% Annual Chance	204	183	$17,819,160	$61,549,910	$26,998,809	$49,849,820	$138,398,539	$27,679,708	0.01%
Total	**1,755**	**1,477**	**$110,173,986**	**$349,462,550**	**$126,901,961**	**$254,199,840**	**$730,564,351**	**$146,112,870**	**0.01%**

Source: FEMA DFIRM 3/27/2024, Colusa County 2023 Parcel/Assessor 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.

Critical Facilities and Infrastructure

Flooding presents a threat to threat to both critical facilities and infrastructure. Critical facilities and infrastructure plays an immensely important role in our communities. Communities rely on roads and related biking and pedestrian routes for transportation, and on water infrastructure for drinking water, wastewater service, and draining streets of rainwater. Damage to any one of these systems can threaten public safety, wreak havoc on daily life, impact properties far from flood zones, and result in economic impacts that cascade throughout the Colusa County Planning Area and the City.

A separate analysis was performed on the critical facility inventory in the City of Williams to determine critical facilities that fall within the DFIRM flood zones. Using GIS, the DFIRM flood zones were overlayed on the critical facility GIS layer. This is shown on Figure B-17. Table B-24 details which critical facilities fall in which flood zone. Details of critical facility categories, type, name, and address by detailed flood zone are listed in Appendix F.

Figure B-17 City of Williams – Critical Facilities in DFIRM Flood Zones

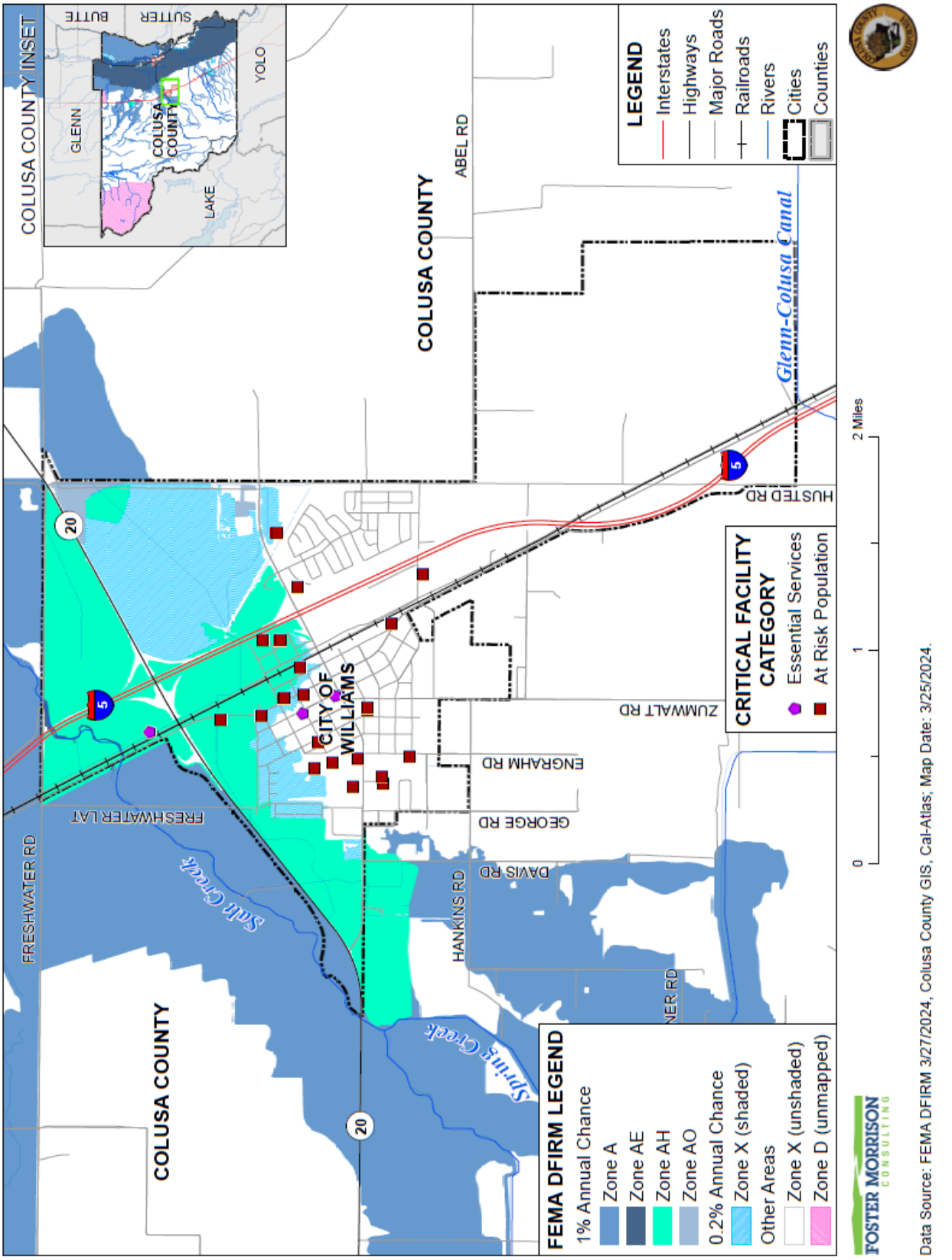


Table B-24 City of Williams – Critical Facilities in DFIRM Flood Zones by Category and Type

Critical Facility Category	Facility Type	Facility Count
1% Annual Chance Flood Hazard		
Zone AH		
Essential Services Facilities	Utility Facility	1
	Total	**1**
At Risk Population Facilities	Hotel or Motel	2
	Mobile Home Park	1
	Total	**3**
Zone AH Total		**4**
1% Annual Chance Flood Hazard Total		**4**
0.2% Annual Chance Flood Hazard		
Zone X (shaded)		
At Risk Population Facilities	Hotel or Motel	3
	Total	**3**
Zone X (shaded) Total		**3**
0.2% Annual Chance Flood Hazard Total		**3**
Other Areas		
Zone X (unshaded)		
Essential Services Facilities	Emergency Response	2
	Fire Station	1
	Public Services	1
	Total	**4**
At Risk Population Facilities	Apartment Complex	4
	Hotel or Motel	3
	Migrant Housing	1
	Mobile Home Park	1
	School	4
	Senior Living Facility	3
	Total	**16**
Zone X (unshaded) Total		**20**
Other Areas Total		**20**
City of Williams Total		**27**

Source: FEMA DFIRM 3/27/2024, City of Williams GIS

Community Lifelines

1% and 0.2% annual chance flooding presents a threat to life and property, including community lifelines in the City. The community lifelines for the City of Williams include those identified for the Colusa County Planning Area. This was discussed in greater detail in Section 4.3.11 of the Base Plan. Generally, even major flood events are temporary events with flood waters receding back to pre-storm levels at the conclusion of the storm. However, depending on the location, duration, and magnitude and severity of any given flood event, some of these community lifelines may be overwhelmed in the short term.

Natural, Historic, and Cultural Resources

Large flood events can affect natural, historic, and cultural resources. There are a number of ways floodwaters can impact natural resources and the environment: Wildlife habitats can be destroyed by floodwaters. Contaminated floodwater can pollute rivers and habitats. Silt and sediment can destroy natural areas. Riverbanks and natural levées can be eliminated as rivers reach bankfull capacity. Rivers can be widened, and deposition can increase downstream. Trees can be uprooted by high-velocity water flow. Plants that survive the initial flood may die due to being inundated with water. Historic and cultural resources may also be affected. Generally, the impacts are associated with damage to structures within the flooded areas, but other cultural resources such as those associated with Native Americans and old tribal areas can also be disturbed, damaged and lost during extreme flood events. Any of these that fall in the flood zones shown on Figure B-12 would be vulnerable.

Economic Assets and Community Activities of Value

Major flood events could affect any economic asset that lies in the floodplain and can have long lasting effects. The overall economic assets and community activities of value for the City were discussed in Section B.4.1. This could cause those businesses and economic assets within these areas to close or relocate. This could cause temporary or permanent loss of sales tax revenue. It could also cause agricultural losses. These events can also affect those economic assets outside of the floodplain, at least in the short term until the City has sufficiently recovered.

The Williams Police Department is located within the AH flood zone at the corner of North and 7th Streets. The Police Department requires many expensive equipment pieces that are housed on site. Total loss would be devastating for the City as getting operations up and running in a different location would be a challenging and arduous process.

Impacts from Flood: 1% and 0.2% Annual Chance

Floods are among the costliest natural disasters in terms of human hardship and economic loss nationwide. Large flood events, including those associated with 1% and 0.2% annual chance floods, can cause substantial damage to structures, landscapes, and utilities as well as life safety issues. People may be swept away in floodwaters, causing injuries or deaths. 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. Direct impacts, such as drowning, can be limited with adequate warning and public education about what to do during floods. Floodwaters can transport large objects downstream which can damage or remove stationary structures. Structures can be

damaged directly from floodwaters and can also be damaged from trees falling as a result of water-saturated soils. 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 causing power outages. The interruption of power causes major problems and can result in the 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.

Standing water can cause damage to crops, roads, foundations, and electrical circuits. Other problems connected with flooding and stormwater runoff include erosion, sedimentation, degradation of water quality, loss of environmental resources, and economic impacts.

Impacts that are not quantified, but can be anticipated in large future events, include:

- Injury and loss of life;
- Commercial and residential structural and property damage;
- Disruption of and damage to public infrastructure, utilities, and services;
- Damage to roads/bridges resulting in loss of mobility;
- Significant economic impact (jobs, sales, tax revenue) to the community; and
- Negative impact on commercial and residential property values

Impacts to identified assets at risk to this hazard and the overall vulnerability of the City may be affected in the future by climate change (which was discussed in the Likelihood of Future Occurrence discussion above), changes in population patterns (migration, density, or the makeup of socially vulnerable populations), and changes in land use and development. Changes in population patterns and land use, and the extent to which they affect this hazard, are discussed in the Future Conditions/Future Development discussion below.

Health Hazards from Flooding

According to FEMA, certain health hazards are also common to flood events. Three general types of health hazards accompany floods. The first comes from the water itself. Floodwaters carry anything that was on the ground that the upstream runoff picked up, including dirt, oil, animal waste, and lawn, farm, and industrial chemicals. Pastures and areas where cattle and other livestock are kept or their wastes are stored can contribute polluted waters to the receiving streams.

Floodwaters also saturate the ground, which leads to infiltration into sanitary sewer lines. When wastewater treatment plants are flooded, there is nowhere for the sewage to flow. Infiltration and lack of treatment can lead to overloaded sewer lines that can back up into low-lying areas and homes. Even when it is diluted by flood waters, raw sewage can be a breeding ground for bacteria such as e. coli and other disease-causing agents.

The second type of health problem arises after most of the water has gone. Stagnant pools can become breeding grounds for mosquitoes, and wet areas of a building that have not been properly cleaned breed mold and mildew. A building that is not thoroughly cleaned becomes a health hazard, especially for small children, the elderly, and those that are medically vulnerable.

Another health hazard occurs when heating ducts in a forced air system are not properly cleaned after inundation. When the furnace or air conditioner is turned on, the sediments left in the ducts are circulated throughout the building and breathed in by the occupants. If a water system loses pressure, a boil order may be issued to protect people and animals from contaminated water.

The third problem is the long-term psychological impact of having been through a flood and seeing one's home damaged and irreplaceable keepsakes destroyed. The cost and labor needed to repair a flood-damaged structure puts a severe strain on people, especially the unprepared and uninsured. There is also a long-term problem for those who know that their homes can be flooded again. The resulting stress on floodplain residents takes its toll in the form of aggravated physical and mental health problems.

Insurance Coverage, Claims Paid, and Repetitive Losses

Standard property insurance does not include flood coverage because of the relatively high risk. The National Flood Insurance Program (NFIP) provides flood insurance to residents in those communities that participate in the NFIP. Federal financial assistance requires the purchase of flood for structures located within a 100-year floodplain – a requirement that affects nearly all mortgages financed through commercial lending institutions. Flood insurance is also recommended for all structures protected by levees, even if not mapped within a floodplain.

The City of Williams joined the National Flood Insurance Program (NFIP) on April 22, 1980. The City does not participate in CRS program. NFIP data indicates that as of February 2, 2024, there were 11 flood insurance policies in force in the City with $6,302,000 of coverage. Of the 11 policies: 5 were for single family homes were residential (single-family homes), and 6 were for non-residential properties. Of the 11 policies in force, 3 were in A Zones and 8 were in B, C, and X zones. The GIS parcel analysis detailed above identified 53 improved parcels in the 1% annual chance flood zone. There have been 11 historical claims for flood losses totaling $55,416.69. NFIP data further indicates that there are no repetitive loss (RL) or severe repetitive loss (SRL) buildings in Williams. There has been 1 substantial damage claims since 1978 in the City.

Based on this analysis of insurance coverage, the City has values at risk to the 1% annual chance and greater floods. Of the 53 improved parcels within the 1% annual chance flood zone, only 3 (or 5.7 percent) of those parcels maintain flood insurance. This can be seen on Table B-25.

Table B-25 City of Williams – 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 Williams	53	3	5.7%

Source: FEMA DFIRM 3/27/2024, Colusa County 2023 Parcel/Assessor Data, NFIP CIS data 7/2023.

As the levees are decertified, an increased number of City residents are placed in the floodplain. Table B-26 illustrates the changes in the number of insured structures in the 1% annual chance floodplain. As seen in the table, the overall percentage of policy holders dropped from 20.8% in 2018 to 5.7% in 2024.

Thus, flood insurance education and promotion will be an important focus moving forward with the recent DFIRM update putting more people and structures within the 1% annual chance floodplain.

Table B-26 Colusa County Planning Area– Comparison of 2024 and 2018 Percentage of Policy Holders to Improved Parcels in the 1% Annual Chance Floodplain

Jurisdiction	2024 LHMP			2018 LHMP		
	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	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 Williams	53	3	5.7%	53	11	20.8%

Source: FEMA DFIRM 3/27/2024, 2023 Colusa County Parcel/Assessor's Data, 2018 Colusa County LHMP Update

Future Conditions/Future Development

Future conditions may be affected by climate change, changes in population patterns (migration, density, or the makeup of socially vulnerable populations), and changes in land use and development. Findings on this for the City of Williams include the following:

- Climate change is likely to exacerbate future flood conditions and associated impacts and vulnerability of the County to 1% and 0.2% annual chance flooding.
- Population growth in the City of Williams has recently slowed; however, additional growth within the floodplain areas of the City would place additional populations at risk to flood. Additional population growth would likely bring continued diversity to the City. Vulnerable population groups could face disproportionate effects from flooding and should be planned for. Changes in population and population patterns may or may not increase the impacts and vulnerability of the City to this hazard depending on the location and nature of growth and continued planning for future hazard conditions.
- Land use planning should be proactive to address future hazard conditions. Locating new development, structures and critical facilities and infrastructure within or near areas of flood risk may put additional development at risk. However, City building codes and the City's floodplain ordinance are in effect to reduce this risk and should be updated as necessary to continue to address future flood conditions. Depending on the location of new development and adherence to protective building codes and the floodplain ordinance, changes in land use and development may or may not increase the impacts and associated vulnerabilities of the County to this hazard.

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 built 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. As levees are decertified, vulnerability increases, and certain populations may experience a disproportionate impact due to lack of access to resources.

The City enforces its floodplain management ordinance. More detail on the specifics of the floodplain ordinance can be found in the Capability section below. A discussion of general considerations follows.

Future Development: General Considerations

Communities that participate in the NFIP adopt regulations and codes that govern development in special flood hazard areas (SFHAs) and enforce those requirements through their local floodplain management ordinances through the issuance of permits. The City of Williams's floodplain management ordinance provides standards for development, subdivision of land, construction of buildings, and improvements and repairs to buildings that meet the minimum requirements of the NFIP and also the requirements of the City's current adopted version of the California Building Code (and International Building Code), which in some areas exceed the base requirements of the NFIP.

The International Residential Code and International Building Code, by reference to ASCE 24, include requirements that govern the design and construction of buildings and structures in flood hazard areas. FEMA has determined that the flood provisions of the I-Codes are consistent with the requirements of the NFIP (the I-Code requirements shown either meet or exceed NFIP requirements). ASCE 24, a design standard developed by the American Society of Civil Engineers, expands on the minimum NFIP requirements with more specificity, additional requirements, and some limitations.

With the adoption of the International Codes, communities will be moving towards a more stringent approach to regulatory floodplain management, beyond the minimum requirements of the NFIP. The adoption and enforcement of disaster-resistant building codes is a core community action to promote effective mitigation. When communities ensure that new buildings and infrastructure are designed and constructed in accordance with national building codes and construction standards, they significantly increase local resilience now and in the future. With continued advancements in building codes, local ordinances should be reviewed and updated to meet and exceed standards as practicable to protect new development from future flood events and to further promote disaster resiliency.

One of the most effective ways to reduce vulnerability to potential flood damage is through careful land use planning that fully considers applicable flood management information and practices. Master planning will also be necessary to assure that open channel flood flow conveyances serving the smaller internal streams and drainage areas are adequately prepared to accommodate the flows. Preservation and maintenance of natural and riparian areas should also be an ongoing priority to realize the flood control benefits of the natural and beneficial functions of these areas.

Future development in the City may be built in the floodplain, in conformance to the standards of the floodplain ordinance. The City enforces the floodplain ordinance on new development in Williams. With the new FEMA DFIRMs in place, the City should consider additional flood protection standards with their flood ordinance update.

The City's Planning Department has plans to build an additional Detention Pond in the north area and then create a series of smaller detention basins throughout the City. There are also plans to create a series of levees on the west side of town to stop the water from flowing directly into the City. The Business Park

detention pond located in the North East of the City is currently in the engineering phase for a buildout large enough to accommodate full development on the east side of town.

The risk of flooding to future development can also be minimized by accurate recordkeeping of repetitive localized storm activity. Mitigating the root causes of the flooding will reduce future risks of losses. Any future development will take all potential flooding into consideration when approving/implementing new development projects to ensure the best possible outcome in future flood events.

Future development areas and their vulnerability to DFIRM flooding is discussed further in the below GIS analysis.

GIS Analysis

The City provided 8 future development areas which were used as the basis for the inventory of future development for the City. These were mapped in GIS. Utilizing the future development area spatial layer, the parcel centroid data was intersected to determine the future development areas within each FEMA DFIRM flood zone. Figure B-18 show the locations of the future development areas overlayed on the FEMA DFIRM flood zones. Table B-27 shows each future development area in the City in these zones.

Figure B-18 City of Williams – Future Development in DFIRM Flood Zones

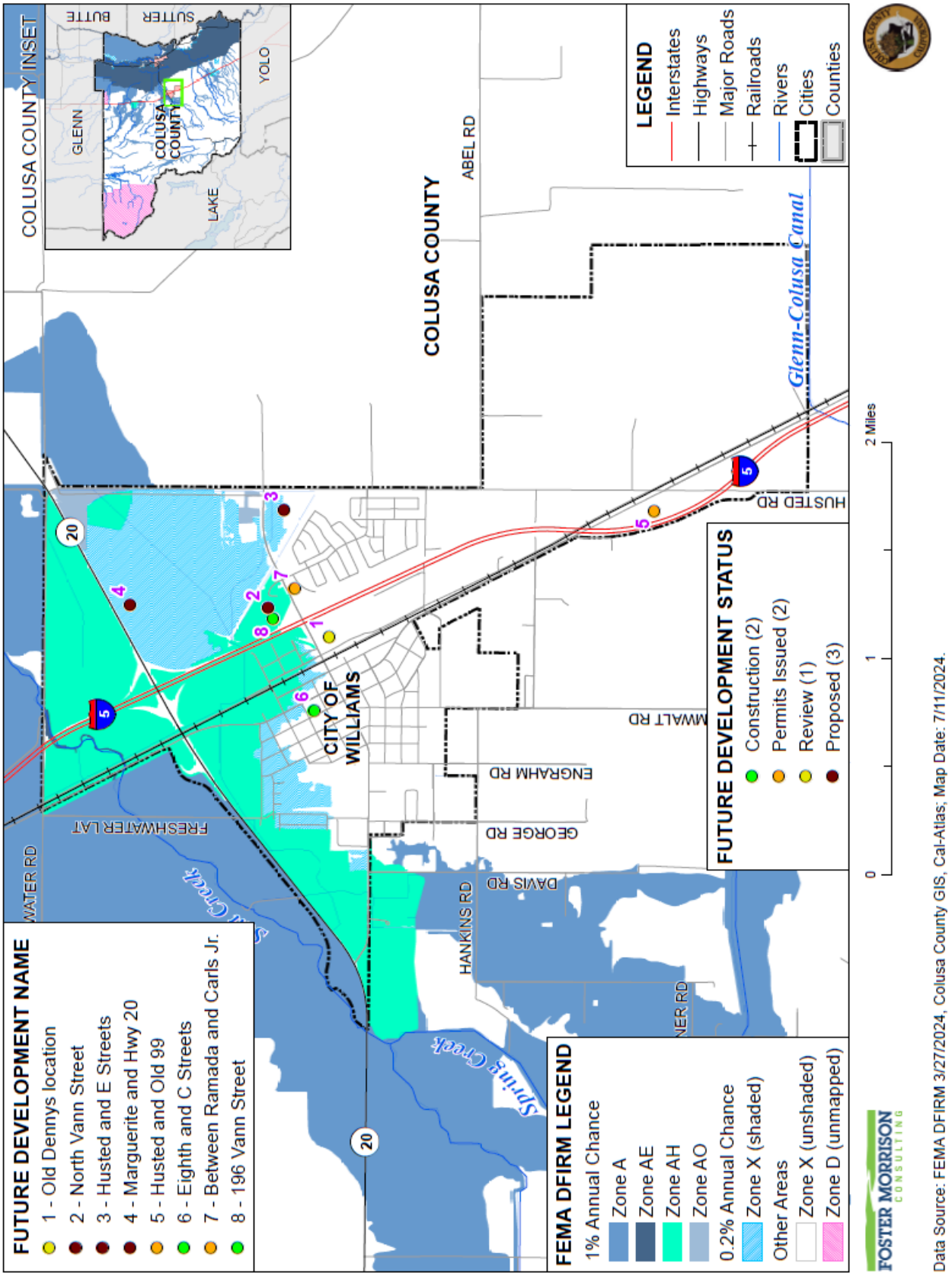


Table B-27 City of Williams – Future Development in DFIRM Flood Zones

Flood Zone	Future Development Status	Future Development Site Number	Future Development Name	Total Parcel Count	Total Acres
1% Annual Chance Flood Hazard					
Zone AH	Proposed	2	North Vann Street	1	14.15
		Proposed Total		**1**	**14.15**
	Construction	8	196 Vann Street	1	4.065
		Construction Total		**1**	**4.065**
	Zone AH Total			**2**	**18.215**
1% Annual Chance Flood Hazard Total				**2**	**18.215**
Other Areas					
Zone X (unshaded)	Proposed	3	Husted and E Streets	1	17.27
		Proposed Total		**1**	**17.27**
	Permits Issued	5	Husted and Old 99	1	9.09
		7	Between Ramada and Carl's Jr.	1	0.95
		Permits Issued Total		**2**	**10.04**
	Review	1	Old Dennys location	1	4.342
		Review Total		**1**	**4.342**
	Construction	6	Eighth and C Streets	1	1.08
		Construction Total		**1**	**1.08**
	Zone X (unshaded) Total			**5**	**32.732**
Other Areas Total				**5**	**32.732**
0.2% Annual Chance Flood Hazard					
Zone X (shaded)	Proposed	4	Marguerite and Hwy 20	1	2.29
		Proposed Total		**1**	**2.29**
Zone X (shaded) Total				**1**	**2.29**
0.2% Annual Chance Flood Hazard Total				**1**	**2.29**
Grand Total				**8**	**53.237**

Source: FEMA 3/27/2024 DFIRM, City of Williams

Flood: Localized Stormwater Flooding

Likelihood of Future Occurrence–Likely
Vulnerability–Medium

Hazard Profile

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 City 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 Williams is subject to localized flooding throughout the City. This is discussed in Table B-28 below. 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.

Past Occurrences

Disaster Declaration History

There have been no state or federal disaster declarations from localized floods. There would most likely have been localized flood events during the disaster declarations from flood as shown in the previous 1%/0.2% annual chance flood section.

NCDC Events

The past occurrences of localized flooding are included in the 1% and 0.2% annual chance flood hazard profile above.

City of Williams Events

The City noted the following past occurrences of localized flooding:

- Localized flooding at Hwy 20 and San Jose Road
- Lone star Road from Abel to Hahn Roads
- Old Hwy 20 from D Street to 4th Street and over to 7th Street
- E Street (Old Hwy 20 and 6th Street
- City Water Treatment Facility

Figure B-19 shows the reoccurring flooding at the corner of 6th & E Streets

Figure B-19 City of Williams – Localized Flooding at 6th and E Streets

Source: City of Williams

Climate Change and Localized Flood

It is likely that climate change will increase the chance of future occurrence as well as future impacts associated with localized flood. More information on future impacts to the City can be found in the Future Conditions/Future Development section of the Vulnerability Assessment below.

Even if average annual rainfall may decrease slightly, the intensity of individual rainfall events is likely to increase during the 21st century, increasing the likelihood of overwhelming stormwater systems built to historical rainfall averages. This makes localized flooding more likely.

Vulnerability to Localized Flood

Flood vulnerability and their impacts vary by location and severity of any given flood event and will likely only affect certain areas of the City during specific times. Based on the risk assessment, it is evident that floods will continue to have potentially significant impacts to certain areas of the City. However, while flooding can cause significant impacts, depending on the duration and volume of precipitation and the drainage in any given area, many of the floods in the City are minor, localized flood events that are more of a nuisance than a disaster.

Many areas of the City are at some measure of vulnerability to localized flooding. An assessment of a community's vulnerability to localized flooding begins with an understanding of local exposure to localized

flooding. This is included in the Local Concerns section below followed by a discussion of the City's Assets at Risk to this hazard.

Local Concerns

The City has specific concerns and unique vulnerabilities regarding this hazard. These concerns form a portion of the basis for the mitigation strategy and mitigation actions that seek to reduce vulnerabilities to this hazard.

As stated in the 1%/2% annual chance flood profile above, Williams is confronted with persistent flood hazards due largely to the upstream watershed. In general, there are approximately 125 square miles of mountains and farmland that drain into the network of creeks and drainage canals above the City. Therefore, rainfall events often exceed the capacity of the conveyance systems, which results in overflows of storm waters that flow into developed portions of the City. As a result, the City has had several disaster declarations, which has resulted in costly damages and emergency construction.

The City of Williams lies mostly within the Freshwater Creek Basin. Two of the basin's tributaries include Salt Creek and Spring Creek, both of which flow through the City and its sphere of influence. As the primary conveyances, the capacity of these stream channels is often exceeded, even with modest rainfall events. This is due, in part, to the external hazards attributed to the runoff generated in areas of the watersheds that are outside of the City. Since these areas are largely rural and have less effect on property, these watersheds have not been extensively studied nor have significant, near-term improvements been identified. Secondly, flooding is caused by a lack of storm drainage infrastructure within the City. Since much of the drainage within the City is by way of overland sheet flow and above ground facilities like roadside ditches, valley gutters, and surface drainage in streets, there is simply an insufficient capacity to adequately handle the volume of storm water that is generated outside of and within the City.

The City tracks localized flooding areas. Affected localized flood areas identified by the City of Williams are summarized in Table B-28.

Table B-28 City of Williams – List of Localized Flooding Problem Areas

Road/Area Name	Flooding	Pavement Deterioration	Washouts	High Water/ Creek Crossing	Landslides/ Mudslides	Debris	Downed Trees
Husted	X	X					
Old 99 N of SR20	X	X		X		X	
E Street @ Davis	X	X					
10th Street N of E	X	X					
6th Steet N of E	X						
Old 99 @ SR20	X			X		X	
Hwy 20 and San Jose Road	X						

Road/Area Name	Flooding	Pavement Deterioration	Washouts	High Water/ Creek Crossing	Landslides/ Mudslides	Debris	Downed Trees
Old Hwy 20 from D Street to 4th Street and over to 7th Street	X						
Lone Star Road from Abel to Hahn Roads	X						
City Water Treatment Facility	X						

Source: City of Williams

The City noted the following root causes of localized flooding associated with these problem areas:

- **Husted** – old County Road. Road is sinking. Drought and flood cycle is weakening the road structure, particularly with canal and storm drainage on west side, as well as critter infiltration.
- **Old 99 N of SR20** – debris must be removed at the bridge north of SR20 during every storm event. Trees/brush/beaver dams flow down Salt Creek and block the bridge forcing water to flow over the bridge and down the street if not removed. Sediment deposition has blocked the north span and scour has undermined the south abutment.
- **E Street @ Davis** – heavy flows from the mountains tend to flood the City in two ways. The first is from the north under SR20 on old highway 99. The second is overland from the west as it overtops the banks of Salt Creek. The first location that this hits puts E Street under water at around Davis Street as the system isn't capable of handling the flows.
- **10th Street N of E** – existing system insufficient to handle flows coming from E Street. 10th Street floods North of E Street during every storm event mostly because of factors such as the insufficient capacity and lack of maintenance of the ditch system north on SR20 along Freshwater Lateral Road; insufficient capacity of the ditch running along North and Virginia Streets, and the lack of an underground storm sewer along 10th Street.
- **6th Street N of E** – storm drains on the east side of 6th Street have sewer crossings in them which collect debris, and back up the system.
- **Old 99 at SR20** – When Salt Creek overflows its banks, that water heads south into the City limits under the SR20 bridge adjacent to the railroad. Every wet year, the City is forced to construct a temporary berm under the crossing to prevent the City from flooding from the north. In the past two years, the City has had to obtain permission to build that berm over the top of the railroad, closing the railroad as well as the street.

Assets at Risk

Assets at risk from localized flood include people and populations; structures; critical facilities and infrastructure; community lifelines; natural, historic, and cultural resources; economic assets; and community activities of value. These are discussed in the following sections.

People and Populations

People and populations (including vulnerable populations) are traditionally not highly vulnerable to localized flooding, but their structures and contents can be at risk. Localized flooding may also cause transportation issues as roads and lanes are impacted or closed and affect the ability for people to travel throughout the City.

Structures

Structures in areas with localized flooding can be affected if floodwaters intrude into the structure. Structures in low lying areas, or those with basements can be at greater risk. Buildings with older foundations that are prone to water intrusion are also at greater risk. Once water finds its way into a structure, it tends to continue to do so until the path that brings water into a structure is mitigated. Structures can also be damaged by trees that have become uprooted and fall during rain and storm events. Large trees falling onto structures can cause significant damages.

Critical Facilities and Infrastructure

Localized flooding, while often more of a nuisance, can cause damage to critical facilities and infrastructure during a heavy rain and storm event. Any facility that experiences localized flooding can be impacted. Utilities and other critical infrastructure can all be affected, causing interruptions in service until repairs can be made. For example, water and wastewater systems can be vulnerable to heavy rains and flood events. Rainfall creates a high water table, surging streams and creeks, and saturates soil. Infiltration of stormwater into water and wastewater systems may occur and presents a threat to public health and safety, when the infrastructure is no longer able to meet operational needs and local demands. Other critical facilities such as roads, bridges and other transportation facilities can also experience localized flooding causing road closures and other impacts until storm waters recede. This can result in extended road closures requiring alternate routes.

Community Lifelines

Due to the relatively minor nature of localized flooding, community lifelines are unlikely to be overwhelmed. Many of the City's community lifelines are the same as or similar to Colusa County's. This was discussed in greater detail in Section 4.3.12 of the Base Plan.

Natural, Historic, and Cultural Resources

Natural resource assets may have some vulnerabilities to localized flood during major storm events, but can benefit from floodwaters, often by design. Many parks and green spaces are designed to take overflow water and release it into the underlying soils and natural areas. Wetlands areas in the City actually help reduce the risk of flooding, as they can absorb excess rainfall that would have to be drained away from impervious surfaces. Flooding can provide many benefits to the natural environment, including recharging wetlands and groundwater, increasing fish production, creating wildlife habitat, and rejuvenating soil fertility. These smaller localized flooding events often provide more benefits to the environment in comparison to negative impacts associated with large flood events. Historic and cultural resources may be at some measure of vulnerability if they are located in areas subject to repeated localized flooding.

Economic Assets and Community Activities of Value

Localized flooding occurs on an annual basis throughout the City during storm events. The overall economic assets and community activities of value for the City were discussed in Section B.4.1. Most of these events have limited impacts and include those associated with localized flooding due to undersized drainage systems, affecting nearby roads, structures, and other nearby assets. Unless directly affected by localized flooding, these events are unlikely to affect the City's key economic assets.

Community activities of value may have minor vulnerabilities if a localized flood event were to occur during the activity. This may cause the activity to be relocated, cancelled, or rescheduled.

Impacts from Localized Flood

Primary concerns associated with stormwater flooding include impacts to infrastructure that provide 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.

Life safety issues from localized flooding would be more limited. The amount and type of damage or flooding that occurs varies from year to year and from storm to storm, depending on the quantity of precipitation and runoff.

Impacts to identified assets at risk to this hazard and the overall vulnerability of the City may be affected in the future by climate change (which was discussed in the Likelihood of Future Occurrence discussion above), changes in population patterns (migration, density, or the makeup of socially vulnerable populations), and changes in land use and development. Changes in population patterns and land use, and the extent to which they affect this hazard, are discussed in the Future Conditions/Future Development discussion below.

Future Conditions/Future Development

Future conditions may be affected by climate change, changes in population patterns (migration, density, or the makeup of socially vulnerable populations), and changes in land use and development. Findings on this for the City of Williams include the following:

- Climate change is likely to exacerbate future heavy rain conditions and associated impacts and vulnerability of the City to localized flood.
- Population growth in the City of Williams has recently slowed. Additional population growth would likely bring continued diversity to the City. This can also impact the vulnerable populations, like low-income individuals and households living in areas that are typically more hazardous. Vulnerable population groups such as low-income individuals and households living in floodprone areas could face disproportionate effects from localized flood and should be planned for. Changes in population and

population patterns may or may not increase the impacts and vulnerability of the City to this hazard depending on the location and nature of growth and continued planning for future hazard conditions.

- Land use planning should be proactive to address future hazard conditions. Creating more urban areas causes an increase in peak flow and stormwater runoff. Such growth will consume previously undeveloped acres, and the impacts may overwhelm existing drainage and flood control facilities. Locating new development, structures and critical facilities and infrastructure within or near areas of localized flooding risk may put additional development at risk. However, City building codes are in effect to reduce this risk and should be updated as necessary to continue to address future localized flood conditions. Depending on the location of new development and adherence to protective building codes, changes in land use and development may or may not increase the impacts and associated vulnerabilities of the City to this hazard.

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 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.

Severe Weather: Heavy Rains and Storms

Likelihood of Future Occurrence–Highly Likely
Vulnerability–Medium

Hazard Profile

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 and storms. Most of the severe rains occur during the fall, winter, and spring months in the City as discussed below (with problem flooding areas associated with heavy rains and storms shown in Table B-28 in the Flood: Localized Stormwater section). 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 rarer in the City and Colusa County. Duration of severe storms in 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.

Colusa County and much of California can be affected by a phenomenon known as an atmospheric river. These types of storms occurred frequently in the winter of 2022/2023. According to the NOAA,

atmospheric rivers are relatively long, narrow regions in the atmosphere – like rivers in the sky – that transport most of the water vapor outside of the tropics. These columns of vapor move with the weather, carrying an amount of water vapor roughly equivalent to the average flow of water at the mouth of the Mississippi River. When the atmospheric rivers make landfall, they often release this water vapor in the form of rain or snow. More information on atmospheric rains can be found in Section 4.3.4 of the Base Plan.

Past Occurrences

Disaster Declaration History

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. Disaster declarations from flooding are shown on Table B-29.

Table B-29 Colusa County – Federal and State Disaster Declarations from Flood (Heavy Rain and Storms) 1950-2024

Disaster Type	Federal Declarations		State Declarations	
	Count	Years	Count	Years
Flood (including heavy rains and storms)	17	1955, 1958, 1963 (twice), 1970, 1983, 1986, 1995 (twice), 1997, 1998, 2005/2006, 2017, 2019 (twice), 2023 (twice)	19	1950, 1955, 1958 (twice), 1963 (twice), 1973, 1978, 1983, 1986, 1995 (twice), 1997, 1998, 2005/2006, 2008, 2017, 2019 (twice)

Source: Cal OES, FEMA

NCDC Events

The NCDC data recorded 30 hail, heavy rain, and winter weather incidents for Colusa County since 1950.

City of Williams Events

The City noted that there have not been any disaster declarations that significantly impacted the City since the last LHMP update. There have been events where the City dispatched a team to mediate high wind and flooding issues. These dates are listed below:

- 1-27-21 Flooding
- 2-2-21 High Winds
- 1-24-22 High Wind
- 1-23-22 High Wind
- 1-9-23 High Winds/Floods
- 1-11-23 Floods
- 1-14-23 Flood
- 10-24-21 High Winds/Flooding
- 1-9-24 Floods
- 1-14-24 Flood/Wind
- 2-17-24 Flood

Climate Change and Heavy Rains and Storms

It is likely that climate change will increase the chance of future occurrence as well as future impacts associated with heavy rains and storms. More information on future impacts to the City can be found in the Future Conditions/Future Development section of the Vulnerability Assessment below.

According to the CAS, while average annual rainfall may increase or decrease slightly, the intensity of individual rainfall events is likely to increase during the 21st century. It is unlikely that hail will become more common in the County. The amount of lightning is not projected to change.

Cal-Adapt noted that, on average, the projections show little change in total annual precipitation in California. Furthermore, among several models, precipitation projections do not show a consistent trend during the next century. Cal-Adapt modeled scenarios are shown in Section 4.3.4 of the Base Plan.

Vulnerability to 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 both significant and localized flooding. Flooding can be worse during times where the ground is already saturated. 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.

These heavy rains and storms can cause damages from localized flooding. This was discussed in the Flood: Localized Stormwater Flooding section above.

The whole of the City is at some measure of vulnerability to heavy rain and storms. An assessment of a community's vulnerability to heavy rains and storms begins with an understanding of local exposure to heavy rain and storms. This is included in the Local Concerns section below followed by a discussion of the City's Assets at Risk to this hazard.

Local Concerns

The City has specific concerns and unique vulnerabilities regarding this hazard. These concerns form a portion of the basis for the mitigation strategy and mitigation actions that seek to reduce vulnerabilities to this hazard.

The City of Williams Police Department is located in the flood zone. The City actively mitigates the amount of water coming in from the Northside of town each year, utilizing berms along salt creek to minimize the effects of flood and prevent flood damage to the P.D.

The City also noted that heavy rains and storms cause localized flooding in the City. The problem areas area shown on Table B-28 above.

Assets at Risk

Assets at risk from heavy rain and storms include people and populations; structures; critical facilities and infrastructure; community lifelines; natural, historic, and cultural resources; economic assets; and community activities of value. These are discussed in the following sections.

People and Populations

All populations (including vulnerable populations) in the City have some measure of risk to heavy rains and storms. Those populations that work or recreate outside and unhoused individuals are more vulnerable to impacts from heavy storm events. Heavy rains and storms occur every year and do not generally cause significant adverse impacts to individuals; it is the secondary hazard, flooding, which poses the biggest impact to people. Populations at risk to flooding resulting from heavy rains and storm events include those who live in floodplains (discussed in further detail in the Flood: 1%/0.2% Annual Chance section above) and those who live in and near localized flooding areas (discussed in further detail in the Flood: Localized Stormwater Flooding section above).

Structures

Structures in the City have some risk to heavy rains and storms. Structures built to modern building codes are built to withstand heavy rains and storms (including high winds and lightning). During a heavy storm, localized flooding may cause water intrusion into buildings from the outside. Trees can be downed causing impacts to structures. Older homes and buildings may be at increased risk to heavy rains and storms. Power outages during severe storm events can occur, impacting the use of structures until the power is back online.

Critical Facilities and Infrastructure,

Heavy rain and storms can affect critical facilities and infrastructure during large events. Power outages may occur taking facilities offline. High winds can down power lines and trees impacting facilities. Water intrusion into facilities and infrastructure can impact operations. City roads, streets, and bridges can be impacted resulting in closures restricting traffic flow in the City. In certain areas, large storms can cause erosion and localized landslides which can impact affected facilities. Many critical facilities are built to modern design standards that take heavy rains and storms into account when siting and building these structures, and others may need to be retrofitted to better withstand these events.

Community Lifelines

Community lifelines are likely to have some vulnerability to heavy rains and storms. Many of the City's community lifelines are the same as or similar to Colusa County's. These were discussed in greater detail in Section 4.3.4 of the Base Plan.

Short-term, heavy rains and storms can cause both widespread flooding as well as extensive localized drainage issues throughout the City. As storms continue to increase in intensity, existing drainage and stormwater systems may be overwhelmed at least temporarily contributing to an increase in flooding related impacts. While components of these lifelines may be damaged or otherwise impacted, it is unlikely that large storm events would overwhelm and take out any of these lifelines in the City as a whole.

Natural, Historic, and Cultural Resources

Large storm events and associated flooding can affect natural, historic, and cultural resources. Silt and sediment can damage natural areas. Trees can be uprooted and downed by high winds. Extended periods of rainfall can erode natural banks along waterways and degrade soil stability for terrestrial species. While some natural systems can be adversely impacted during these large storms, heavy rain events can also provide benefits. Groundwater and wetland areas can be recharged and water supplies replenished. Historic and cultural resources may also be affected. Generally, the impacts are associated with damage to structures affected by large storm events, but other cultural resources such as those associated with Native Americans and old tribal areas can also be disturbed, damaged, and lost during extreme storm and flood events.

Economic Assets and Community Activities of Value

Heavy rain and storm events can cause direct damage to economic assets such as businesses and commercial centers. The overall economic assets and community activities of value for the City were discussed in Section B.4.1. During extreme events, the economy may slow as people stay home or inside. Business revenue may be reduced during extended storm events. Community activities of value may see a reduction in attendance, impacting revenues associated with these events, especially those that occur outdoors. Events may be cancelled or rescheduled.

Impacts from Heavy Rain and Storms

Impacts from heavy rains and storms include damage to property, critical facilities and infrastructure, and the natural landscape. This includes: erosion; downed trees; damaged utility structures and infrastructure; power outages; road damage and blockages; and even lightning strikes to critical infrastructure and people. Lightning can also cause wildfires and urban fires to occur. Landsliding and erosion occur when the soil on slopes becomes oversaturated and fails. Climate change may cause these impacts to worsen.

Actual damage associated with the primary effects of severe storms and heavy rains has been somewhat limited. It is the secondary hazards caused by these severe weather events, such as floods and erosion that would likely have the greatest impact.

Impacts to identified assets at risk to this hazard and the overall vulnerability of the City may be affected in the future by climate change (which was discussed in the Likelihood of Future Occurrence discussion above), changes in population patterns (migration, density, or the makeup of socially vulnerable populations), and changes in land use and development. Changes in population patterns and land use, and the extent to which they affect this hazard, are discussed in the Future Conditions/Future Development discussion below.

Future Conditions/Future Development

Future conditions may be affected by climate change, changes in population patterns (migration, density, or the makeup of socially vulnerable populations), and changes in land use and development. Findings on this for the City Williams include the following:

- Climate change is likely to exacerbate future heavy rain and storm conditions and associated impacts and vulnerability of the City to flooding.
- Population is expected to decrease for the City of Williams; however, the vulnerability may change depending on changes to the makeup of more vulnerable populations. Certain vulnerable populations, such as the unhoused, could experience disproportional effects from this hazard. and should be addressed as the County continues to grow. Thus, changes in population and population patterns may or may not increase the impacts and vulnerability of the City to this hazard depending on the location and nature of growth and continued planning for future hazard conditions.
- Land use planning should be proactive to address future hazard conditions. Changes in land use may also amplify the impacts of heavy rains and storms, as additional impervious surfaces can cause additional runoff and localized flooding throughout the City. 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. With adherence to development standards, future losses to new development should be minimal.

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. Changes in population could increase the number of people impacted by heavy rains and storms. Changes in land use may also amplify the impacts of heavy rains and storms, as additional impervious surfaces can cause additional runoff and localized flooding throughout the City.

Stream Bank Erosion

Likelihood of Future Occurrence–Highly Likely
Vulnerability–Medium

Hazard Profile

Erosion is the general process whereby rocks and soils are broken down, removed by weathering, or fragmented and then deposited in other places by water or air. Stream bank erosion poses problems for the City. The rate of erosion depends on many variables, including the soil or rock texture and composition, soil permeability, slope, extent of vegetative cover, and precipitation amounts and patterns. Erosion increases with increasing slope and precipitation and with decreasing vegetative cover, which includes areas where protective vegetation has been removed by fire, construction, or cultivation. The City is traversed by many waterways. These locations are all subject to bank erosion. Stream bank erosion is a natural process, but acceleration of this natural process leads to a disproportionate sediment supply, stream channel instability, land loss, habitat loss and other adverse effects.

Stream bank erosion processes, although complex, are driven by two major components: stream bank characteristics (erodibility) and hydraulic/gravitational forces. Many land use activities can affect both of these components and lead to accelerated bank erosion. The vegetation rooting characteristics can protect banks from fluvial entrainment and collapse, and also provide internal bank strength. When riparian vegetation is changed from woody species to annual grasses and/or forbs, the internal strength is weakened, causing acceleration of mass wasting processes. Stream bank aggradation or degradation is often a response

to stream channel instability. Since bank erosion is often a symptom of a larger, more complex problem, the long-term solutions often involve much more than just bank stabilization. Numerous studies have demonstrated that stream bank erosion contributes a large portion of the annual sediment yield, often impacting stream flows.

Location and Extent

Stream bank erosion occurs on rivers, streams, and other moving waterways, including leveed areas, in the City. The speed of onset of stream bank erosion is slow, as the erosion takes place over periods of years. This can be sped up and occur quickly during times of high water (as during heavy rains and storms). Duration of erosion is extended. Greater erosion occurs during periods of high stream flow and during storm and wind events when wave action contributes to the extent and speed of streambank erosion.

Past Occurrences

Disaster Declaration History

There have been no federal or state disaster declarations related to erosion.

NCDC

The NCDC does not track stream bank erosion.

City of Williams Events

February 2017 - Salt Creek experienced about 150 feet of stream bank erosion at Old Highway 99 and Highway 20. Figure B-20 shows some of the damage and erosion along the bridge.

Figure B-20 City of Williams – Erosion Issues on Salt Creek

Source: City of Williams

Climate Change and Stream Bank Erosion

It is likely that climate change will increase the chance of future occurrence as well as future impacts associated with stream bank erosion. More information on future impacts to the City can be found in the Future Conditions/Future Development section of the Vulnerability Assessment below.

According to the CAS, climate change may affect flooding which contributes to erosion in Colusa County. While average annual rainfall may increase or decrease slightly, the intensity of individual rainfall events is likely to increase during the 21st century. It is possible that average soil moisture and runoff could decline, however, due to increasing temperature, evapotranspiration rates, and spacing between rainfall events. Reduced snowpack and increased number of intense rainfall events are likely to put additional pressure on water infrastructure which could increase the chance of flooding associated with breaches or failures of flood control structures such as levees and dams. Future precipitation projections were shown in Section 4.3.4 of the Base Plan. Also according to the National Center for Atmospheric Research in Boulder, Colorado, atmospheric rivers are likely to grow more intense in coming decades, as climate changes warms the atmosphere enabling it to hold more water. All of the events above could exacerbate stream bank erosion in the County.

Vulnerability to Stream Bank Erosion

Parts of the City located along streambanks are at some measure of vulnerability to streambank erosion. An assessment of a community's vulnerability begins with an understanding of local exposure to streambank erosion. This is included in the Local Concerns section below followed by a discussion of the City's Assets at Risk to this hazard.

Local Concerns

The City has specific concerns and unique vulnerabilities regarding this hazard. These concerns form a portion of the basis for the mitigation strategy and mitigation actions that seek to reduce vulnerabilities to this hazard.

A primary location for stream bank erosion within the City of Williams is along Salt Creek. The erosion often occurs at Old Highway 99 and Salt Creek. When Salt Creek overflows its banks, water heads south into the city limits under the SR20 bridge adjacent to the railroad. Every wet year, the City is forced to construct a temporary berm under the crossing to prevent the City from flooding from the north. In the past two years (2022/2023), the City has also had to obtain permission to build that berm over the top of the railroad, closing the railroad as well as the street.

There are various impacts to the City of Williams as a result of stream bank erosion. This includes the City's Solar Field which could be damaged from floodwaters, the City Wastewater Treatment Plant, and the overall water supply which could be contaminated from floodwaters.

Assets at Risk

Assets at risk from streambank erosion include people and populations; structures; critical facilities and infrastructure; community lifelines; natural, historic, and cultural resources; economic assets; and community activities of value. These are discussed in the following sections.

People and Populations

Streambank erosion will have a minimal direct effect on people and populations in the City (unless it causes a levee failure which would have larger impacts on the City). Indirect effects on people and populations include damages to roads or bridges from streambank erosion, causing transportation issues. Streambank erosion can also cause high sediment loads. While rare, this can cause water quality impacts. Water quality can be impacted causing health problems, especially to vulnerable populations where access to clean water supplies can be more challenging.

Structures

Structures near rivers are at some risk from the effects of streambank erosion. Streambank erosion can undercut structure foundations causing instability and other issues. Structures that are in areas protected by levees are at greater risk of streambank erosion. Should levees erode quickly, their risk of failure increases. Those structures behind the levees would be at risk. This is discussed in greater detail in Levee Failure section above.

Critical Facilities and Infrastructure

Streambank erosion (especially that which causes levee failures) presents a threat to critical facilities and infrastructure, and community lifelines. Critical infrastructure plays an immensely important role in our communities. As previously noted, communities rely on roads, bridges, and related biking and pedestrian routes for transportation, and on water infrastructure for drinking water, wastewater service, and draining streets of rainwater. Damage to any one of these systems can threaten public safety, wreak havoc on daily life, impact properties far from flood zones, and result in economic impacts that cascade throughout California.

Community Lifelines

Streambank erosion that causes significant impacts such as levee failures presents a threat to life and property, including community lifelines in the City. Many of the City's community lifelines are the same as or similar to Colusa County's. It is unlikely these community lifelines would be overwhelmed, unless the streambank erosion caused a levee failure. This were discussed in greater detail in Section 4.3.15 of the Base Plan.

Natural, Historic, and Cultural Resources

Streambank erosion could have a minor effect on those resources that are near areas where streambank erosion occurs. The greater risk is from streambank erosion that could cause levee failure flooding. Large flood events can affect natural, historic, and cultural resources. There are a number of ways floodwaters

can impact natural resources and the environment: Wildlife habitats can be destroyed by floodwaters. Contaminated floodwater can pollute rivers and habitats. Silt and sediment can destroy natural areas. Riverbanks and natural levées can be eliminated as rivers reach bankfull capacity. Rivers can be widened, and deposition can increase downstream. Trees can be uprooted by high-velocity water flow. Plants that survive the initial flood may die due to being inundated with water. Historic and cultural resources may also be affected. Generally, the impacts are associated with damage to structures within the flooded areas, but other cultural resources such as those associated with Native Americans and old tribal areas can also be disturbed, damaged and lost during extreme flood events. Any of these resources that fall in the flood zones would be vulnerable.

Economic Assets and Community Activities of Value

Streambank erosion could have a minor effect on those assets that are near areas where streambank erosion occurs. The overall economic assets and community activities of value for the City were discussed in Section B.4.1. Activities of value are thought to be minimally affected. The greater risk is from streambank erosion that could cause levee failure flooding. Major flood events could affect any economic asset that lies in the floodplain and can have long lasting effects. This could cause those businesses and economic assets within these areas to close or relocate. This could cause temporary or permanent loss of sales tax revenue. This is also true if agricultural areas are flooded in the County (discussed in greater detail in Section 4.3.6 of the Base Plan). These events can also affect those economic assets outside of the floodplain, at least in the short term until the Planning Area has sufficiently recovered. Community activities of value can also be disrupted by floods, though many of these events take place in the summer months, which are less likely to flood.

Impacts from Streambank Erosion

Stream bank erosion and deposition are occurring continually at varying rates over the City and larger Planning Area. Swiftly moving floodwaters cause rapid local erosion as the water carries away earth materials. This is especially problematic in leveed areas. Severe erosion removes the earth from beneath bridges, roads and foundations of structures adjacent to streams. By undercutting it can lead to increased rockfall and landslide hazard. The deposition of material can block culverts, aggravate flooding, destroy crops and lawns by burying them, and reduce the capacity of water reservoirs as the deposited materials displace water.

Impacts to identified assets at risk to this hazard and the overall vulnerability of the City may be affected in the future by climate change (which was discussed in the Likelihood of Future Occurrence discussion above), changes in population patterns (migration, density, or the makeup of socially vulnerable populations), and changes in land use and development. Changes in population patterns and land use, and the extent to which they affect this hazard, are discussed in the Future Conditions/Future Development discussion below.

Future Conditions/Future Development

Future conditions may be affected by climate change, changes in population patterns (migration, density, or the makeup of socially vulnerable populations), and changes in land use and development. Findings on this for the City of Williams include the following:

- Climate change is likely to exacerbate future streambank erosion conditions and associated impacts and vulnerability of the City to levee failures.
- Population growth in the City has recently slowed. Additional population growth would likely bring continued diversity to the County. Vulnerable population groups could face disproportionate effects from streambank erosion (and resultant levee failure) and should be planned for. Changes in population and population patterns will likely not increase the impacts and vulnerability of the City to this hazard depending on the location and nature of growth and continued planning for future hazard conditions.
- Land use planning should be proactive to address future hazard conditions. A degrading streambed results in higher and often unstable, eroding banks. When land use changes occur in a watershed, such as clearing land for agriculture or development, runoff increases. With this increase in runoff the stream channel will adjust to accommodate the additional flow, increasing streambank erosion. Addressing the problem of streambank erosion requires land use planning, enforcing regulatory requirements, and an understanding of both stream dynamics and the management of streamside vegetation. Thus, depending on the location of new development and adherence to protective building codes, changes in land use and development may or may not increase the impacts and associated vulnerabilities of the City to this hazard.

Determining the cause of accelerated streambank erosion is the first step in solving the problem. When a stream is straightened or widened, streambank erosion increases. Accelerated streambank erosion is part of the process as the stream seeks to re-establish a stable size and pattern. Damaging or removing streamside vegetation to the point where it no longer provides for bank stability can cause a dramatic increase in bank erosion. A degrading streambed results in higher and often unstable, eroding banks. When land use changes occur in a watershed, such as clearing land for agriculture or development, runoff increases. With this increase in runoff the stream channel will adjust to accommodate the additional flow, increasing streambank erosion. Addressing the problem of streambank erosion requires an understanding of both stream dynamics and the management of streamside vegetation.

Planned developments should take erosion risk areas into account during the construction of new homes and commercial properties.

Wildfire

Likelihood of Future Occurrence–Occasional
Vulnerability–Low

Note: though considered a low priority hazard by the City, due to significance in the County and in the State of California, wildfire is profiled here. It is not considered a priority hazard for mitigation actions.

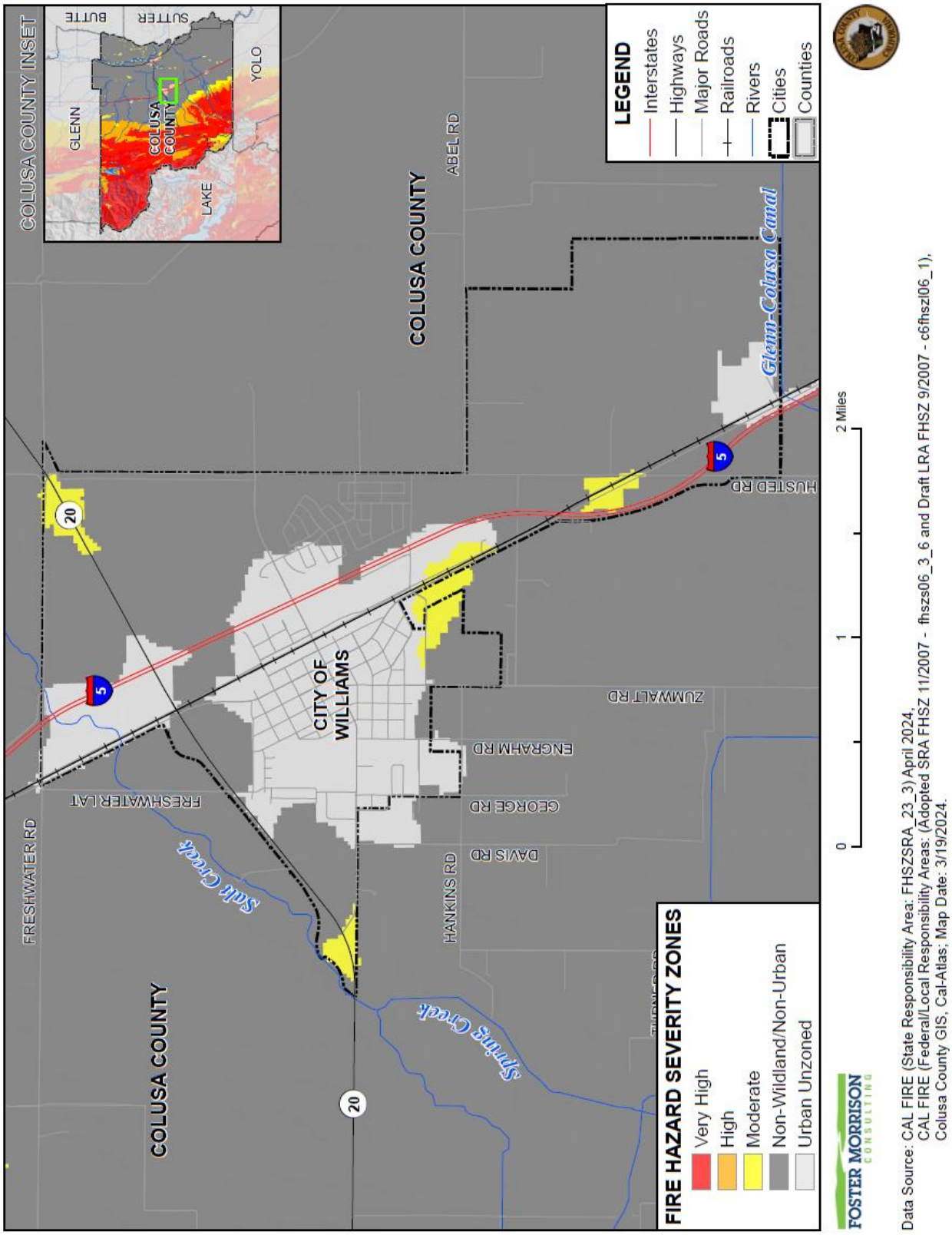
Hazard Profile

Wildland fire and the risk of a conflagration is an ongoing concern for the City of Williams. 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 fire regimes. Wildland fires affect grass, forest, and brushlands, as well as structures. 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 weather conditions can result in red flag (e.g., fire weather) days, and can result in PSPS/ESPS 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. There is also the concern of wildfires occurring in these more remote, forested areas that under certain weather conditions, can extend into areas not generally considered at a high risk to wildfire. Smoke and air quality also become an issue, both from fires occurring inside and outside of the Colusa County Planning Area and the City.

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 4.3.17 of the Base Plan, wildfire maps for the City of Williams were created. Figure B-21 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-21 City of Williams – CAL FIRE 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-30.

Table B-30 City of Williams – CAL FIRE Fire Hazard Severity Zone Geographical 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	96	3.30%	27	2.55%	69	3.74%
Non-Wildland/Non-Urban	2,047	70.59%	603	56.76%	1,444	78.59%
Urban Unzoned	757	26.11%	432	40.69%	325	17.67%
City of Williams Total	**2,900**	**100.00%**	**1,062**	**100.00%**	**1,838**	**100.00%**

Source: CAL FIRE

Wildfires that burn in the County, as well as those that burn outside the County may cause wildfire smoke to occur. This does not affect structures but can affect human health. Durations of wildfire smoke can be long, depending on the burn area and the prevailing winds. More information can be found in the Vulnerability Assessment below.

Past Occurrences

Disaster Declaration History

There has been one federal and two state disaster declaration due to fire, as shown in Table B-31.

Table B-31 Colusa County – Federal and State Wildfire Disaster Declarations 1950-2024

Disaster Type	Federal Declarations		State Declarations	
	Count	Years	Count	Years
Wildfire	1	2018	2	1987, 2018

Source: Cal OES, FEMA

NCDC Events

The NCDC has tracked 13 wildfire events in the County dating back to 1993.

City of Williams Events

There have been no past occurrences of wildfires within the City of Williams. The wildfires that have occurred in California in recent years have not been in the City of Williams but due to the City's location in the Sacramento Valley, residents have been negatively affected by the smoke. As a precaution the City has asked all Public Works personnel to stay indoors if the air quality reaches dangerous levels, but this practice is not written in any policy.

A wildland fire on October 27, 2019, started by PG&E equipment during high wind event, burned around 100 acres at Husted and Highway 20.

Climate Change and Wildfire

It is likely that climate change will increase the chance of future occurrence as well as future impacts associated with wildfire. More information on future impacts to the City can be found in the Future Conditions/Future Development section of the Vulnerability Assessment below.

Warmer temperatures can exacerbate drought conditions. Drought often kills plants and trees, which serve as fuel for wildfires. Warmer temperatures could increase the number of wildfires and pest outbreaks, such as the western pine beetle. Cal-Adapt's wildfire tool predicts the potential increase in the amount of burned areas for the year 2090-2099, as compared to recent (2010) conditions. This is shown in Section 4.3.17 of the Base Plan. Based on this model, Cal-Adapt predicts that wildfire risk in Colusa County will increase moderately at the end of the century. However, wildfire models can vary depending on the parameters used. Cal-Adapt does not take landscape and fuel sources into account in their model. In all likelihood, in the Colusa County Planning Area, precipitation patterns, high levels of heat, topography, and fuel load will determine the frequency and intensity of future wildfire.

Vulnerability to Wildfire

Risk and vulnerability to the City of Williams from wildfire is of limited concern. Wildfires that occur in the City occur from a variety of both natural and manmade causes. The City can be affected both by fires that start on or near City lands as well as those that start elsewhere and move into the City. In addition to burning large areas of land, air quality can be affected in the City by fires occurring inside the City as well as those from many miles away. As growth continues and populations increase in the City, the potential for wildfires will also increase.

The whole of the City is at some measure of vulnerability to wildfire. An assessment of a community's vulnerability to wildfire begins with an understanding of local exposure to wildfire. This is included in the Local Concerns section below. After that section, assets at risk are discussed.

Wildfire Smoke and Air Quality

Smoke from wildfires is made up of gas and particulate matter, which can be easily observed in the air. Air quality standards have been established to protect human health with the pollutant referred to as PM2.5 which consists of particles 2.5 microns or less in diameter. These smaller sizes of particles are responsible for adverse health effects because of their ability to reach the lower regions of the respiratory tract.

Wildfire smoke can have negative effects to those who live in or near a fire burn area. Smoke and air pollution from wildfires can be a severe health hazard. Significant wildfires occurring in both the County and nearby northern California communities since the 2018 LHMP Update have created significant air pollution affecting area residents. This was the case during the 2020 North Complex Fire, as well as others that affected the nearby areas.

Assets at Risk

Assets at risk from wildfire include people and populations; structures; critical facilities and infrastructure; community lifelines; natural, historic, and cultural resources; economic assets; and community activities of value. These are discussed in the following sections.

Local Concerns

The City has specific concerns and unique vulnerabilities regarding this hazard. These concerns form a portion of the basis for the mitigation strategy and mitigation actions that seek to reduce vulnerabilities to this hazard.

No wildfires have impacted the City of Williams directly. The City's Fire Protection Agency is a subsidiary of CAL FIRE so City fire staff is often fully involved with fires throughout the State. The Williams Fire Protection Agency keeps the local department adequately staffed while still supporting CAL FIRE with resources and manpower.

The 2023 Safety Element Update noted that although wildfire risk is relatively low within City limits, it is important for the City to remain cognizant of this potential threat, and to prepare itself in a manner that protects life, property, and resources from wildfires. Therefore, it is prudent for the City to adapt its fire protection planning to incorporate good practices for limiting the exposure to unnecessary fire hazards.

People and Populations

All populations are at some vulnerability to wildfire. Certain vulnerable populations are at greater risk to the effects of wildfire as well as smoke and air quality issues that wildfires bring. Vulnerable populations include:

- Unhoused
- Infants and children under age five and their caregivers
- Elderly (65 and older)
- Individuals with disabilities
- Individuals' dependent on medical equipment
- Individuals who exercise, recreate, or work outdoors
- Individuals with impaired mobility

To further evaluate the impact to the residential population within the City the CAL FIRE FHSZ dataset was overlayed on the parcel layer. Those residential parcel centroids that intersect the FHSZs were counted and multiplied by the 2022 Census Bureau average household factors for the City of Williams – 3.58.

According to this analysis, there is a total population of 8 residents of the City of Williams at risk to moderate or higher FHSZs. This is shown in Table B-32.

Table B-32 City of Williams – Improved Residential Parcels and Population by CAL FIRE 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 Williams	0	0	0	0	3	8

Source: CAL FIRE, Colusa County 2023 Parcel/Assessor Data, US Census Bureau American Community Survey 2022 Household Size Estimates.

The City noted that the Critical Facilities and Infrastructure section below includes the facilities used by At-Risk populations that are threatened by this hazard. While this is not specific to what special populations reside in the City, it does speak to facilities that area used to serve (portions) of this population.

Structures

All structures in the City have some risk to wildfire. GIS was used to determine the possible impacts of wildfire within the City of Williams. The methodology described in Section 4.3.17 of the Base Plan was followed in determining structures and values at risk in CAL FIRE's Fire Hazard Severity Zone layer. Summary analysis results for the City of Williams are shown in Table B-33, which summarizes total parcel counts, improved parcel counts and their land and structure values by fire hazard severity zone.

Table B-33 City of Williams – Count and Value of Parcels (and Structures) by CAL FIRE 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	Other Value	Estimated Contents Value	Total Value
Moderate							
Agricultural	3	1	$178,061	$35,700	$0	$35,700	$249,461
Commercial	5	3	$684,987	$1,334,788	$333,680	$1,334,788	$3,688,243
Government	3	0	$170,821	$0	$0	$0	$170,821
Industrial	0	0	$0	$0	$0	$0	$0
Institutional	0	0	$0	$0	$0	$0	$0
Miscellaneous	0	0	$0	$0	$0	$0	$0
Residential	3	3	$179,691	$507,130		$253,565	$940,386
Moderate Total	**14**	**7**	**$1,213,560**	**$1,877,618**	**$333,680**	**$1,624,053**	**$5,048,911**
Non-Wildland/Non-Urban							
Agricultural	49	10	$7,152,090	$1,925,167	$164,824	$1,925,167	$11,167,248
Commercial	21	7	$14,348,778	$20,616,958	$5,239,411	$20,616,958	$60,822,105
Government	20	1	$2,233,757	$13,785,660	$14,311,276	$13,785,660	$44,116,353

Fire Hazard Severity Zone / Property Use	Total Parcel Count	Improved Parcel Count	Total Land Value	Improved Structure Value	Other Value	Estimated Contents Value	Total Value
Industrial	6	4	$817,269	$3,472,755	$2,405,890	$5,209,133	$11,905,047
Institutional	1	1	$60,493	$289,304	$349,797	$289,304	$988,898
Miscellaneous	10	0	$19,024	$0	$0	$0	$19,024
Residential	517	510	$25,526,535	$116,264,336	$16,962,312	$58,132,163	$216,885,346
Non-Wildland/Non-Urban Total	**624**	**533**	**$50,157,946**	**$156,354,180**	**$39,433,510**	**$99,958,385**	**$345,904,021**
Urban Unzoned							
Agricultural	12	2	$980,787	$61,421	$0	$61,421	$1,103,629
Commercial	177	112	$20,594,585	$46,336,752	$9,227,978	$46,336,752	$122,496,067
Government	63	21	$2,068,503	$17,889,575	$6,624,098	$17,889,575	$44,471,751
Industrial	8	7	$1,591,061	$21,216,864	$69,550,620	$31,825,297	$124,183,842
Institutional	15	10	$224,426	$3,564,507	$1,376,744	$3,564,507	$8,730,184
Miscellaneous	7	1	$370,367	$3,718,064	$0	$3,718,064	$7,806,495
Residential	835	784	$32,972,751	$98,443,569	$355,331	$49,221,786	$180,993,437
Urban Unzoned Total	**1,117**	**937**	**$58,802,480**	**$191,230,752**	**$87,134,771**	**$152,617,402**	**$489,785,405**
City of Williams Total	**1,755**	**1,477**	**$110,173,986**	**$349,462,550**	**$126,901,961**	**$254,199,840**	**$840,738,337**

Source: CAL FIRE, Colusa County 2023 Parcel/Assessor Data

Critical Facilities and Infrastructure

Wildfire presents a threat to critical facilities and infrastructure. The following analysis identifies critical facilities and infrastructure at risk to wildfire. An analysis was performed on the critical facility inventory in the City of Williams in identified Cal Fire's FHSZ mapping. Critical facilities in CAL FIRE FHSZs in the City of Williams are shown in Figure B-22 and detailed in Table B-34. As shown, no critical facilities fall in the FHSZs in the City. Details of critical facility definition, type, name and address and jurisdiction by fire hazard severity zone are listed in Appendix F.

Figure B-22 City of Williams – Critical Facilities in Fire Hazard Severity Zones

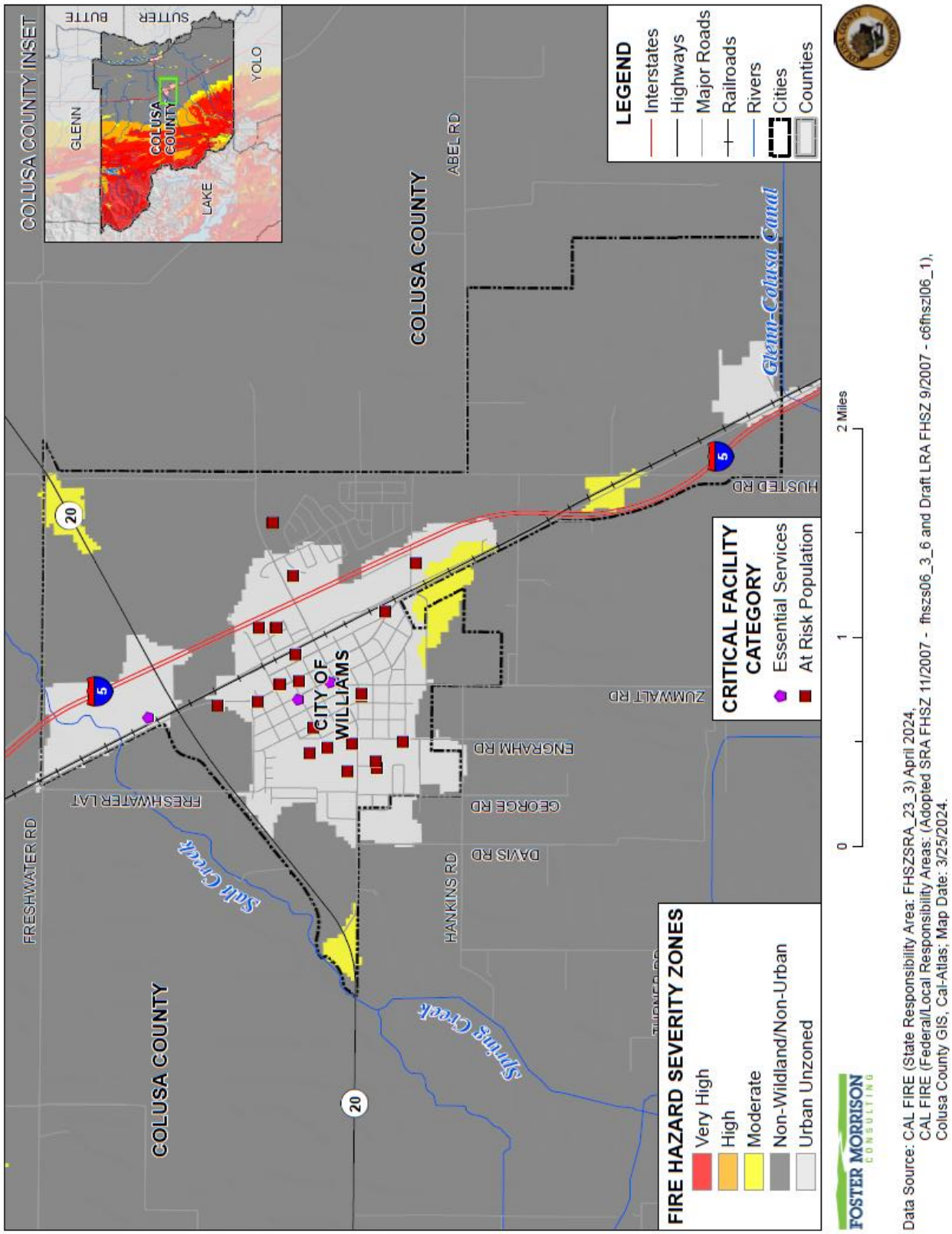


Table B-34 City of Williams – Critical Facilities by Fire Hazard Severity Zone

Fire Hazard Severity Zone	Critical Facility Category	Facility Type	Facility Count
Non-Wildland/Non-Urban			
Non-Wildland/Non-Urban	At Risk Population Facilities	Mobile Home Park	1
		Senior Living Facility	1
		Total	**2**
Non-Wildland/Non-Urban Total			**2**
Urban Unzoned			
Urban Unzoned	Essential Services Facilities	Emergency Response	2
		Fire Station	1
		Public Services	1
		Utility Facility	1
		Total	**5**
	At Risk Population Facilities	Apartment Complex	4
		Hotel or Motel	8
		Migrant Housing	1
		Mobile Home Park	1
		School	4
		Senior Living Facility	2
		Total	**20**
Urban Unzoned Total			**25**
City of Williams Total			**27**

Source: CAL FIRE, City of Williams GIS

Community Lifelines

Wildfire presents a threat to life and property, including to community lifelines in the City. Many of the City's community lifelines are the same as or similar to Colusa County's. These were discussed in greater detail in Section 4.3.17 of the Base Plan. A large wildfire near the City could overwhelm community lifelines.

Natural, Historic, and Cultural Resources

Natural, historic, and cultural resources located within areas at risk to wildfire would be vulnerable. Should a wildfire occur in the City of Williams, the impacts to natural, historic and cultural resources could be extensive and include air pollution, contamination from water runoff containing toxic products, and other environmental discharges or releases from burned materials affecting soils, habitat areas, wildlife, and aquatic resources. Historic and cultural resources can be affected and are often more vulnerable due to their older age, construction type, and lack of fire prevention infrastructure such as sprinklers.

Economic Assets and Community Activities of Value

Wildfires in the City can cause direct damage to economic assets such as businesses and commercial centers located in affected areas. The overall economic assets and community activities of value for the City were discussed in Section B.4.1. During extreme events, the economy may slow while recovery efforts are prioritized. Business revenue may be reduced during extended events. Community activities and events in areas affected by wildfire (and smoke and air quality issues) may be cancelled or rescheduled.

There have been wildfire occurrences to the northwest of the City in the areas of Sites/Leesville/Walker Ridge such as the 2024 Sites fire, however, all these events have been contained miles from the City limits. Although depending on the fire, wildfire smoke from nearby wildfire events can affect air quality in the City and impact outdoor events such as Pioneer Day which occurs in June.

Impacts from Wildfire

Potential impacts from wildfire include loss of life and injuries; damage to structures (commercial, industrial, and residential) 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. Smoke impacts may come from wildfires outside the City, as well as from within.

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.

The impacts of a fire are felt long after the fire is extinguished. In addition to the loss of property in fires, the loss in vegetation and changes in surface soils alters the environment. When supporting vegetation is burned, hillsides become destabilized and prone to erosion. The burnt surface soils are harder and absorb less water. When winter rains come, this leads to increased runoff, erosion, and landslides in hilly areas.

Impacts that are not quantified, but can be anticipated in large future events, include:

- Injury and loss of life;
- Commercial and residential structural and property damage;
- Disruption of and damage to public infrastructure, utilities, and services;
- Damage to roads/bridges resulting in loss of mobility;

- Significant economic impact (jobs, sales, tax revenue) to the community; and
- Negative impact on commercial and residential property values

Impacts to identified assets at risk to this hazard and the overall vulnerability of the City may be affected in the future by climate change (which was discussed in the Likelihood of Future Occurrence discussion above), changes in population patterns (migration, density, or the makeup of socially vulnerable populations), and changes in land use and development. Changes in population patterns and land use, and the extent to which they affect this hazard, are discussed in the Future Conditions/Future Development discussion below.

Future Conditions/Future Development

Future conditions may be affected by climate change, changes in population patterns (migration, density, or the makeup of socially vulnerable populations), and changes in land use and development. Findings on this for the City of Williams include the following:

- Climate change is likely to exacerbate future wildfire conditions and associated impacts and vulnerability of the City to wildfire.
- Population growth in the City of Williams has recently slowed. Additional population growth would likely bring continued diversity to the City. Vulnerable population groups could face disproportionate effects from wildfire and should be planned for. Changes in population and population patterns may or may not increase the impacts and vulnerability of the City to this hazard depending on the location and nature of growth and continued planning for future hazard conditions.
- Land use planning should be proactive to address future hazard conditions. Locating new development, structures and critical facilities and infrastructure within or near areas of wildfire risk may put additional development at risk. However, City building codes are in effect to reduce this risk and should be updated as necessary to continue to address future wildfire conditions. It should be noted that most of the growth in the County is occurring in areas outside the moderate or higher fire hazard severity zones. Thus, depending on the location of new development and adherence to protective building codes, changes in land use and development may or may not increase the impacts and associated vulnerabilities of the City to this hazard.

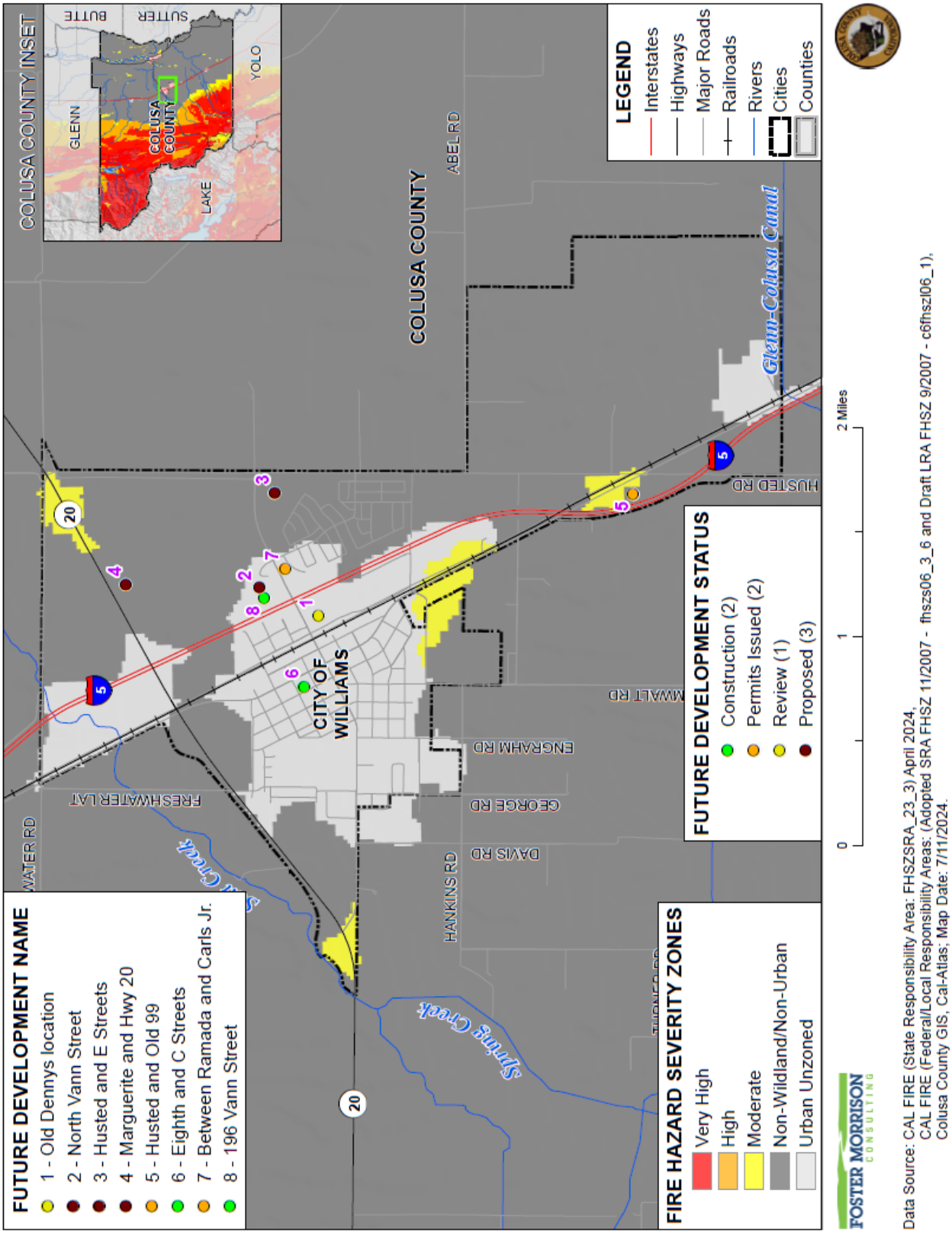
Additional growth and development within moderate or higher fire hazard severity zones in the City would place additional values at risk to wildfire. City building codes are in effect and should continue to be updated as appropriate to reduce this risk.

Future development areas and their vulnerability to wildfire are discussed further in the below GIS analysis.

GIS Analysis

The City provided 8 future development areas which were used as the basis for the inventory of future development for the City. These were mapped in GIS. Figure B-23 show the locations of the future development areas overlayed on the CAL FIRE FHSZs. As shown, no future development areas fall in moderate or higher FHSZs, as such, no tabular analysis is presented.

Figure B-23 City of Williams – Future Development in FHSZs



B.5 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, mitigation education, outreach, and partnerships, and other mitigation efforts.

B.5.1. Regulatory Mitigation Capabilities

Table B-35 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 Williams.

Table B-35 City of Williams's Regulatory Mitigation Capabilities

Plans	In Place Y/N	Does the plan address hazards? Can the plan be used to carry out mitigation actions? When was it last updated??
Capital Improvements Plan	N	
Climate Change Adaptation Plan	Y	Addresses: temperature, reduced precipitation, flooding, reduced agriculture, reduced water, wildfire, heat, reduced tourism
Community Wildfire Protection Plan	Y	Colusa County Community Wildfire Protection Plan
Comprehensive/Master Plan	Y	The General Plan addresses various hazards but does not identify any mitigation projects. The General Plan does not implement mitigation.
Continuity of Operations Plan	N	
Economic Development Plan	N	
Land Use Plan	Y	The General Plan Land Use was last updated in 2012. This plan does not implement mitigation.
Local Emergency Operations Plan	Y	The EOP is updated as necessary by the Emergency Manager.
Stormwater Management Plan	N	
Transportation Plan	Y	Circulation Element
Other (describe)		
Land Use Planning and Ordinances	**Y/N**	**Is the ordinance an effective way to reduce hazard impacts? Is the ordinance adequately administered and enforced?**
Acquisition of land for open space and public recreation use	Y	Yes and Yes
Building code	Y	Yes and Yes. Updated 2023
Flood insurance rate maps	Y	Yes and Yes.
Floodplain ordinance	Y	Yes and Yes. Updated Jan. 2024

Natural hazard-specific ordinance (stormwater, steep slope, wildfire)	N	
Subdivision ordinance	Y	Yes and Yes
Zoning ordinance	Y	Yes and Yes
Other		
How can these capabilities be expanded and improved to reduce risk?		
Ordinances are regularly updated to State standards as well as on an as needed basis to reduce hazard. These ordinances will be kept current to reduce risk in the City.		

Source: City of Williams

The City of Williams General Plan Program, 2012 (Safety Element updated in 2023)

The City of Williams General Plan Program serves as the blueprint for future growth and development and provides comprehensive planning for the future. It encompasses what the City is now, and what it intends to be, and provides the overall framework of how to achieve this future condition (see the discussion in Section 4.3.1 Growth and Development Trends).

The General Plan includes a Safety Element (updated in 2023) that focuses on safety issues to be considered in planning for the present and future development of the Williams Planning Area. Identified hazards include wildfire, geologic/seismic, flooding, and other natural and man-made hazards (such as hazardous materials). Mitigation-related actions and objective summaries are as follows:

- Flooding – 18 policies and 21 actions
- Seismic and Geologic Hazards – 4 policies and 3 actions
- Fire – 14 policies and 11 actions

Flood Hazard Mitigation Study (2003)

This final report provides background information and discusses alternatives to mitigate historical flood hazards in the city and its surrounding watersheds. Several approaches are presented in this document, both structural and non-structural, that address the problems specific to Williams. Alone or in combination with other approaches, these measures lend varying degrees of protection against future flood impacts. From supporting engineering analyses, these approaches were screened and two project alternatives were analyzed: first an engineered levee accompanied by internal drainage improvements within the city and, second, a proposal to elevate or retrofit existing structures in the floodplain against future flood damages. The two alternatives have been conceptualized to a level of detail that permits an understanding of project impacts, key components, and construction costs.

Mitigation Related Ordinances

Buildings and Construction (Title 15)

The following codes are adopted by the city for purposes of construction:

- The California Building Code, 2019 Edition, Volumes 1 and 2, including Chapter 1, which incorporates and amends the International Building Code, 2018 Edition published by the International Code Council,

is hereby adopted by this reference and incorporated herein as if set forth in full, as the building code of the city.

- The California Residential Code, 2019 Edition, including Chapter 1, which incorporates and amends the International Residential Code, 2018 Edition, published by the International Code Council, is hereby adopted by this reference and incorporated herein as if set forth in full, as the residential code of the city.
- The California Plumbing Code, 2019 Edition, including Chapter 1, which incorporates and amends the Uniform Plumbing Code, 2018 Edition, published by the International Association of Plumbing and Mechanical Officials, is hereby adopted by this reference and incorporated herein as if set forth in full, as the plumbing code of the city.
- The California Green Building Standards Code, 2019 Edition is hereby adopted by this reference and incorporated herein as if set forth in full, as the green building standards code of the city.
- The California Electrical Code, 2019 Edition, including Article 89, which incorporates and amends the National Electrical Code, 2017 Edition, published by the National Fire Protection Association, is hereby adopted by this reference and incorporated herein as if set forth in full, as the electrical code of the city.
- The Uniform Housing Code, 1997 Edition, published by the International Conference of Building Officials, is adopted by this reference and incorporated herein as if set forth in full, as the housing code of the city.
- The Uniform Code for the Abatement of Dangerous Buildings, 1997 Edition, published by the International Conference of Building Officials, is adopted by this reference and incorporated herein as if set forth in full as the abatement code for the city.
- The California Fire Code, 2016 Edition, including Chapter 1 with the exception of Section 103.2, which incorporates and amends the International Fire Code, 2015 Edition, published by the International Code Council, is hereby adopted by this reference and incorporated herein as if set forth in full, as the fire code of the city.
- The California Mechanical Code, 2019 Edition, including Chapter 1, which incorporates and amends the Uniform Mechanical Code, 2018 Edition, published by the International Association of Plumbing and Mechanical Officials, is hereby adopted by this reference and incorporated herein as if set forth in full, as the mechanical code of the city.

Subdivisions (Title 16)

This title shall be known and may be cited as the "Williams Subdivision Ordinance." This title is enacted for the purpose of adopting standards, regulations and procedures for the subdivision and other specified types of division and utilization of land in the incorporated area of the city, as authorized and directed by the Subdivision Map Act and other applicable provisions of law. This title regulates and controls subdivisions for which the Subdivision Map Act requires a tentative and final or parcel map, and other divisions and subdivisions as authorized by the act. This title also provides for the reversion to acreage of lands previously divided, and for exclusions from subdivisions.

Zoning (Title 17)

This chapter divides the city into zoning districts, and sets out which uses of land are permitted by right, conditionally permitted, and prohibited in each zoning district. It also provides limitations, separation, and special bulk standards for certain uses. The City of Williams is divided into the eleven zoning districts. The creation of these districts is consistent with the land use and community character designations used in the Williams General Plan.

Civil Defense Shelters (Section 15.28)

All buildings and structures which are designed primarily as civil defense shelters are exempt from the provisions of the building code of the city, except as such provisions may be adopted by the civil defense shelter board.

Flood Damage Preventions (Section 15.30)

The Legislature of the State of California has in Government Code Sections 65302, 65560, and 65800 conferred upon local governments the authority to adopt regulations designed to promote the public health, safety, and general welfare of its citizenry. Therefore, the City Council of the City of Williams, California does hereby adopt the following floodplain management regulations. (Ord. No. 190-12, § 1(exh. A), 2-15-2012)

The flood hazard areas of the City of Williams are subject to periodic inundation which results in loss of life and property, health and safety hazards, disruption of commerce and governmental services, extraordinary public expenditures for flood protection and relief, and impairment of the tax base, all of which adversely affect the public health, safety, and general welfare. These flood losses are caused by uses that are inadequately elevated, floodproofed, or protected from flood damage. The cumulative effect of obstructions in areas of special flood hazards which increase flood heights and velocities also contributes to flood losses. In order to accomplish its purposes, this chapter includes regulations to:

- Restrict or prohibit uses which are dangerous to health, safety, and property due to water or erosion hazards, or which result in damaging increases in erosion or flood heights or velocities;
- Require that uses vulnerable to floods, including facilities which serve such uses, be protected against flood damage at the time of initial construction;
- Control the alteration of natural floodplains, stream channels, and natural protective barriers, which help accommodate or channel floodwaters;
- Control filling, grading, dredging, and other development which may increase flood damage; and
- Prevent or regulate the construction of flood barriers which will unnaturally divert floodwaters or which may increase flood hazards in other areas.

No structure or land shall hereafter be constructed, located, extended, converted, or altered without full compliance with the terms of this chapter and other applicable regulations. Violation of the requirements (including violations of conditions and safeguards) shall constitute a misdemeanor. Nothing herein shall prevent the city council from taking such lawful action as is necessary to prevent or remedy any violation.

B.5.2. Administrative/Technical Mitigation Capabilities

Table B-36 identifies the City department(s) responsible for activities related to mitigation and loss prevention in the City of Williams.

Table B-36 City of Williams's Administrative and Technical Mitigation Capabilities

Administration	In Place Y/N	Describe capability Is coordination effective?
Staff		**Is staffing adequate to enforce regulations? Is staff trained on hazards and mitigation? Is coordination between agencies and staff effective?**
Chief Building Official	Y	The Building Inspector is a full-time position required to inspect and certify that all buildings conform to code mitigating possible hazards.
Civil Engineer, including dam and levee safety	Y	The City Engineer is a full-time position. The City Engineer is trained in hazards and their mitigation and has been actively enforcing mitigation measures to combat the localized flooding north of the city.
Community Planner	Y	The City Planner is a full-time position. The City Planner stays up to date on state requirements updating zoning ordinances as necessary.
Emergency Manager	Y	The Fire Chief of the Williams Fire Protection Agency is the Emergency Manager for the city's Emergency Operations Plan.
Floodplain Administrator	Y	The duties of this position were previously assigned to the City Administrator but were updated in January of 2024 to assign administrator duties to the City Engineer.
GIS Coordinator	N	
Planning Commission	Y	Planning Commission capability/defined roles are limited to land use planning, development, and flood plain variances. Mitigation review is on limited projects.
Other		
Technical	**Y/N**	**Has capability been used to assess/mitigate risk in the past?**
Grant writing	N	
Hazard data and information	N	
GIS analysis	N	
Mutual aid agreements	N	
Other		
How can these capabilities be expanded and improved to reduce risk?		
Increase capacity through staffing, training, and enhanced coordination among all department and jurisdictions; emergency management/hazard specific program enhancements, training, and exercising; increased funding opportunities and capacity; and implementation of mitigation actions and projects		

Source: City of Williams

B.5.3. Fiscal Mitigation Capabilities

Table B-37 identifies financial tools or resources that the City could potentially use to help fund mitigation activities.

Table B-37 City of Williams's Fiscal Mitigation Capabilities

Funding Resource	In Place 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	
Community Development Block Grant	Y	The city is currently using CDBG funds to rehabilitate an old building into a food distribution center. CDBG funds are unlikely to be used for mitigation actions since their funding regulations are so specific.
Federal funding programs (non-FEMA)		
Fees for water, sewer, gas, or electric services	Y	No gas/electric.
Impact fees for new development	Y	Schools, fire, police, parks, city facilities, roads, flood
State funding programs	N	
Stormwater utility fee	N	
Other		
How can these capabilities be expanded and improved to reduce risk?		
Increase capacity through staffing, training, and enhanced coordination among all department and jurisdictions; emergency management/hazard specific program enhancements, training, and exercising; increased funding opportunities and capacity; and implementation of mitigation actions and projects.		

Source: City of Williams

B.5.4. Mitigation Education, Outreach, and Partnerships

Table B-38 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-38 City of Williams's Mitigation Education, Outreach, and Partnerships

Program/Organization	In Place Y/N	How widespread are each of these in your community?
Community newsletters	Y	The City posts newsletters from local assistance organizations to keep the citizens up to date on local resources and distributions.
Hazard awareness campaigns (such as Firewise, Storm Ready, Severe Weather Awareness Week, school programs, public events)	Y	Fire prevention, risk management, and worker safety training and CPR training is offered regularly by/through the Fire Department
Local news	Y	All public notices and outreach are posted in the local newspaper
Organizations that interact with underserved and vulnerable communities	Y	First 5 and the Williams Community Church post food distribution days in City Facilities. CDBG funds will give these organizations a central location to serve the community.

Program/Organization	In Place Y/N	How widespread are each of these in your community?
Social media	Y	The City utilizes both a City and Parks and Recreations Facebook pages for outreach.
Other	Y	The City installed two digital marquee boards on either side of town for outreach messages.
How can these capabilities be expanded and improved to reduce risk?		
Increase capacity through staffing, training, and enhanced coordination among all department and jurisdictions; emergency management/hazard specific program enhancements, training, and exercising; increased funding opportunities and capacity; and implementation of mitigation actions and projects.		

Source: City of Williams

B.5.5. Other Mitigation Efforts

The City has many other completed or ongoing mitigation projects/efforts that include the following:

- The City has become more aggressive with its preventative measures during potential flood events. The City stages public works around the clock and install earthen/sandbag berm to prevent flooding to the north side of town.
- The newly formed Environmental Justice Element found that while Williams does not have an area that meets the threshold of a Disadvantaged Community, it does have unique health hazards to the area. One example is due to the large agricultural uses both in the City and in the surrounding area, there is a higher chance of residents coming in contact with harmful levels of air or water pollutants associated with agricultural byproducts. To combat these effects, the city has many policies in place such as Public Safety Policy 4.53, Land Use Policy 3.44, and Land Use Policy 3.47.

B.6 Mitigation Strategy

B.6.1. Mitigation Goals and Objectives

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

B.6.2. NFIP Mitigation Strategy

The City of Williams joined the National Flood Insurance Program (NFIP) on April 22, 1980. As a participant of the NFIP, the City of Williams 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 Williams will continue to comply with the requirements of the NFIP in the future.

The City of Williams Planning and Public Works Departments 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 Planning and Public Works Departments 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 Williams is not a current participant in the CRS program.

More information about the floodplain administration in the City of Williams can be found in Table B-39.

Table B-39 City of Williams Compliance with NFIP

NFIP Topic	Comments
Staff Resources	
Who is responsible for floodplain management in your community? Provide Department/Title. Do they serve any roles other than Community Floodplain Administrator (FPA)?	The city manager or his or her designee shall serve as city's floodplain administrator and shall administer, implement, and enforce this ordinance by granting or denying development permits in accord with its provisions The City Manager does server other roles.
Is the Community FPA or NFIP Coordinator a Certified Floodplain Manager?	No
Is floodplain management an auxiliary function?	Yes
Provide an explanation of NFIP administration services (e.g., permit review, GIS, education or outreach, inspections, engineering capability)	This is discussed in the cell titled "Provide an explanation of the permitting process" below.
What are the barriers to running an effective NFIP program in the community, if any?	Lack of staffing
Insurance Summary	
How many NFIP policies are in the community? What is the total premium and coverage?	11 policies $12,777 in total premiums $6,302,000 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?	11 losses paid $55,416.69 in paid losses 1 substantial damage claim
How many structures (residential and non-residential) are exposed to flood risk within the community?	53 in 1% annual chance flood zone 183 in 0.2% annual chance flood zone
Are there Repetitive Loss (RL) and Severe Repetitive Loss Properties (SRL) structures in the community?	0 RL or SRL properties
Describe any areas of flood risk with limited NFIP policy coverage	None.
How does the community teach property owners or other stakeholders about the importance flood insurance?	Flyers, social media outreach, and other efforts are used. City website is also used.
What digital sources (like the FEMA Map Service Center, National Flood Hazard Layer) or non-regulatory tools does the community use?	DFIRMs are used.

NFIP Topic	Comments
Compliance History	
Is the community in good standing with the NFIP?	Yes
Are there any outstanding compliance issues (i.e., current violations)?	No
Who is responsible (Department, Title) for making substantial damage/improvement determinations? How does the community identify substantially damaged/improved structures? What is the process to make sure these structures are brought into compliance?	This is a combination of the City engineer and the Planning Department. Substantial damaged structures are identified after flood assessments are done. The City follows NFIP guidelines to make sure these structures are brought into compliance.
When was the most recent Community Assistance Visit (CAV) or Community Assistance Contact (CAC)?	CAV 8/28/2017
Is a CAV or CAC scheduled or needed?	N
Regulation	
When did the community enter the NFIP?	4/22/1980
Are the FIRMs digital or paper?	Digital
Has the community adopted the NFIP minimum floodplain management criteria via local regulation? Date of current local regulation?	The community has adopted a floodplain ordinance that meets or exceeds the NFIP minimum regulations. It was last adopted on 8/19/2020.
Has the community adopted the latest effective FIRM? Date adopted?	Yes.
How does the community enforce local floodplain regulations and monitor compliance?	This is discussed in the cell titled "Provide an explanation of the permitting process" below.
Do floodplain development regulations meet or exceed FEMA or State minimum requirements? If so, in what ways?	The City's regulations meet the minimum requirements of the NFIP and the CBS.
How are Letters of Map Change (LOMCs) tracked and compiled?	New DFIRMs are downloaded regularly which include the latest LOMCs, LOMRs, and CLOMRs.

NFIP Topic	Comments
Provide an explanation of the permitting process.	Development permit applications are submitted to the Planning Department where the project is reviewed for zoning and code requirements. The application is then submitted to the Building Department for plan check review. Larger project applications are submitted to the Planning Department for initial review, after which they are reviewed by the Technical Advisory Committee (TAC), which includes all City departments. Planning Staff then completes the environmental review process and prepares a staff report, project conditions, and recommendations to the Planning Commission. The Planning Commission can then approve or deny the applications. For development within a Special flood hazard area (SFHA), section 15.30.150 of the municipal code requires permit applications to include: 1. Location of the regulatory floodway 2. BFE 3. Proposed elevation of the lowest floor 4. Proposed elevation to which any nonresidential structure will be flood proofed 5. Location and total net area of foundation openings 6. The extent to which any watercourse will be altered or relocated. Certified elevations for final construction are required for: 1. Lowest floor elevations for residential structures 2. Lowest floor elevations or elevations of flood proofing for nonresidential structures.
Community Rating System	
Does the community participate in CRS? If so, what is the community's CRS Class Ranking?	No
What categories and activities provide CRS points and how can the class be improved?	N/A
Does the plan include CRS planning requirements?	N/A

Source: City of Williams

B.6.3. Mitigation Actions

The Planning Team for the City of Williams 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:

- Climate Change
- Drought & Water shortage
- Earthquake
- Floods: 1%/0.2% annual chance
- Floods: Localized Stormwater
- Severe Weather: Heavy Rain and Storms (Wind, Hail, Lightning)
- Stream Bank Erosion

- Wildfire

The following hazards were considered as non-priority hazards for mitigation planning purposes:

- Ag Hazards: Severe Weather/Invasive Species (Pests and Weeds)
- Landslide, Mudslide, and Debris Flow
- Levee Failure
- Severe Weather: Extreme Cold and Freeze
- Severe Weather: Extreme Heat
- Severe Weather: High Winds and Tornados
- Dam Failure
- Subsidence

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.

Mitigation Actions

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

Hazards Addressed: Multi-hazard (Climate Change, Drought & Water shortage, Earthquake, Floods: 1%/0.2% annual chance, Floods: Localized Stormwater, Severe Weather: Heavy Rain and Storms (Wind, Hail, Lightning), Stream Bank Erosion, 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 Williams Planning 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 (Climate Change, Drought & Water shortage, Earthquake, Floods: 1%/0.2% annual chance, Floods: Localized Stormwater, Severe Weather: Heavy Rain and Storms (Wind, Hail, Lightning), Stream Bank Erosion, 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. The public outreach effort will leverage and build upon existing mechanisms, will include elements to meet the objectives of Goal 3 of this LHMP Update, and will consider:

- Using a variety of information outlets, including websites, local radio stations, news media, schools, and local, public sponsored events;
- Creating and distributing (where applicable) brochures, leaflets, water bill inserts, websites, and public service announcements;
- Displaying public outreach information in County office buildings, libraries, and other public places and events;
- Developing public-private partnerships and incentives to support public education activities.

Location of Project: Citywide

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 Williams in partnership with the County

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. Aquifer Recharge Project

Hazards Addressed: Drought and Water Shortage

Goals Addressed: 1, 3, 4

Issue/Background: Drought and water shortage lower the groundwater tables. This causes impacts to the wastewater treatment plant as the ponds seem to be a source of water for wildlife and insects, impacting our ability to treat wastewater. For example: midge flies brought larva to our wastewater basins which upset the microbes and raised our levels out of compliance which raised our costs to treat the wastewater significantly. Replenishing the groundwater table will assist the city as we navigate this new drought climate.

Project Description: Recharge the local aquifers using boreholes or dug wells and shafts. To be cost effective the city may explore locating and utilizing abandoned wells that have run dry as candidates for reverse drainage.

Other Alternatives: No action.

Existing Planning Mechanism(s) through which Action Will Be Implemented: The City enforces watering schedules during the warmer months with high water usage. The City provides a phone number for residents to call to report violators.

Responsible Office/Partners: Public Works Department, Planning Department

Cost Estimate: $390 per acre foot

Benefits (Losses Avoided): Sustaining the City's aquifer may enable the city to assist our neighbors in the county by selling water to maintain the homes in the more rural areas where wells have run dry. This practice has been used in extreme drought years but recharging the aquifer may enable the City of Williams to continue this practice.

Potential Funding: Sustainable Groundwater Management Grant Program; Prop 68 Water Recycling

Timeline: 5 years

Project Priority: High

Action 4. Storm Drain Master Plan

Hazards Addressed: Flood – Localized Stormwater, Heavy Rains and Storms

Goals Addressed: 1, 3, 4, 5

Issue/Background: Storms tend to have grown in intensity. We are getting larger quantities of water in shorter periods of time and the city watershed flows are strained by the inability of the natural drainage system's ability to accept them.

Project Description: Create and adopt a new Storm Drain Master Plan.

Other Alternatives: Status quo, responding to issues rather than proactively planning for them.

Existing Planning Mechanism(s) through which Action Will Be Implemented: New Storm Drain Master Plan. Curbs gutters and sidewalks are required for future development, similarly open space requirements encourage the addition of impervious surfaces for water drainage. New subdivisions are often required to install detention basins to combat the increased water runoff.

Responsible Office/Partners: Public Works, Planning Department

Cost Estimate: To be determined.

Benefits (Losses Avoided): Reduced flood risk to people and property.

Potential Funding: Prop 1 Storm Water Grants Program (SWGP)

Timeline: 5 years

Project Priority: High

Action 5. Salt Creek Erosion Control

Hazards Addressed: Streambank Erosion, Floods 1%/0.2%

Goals Addressed: 1, 3, 4, 5

Issue/Background: Erosion and sedimentation at Old 99 bridge north of SR20. When Salt Creek overflows its banks, water heads south into the city limits under the SR20 bridge adjacent to the railroad. Every wet year, the city is forced to construct a temporary berm under the crossing to prevent the city from flooding from the north. In the past two years, we have also had to obtain permission to build that berm over the top of the railroad, closing the railroad as well as the street.

Project Description: Evaluate a create a plan to manage and keep water from flooding into the town from the north by increasing the capacity of water downstream from the city limits.

Other Alternatives: In order to prevent flow from Salt Creek or other conveyance systems from inundating the City, a flood wall or similar construction could be constructed at the Highway 99W and Hwy 20 underpass to keep flood stages to the north of Hwy 20.

Existing Planning Mechanism(s) through which Action Will Be Implemented: The Public Works department currently maintains the ditches along Old 99 as well as sections of Salt Creek.

Responsible Office/Partners: City of Williams Public Works, Colusa County Public Works

Cost Estimate: To be determined.

Benefits (Losses Avoided): Reducing flooding to the north of town will protect the homes and properties along North Street, Virginia Street, and North 7th Street.

Potential Funding: Floodplain Management, Protection, and Risk Awareness Grant Program (when open)

Timeline: 5 years

Project Priority: High

Action 6. Underground Powerlines

Hazards Addressed: Earthquake, Wildfire (PSPS)

Goals Addressed: 1, 3, 4

Issue/Background: The City of Williams has a high occurrence of high North winds that funnel down the I-5 corridor. The city has received multiple complaints and three formal claims caused by damage to cars or fences from fallen trees. The city received complaints in 2019, 2021, and 2022 with two occurrences of tree to car damage and one tree to fence. Similarly, high winds frequently remove power from the city.

Project Description: As the City of Williams continues to grow, we will continue to require undergrounding of all utilities. The City will also assess current utility poles and see if any meet the qualification criteria to be undergrounded using PG&E 20A funding. Many of the old power poles along Old Highway 99 sit in access points impeding ADA access to city streets which is a qualifier.

Other Alternatives: No action.

Existing Planning Mechanism(s) through which Action Will Be Implemented: The Planning Department requires new development to underground utilities.

Responsible Office/Partners: Planning Department

Benefits (Losses Avoided): Reduced risk of power failure, which can be a life safety issue for those dependent on medical devices.

Potential Funding: Rule 20A

Timeline: 5 years

Project Priority (H, M, L): High

Action 7. Healthy Trees Program

Hazards Addressed: Severe Weather – Heavy Rain and Storms, Climate Change, Drought

Goals Addressed: 1, 3, 4

Issue/Background: The City of Williams has a high occurrence of high North winds that funnel down the I-5 corridor. The city has received multiple complaints and three formal claims caused by damage to cars or fences from fallen trees. The city received complaints in 2019, 2021, and 2022 with two occurrences of tree to car damage and one tree to fence. Similarly, high winds frequently remove power from the city.

Project Description: Assess the health of all city trees for removal and replacement. Maintain and trim established trees to encourage growth. Add more trees to city properties increasing the tree canopy and reduce urban heat.

Other Alternatives: No action.

Existing Planning Mechanism(s) through which Action Will Be Implemented: The Planning Department currently requires all new developments to have at least one tree in the yard. In the established section of town, street tree removal is prohibited, with regular maintenance encouraged.

Responsible Office/Partners: Planning Department

Benefits (Losses Avoided): Improving the health of all trees in town will lessen the chance of people or personal properties being impacted from falling tree parts.

Potential Funding: Urban and Community Forestry Program; Extreme Heat and Resilience Program

Timeline: 5 years

Project Priority (H, M, L): High

Action 8. EQ Vulnerability Study and Retrofit of City Assets

Hazards Addressed: Earthquake

Goals Addressed: 1,2,3

Issue/Background: Several City assets are older and need to be evaluated for EQ vulnerability. This can be completed using Matterport 3D scanning that evaluates the structural integrity of the building. The city has used this in the past on the newly acquired Old Bowling Alley building.

Other Alternatives: No action

Existing Planning Mechanisms through which Action will be Implemented: Currently all building remodels are required to meet earthquake safety standards, this is enforced through the city's building code.

Responsible Office: City of Williams Building and Planning Departments

Potential Funding: National Endowment for Humanities

Benefits (Losses Avoided): Life and property preservation

Schedule: Three to Five Years

Priority (H, M, L): Low

Action 9. Detention Basin Construction (continuing from the 2018 LHMP)

Hazards Addressed: Flood: 100/200/500; Localized Flooding; Stream Bank Erosion, Heavy Rains and Storms

Goals Addressed: 1, 2, 3, 4

Issue/Background: In order to prevent flow from Salt Creek or other conveyance systems from inundating the City, a detention basin(s) could be constructed in the north end of the city to capture the water, and then additionally smaller basins could be completed throughout the City to collect the water from the conveyances that are often overwhelmed during storm events. The city is currently in the design phase of a detention basin for the Northeast section of town where water from our developing Business Park is located.

Other Alternatives: No action

Existing Planning Mechanisms through which Action will be Implemented: Stormwater Master Plan

Responsible Office: City of Williams Planning Department

Cost Estimate: Approximately $137 million.

Potential Funding: CA DWR, Cal OES, FMA, BRIC, and HMGP grants.

Benefits (avoided Losses): Reduced flood risk, which reduces risk to people and property.

Schedule: As soon as possible

Priority (H, M, L): High