This document is a support annex to the Yolo County Multijurisdictional Hazard Mitigation Plan

City of Woodland Community Profile

Version 1.0 December 2018

This page is intentionally blank.

ACKNOWLEDGEMENTS

The City of Woodland would like to thank those Yolo County Operational Area collaborators and partners who participated in the planning and development of this document.

The official Yolo County Operational Area Hazard Mitigation Steering Committee provided the oversight and dedication to this project that was required and without their commitment; this project would not be possible.

As with any working plan, this document represents planning strategies and guidance as understood as of the date of this plan's release. This plan identifies natural hazards and risks and identifies the hazard mitigation strategy to reduce vulnerability and make the communities of the City of Woodland more disaster resistant and sustainable.

This page is intentionally blank

TABLE OF CONTENTS

SECTION 1.0: INTRODUCTION

1.1 INTRODUCTION

The City of Woodland Community Profile has been prepared in conjunction with the Yolo County multi-jurisdictional Hazard Mitigation Plan (HMP), establishing an inter-jurisdictional process for the development and implementation of effective hazard mitigation strategies in association with identified hazards that pose real or potential threats to the City of Woodland.

1.2 PLANNING PROCESS

As described above, the City of Woodland followed the planning process detailed in the HMP. In addition to providing representation on the Yolo County Hazard Mitigation Planning Team, the City formulated their own internal planning team to support the broader planning process requirements.

1.3 OVERVIEW

Woodland is a medium sized municipality located in the relative central portion of Yolo County. The designated county seat, Woodland is a mix of residential neighborhoods, commercial establishments, industry, recreational facilities, government offices, and service activities. With its proximity to both major highway and rail corridors, Woodland serves as the major agricultural support center for Yolo County, being host to both the processing and shipment of crops and other agricultural commodities. See Figure 1 for a map of the City of Woodland.

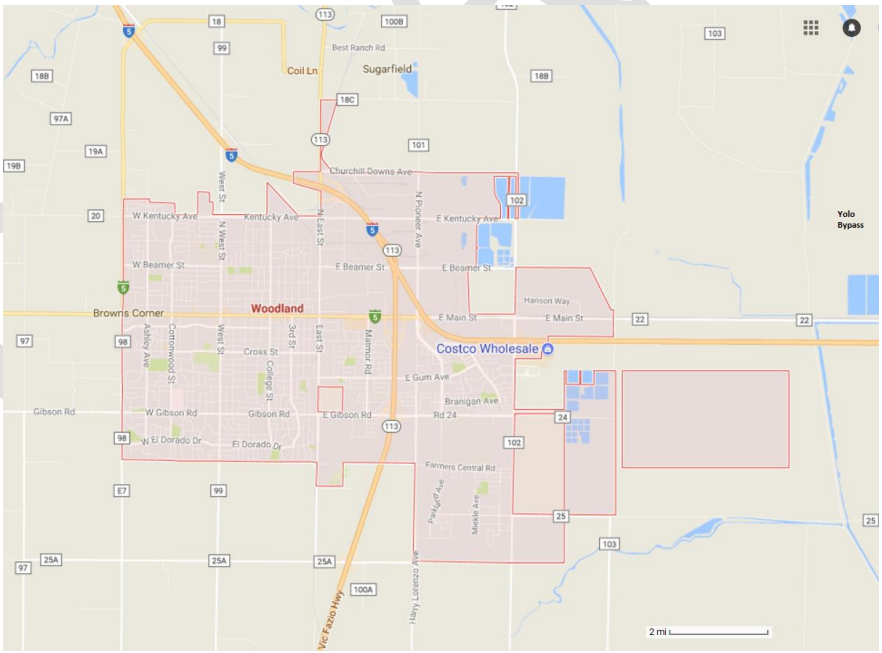


Figure 1: Map of the City of Woodland

1.4 History

In the winter of 1853, Henry Wyckoff settled in a dense grove of oak trees and opened a small store in Yolo City. Within a couple of years, other businesses were established in the area, and the favorable soil attracted other settlers who found farming to be a profitable venture. The settlement grew around what is now Main Street, and the town was renamed Woodland in 1858. Woodland became the Yolo County Seat in 1862 and was incorporated on February 22, 1871.

1.5 Weather and Climate

The Central Valley climate can be described as Mediterranean. During the hot, dry, sunny summers, temperatures can exceed 100 degrees F on some days, however more often summer temperatures are in the low 90s. The Sacramento River Delta breeze usually cools overnight temperatures into the 60s. Spring and fall has some of the most pleasant weather in the state. The rainy season typically runs from late fall through early spring and fog season last from November through March. Table 1 shows the City of Woodland weather averages.

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Average temp. (°F)	45.7	50.6	54.9	59.9	66.7	73.0	76.4	75.5	72.2	64.5	53.0	45.6
High temperature (°F)	53.7	60.3	65.5	72.6	80.9	89.0	94.0	93.2	88.6	78.7	63.5	54.1
Low temperature (°F)	37.6	40.9	44.2	47.2	52.4	57.0	58.7	57.8	55.8	50.3	42.5	37.0
Precipitation (in)	4.5	4.1	3.3	1.1	0.6	0.2	0.0	0.0	0.4	1.1	2.5	3.0

Table 1: City of Woodland Weather Averages

1.6 Demographics

According the California Department of Finance, the population of Woodland was 58,615 in 2016 and is 59,616 in 2017 whih represents a 1.7% increase. According to the US Census - American Community Survey 2016 data, the age and sex of persons and housing information within the City of Woodland are as follows:

	Woodland city, California					
	Total		Male		Female	
Subject	Estimate	Margin of Error	Estimate	Margin of Error	Estimate	Margin of Error
Total population	57,552	+/-41	28,174	+/-563	29,378	+/-563
AGE						
Under 5 years	6.7%	+/-0.6	7.7%	+/-0.9	5.8%	+/-0.7
5 to 9 years	7.1%	+/-0.7	8.1%	+/-1.0	6.2%	+/-0.9
10 to 14 years	7.5%	+/-0.7	7.3%	+/-1.1	7.8%	+/-1.0
15 to 19 years	7.3%	+/-0.7	7.0%	+/-0.8	7.5%	+/-1.1
20 to 24 years	7.2%	+/-0.8	6.8%	+/-1.0	7.7%	+/-1.0

25 to 29 years	7.1%	+/-0.7	7.9%	+/-1.1	6.5%	+/-0.7
30 to 34 years	6.9%	+/-0.6	7.1%	+/-0.9	6.7%	+/-0.8
35 to 39 years	5.8%	+/-0.6	5.7%	+/-0.8	5.8%	+/-0.8
40 to 44 years	7.1%	+/-0.6	7.4%	+/-0.9	6.9%	+/-0.7
45 to 49 years	6.7%	+/-0.5	6.2%	+/-0.7	7.3%	+/-0.7
50 to 54 years	6.7%	+/-0.5	7.4%	+/-0.8	6.0%	+/-0.7
55 to 59 years	6.0%	+/-0.6	6.4%	+/-0.8	5.6%	+/-0.7
60 to 64 years	5.2%	+/-0.6	4.6%	+/-0.7	5.7%	+/-0.8
65 to 69 years	4.1%	+/-0.4	3.8%	+/-0.6	4.4%	+/-0.6
70 to 74 years	2.7%	+/-0.4	2.4%	+/-0.6	2.9%	+/-0.6
75 to 79 years	1.8%	+/-0.4	1.3%	+/-0.4	2.2%	+/-0.6
80 to 84 years	1.6%	+/-0.3	1.3%	+/-0.4	1.8%	+/-0.4
85 years and over	2.4%	+/-0.4	1.6%	+/-0.4	3.2%	+/-0.6

Age and Sex in City of Woodland

Subject	Woodland city, California			
	Estimate	Margin of Error	Percent	Percent Margin of Error
HOUSING OCCUPANCY				
Total housing units	20,812	+/-472	20,812	(X)
Occupied housing units	19,768	+/-389	95.0%	+/-1.1
Vacant housing units	1,044	+/-250	5.0%	+/-1.1
Homeowner vacancy rate	1.0	+/-0.7	(X)	(X)
Rental vacancy rate	3.8	+/-1.7	(X)	(X)

Age and Sex in City of Woodland

1.7 Economy and Tax Base

According to the City's 2035 General Plan, Woodland strives to provide high quality services for residents and businesses while also maintaining a fiscally sustainable budget. The City's entire adopted budget for FY 2015-16 was about $158 million, of which about 28 percent is the General Fund, the City's primary discretionary funding source. The General Fund gets the majority of its money from property taxes and property- based revenues; economically sensitive revenues such as sales tax, business license tax, transient occupancy tax, etc; interest and fees such as ambulance fees; and parking and traffic fines. The balance of the City budget is comprised of other funding sources such as grants, special tax revenue (like parks, libraries and paramedic ser- vices) and fees for specific services (marina berth fees, garbage and sewer fees, building permits, etc). Revenue generated from these sources must be spent on very specific services. For example, the City cannot use revenue collected from sewer fees to fund police officers.

1.8 Critical Facilities

The following list of facilities has been determined to be critical to the ability of the City of Woodland to fulfill the requirements of its mission during an emergency:

Item #	Facility	Address
131	City Hall	300 First Street

Item #	Facility	Address
132	Police Department	1000 Lincoln Ave
134	Community & Senior Center	2001 East Street
	Fire Station #1	101 Court Street
152	Fire Station #2	1619 West St
153	Fire Station #3	1550 Springlake Ct
191	Water Well #5l	Elm & Maedel
192	Water Well #12	Kentucky Ave west of Rd 101
193	Water Well #13	Cottonwood & El Dorado
194	Water Well #15	Thomas St & Matmor St
195	Water Well #16	Crawford & College
196	Water Well #18	Gibson Rd
197	Water Well #19	Sutter St Yard
198	Water Well #20	West Court Street
199	Water Well #21	Kentucky & Cottonwood
200	Well #1	409 5th St
201	Well #4	Beamer & Walnut
202	Well #6	Grand between Lincoln and Mai
203	Well #7	California St
205	Well #9	6th & El Dorado
206	Well #10	Bemmerly & Wycoff
207	Well #11	Cottonwood & W. Southwood
208	Well #14	CR101 & Case Place
209	Well #17	Rd 98 & W El Dorado
200	Well #28 (ASR)	Court & Sixth
201	Well #29 (ASR)	Beamer & Walnut
	Ground Level Storage Tank and Booster Pump Station	Rd 98 & W El Dorado
210	Municipal Service Center	655 Pioneer Ave
211	Water Tank	Christiansen Park
212	Public Library	250 First St
215	Shop & Maintenance	42323 County Road 24
216	Electrical Building	42323 County Road 24
217	Chlorine/Sulfur Dioxide Building	42323 County Road 24
218	North Building and Well	42323 County Road 24
219	South Pump Station	42323 County Road 24

Item #	Facility	Address
220	Recycled Water Backup Well	42323 County Road 24
221	West Levee Pump Station	42323 County Road 24
222	North Pump Station	42323 County Road 24
223	Operations & Lab Building	42323 Count Road 24
224	Other Equipment & Concrete Structures	42323 County Road 24
225	Storm Drainage Pump Station	Beamer St
	Gibson Ranch Lift Station	Gibson Road & Farnham
226	Spring Lake Lift Station	Farmers Central Road
	WDXWA RWTF	855 CR 102

Table 2: City of Woodland Critical Facilities

HEALTH CARE FACILITIES

The following acute care hospital/medical facility is located in and provides service to Woodland:

- Woodland Healthcare

The following skilled nursing facilities provide service to Woodland:

- St. John's Retirement Village
- Courtyard Healthcare
- Alderson Health Care
- Woodland Skilled Nursing
- Cottonwood Health Care

EDUCATIONAL FACILITIES

The following public primary and secondary schools are located in Woodland:

Senior High Schools

- Woodland Senior High School
- Pioneer High School
- Yolo Youth Academy
- Alternative/Opportunity
- Cesar Chavez Community School

Intermediate/Middle Schools

- Douglass Junior High
- Lee Junior High

Elementary/Primary Schools

- Beamer Elementary
- Dingle Elementary
- Freeman Elementary
- Gibson Elementary

- Maxwell (Rhoda) Elementary
- Tafoya (Ramon S.) Elementary
- Whitehead (T.L.) Elementary
- Woodland Prairie Elementary
- Springlake Elementary
- Zamora Elementary

The following private primary and middle schools are located in Woodland:

- Community Christian Academy
- Cornerstone Christian Academy
- Holy Rosary Parish School
- Montessori Children's School House
- Woodland Adventist
- Woodland Christian Elementary School

Woodland Community College is also located within the City of Woodland.

1.9 HISTORICAL PROPERTIES

Woodland has a rich historic heritage and many significant historic buildings, districts, events and artifacts that reflect its past. These are symbols of Woodland's unique heritage and identity. Downtown Woodland in particular includes many historically significant buildings and is recognized as a National Register Historic District. To this day, the Downtown Woodland Historic District retains much of its historic appearance and function and is considered the heart and jewel of Woodland. nThe district has major examples of several architectural styles, including Italianate, Richardsonian Romanesque, Spanish Colonial Revival, Streamline, and several versions of the Second Renaissance Revival. The historic integrity of the district is high due to the concentration of resources, the proportion, size and importance of the contributing historic buildings, and the relative inconspicuousness of non-contributing buildings.

The Woodland Opera House and Yolo County Courthouse are included on the National Register of Historic Places. Other Downtown buildings on the National Register include the I.O.O.F. building, Porter building, Woodland Public Library, R.H. beamer House, Jackson Apartments, and Hotel Woodland. Outside Downtown, the Gibson Mansion Historical museum is also a City historic building and listed on the National Register. In addition, Woodland's historic neighborhoods offer a variety of historically and architecturally significant structures.

Awareness and appreciation of Woodland's historic resources will foster a greater enjoyment of the city and greater support for historic preservation efforts. Further, the historic Downtown is the City's center of shopping, dining, entertainment and employment.

To that end, Woodland's Historical Preservation Commission serves to assist the City and recommend to City Council the means to implement the City's Historical Landmarks, Districts and Resources Ordinance, Chapter 12A, of the Woodland Municipal Code. Chapter 12A was adopted to

preserve areas and specific structures and objects in the city that reflect elements of its cultural, social, economic, political and architectural history and to promote their use for the education and welfare of the residents of the city.

This page is intentionally blank.

SECTION 2.0: HAZARD IDENTIFICATION AND RISK ASSESSMENT

The City of Woodland identified hazards that affect the city and developed natural hazard profiles based upon the countywide risk assessment, past events and their impacts (see Figure 4).

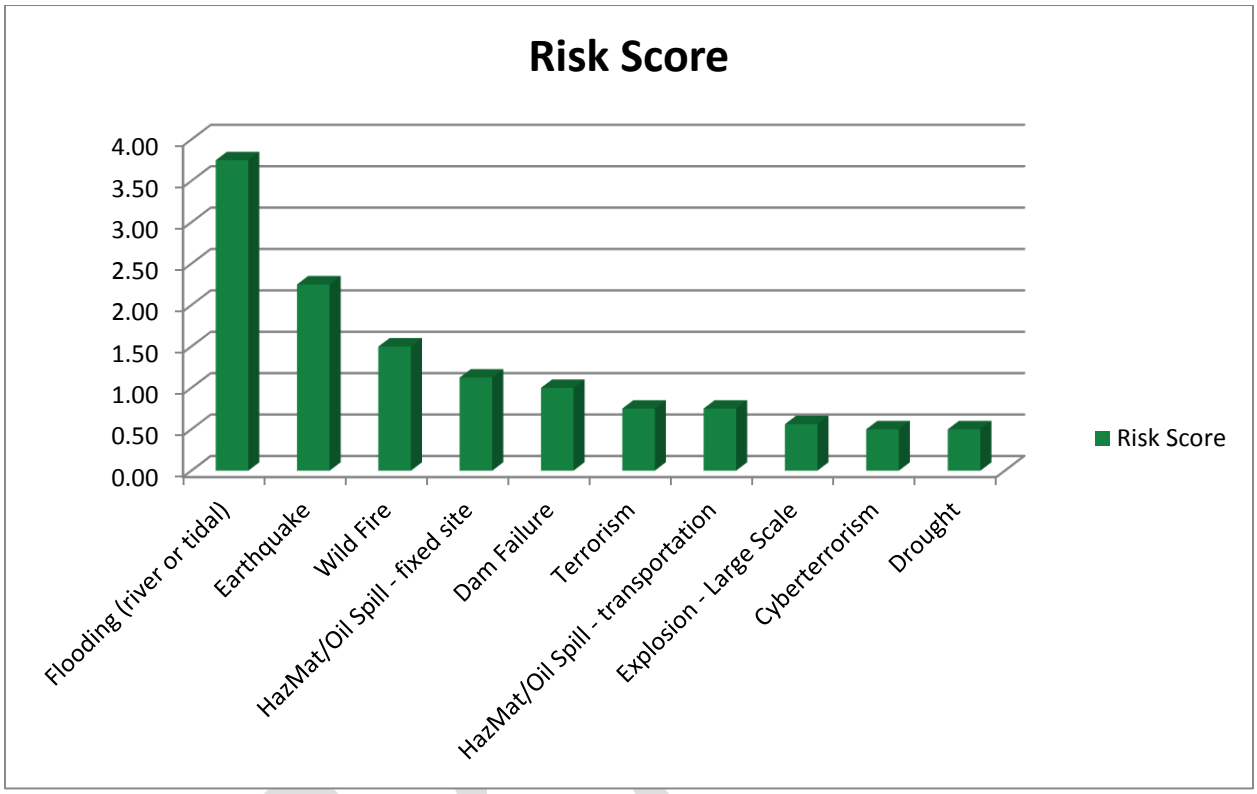


Figure 2: City of Woodland Risk Assessment

Definitions for the rankings and a detailed explanation of the hazards can be found in the Hazard Identification and Risk Assessment of the Yolo County Hazard Mitigation Base Plan.

2.1 HAZARDS

Of the hazards profiled in the Yolo County LHMP, those noted in the table are specific for the City as per the planning team. Following the table, there are descrition of significant hazards facing the City of Woodland. For the purposes of the Hazard Mitigation Plan, The City of Woodland defines climate change as a technological and human-caused hazard.

Hazard	Probability of Occurrence	Geographic Extent & Potential Magnitude
Flooding	Highly Likely	Critical

Hazard	Probability of Occurrence	Geographic Extent & Potential Magnitude
Drought	Likely	Critical
Dam Failure	Unlikely	Critical
Levee Failure	Occaisional	Critical
Earthquake	Occasional	Critical
Land Subsidence	Occaisional	Limited
Severe Weather - Fog	Likely	Critical
Severe Weather - Tornado	Occasional	Limited
Severe Weather – High Wind	Highly Likely	Critical
Severe Weather – Extreme Heat	Highly Likely	Critical
Severe Weather - Freeze	Occaisional	Limitedl
Volcano	Highly Unlikely	Catastrophic
Wildfire	Highly Likely	Critical

Table 3: Probability and Extent for Natural Hazards in the City of Woodland

2.1.1 FLOODING

Typical flood hazards in Woodland generally consist of shallow sheet flooding from surface water runoff from large rainstorms with depths generally less than two feet. However, in larger storm events, there are significant areas within the City on the north and east sides that are also affected by flooding from Lower Cache Creek and/or the Yolo Bypass.

City streets, even those outside of the floodplain, are also subject to localized flooding during periods of heavy rainfall. Currently, the city's storm drain system is not adequately sized for the actual flows. Older parts of the city, particularly west of East Street, do not have a system of under-street storm drain pipes. Instead, runoff is conveyed through intersections in valley gutters, gutter culverts, or inverted siphons, and must travel long distances to reach a drain inlet. In these areas, when the capacity of drain inlets and pipes is exceeded, localized street flooding occurs and remains for three to four hours after rainfall has subsided.

The City Storm Drain system collects water through gutters, ditches, and catch basins, and conveys that water generally from west to east, by gravity, through canals and storm mains to the pump stations on East Main Street. From there it is pumped into a canal along the south side of the Cache Creek Settling Basin. From there it flows into the Yolo Bypass, Tule Canal, and the Sacramento River. There are several detention basins at various locations around the City that assist in dealing with peak storm flows. When the capacity of the system is exceeded, localized street flooding occurs until 3-4 hours after the rainfall subsides and the streets are again able to drain. While it may appear that the catch basin grates are blocked, the system is just overloaded and the excess water is "stored" in the gutters and on the street.

From the west of the City, the runoff area is small and does not pose a flood threat. From the south, Willow Slough floods towards the south; from the east, the Yolo Bypass would flood to a maximum elevation of 32 feet, which affects only a small portion of Woodland. Interior drainage and localized flooding is not expected to generate major flood damages.

The lands to the east of Woodland could potentially be subject to deep flooding from overflows from the Willow Slough Bypass or the Yolo Bypass, depending on the particular flood event or levee failure and the associated volume of overflow. The deep flooding could occur as a result of water ponding against levees of the Yolo Bypass and the Willow Slough Bypass. The proposed document that outlines the method of assessment for operation and maintenance of Reclamation District 2035 states those lands to the east of Woodland would be subject to 6.5 to 16 feet of inundation should the bypass levee fail.

Low-lying areas of the City of Woodland are subject to periodic flooding due to overflow from Cache Creek, from runoff originating in the western sector of the City, or from overland flow originating west of the City in a gently upward sloping area defined by the Maple Canal on the southwest and low divide on the north. Flooding from the creek results from heavy rain over the tributary drainage during the period from November through March. On rare occasions, melting snow in the high elevations of the basin could augment runoff from general rain.

Cache Creek and the Yolo Bypass will continue to be the primary flood hazards to the City of Woodland. The primary flood hazard within the project area would be from Cache Creek. The Army Corps of Engineers enlarged and extended the existing constructed levees along both banks of Cache Creek in the 1950's. The design flow for the levees is 30,000 cfs, which has approximately a 1 in 10 chance of occurring in any given year. Historically, the levee system has passed flows up to

34,000 cfs, a 1 in 20 chance flow, without failures. Without a new project, larger flows would continue to flood agricultural lands and would likely flood the City of Woodland.

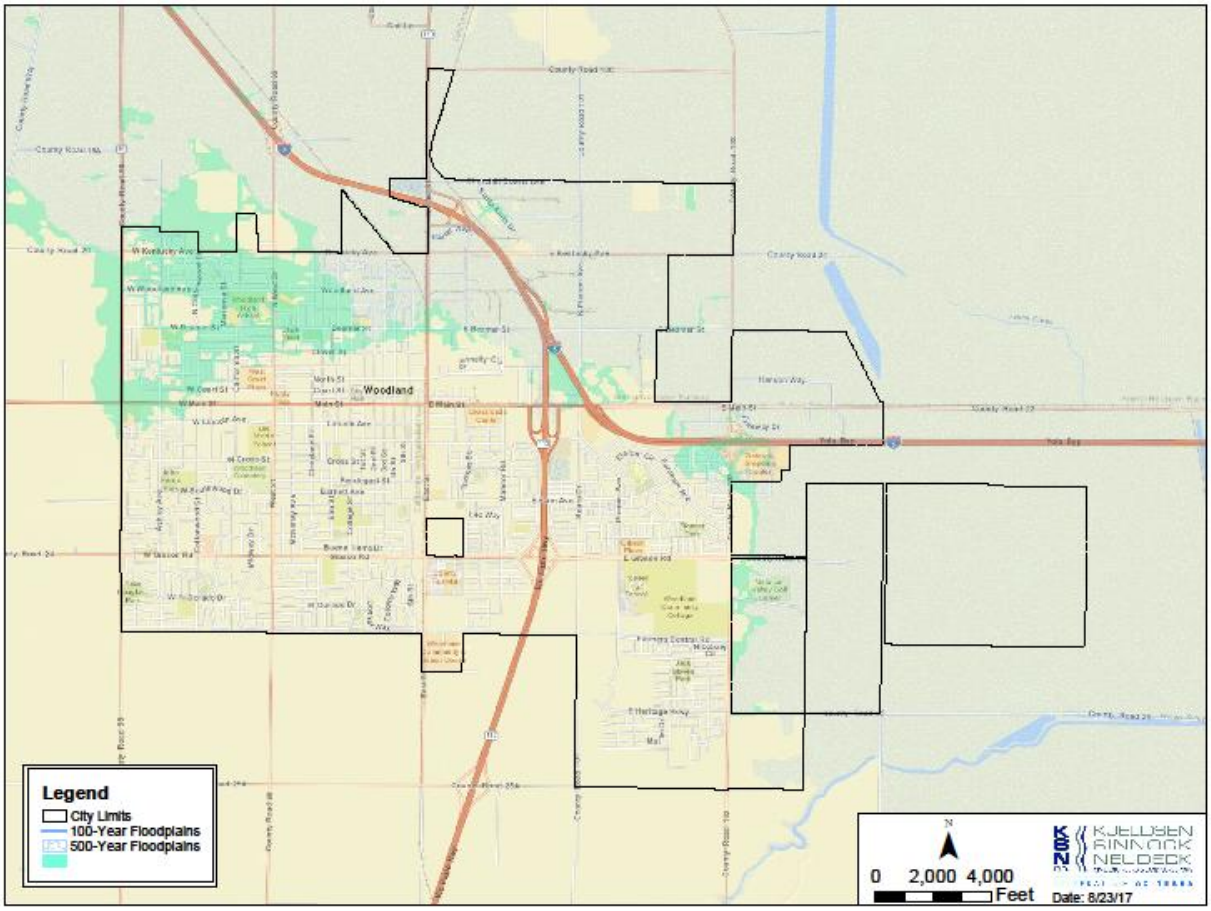


Figure 3: City of Woodland Floodplain

2.1.2 DAM FAILURE

In addition, areas in and around Woodland could potentially experience up to eight feet of flooding in the unlikely event of failure of the Indian Valley Dam, located on the North fork of Cache Creek. The Indian Valley Dam is owned by the Yolo County Flood Control & Water Conservation District, which maintains an Emergency Action Plan. The dam has a maximum permitted storage capacity of 300,600 acre-feet and maintains a 40,000 acre-foot flood storage capacity. The design flood discharge from the dam is 39,500 cfs. In the event of a dam failure, the potential inundation and front of the wave travel time will occur in approximately eight hours after dam failure. In addition to a severe earthquake, other potential events that could lead to dam failure or overtopping include major flood inflows, massive landslide or slippage, and piping (when water finds a path through the levee embankment) or erosion of the dam embankment. Flooding would occur within six to seven hours of dam failure.

2.1.3 LEVEE FAILURE

The major problems facing the Woodland area include deficient levees along the Yolo Bypass, Cache Creek, the Cache Creek Settling Basin, and the Willow Slough Bypass.

The out of bank flows and levee failures West of I-5 can be diverted northwest and southeast along the I-5 embankment from Cache Creek. These Southeast flows are directed into the City of Woodland and continue East by over topping I-5 and using the Beamer Underpass as a siphon under 1-5. An additional example is that construction of the Cache Creek Settling Basin did not provide for returning flows from the south bank overflows from Cache Creek back to the Yolo Bypass. This results in large expanses of RD 2035 being put under more than eight feet of water along with I-5, for several months. This situation also subjects the City of Davis' wastewater treatment plant and the Yolo County landfill to being flooded.

2.1.4 EARTHQUAKE

GEOLOGY

Woodland is located in the Great Valley geomorphic province of California and consists of gently sloping to level alluvial plains. The geologic parent material within the region was formed from the erosion of mountain ranges to the east and geologic uplift along the western shore of the North American continent. Two hundred and forty-five million years ago, the Great Valley province began forming from sediment-laden runoff deposits. Eventually, the deposits accumulated to a depth of almost six miles, with large amounts of sediment continuing to be added until approximately 30 million years ago. These processes occurred beneath the sea, and as a result, the water captured in the pores of deeply buried rock is saline. The Great Valley area generally consists of Holocene alluvium or basin deposits, as well as quaternary Modesto and Riverbank for- mations, both of which consist of somewhat older alluvium. Earthquakes can occur anywhere in Woodland. The city lies along the eastern edge of the Coast Range-Sierran Block Boundary (CRSBB), where the Dunnigan Hills Fault is located (see Figure 4).

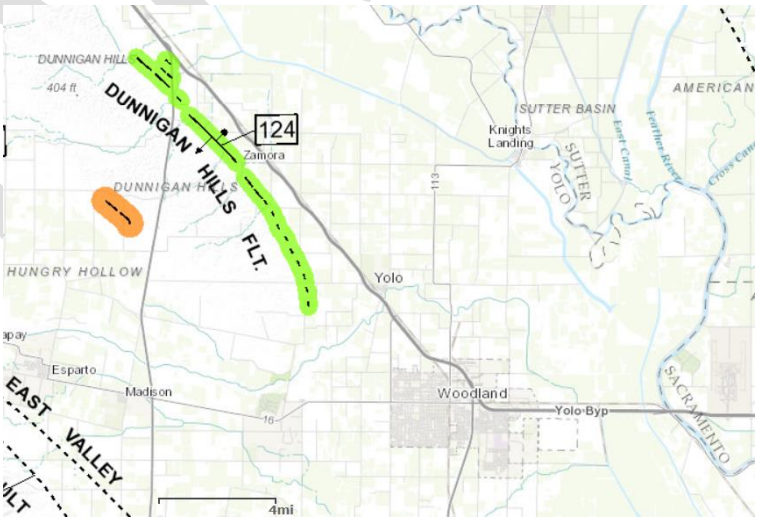


Figure 4: Fault Line near Woodland

A major earthquake originating along this fault line or from an unknown fault in the CRSBB could grind the local public infrastructure in Woodland to a halt. In 2016 a small 2.5 earthquake shook Woodland; the quake was centered seven miles west of the city in an area of the CRSBB where there are no known fault lines. The Midland Fault, located southwest of Davis, is another fault that could cause shaking for Woodland as had occurred after the 1892 Vacaville-Winters Earthquake.

Further away, the San Andreas Fault system is located to the west and the Western Sierra Fault system is located to the east of Woodland (see Yolo County HMP). Numerous quakes along these faults have been felt in Woodland, most recently during the Loma Prieta Earthquake in 1989, but Woodland suffered no significant damage.

2.1.5 Land Subsidence

Land subsidence could essentially occur anywhere in Woodland. See the Yolo County HMP for maps of expansive soils and causes of land subsidence in Yolo County. Most of Woodland is located in an area of low expansive soils, though the southeastern side has much higher expansive soils. These areas are closer to agricultural fields where there is a higher instance of groundwater pumping, a primary cause of land subsidence. Land subsidence could have numerous impacts for Woodland, including the settling of homes and businesses as well as the shifting of railroad tracks that run through the city.

2.1.6 Severe Weather

High Wind

High wind could occur anywhere in Woodland and could be compounded by atmospheric river events. High winds can fell trees, which can cause subsequent damages to cars and structures as well as critical infrastructure such as power lines and water mains throughout Woodland. The Watts-Woodland Airport located outside of Woodland is also susceptible to high winds, which can cause damages to aircraft and affect airport operations.

Fog

Fog can be prevalent throughout Woodland as it is located in the valley of Yolo County where fog is more apt to form. Impacts from fog can be compounded in Woodland due the presence of two major highways, Interstate 5 and State Route 113, which run through the City. The potential for serious accidents exist due to fog, which could result in injuries and fatalities to motorists and first responders.

Tornado

A tornado could touch down anywhere in Woodland, and is documented as one of the top ten hazards that the city is at highest risk from (see city risk assessment). Though tornados in the Central Valley of California are often rare and of low intensity (EF-0 or EF-1), the potential exists for an EF-2 tornado to touch down in Woodland as it did in Sacramento in 1978. While unlikely, impacts from such a tornado could be extensive depending on where the tornado touches down and how long it travels. Roofs of structures could be significantly damaged, trees could be knocked over, and cars could be overturned. A less intense EF-0 or EF-1 tornado could cause flying debris

and damage to fences. Tornados can also produce hail, which can be damaging to cars and buildings.

EXTREME HEAT

Extreme heat can occur at any location in Woodland due to its location in the valley of Yolo County. Temperatures can feel warmer in the city due to the widespread presence of concrete and asphalt, which stores heat longer. Heat waves can cause power outages and can sicken people who are exposed to high temperatures too long, particularly infants the elderly.

FREEZE

Freezing temperatures can occur at any location in Woodland. Prolonged exposure to the cold can cause frostbite or hypothermia and can become life-threatening. Infants and the elderly are most susceptible. Pipes may freeze and burst in homes or buildings that are poorly insulated or without heat. Extreme cold can disrupt or impair communications facilities.

2.1.7 VOLCANO

Woodland is not located close to any active volcanoes where there is the threat of a lahar flow. Woodland could be impacted by ash fall, however, if there were to occur a significant eruption of any of the active volcanoes located throughout the state. Particular areas of concern include the Mt. Shasta, Lassen Volcanic Center, Medicine Lake, and the Clear Lake/Mt. Konocti Volcanic Field. People susceptible to respiratory illnesses would be most impacted by ash fall.

2.1.8 WILDFIRE

Woodland does not have a wildland urban interface similar to those in the western, more mountainous areas of the county where large wildfires are more apt to occur. As the city is not heavily forested, Woodland would primarily experience grass fires that could threaten homes and infrastructure. Grass fires in Woodland along Interstate 5 and State Route 113 could cause traffic issues as well.

The California Department of forestry and fire Protection (CalFire) has mapped fire threat potential throughout California. CalFire ranks fire threat according to the availability of fuel and the likelihood of an area burning (based on topography, fire history, and climate). The rankings include little or no fire threat, moderate, high, and very high fire threat. There are no State Responsibility Areas or Very High fire Hazard Severity Zones located within the Woodland Planning Area or its vicinity. While the majority of the Planning Area is identified to have little to no wildland fire threat, some areas along CR 102 are identified as Local Responsibility Areas with a moderate fire threat. However, it is likely that wildfire danger will increase with climate change. The following figure shows existing fire hazard severity zones within the City and its vicinity.

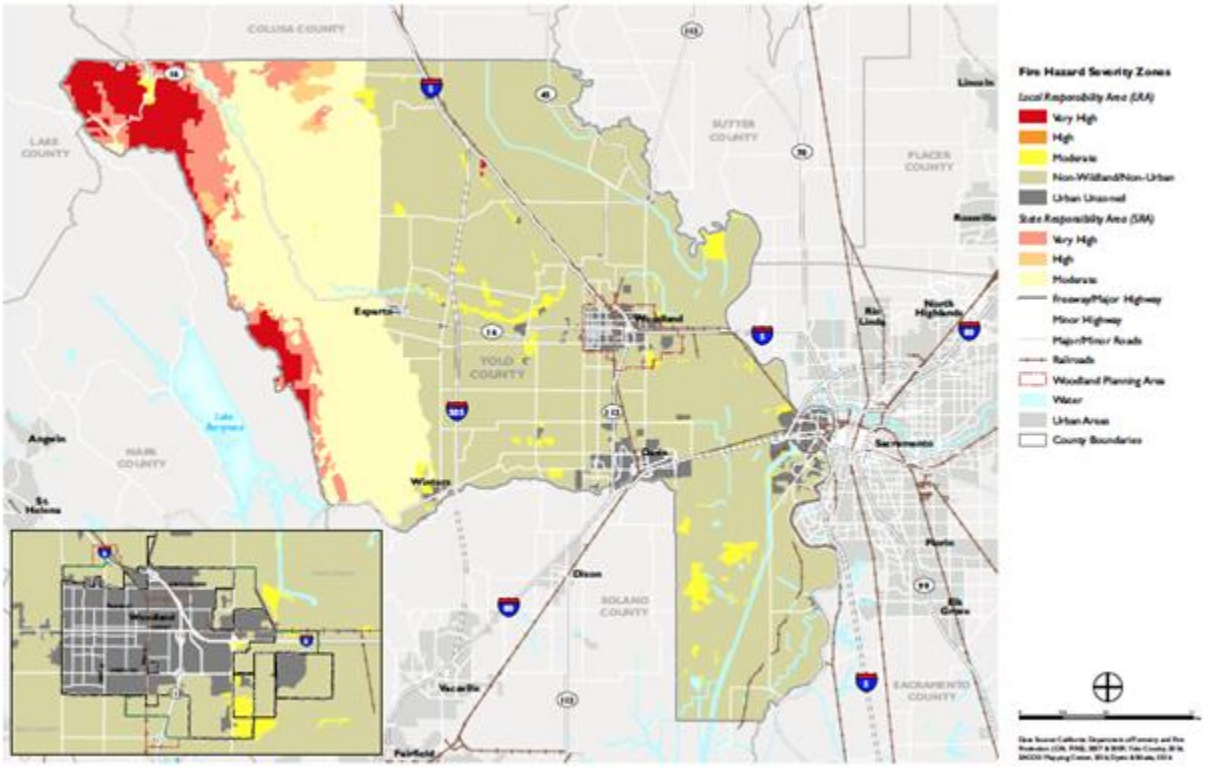


Figure 5: Woodland Wildfire Susceptibility

2.1.9 DROUGHT

Woodland relies primarily on the Sacramento River for drinking water supply. The availability of water in the Sacramento River is susceptible to drought. Prolonged drought conditions will result in a curtailment in water rights in the Sacramento River, which will cause a shortfall in Sacramento River water to Woodland. ASR wells and backup native groundwater wells would be utilized during a drought.

2.2 HAZARD RISK ASSESSMENT – TECHNOLOGICAL AND HUMAN-CAUSED HAZARDS

The City of Woodland is not a risk to agricultural pests and diseases, pandemic/epidemic, ship and airplane accidents, power/utility failure, and communications/IT failure.

2.2.1 HAZARDOUS MATERIALS

Releases, leaks, or disposal of chemical compounds, such as pe- troleum hydrocarbons, on or below the ground surface, can lead to contamination of underlying soil and groundwater. Disturbance of a previously contaminated area through grading or excavation operations could expose the public to health hazards from physical contact with contaminated materials or hazardous vapors. Improper handling or storage of contaminated soil and groundwater can further expose the public to these hazards, or potentially spread contamination through surface water runoff or air-borne dust.

Areas with known or suspected release of hazardous materials to soil and groundwater, and where current clean up activities monitored by the State Water quality Control board or the California Department of Toxic Substances are active, are monitored. The sites are primarily located in the industrial area and along Main Street and East Street. Most of the sites in Woodland are Leaking underground Storage Tanks (LuSTs), and many of the sites are automobile-related, such as gas stations or auto repair shops. Woodland also currently has sites undergoing remediation for contamination with hazardous materials. Some contaminated sites are on vacant parcels or properties with the potential to re- develop. Contamination does not render these sites unusable, but may require time and funding for cleanup, and in some cases, may limit allowable land uses.

2.2.2 Transportation Accidents

Vehicle Accidents

Two major highways pass through Woodland, the most prominent being Interstate 5. The potential exists for a major vehicle accident to occur this highway, resulting in a mass casualty and/or hazmat incident.

Train Accidents

Several rail lines pass through Woodland. The California Northern Railroad operates freight traffic through the center of downtown Woodland, and the Sierra Northern Railroad operates freight traffic through the industrial area of Woodland.

2.2.3 Terrorism

Terrorism in Woodland can occur in many forms, including from a car bomb to an incident at a local downtown festival.

2.2.4 Civil Disturbance

Civil disturbance in Woodland can occur as a result of numerous different activities including from a police shooting to a general protest.

2.2.5 Urban Conflagration

Urban and wildland fire hazards can threaten life and property in Woodland. Policies in the General Plan seek to ensure that new development is constructed to minimize potential fire hazards and to provide public education concerning fire prevention.

Urban fires are fires that begin in buildings in urban centers. They are typically localized, but have the potential to spread to an adjoining building, especially in areas where homes and/or business facilities are clustered close together. Structural fire risk in Woodland is greatest in older structures and neighborhoods built before modern building codes for fire safety and building systems were in place.

In 1892, a fire broke out in the rear of a fruit store on Main Street in Woodland. Fanned by strong north winds, the conflagration spread to several blocks before it was under control. A large section of the central business area was destroyed, including the historic opera house, resulting in over $200,000 in damages. One citizen was killed.

Woodland engineering standards require a minimum flow of water for fire protection in accordance with Woodland Fire Department, California fire Code, and Insurance Services Office standards.

Adequate emergency vehicle access to buildings is important for effective public safety service and emergency response. Emergency access is regulated by the California fire Code. under the current fire Code, all portions of a building must be located within 150 feet of a serviceable fire access road. In some instances, the fire Marshal can make an exception to this rule, such as when a building is equipped with an approved automatic sprinkler system.

2.2.6 CLIMATE CHANGE

The City of Woodland is actively engaged regarding the issues of sustainability and climate change. Looking to the future,Woodland seeks to establish itself as a leader in sustainability practices at- tuned to reducing greenhouse gas emissions and increasing resil- iency to the effects of climate change.

The City advocates responsible growth while seeking to conserve energy, water and other resources; reduce greenhouse gas emissions; promote infill, green and net-zero energy devel opment; and build community resiliency to the effects of climate change. Policies related to the issues of sustainability and climate change can be fund in the General Plan.

In addition, the city's Climate Action Plan (CAP) outlines Woodland's overall strategy to reduce greenhouse gas emissions. Development of the CAP occurred concurrently with the planning process for the General Plan to ensure that the two documents support one another.

2.3 PARTICIPATION IN THE NATIONAL FLOOD INSURANCE PROGRAM

The City of Woodland participates in the NFIP and continues to enforce the compliance with the NFIP through their Flood Plain Management Ordinance. However, as in much of California, FEMA is working with local governments to refine and remap the floodplains. These changes to flood mapping and zoning in Woodland may result in additional properties needing to be insured and evaluated in future plans.

As of 2017 there are zero repetitive loss properties and two severe repetitive loss properties in the City of Woodland. Total SRL payouts are $219,546.40. The City of Woodland does not participate in the Community Rating System.

SECTION 3.0 MITIGATION STRATEGY

3.1 CAPABILITY ASSESSMENT

Capabilities are the programs and polices currently in use to reduce hazard impacts or that could be used to implement hazard mitigation activities. The capability assessment is divided into five sections: regulatory, administrative and technical, fiscal, outreach and partnerships, and other mitigation efforts.

3.1.1 REGULATORY CAPABILITY

The legal and regulatory capabilities of each jurisdiction are shown in the table below, which presents the existing ordinances and codes that affect the physical or built environment of each jurisdiction. Examples of legal and/or regulatory capabilities can include: a jurisdiction's building codes, zoning ordinances, subdivision ordnances, special purpose ordinances, growth management ordinances, site plan review, general plans, capital improvement plans, economic development plans, emergency response plans, and real estate disclosure plans.

City of Woodland Regulatory and Planning Capabilities

Regulatory Tools	YOA	WLD	DAV	WSAC	WIN	YDH
Building code	√	√	√	√	√	√
Zoning ordinance	√	√	√	√	√	√
Subdivision ordinance or regulations	√	√	√	√	√	
Special purpose ordinances (floodplain management, storm water management, hillside or steep slope ordinances, wildfire ordinances, hazard setback requirements)	√	√	√	√	√	√
Growth management ordinances (also called "smart growth" or anti-sprawl programs)	√	√	√	√	√	√
Site plan review requirements	√	√	√	√	√	√
General or comprehensive plan	√	√	√	√	√	
A capital improvements plan	√	√	√		√	√
An economic development plan	√	√	√	√	√	√
An emergency response plan	√	√	√	√	√	√
A post-disaster recovery plan				√		√
A post-disaster recovery ordinance						

Regulatory Tools	YOA	WLD	DAV	WSAC	WIN	YDH
Real estate disclosure requirements	√	√	√	√	√	
Habitat Management Plan	√	√	√	√	√	
Master Drainage, Sewer, Water, & Reclaimed Water	√	√	√	√	√	√

Source: Steering Committee

AB 156 (Laird). Requires DWR and the board to adopt a schedule for mapping flood risk areas within the CentralValley. Sets out requirements for reports on the flood control system to be prepared by DWR and the board, including levee flood zone protection maps to be prepared by DWR by December 31, 2008. Mandates DWR to provide yearly notices to owners of property within a levee protection zone, beginning Septem- ber 1, 2010. The same requirements are also enacted by Ab 5.

AB 162 (Wolk). Requires cities and counties to amend the land use, conservation, safety, and housing elements of their general plans to address flood-related matters. These amend- ments are required to be made by the next scheduled revision of the housing element after January 1, 2009.

SB 379 As California confronts mounting climate change impacts, local governments are now required, in accordance with Senate bill 379, Land use: General Plan: Safety Element (Jackson) to include a cli- mate change vulnerability assessment, measures to address vul- nerabilities, and comprehensive hazard mitigation and emergency response strategy. Impacts that Woodland may face as a result of climate change include increased flooding, wildfires, and heat waves.

Emergency Operations Plan The California Emergency Services Act requires cities to prepare and maintain an Emergency Plan for natural, manmade, or war- caused emergencies that result in conditions of disaster or in ex- treme peril to life. The Woodland Emergency Operations Plan addresses the City's planned response to extraordinary emergency situations associated with natural disasters, technological incidents and national security emergencies, including acts of terrorism. The plan does not apply to normal day-to-day emergencies, but rather focuses on large-scale disasters that pose major threats to life, property and the environment, and require unusual emergency re- sponses.

3.1.2 ADMINISTRATIVE AND TECHNICAL CAPABILITY

The **Administrative and Technical Capability** table identifies the city personnel responsible for activities related to mitigation and loss prevention in the City of Woodland. Many positions are full time and/or filled by the same person. A summary of technical resources follows.

City of Woodland Personnel Capabilities

Personnel Resources	Department/Position
Engineer and/or Planner with knowledge of land development/land management practices	Community Development; Public Works Department
Professional trained in construction practices related to buildings and/or infrastructure	Community Development / Building Official and Senior Building Inspector, Public Works Department
Full time Building Official	Community Development / Building Official
Floodplain Manager	Community Development / Building Official and City Engineer
Emergency Manager	City Manager's Office, Fire Department
Grant Writer	Various Departments
Other Personnel Resources	Various Departments

Source: Steering Committee

3.1.3 FISCAL CAPABILITY

The **Fiscal Capability** table shows specific financial and budgetary tools available to the jurisdictions such as community development block grants; capital improvements project funding; authority to levy taxes for specific purposes; fees for water, sewer, gas, or electric services; impact fees for homebuyers or developers for new development; ability to incur debt through general obligations bonds; and withholding spending in hazard-prone areas.

City of Woodland Available Financial Tools and Resources

Financial Resources	YOA	WLD	DAV	WSAC	WIN	YDH
Community Development Block Grants	√	√	√	√	√*	
Capital improvements project funding	√	√	√	√	√	
Authority to levy taxes for specific purposes	√	√	√	√	√**	
Fees for water, sewer, gas, or electric service	√	√	√	√	√	
Impact fees for homebuyers or developers for new developments/homes	√	√	√	√	√	
Incur debt through general obligation bonds	√	√	√	√	√**	
Incur debt through special tax and revenue bonds	√	√	√	√	√**	

Financial Resources	YOA	WLD	DAV	WSAC	WIN	YDH
Incur debt through private activity bonds	√	√	√	√	√**	
Withhold spending in hazard-prone areas	√	√	√	√	√	

* Subject to grant from State
** Subject to voter approval

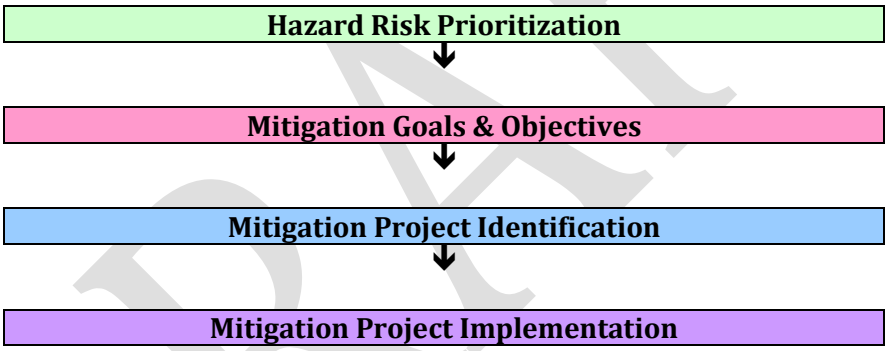
Source: Steering Committee

3.1.4 COMMUNITY OUTREACH

The City currently has several community outreach and public education programs in the areas of Fire and Crime prevention through both the Fire and Police Departments.

3.2 MITIGATION GOALS

The information developed for the risk assessment was used as the primary basis for developing mitigation goals and objectives. Mitigation goals are defined as general guidelines explaining what each jurisdiction wants to achieve in terms of hazard and loss prevention.



Goal statements are typically long-range, policy-oriented statements representing jurisdiction-wide visions. Objectives are statements that detail how each jurisdiction's goals will be achieved, and typically define strategies or implementation steps to attain identified goals. Other important inputs to the development of jurisdiction-level goals and objectives include performing reviews of existing local plans, policy documents, and regulations for consistency and complementary goals, as well as soliciting input from the public.

The following represents overarching strategic goals associated with the identification and eventual implementation of appropriate and meaningful hazard mitigation efforts in relation to prioritized hazards and threats confronting the Yolo Operational Area. These goals form the basis for specific supporting process objectives and are shown from the highest priority, at the top of the list, to those of lesser importance.

The establishment of hazard mitigation goals represents both individual and collective strategies that have been mutually agreed upon by the Steering Committee, and have not changed with the 2018 HMP update. Eventually, these goals will be adopted by each participating jurisdiction and

public agency as the guiding policy behind local hazard mitigation efforts, in conjunction with other associated principles.

Goal 1:	Protection of life during and after the occurrence of disasters from identified hazards;
Goal 2:	Preventing loss of life and reducing the impact of damage where problems cannot be eliminated
Goal 3:	Protection of emergency response capability
Goal 4:	Protection of developed property, homes and businesses, industry, educational opportunities and the cultural fabric by combining hazard loss reduction with the community's environmental, social and economic needs
Goal 5:	Promoting public awareness of community hazards and mitigation measures and encouraging public participation in the planning objectives
Goal 6:	Preserving or restoring natural mitigation values such as flood plains.
Goal 7:	Protection of natural resources and the environment.

Planning Process Objectives

The following objectives are meant to serve as a metric upon which the Yolo Operational Area Hazard Mitigation Plan can be evaluated. Meeting these objectives assures the Multi Hazard Mitigation Plan as a functional document that identifies short-and long-term strategies, and describes each measure including:

Objective 1:	Identification of individuals, agencies or organizations responsible for project implementation.
Objective 2:	Projecting a realistic and doable time frame for project implementation.
Objective 3:	Explanation of how the project will be financed including the conditions for financing and implementation as information is available.
Objective 4:	Identification of alternative measures, should financing not be available.
Objective 5:	Maintain consistent support for the implementation of existing hazard mitigation planning goals and objectives for the operational area.
Objective 6:	Base mitigation strategies on hazards as identified within the Yolo OA Risk Assessment.

Objective 7:	Provide significant potential for the effective reduction of damage to public and/or private property, or to costs associated with local, state, and federal recovery from future potential impacts.
Objective 8:	Establish and maintain a benchmark for identifying the most practical, cost effective, socially acceptable, and environmentally sound mitigation solution after consideration of available alternatives.
Objective 9:	Address a repetitive problem, or one that has the potential to have a major impact on an area, reducing the potential for loss of life, loss of essential services and personal property, damage to critical facilities, economic loss, hardship or human suffering.
Objective 10:	Meet applicable permit requirements.
Objective 11:	Develop mitigation standards for development in hazardous areas.
Objective 12:	Contribute to both the short-and long-term solution to the hazard vulnerability risk problem.
Objective 13:	Assuring the benefits of a mitigation measure is equal to or exceeds the cost of implementation.
Objective 14:	Have manageable maintenance and modification costs.
Objective 15:	When feasible, be designed to accomplish multiple objectives including improvement of life safety, damage reduction, restoration of essential services, protection of critical infrastructure, security of economic development, recovery, and environmental sustainability.
Objective 16:	Whenever feasible, use existing resources, agencies and programs to implement the project.
Objective 17:	Include regional hazard mitigation concerns and strategies

3.3 MITIGATION PROJECTS

Mitigation projects were selected for each hazard and for each jurisdiction based off the hazard risk assessment. The projects are supported by the mitigation goals and objectives, and are ranked using the following criteria; approximate cost, timeframe of completion, whether the project requires regulatory action, and an assumption as to whether or not the project would be subject to CEQA or federal EIR requirements. Funding sources are identified for all projects.

The Lower Cache Creek Feasibility Study is an ongoing collaborative effort between the Army Corps of Engineers, Department of Water Resources, and the City of Woodland. The Study has identified a project to provide flood protection to Woodland from Cache Creek. Construction of the planned

flood protection project would provide 200-year flood protection for all of Woodland from Cache Creek.

The 2017 Central Valley Flood Protection Plan includes an evaluation of flood mitigation measures to protect Woodland from flooding from the Yolo Bypass West Levee. Construction of either the transitory storage project or upgrading the Yolo Bypass West Levee to current levee standards would protect Woodland from flooding from the east.

The construction of additional ASR wells would provide added protection to Woodland from future droughts. The ASR wells allow for the storage of excess available treated drinking water in winter months for use in summer months. The ASR well would be available to supply additional drinking water at treated Sacramento River water standards in drought periods.

MITIGATION PROJECTS					
Mitigation Project	**Jurisdiction/ Responsible Agency**	**New/ Existing or Completed/ Deleted**	**Estimated Cost and Potential Funding Source**	**Timeframe of Completion**	**Comments/ Progress**
ALL HAZARDS					
All Hazards Public Awareness and Disaster Preparedness	All / Yolo County Office of Emergency Services (OES)	Existing (2005)	Yolo County OES General Fund	Ongoing	Important element of CRS program
Integrate Local Hazard Mitigation Plan into Safety Element of General Plan	Yolo County and the Cities of Davis, West Sacramento, Winters, and Woodland / Yolo County OES	Existing (2013)	Yolo County OES General Fund	Ongoing	Ongoing
Community Warning System	All / Yolo County OES	COMPLETED (2005)	Yolo County OES General Fund	Completed	These systems are continually updated due to changing technology
DROUGHT					
Drought Contingency Plan	All / Yolo County OES	Existing (2013)	PDM, HMGP	2018	Ongoing
Drought Mitigation Plan	All / Yolo County OES	NEW (2017)	PDM, HMGP	2018	Includes effects of climate change

MITIGATION PROJECTS					
Mitigation Project	**Jurisdiction/ Responsible Agency**	**New/ Existing or Completed/ Deleted**	**Estimated Cost and Potential Funding Source**	**Timeframe of Completion**	**Comments/ Progress**
EARTHQUAKE					
Non-Structural Mitigation Outreach Program	All / Yolo County Community Services Department	Existing (2013)	Yolo County OES General Fund	Ongoing	Ongoing
FLOODING/LEVEE FAILURE					
Cache Creek Flooding	Woodland / Public Works Division, Yolo County / Yolo County OES	Existing (2005)	DWR Grants	Ongoing	Ongoing
Promote Flood Insurance (Cont'd participation in the NFIP)	Yolo County and the Cities of Davis, West Sacramento, Winters, Woodland / Yolo County OES	Existing (2013)	Yolo County OES General Fund	Ongoing	Ongoing
Wastewater Treatment Plant through levee pipe removal	Woodland	New			
SEVERE WEATHER					
Winter Weather Preparedness Campaign	All / Yolo County OES	Existing (2013)	Yolo County OES General Fund	Ongoing	Ongoing
WILDFIRE					
Fuel Reduction in Local Responsibility Areas	All / Yolo County OES	Existing (2013)	CalFire Grants, Fire Safe Council Grants, HMGP	Ongoing	Ongoing
Downtown Infrastructure Upgrades	Woodland	New			
Wildfire Mitigation Plan	All / Yolo County OES	NEW (2017)	PDM, HMGP	2018	Includes effects of climate change

SECTION 4.0: PLAN REVIEW, EVALUATION AND IMPLEMENTATION

The strategies presented are deemed appropriate and effective by recommendation of the City of Woodland.

4.1 PLAN ADOPTION

Upon submission to the California Office of Emergency Services (CalOES) for review, and subsequent approval by the Federal Emergency Management Agency (FEMA), the Yolo County Hazard Mitigation Plan will be presented to local government for formal adoption. As appropriate, the adopted plan and accompanying City of Woodland Community Profile will then be incorporated into local general plans for integration into organizational policy.

4.2 PLAN MONITORING

The process of hazard mitigation does not end with the completion, approval, and adoption of the Yolo County Hazard Mitigation Plan and the City of Woodland Community Profile. Within the lifespan of these documents (five years), local government along with community-based organizations will ensure that the mitigation goals and strategies identified are monitored, that plan administration will continue under a collaborative and cooperative umbrella, and that the document itself will be properly maintained.

The Yolo County Office of Emergency Services, as lead coordination agency for hazard mitigation planning within the Yolo OA, and will assist and support the ongoing collaborative efforts of the City of Woodland, through the established Hazard Mitigation Steering Committee. Specific plan maintenance activities by the Yolo County Office of Emergency Services and the City of Woodland may include:

- Distribution of the HMP and Community Profile to all interested parties, including both written and digital formats
- Monitoring of the City of Woodland mitigation project activities and dissemination of status reports
- Generation of reports relative to plan status, project management, and revision updates to executive leadership
- Preparations for plan eventual revision and updating

4.3 PLAN EVALUATION

Upon approval and adoption by the City of Woodland, the prioritized mitigation strategies will be further developed for funding and implementation by the lead agencies. The plan describes the potential sources of Hazard Mitigation Strategy funding, and general procedures to obtain that funding.

The mitigation strategies represented and adopted within this plan are recommendations only, and must be approved and funded in order to be implemented as official mitigation solutions. Ultimately, it is the responsibility of jurisdictional and agency officials within the Yolo Operational Area to undertake project implementation based upon identified mitigation strategies, funding availability, and local need when it arises. The Yolo County Office of Emergency Services will meet with the Hazard Mitigation Steering Committee to evaluate the plan after each update meeting.

4.4 PLAN UPDATE

During the five year update cycle, the Yolo County Office of Emergency Services will hold tri-annual update meetings with the Hazard Mitigation Steering Committee and local stakeholders to discuss revisions to the plan. The Yolo County Office of Emergency Services will continue to hold public meetings after the first and third update meetings annually, and will continue to invite public participation in the update process via updated public surveys.

APPENDIX A: ADOPTION LETTER

RESOLUTION NO. 7182

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF WOODLAND ADOPTING THE YOLO COUNTY OPERATIONAL AREA MULTI-JURISDICTIONAL HAZARD MITIGATION PLAN

WHEREAS, the Federal Disaster Mitigation Act of 2000 (DMA 2000), requires all jurisdictions to be covered by a Pre-Disaster All Hazards Mitigation Plan in order to be eligible for Federal Emergency Management Agency pre- and post-disaster mitigation grants and funding; and

WHEREAS, the City of Woodland recognizes that no jurisdiction is immune from natural, technological or human-caused hazards and recognizes the importance of enhancing its ability to withstand hazards as well as the importance of reducing human suffering, property damage, interruption of public services and economic losses caused by those hazards; and

WHEREAS, the City of Woodland participated in a collaborative effort led by the County of Yolo, involving various local and tribal government jurisdictions, public authorities, special districts, and selected community-based organizations; and

WHEREAS, the Yolo County Operational Area Multi-Jurisdiction Hazard Mitigation Plan Update focuses on potential impacts of natural hazards, and includes an assessment of these natural hazards, a plan to mitigate them, and methods of monitoring, evaluating, and updating the Plan at least once every five years; and

WHEREAS, the United States Department of Homeland Security, Federal Emergency Management Agency (FEMA) has approved the Multi-Jurisdiction Hazard Mitigation Plan; and

WHEREAS, the 2018 Yolo County Multi-Jurisdiction Hazard Mitigation Plan is consistent with Policy 8.F.2 of the Safety Element of the City of Woodland General Plan.

NOW, THEREFORE, BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF WOODLAND:

The Multi-Jurisdiction Hazard Mitigation Plan Update is hereby adopted.

PASSED AND ADOPTED by the City Council this 20th day of November, 2018, by the following vote:

AYES:	Council Member Barajas, Davies, Fernandez, Rodriguez and Stallard
NOES:	None
ABSENT:	None
ABSTAIN:	None

Enrique Fernandez, Mayor

ATTEST:

Ana B. Gonzalez, City Clerk

APPROVED AS TO FORM:

Kara K. Ueda, City Attorney