

City of Willits General Plan

2019 Safety Element

Public Review Draft
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I. Executive Summary

A. Conditions in Willits and Focus of the Safety Element

The City of Willits is located in Little Lake Valley, in central Mendocino County. Surrounded by hills and mountains, the City is vulnerable to a variety of natural hazards that could impact the community's residents and businesses. The most prevalent hazards of concern for the City include:

- Presence of an active splay of the Maacama fault transecting the community.
- Northeastern portions of the City located within designated FEMA flood zones.
- Wildfire and landslide hazard zones located within the surrounding hillside areas of the City.
- Dam inundation potential along drainages and stream courses that could impact the community if failure were to occur.
- Impacts associated with changing climate conditions (increased temperatures and wetter and more intense winter storms) could intensify future impacts.

The focus of this Safety Element centers upon identifying these safety risks and developing goals, policies, and implementation programs to better address these issues. The Safety Element also strives to be in alignment with other general plan elements, as required by State law, including: (1) Housing, (2) Land Use, (3) Circulation, and (4) Open Space and Conservation. The City of Willits has also participated in the development of a Multi-Jurisdictional Hazard Mitigation Plan for Mendocino County that was adopted in 2014. This plan is slated for update in 2019 and is intended to be integrated into this element upon adoption. Adoption and integration of this plan into the Safety Element allows Willits to be eligible for federal grant funding to mitigate many of the natural hazards identified in the City.

B. Purpose of the Safety Element

The Safety Element is one of seven mandatory elements of the General Plan. Its primary purpose is to identify potential risks within the City that could potentially endanger the public health, safety, and welfare of the community. Periodic updates of the Safety Element ensure that goals and policies are relevant and responsive to community needs. California Government Code Section 65302(g)(1) identifies the following list of safety risks that at a minimum, be examined in each Safety Element:

- seismically induced surface rupture*
- ground shaking*
- ground failure*
- flooding*
- tsunami
- seiche
- dam failure*
- slope instability leading to mudslides and landslides*
- subsidence
- liquefaction (areas with shallow groundwater [<50 feet])*
- other seismic hazards identified pursuant to Chapter 7.8 (commencing with Section 2690) of Division 2 of the Public Resources Code
- other geologic hazards known to the legislative body*
- wildland and urban fires*
- climate change*

Items denoted by an* are potential hazards relevant to the City of Willits.

Each Safety Element must also geographically identify the location and potential extent of each safety risk using maps, primarily those risks pertaining to seismicity, flooding, and fires. The Safety Element also

functions as an intermediary between the General Plan and the Local Hazard Mitigation Plan (LHMP), which will be incorporated into the update requirements under Government Code Section 65302(g)(4).

C. Moving Forward

The City of Willits reaffirms the importance of protecting the community from potential natural hazard risks. The City's location and history with hazards make it likely that Willits will experience risks from seismic, flooding, and fire events in the future. Willits can also expect that some of these risks will intensify as climate change accelerates. The Safety Element, in conjunction with the LHMP, is the best way to understand and address natural hazard risks within the community.

II. Introduction

A. Purpose

The City of Willits General Plan Safety Element is intended to assist City leaders and staff to address potential emergency situations caused by natural and human-caused hazards and plan for future emergency events. This element provides the necessary context to understand the hazards that threaten the community and outlines policies and practices that help ensure the community's future prosperity.

B. Scope

The Willits Safety Element addresses the relevant planning hazards mandated by California Government Code Section 65302(g). In accordance with state planning law, this element identifies and discusses the following hazards as they relate to the city:

- Seismic and geologic hazards such as surface fault rupture, seismic shaking, liquefaction, landslides and mudslides caused by slope instability, naturally occurring asbestos, and seismically-induced dam failure
- Flood hazards
- Wildfire hazards
- Climate adaptation and resiliency strategies

The element also identifies and addresses the following safety issues:

- Disaster and emergency preparedness
- Hazardous materials and waste
- Aircraft hazards

C. Element Organization

This element is organized to be consistent with the other General Plan Elements. The goals, policies, and implementation programs provide declarative statements setting forth the City's approach to safety related issues. A definition of these key terms is provided below:

- **Goal:** A general statement of desired community outcome. Denoted as Goal S-X in this element.
- **Policy:** Policies are actions that a community will undertake to meet the goals. Denoted as Policy S-X.X in this element.
- **Implementation Program:** A list of recommended programs and future actions necessary to achieve element goals and policies; implementing actions are discussed in Section IV.

D. Consistency with Other Elements

Integrating safety considerations throughout the General Plan creates a consistent framework that prioritizes the well-being of the community. The Willits Safety Element is an essential component of the General Plan and works in tandem with other elements to guide these efforts.

Land Use

The Land Use Element is particularly responsive to natural hazards. Understanding the extent of natural and human-caused hazards that threaten a community can help reduce the possibility of disaster by avoiding the designation of sensitive land uses in hazard-prone areas.

Circulation

Coordination between the Circulation Element and the Safety Element is an important component of comprehensive planning. The Circulation Element can influence public health and safety by addressing traffic congestion on roads designated as evacuation routes during emergencies and by redefining truck routes to avoid transport of hazardous materials through residential and other heavily populated areas.

Housing

The Housing Element is more closely associated with land use but also incorporates many safety considerations into its goals and objectives. Building practices and codes addressed in the Housing Element contribute to community safety by improving the built environment's resiliency to natural and human-caused hazards. In addition, the Housing Element can help identify vulnerable populations and can inform the Safety Element to ensure proper protections are in place.

Open Space and Conservation

The Open Space and Conservation Element focuses on open space protection and provision of ecosystem services for flood risk reduction and habitat preservation. Progressive open space management techniques can help mitigate against wildfire, flood, and landslide hazards, reducing the need for additional city services.

E. Consistency with Local Hazard Mitigation Plan

The City of Willits participated in the 2014 update of the Mendocino County Multi-Jurisdictional Hazard Mitigation Plan (MJHMP). The MJHMP serves three primary purposes: it provides a comprehensive analysis of the natural and human-caused hazards that threaten the city, with a focus on mitigation; it keeps the City of Willits eligible to receive additional federal and state funding to assist with emergency response and recovery, as permitted by the federal Disaster Mitigation Act of 2000 and California Government Code Sections 8685.9 and 65302.6; and it complements the efforts undertaken by the Safety Element.

F. Regulatory Environment

California Government Code 65302(g)(1)

California Government Code Section 65302(g)(1) establishes the legislative framework for all safety elements in the state of California. This framework consolidates the requirements from relevant federal and state agencies, ensuring that all cities are compliant with the numerous statutory mandates. These mandates include:

- Protecting against significant risks related to earthquakes, tsunamis, seiches, dam failure, landslides, subsidence, flooding, and fires as applicable.
- Including maps of known seismic and other geologic hazards.
- Addressing evacuation routes, military installations, peak-load water supply requirements, and minimum road widths and clearances around structures as related to fire and geologic hazards, if applicable to the community.
- Identifying areas subject to flooding and wildfires.
- Avoiding locating critical facilities within areas of high risk.

- Assessing the community’s vulnerability to climate change.
- Including adaptation and resilience goals, policies, objectives, and implementation measures.

California Government Code Sections 8685.9 and 65302.6

California Government Code Section 8685.9 (also known as Assembly Bill 2140) limits the State of California’s share of disaster relief funds paid out to local governments to 75 percent of the funds not paid for by federal disaster relief efforts, unless the jurisdiction has adopted a valid hazard mitigation plan consistent with the Disaster Management Act of 2000 and has incorporated the hazard mitigation plan into the jurisdiction’s general plan. In these cases, the State may cover more than 75 percent of the remaining disaster relief costs.

All cities and counties in California must prepare a general plan, which must include a safety element that addresses various hazard conditions and other public safety issues. The safety element may be a stand-alone chapter or incorporated into another section, as the community wishes. California Government Code Section 65302.6 indicates that a community may adopt an LHMP into its safety element if the LHMP meets applicable state requirements. This allows communities to use the LHMP to satisfy state requirements for safety elements. As the General Plan is an overarching long-term plan for community growth and development, incorporating the LHMP into it creates a stronger mechanism for implementation.

California Government Code Section 65302(g)(4)

California Government Code Section 65302(g)(4), also known as Senate Bill (SB) 379, requires that the safety element of a community’s general plan address the hazards created or exacerbated by climate change. The safety element must identify how climate change is expected to affect hazard conditions in the community and include measures to adapt and be more resilient to these anticipated changes.

Because the LHMP can be incorporated into the safety element, addressing these items in the LHMP can satisfy the state requirement. SB 379 requires that climate change be addressed in the safety element when the LHMP is updated after January 1, 2017, for communities that already have an LHMP, or by January 1, 2022, for communities without an LHMP.

National Flood Insurance Program

The National Flood Insurance Program (NFIP) was created in 1968 to help communities adopt more effective floodplain management programs and regulations. The Federal Emergency Management Agency is responsible for implementing the NFIP and approves the floodplain management plans for participating cities and counties. The City of Willits participates in the NFIP and received its initial Flood Insurance Rate Map in 1982. As of September 2018, there are currently 69 flood policies within the City that fall under this program. Chapters 17.38 and 17.40 of the Willits Municipal Code administer flood management regulations throughout the city.

Alquist-Priolo Earthquake Fault Zoning Act

Adopted in 1972, the Alquist-Priolo Earthquake Fault Zoning Act (California Public Resources Code[PRC], Chapter 7.5, Section 2621-2699.6) was intended to reduce the risks associated with surface faults and requires that the designated State Geologist identify and map “Earthquake Fault Zones” around known active faults. In accordance with PRC Section 2623, Cities and counties shall require, prior to the approval of a project, a geologic report defining and delineating any hazard of surface fault rupture. If the city or county finds that no undue hazard of that kind exists, the geologic report on the hazard may be waived, with the approval of the State Geologist. For a list of project types, please refer to PRC Section 2621.6.

Seismic Hazards Mapping Act

The Seismic Hazards Mapping Act (California Public Resources Code, Chapter 7.8, Section 2690-2699.6) created a statewide seismic hazard mapping and technical advisory program in 1990 to help cities and counties more effectively address the effects of geologic and seismic hazards caused by earthquakes. In accordance with PRC 2697, cities and counties shall require, prior to the approval of a project located in a seismic hazard zone, a geotechnical report defining and delineating any seismic hazard. If the city or county finds that no undue hazard of this kind exists, based on information resulting from studies conducted on sites in the immediate vicinity of the project and of similar soil composition to the project site, the geotechnical report may be waived. After a report has been approved or a waiver granted, subsequent geotechnical reports shall not be required, provided that new geologic datum, or data, warranting further investigation is not recorded. Each city and county shall submit one copy of each approved geotechnical report, including the mitigation measures, if any, that are to be taken, to the State Geologist within 30 days of its approval of the report. For a list of project types, please refer to PRC Section 2693.

Cortese List

Government Code Section 65962.5 is typically referred to as the “Cortese List” identifies sites that require additional oversight during the local permitting process as well as compliance with the California Environmental Quality Act (CEQA). The list is generally a compilation of properties and businesses that generate, store, and/or have been impacted by the presence of hazardous materials/wastes. Many properties identified on this list may be undergoing corrective action, cleanup, or may be abandoned and in need of these activities.

III. Potential Hazards/ Trends

There are several potential hazards of concern in Willits that could cause harm to community members and result in property damage. This section summarizes this information and contains policies intended to improve community resilience.

A. Seismic and Geologic Hazards

Seismic and geologic hazards are traditionally addressed together because they both involve the movement of the earth's surface. Although some geologic events (landslide, subsidence, erosion, etc....) can and do happen on their own, the primary catalyst for their occurrence is often a seismic event, commonly referred to as an earthquake. In addition, some geologic hazards are based on the presence of certain conditions or earth materials that pose a threat, if exposure occurs. This section identifies common seismic and geologic hazards that threaten the City of Willits and establishes policies and procedures meant to protect the community from future events/exposures.

Seismic Hazards

Northern California is prone to seismic activity and their frequent occurrence is widely accepted as a factor for future developments. Due to the City's location within a seismically active region and proximity to numerous active faults, Willits is prone to seismic hazards (**Figure S-1**). These hazards can be divided into Primary and Secondary Hazard categories, each with unique characteristics and implications for planning.

Primary Hazards

Primary seismic hazards include surface fault rupture and seismic shaking. Descriptions of these two hazards are provided below.

i. Surface Fault Rupture

The earth is covered in tectonic plates, which are large sections of the earth's crust that are constantly shifting and moving closer together, further apart, or past one another. The movement of two plates past one another frequently causes friction resulting in plates that "stick." When this occurs, the same forces that push these plates past each other are now concentrated in certain areas. In time, friction can no longer hold the plates together, and the plates suddenly shift, releasing the massive build-up of energy (i.e., earthquake). This rapid movement and release of energy can cause the earth to fracture at the surface and displace the land around it, resulting in the creation of an earthquake fault. Surface rupture of a fault is especially dangerous if structures are built on top of the fault or infrastructure crosses the fault. Facilities within the zone of fault rupture could be damaged or destroyed depending on the magnitude of the event. If surface rupture occurs, the movement could break pipelines and damage roads and bridges, rendering them useless after the event. Areas of known fault rupture in California are identified in Alquist-Priolo Special Study Zones, which require additional fault location investigation and analysis (**Figure S-2**). This figure identifies the Maacama Fault, which is considered an active fault by the California Geological Survey, requiring additional study in accordance with this Act. The Maacama fault is a right-lateral strike slip fault, that experiences fault creep of approximately 8 millimeters per year. The Maacama fault is theorized to be the northernmost segment of the Hayward Fault subsystem of the San Andreas Fault zone, which is the dominant fault along the western margin of California.

ii. Seismic Shaking

Seismic shaking is the recognizable movement caused by the energy released from an earthquake. The same mechanism that creates surface rupture is also responsible for seismic shaking and can produce an equally devastating effect. Buildings and other structures may be destroyed because of violent shaking. Infrastructure such as roads, pipelines, and power lines are also susceptible to damage and pose additional safety concerns. Unlike surface rupture, the consequences of seismic shaking are not restricted to the area immediately surrounding the fault. Energy resonating through the ground has the potential to travel hundreds of miles and cause damage in many locations simultaneously. The closer you are to the earthquake's source (epicenter), the stronger the shaking will be. Seismic shaking is of concern for the City of Willits because numerous active faults—such as the San Andreas Fault Zone, Maacama Fault, and Bartlett Springs Fault—run through the city (Maacama) and the surrounding Mendocino County region (San Andreas and Bartlett Springs faults). Recent estimates suggest these faults could produce a seismic event of magnitude (M) 6.25 or greater within the next 30 yearsⁱ, which depending on the location and duration of the event could impact the City significantly. **Figure S-1** identifies the intensity of shaking from modeling provided by the California Geologic Survey. This modeling suggests areas within Little Lake Valley would experience the greatest amount of shaking (measured as a percentage of gravity [g]) during a seismic event.

Secondary Hazards

Secondary seismic hazards typically include seismically induced landslides and liquefaction. Descriptions of these two hazards are provided below.

i. Seismically Induced Landslides

During a seismic event, areas with steep topography, weak geologic formations, and/or a combination of these conditions can experience movement as a result of seismic shaking. Most of these failures occur in areas already prone to movement due to the presence of existing landslides. See the Landslide discussion below for further detail.

ii. Liquefaction

Liquefaction is a phenomenon that occurs when intense vibrations from an earthquake cause saturated soil to lose stability and act more like a liquid than a solid. This poses significant problems for buildings and other structures in areas where liquefaction can occur, as the ground may give way under the weight of the structure and its foundation. In addition, underground structures are also vulnerable to liquefaction. Areas of the City of Willits where groundwater is shallower than fifty feet may be prone to liquefaction, which would require additional analysis and mitigation if liquefiable materials (loose sandy soils) are present. No historic impacts associated with liquefaction have occurred within the City of Willits.

Geologic Hazards

Although geologic hazards are often triggered by seismic events, such as earthquakes, this is not always the case. Therefore, understanding and preparing for these hazards as stand-alone events is equally important.

Landslide

A landslide is the movement of earth materials down slopes and areas of steep topography. Although they are often caused by earthquakes, landslides can occur when any sloped surface is no longer able to support the material contained within or sitting above it. This instability can be caused by the sheer weight of the loose material or can be aided by other events such as heavy rain. When rain

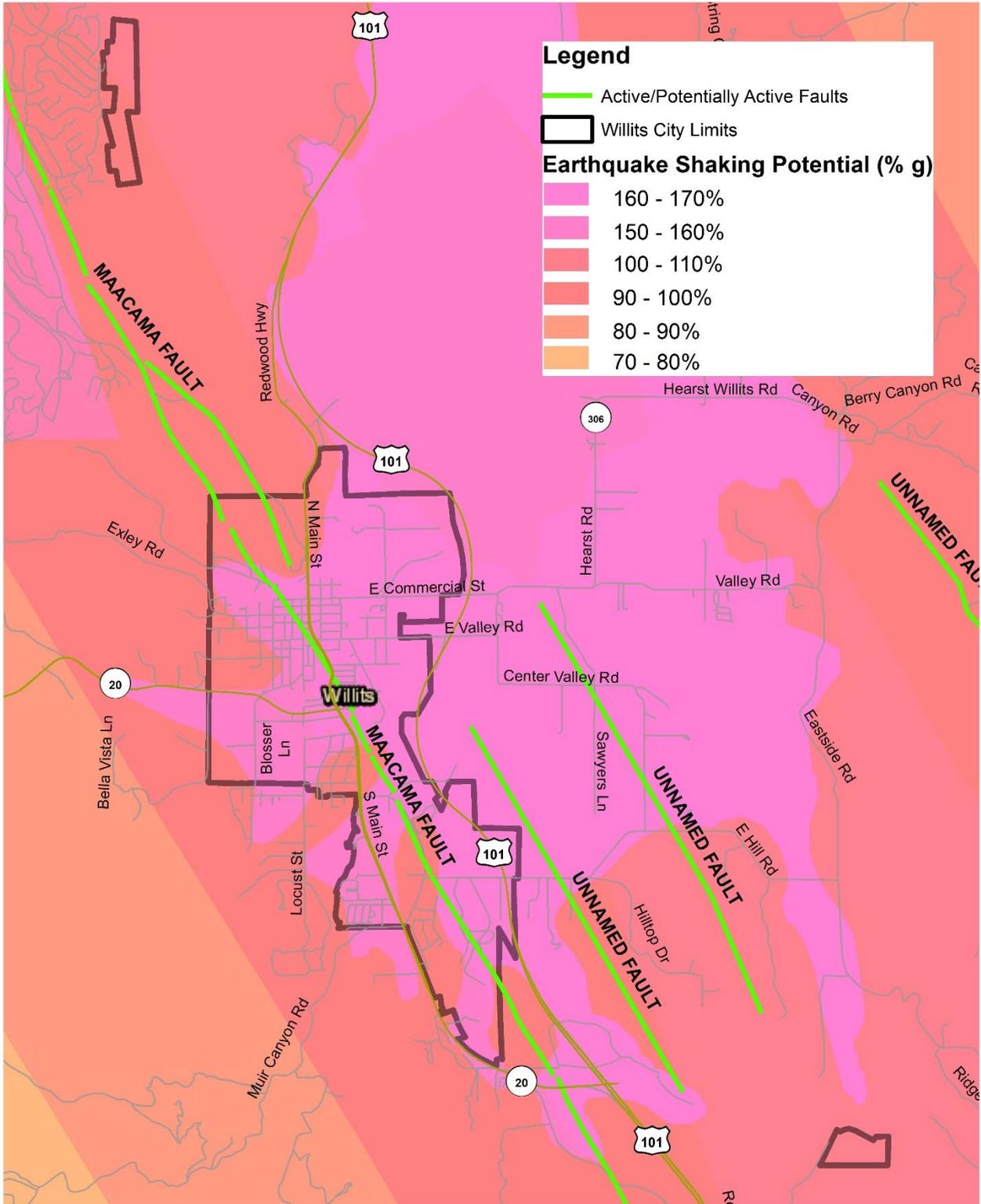
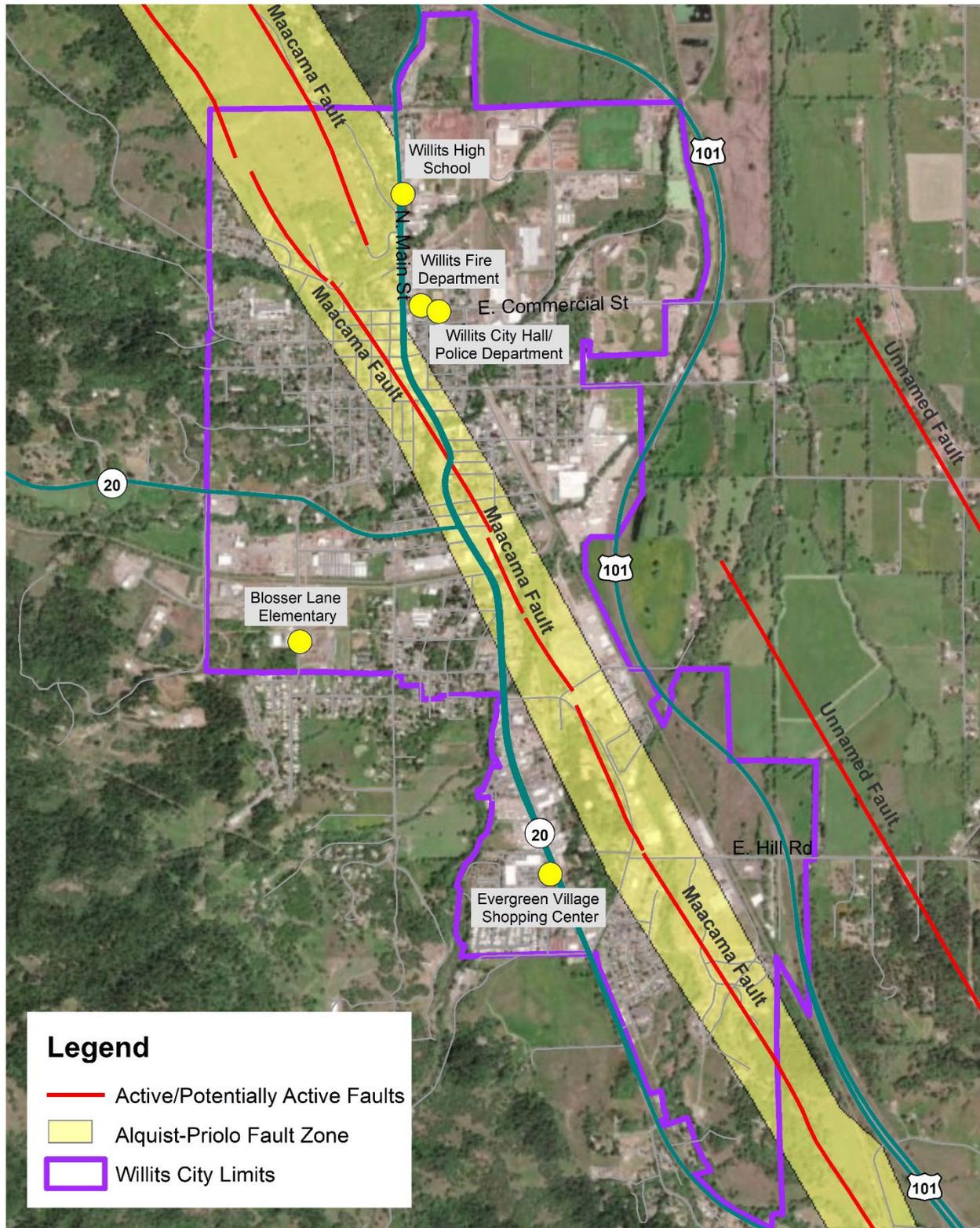


Figure S-1 Faulting and Seismicity

Sources: Esri, HERE, Garmin, (c) OpenStreetMap contributors, and the GIS user community, D. Branum, R. Chen, C. Wills (California Geological Survey); M. Petersen (United States Geological Survey).





Legend

- Active/Potentially Active Faults
- Alquist-Priolo Fault Zone
- Willits City Limits



Figure S-2 Alquist-Priolo Special Study Zones

Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community, Seismic Hazards Program, California Geological Survey, California Department of Conservation



causes a slope to fail, the movement of earth materials is typically referred to as a mudslide. Both landslides and mudslides move with great force and pose significant danger to buildings and other structures. In some circumstances, these events may cause bodily harm if bystanders are unable to move out of its path in time. Landslides present some risk to the City of Willits, mainly along the southern and western portions of the City. Anticipating the risk of landslides in the areas identified by **Figures S-3a** and **S-3b** will be important for protecting the residents, businesses and community assets located in these locations.

GOAL S-1 Improve the community’s resilience to seismic and geologic hazards by ensuring the integrity of the built environment.

Policy S-1.1	Maintain up-to-date records and information on seismic and geologic event activity within the city and surrounding areas.
Policy S-1.2	Identify if existing and new structures are located within Alquist-Priolo Special Study Hazard Zones and in areas at risk from liquefaction and landslides and take corrective action to minimize the risk of injury or damage from seismic or geologic events.
Policy S-1.3	Encourage the retrofitting of buildings and other structures to minimize the damage caused by earthquakes and other geologic events through existing programs offered by the California Earthquake Authority.
Policy S-1.4	Require new development comply with state requirements regarding fault setbacks and accommodate larger setbacks where feasible.
Policy S-1.5	Require new development to observe 30-foot setbacks from all hillsides and other sloped surfaces that show medium to high landslide susceptibility (Class VII or greater).
Policy S-1.6	Restrict development in areas prone to liquefaction and/or landslide unless an independent geotechnical investigation determines the site is safe for development.
Policy S-1.7	Assess existing and proposed infrastructure vulnerability, with emphasis on water and sewer infrastructure that could collapse or rupture as a result of a seismic or geologic event.

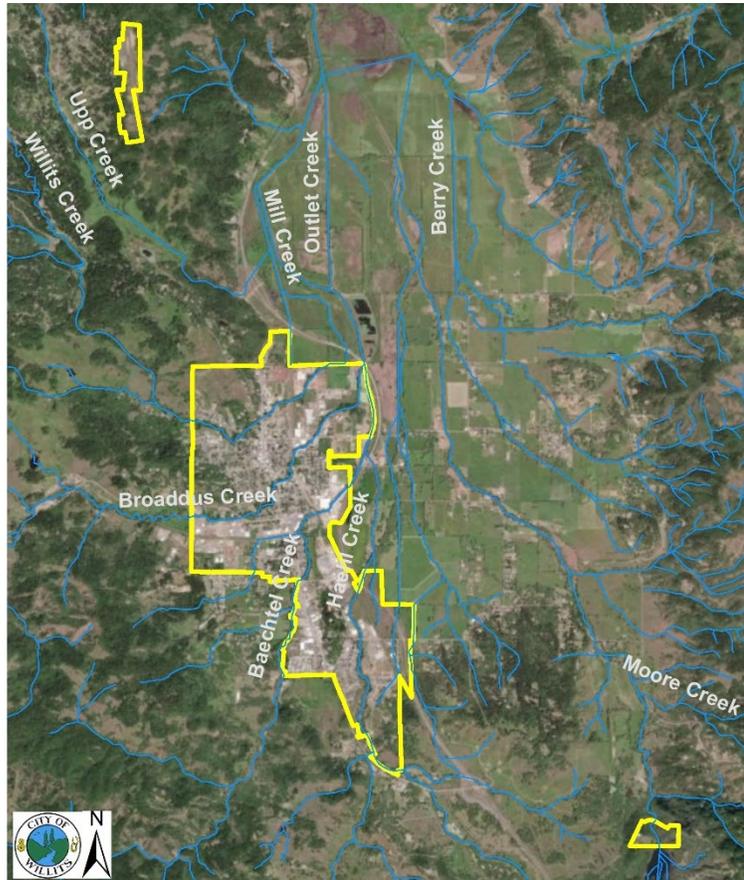
B. Flood Hazards

Willits is located in the center of Mendocino County, within the Little Lake Valley. Little Lake Valley lies immediately north of the drainage divide between the Eel and Russian River basins. Several small streams, including Baechtel, Broaddus, Davis, Haehl, and Willits Creeks, flow through the valley and join in a marshy area near the north end of the City. The marshy area is drained by Outlet Creek, a tributary of the main stem of the Eel River. The valley consists of an oblong-shaped flat floor measuring approximately 5 miles long (north to south) and 2.5 miles wide (west to east). The average elevation of the valley floor is approximately 1,350 feet above mean sea level. The convergence of these streams into Outlet Creek occurs near the City’s Wastewater Treatment Plant, which is a critical City facility located in the lowest portions of the valley. Due to the low-lying topography in this location, this part of the City is at the greatest risk of flooding. During a large rain event or upstream dam failure these areas of the watershed could become overwhelmed with floodwaters and be impacted severely. Due to the location of the WWTP in this area, this facility is highly vulnerable to potential flooding events, as the loss of operation would impact all

properties connected to the system. Understanding these hazards will help the City better understand and prepare for the risks associated with future flooding events.

Flooding

Flooding is caused by the accumulation of water on the ground surface. This typically occurs after heavy rainfall but can also result from the failure of water delivery infrastructure such as pipes and water tanks. Worsening drought conditions caused by climate change may exacerbate the effects of flooding, as surfaces that normally absorb water can quickly dry out and become less permeable. Flooding presents multiple dangers to people and structures alike. Standing water may be deep enough to cause drowning, and even shallow water can easily damage buildings and property. Fast-moving water is more hazardous, as it may sweep people, vehicles, equipment, and debris downstream or cause extensive damage to structures. Bridges constructed over drainage courses may be compromised if floodwaters undermine the structure or damage it due to debris. In addition, many drainages may have vegetation and debris that has not been thinned and maintained, which could reduce the flow capacity, which could cause flooding upstream. The risk of flooding in Willits is largely isolated to the areas immediately adjacent to these drainages and the floodplain areas of the Little Lake Valley as depicted in **Figure S-4**.



The risk of flooding in Willits is largely isolated to the areas immediately adjacent to these drainages and the floodplain areas of the Little Lake Valley as depicted in **Figure S-4**.

Dam Failure

Dam failure can be influenced by several factors. Aging infrastructure, overcapacity, and seismic and geologic hazards all have the potential to compromise a dam’s integrity, potentially leading to failure. When a dam does fail, the water retained by the structure rushes out and can flood a large geographic area. Dam failure poses a flooding risk to the City of Willits due to its proximity to several dams and drainages that floodwaters would travel. The following facilities are located within proximity of the City and could impact properties if inundation were to occur:

- Morris and Centennial Dams** – located along the Davis Creek, these two dams provide water storage for the City’s water supply. The reservoirs backed up by these dams have a combined capacity of 1,310 acre-feet, which is supplied by city-owned watershed property. Failure of this facility would potentially inundate northeast portions of the City in the vicinity of Outlet Creek and Highway 101.

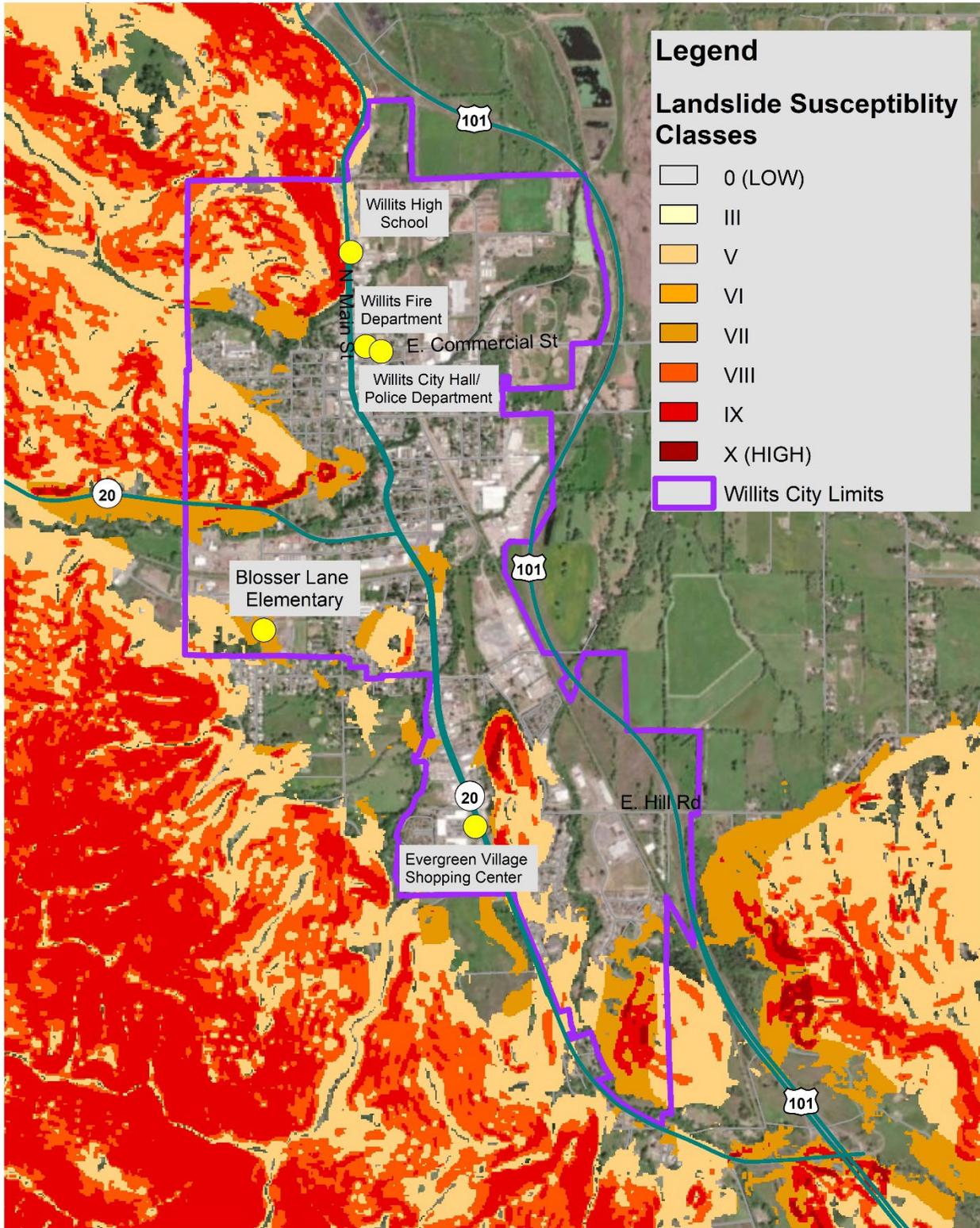


Figure S-3a Landslide Susceptibility Classes

Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community, Seismic Hazards Program, California Geological Survey, California Department of Conservation



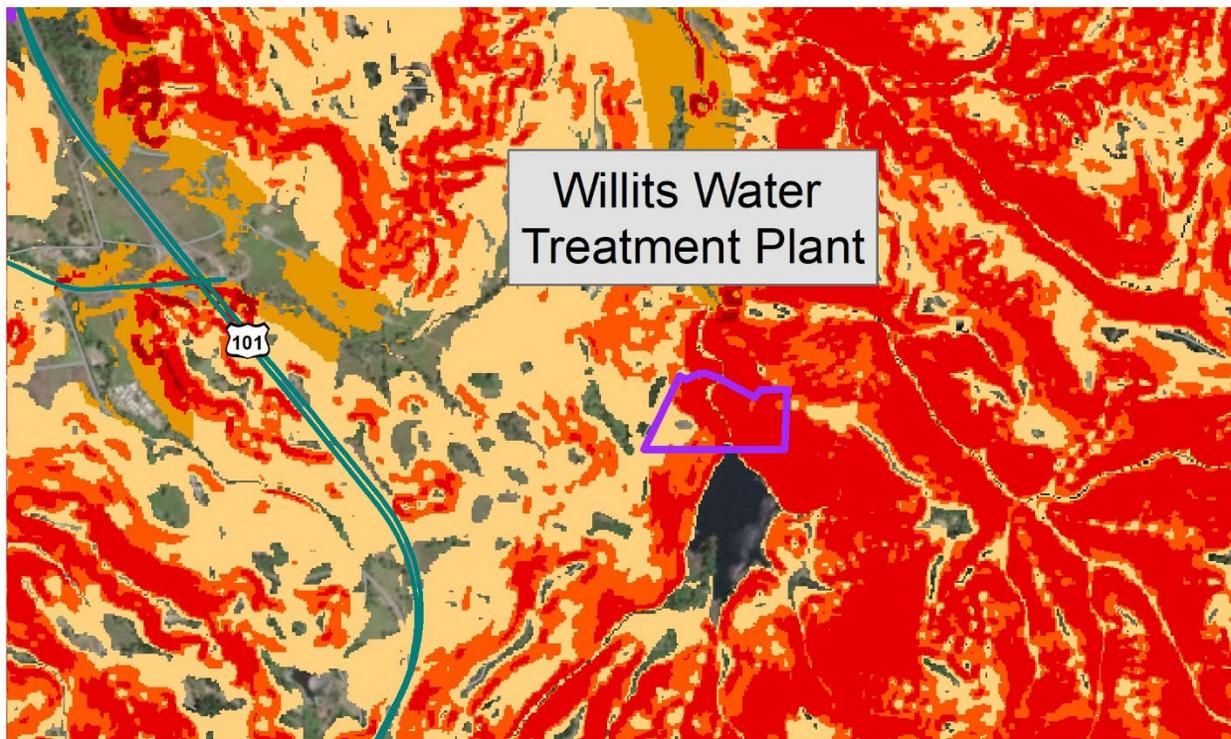
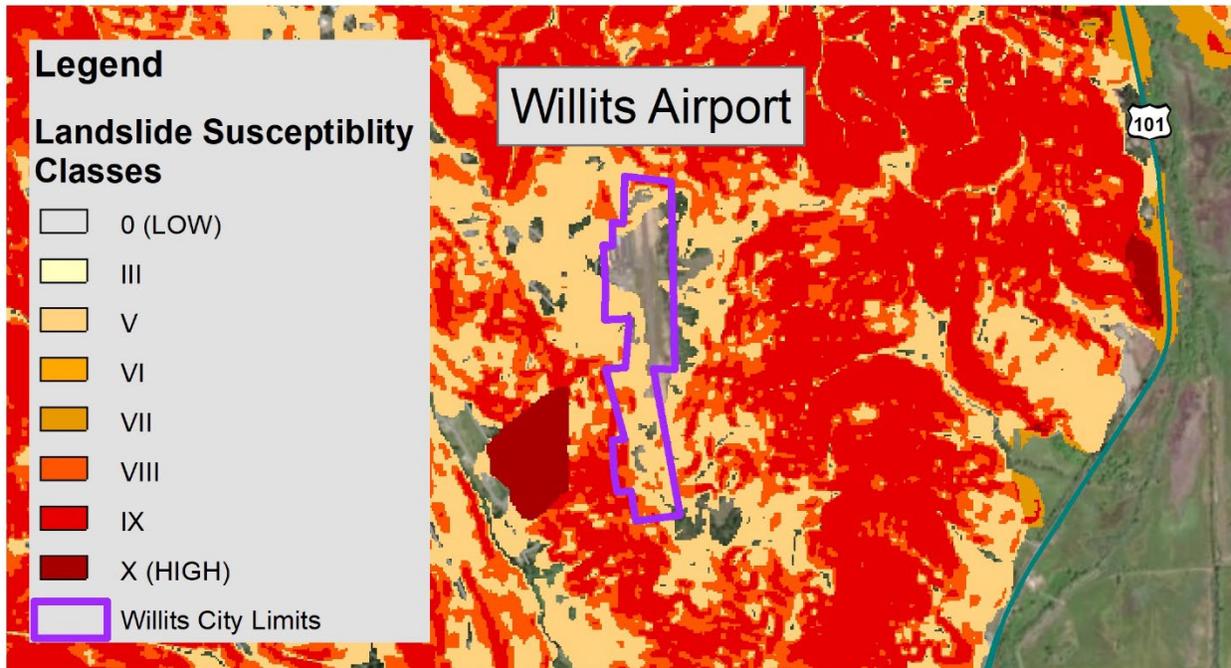
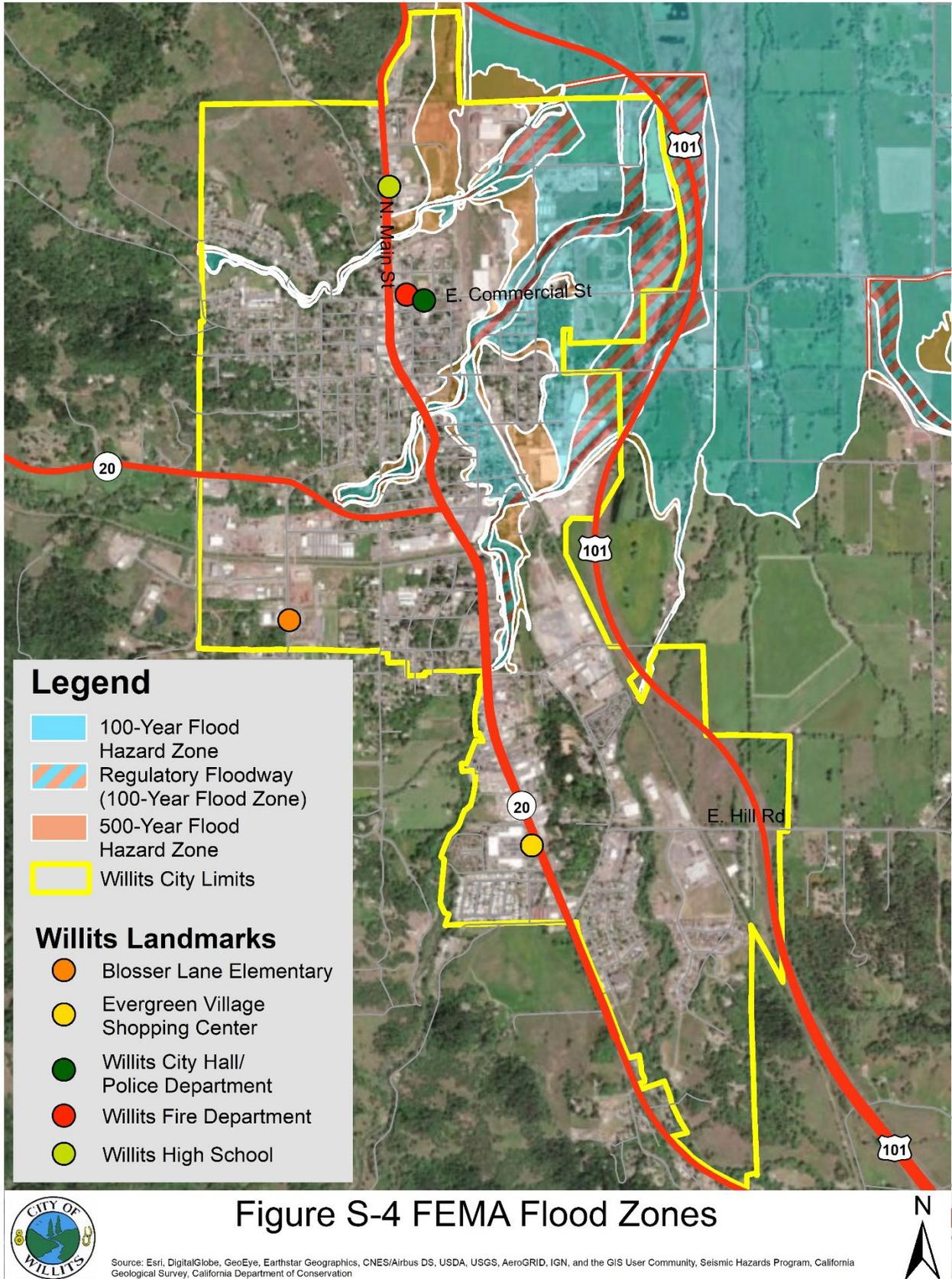


Figure S-3b Landslide Susceptibility Classes

Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community, Seismic Hazards Program, California Geological Survey, California Department of Conservation





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- **Brooktrails Dam** – located along Willits Creek, this dam impounds Lake Emily, which contains approximately 251 acre-feet of water within its reservoir. Failure of this reservoir would inundate properties along Willits Creek in the northwestern corner of the City.
- **Scout Lake Dam** – located along Berry Creek, impounds Lake Winawa reservoir, which contains approximately 1,140 acre-feet of water. Failure of this facility would inundate portions of Little Lake Valley outside the City limits of Willits.

Based on the analysis within the Mendocino County Multi-Jurisdictional Hazard Mitigation Plan, inundation from flood waters resulting from dam failure would be confined to the 100-year floodplain, which would impact the northeastern portions of the City and unincorporated areas. **Figure S-5** depicts the potential inundation areas for these three dams, which assumes the reservoirs are full at the time of failure.

Water Supply

Water supply for the City is supplied by the 1,600 acre watershed property located upstream of the Morris and Centennial Dams. These reservoirs supply potable water for the City, which is predominantly sourced from surface water. Due to the limited amount of capacity within these two reservoirs, the City has begun developing additional water resources in the form of additional well sites, groundwater treatment facilities, and interties with the existing City water supply system. Future upgrades to the system include upgraded pumps, the addition of new wells and water pipelines to enhance the water system and create greater redundancy. Based on a 1985 study of the Little Lake Valley Groundwater Basin, the annual recharge rate of the basin is approximately 10,000 acre-feetⁱⁱ. Sustainable use of this resource will provide the City with a more resilient water supply.

GOAL S-2 Anticipate the risks and mitigate the effects that flood hazards pose to the community.

Policy S-2.1	Continuously monitor weather conditions, especially during periods of severe drought followed by heavy precipitation.
Policy S-2.2	Continuously monitor flooding extent and locations to determine changes to the 100-year and 500-year flood zone boundaries, anticipating future changes associated with climate change.
Policy S-2.3	Identify if existing and new structures are located within 100- and 500-year floodplains and take corrective action to minimize the risk of injury or damage from flooding events.
Policy S-2.4	Identify and pursue funding opportunities to improve infrastructure located within the 100-year and 500-year floodplains.
Policy S-2.5	Restrict new development in high-flood risk areas, such as the 100- and 500-year floodplains and floodways, unless addressed through adequate flood proofing and mitigation.
Policy S-2.6	Design and maintain storm drainage infrastructure to accommodate, at minimum, 100-year flood events.
Policy S-2.7	Coordinate dam failure evacuation plans with Mendocino County and key City/County/State Departments.
Policy S-2.8	Promote low impact development techniques and strategies as part of the development process, to reduce flooding throughout the city.

Policy S-2.9	Encourage the use of flood insurance for properties within the 100- and 500-year floodplains.
Policy S-2.10	Periodically update the Floodplain Management Regulations adopted in the Willits Municipal Code.
Policy S-2.11	Identify key drainages that require routine maintenance to ensure adequate drainage flows are accommodated.
Policy S-2.12	Develop flood management strategies that prioritize healthy ecological practices that integrate effectively with wildfire management priorities.

C. Fire Hazards

The City of Willits, like all cities within Mendocino County, is at risk of suffering substantial damage caused by a fire. As Mendocino County recovers from the 2018 Mendocino Complex Fire, communities like Willits focus on the conditions within the City and surrounding environs to identify vulnerabilities to wildfire. The City is highly susceptible to impacts associated with wildfires. While a significant fire hasn't occurred within the city limits, **Figure S-6**, depicts previous wildfire incidents from 1950 to 2018 within the vicinity of the City of Willits. This figure illustrates the many significant wildfire events that have occurred in the vicinity of the City. These past incidents have impacted the community indirectly through the need for evacuation, housing of fire refugees and response personnel, and loss of communications and electricity. These effects stand to stress City capabilities and resources, which can impact overall function and quality of life within the region. Planning for wildfires is essential to protecting the community, especially with the threat of climate change increasing the risk and severity of future wildfire events.

Unique to the Willits area is the operation of the Skunk Train, which provides passenger service between the City and Fort Bragg. A key concern for the community is the initiation of fires associated within operation of this rail line. On average three to five fire incidents per year occur within the railroad right of way. Given the proximity of this right of way to natural areas, this facility can contribute to increase fire risk within the City and region.

Wildfires

The most common type of natural hazard in California, wildfires can burn large areas of undeveloped or natural land in a short amount of time. They often begin as smaller fires caused by lightning strikes, downed power lines, or unattended campfires, but may rapidly expand in size if conditions are dry and/or windy. The recent trend toward more prolonged periods of drought increases the likelihood of wildfire occurring. Normally, wildfires pose minimal threat to people and buildings in urban areas but increasing human encroachment into natural areas increases the likelihood that bodily harm or structural damage will occur. This encroachment occurs in areas called the wildland-urban interface (WUI), which is considered any area within the high and very high fire hazard severity zone, as defined by Cal FIRE. The City of Willits is located within the WUI as many areas of the City are classified within the moderate and high fire hazard severity zones. **Figures S-7a** and **S-7b** identifies the fire hazard severity zones within the city limits and surrounding unincorporated areas.

Those areas within the Very High Fire Hazard Severity Zone (VHFHSZ) are of greatest importance to the City, which includes the City's water treatment plant. While this facility is at the greatest risk, the entire watershed could be impacted by wildfire, which could affect the City's water supply. For these reasons, fire management within this watershed will play an important role in ensuring a safe and resilient water supply for the City in the future. In addition, the City's airport is also located adjacent to VHFHSZs within unincorporated Mendocino County. Operation of the airport facility is important to the local economy,

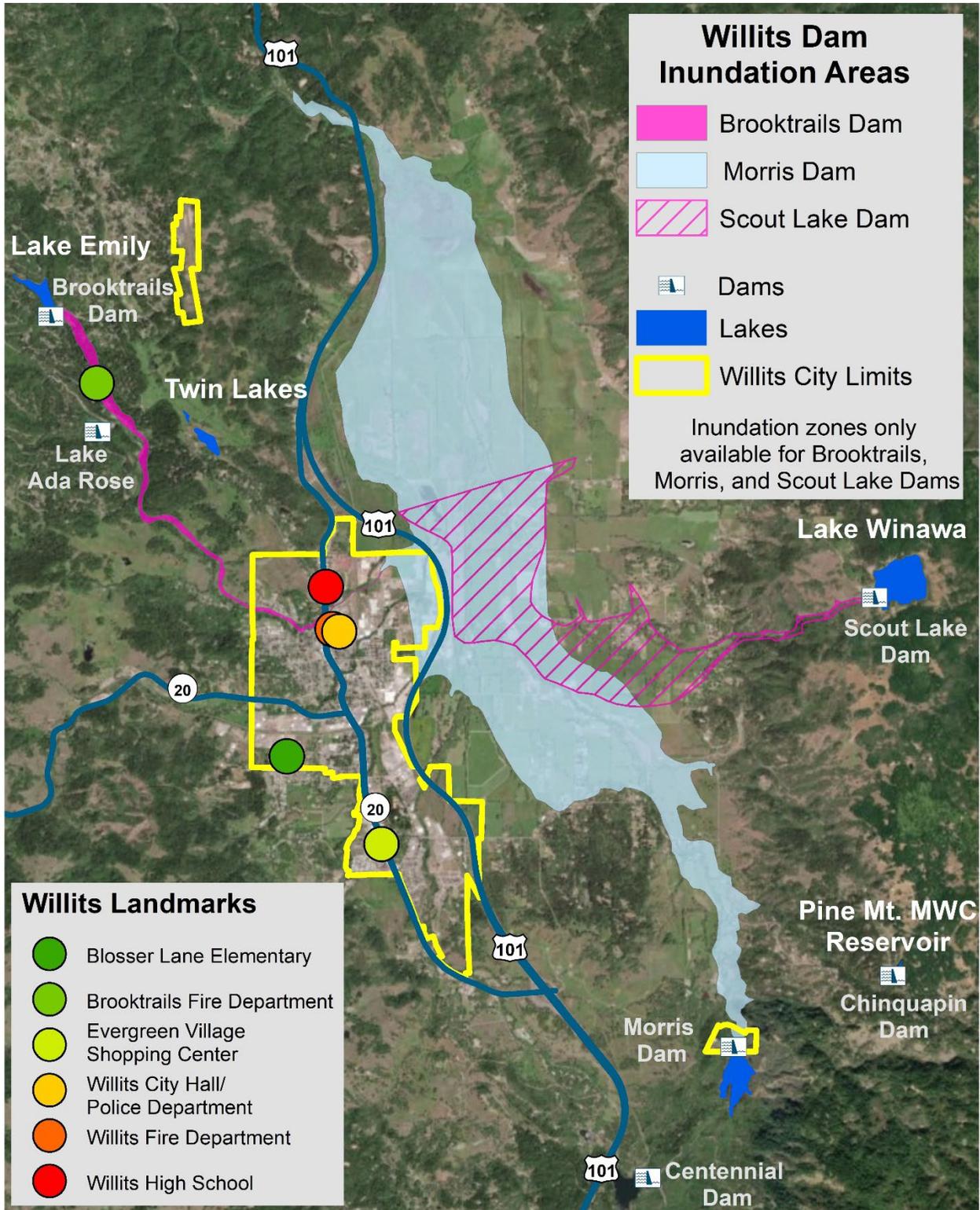


Figure S-5 Dam Inundation Zones

Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community



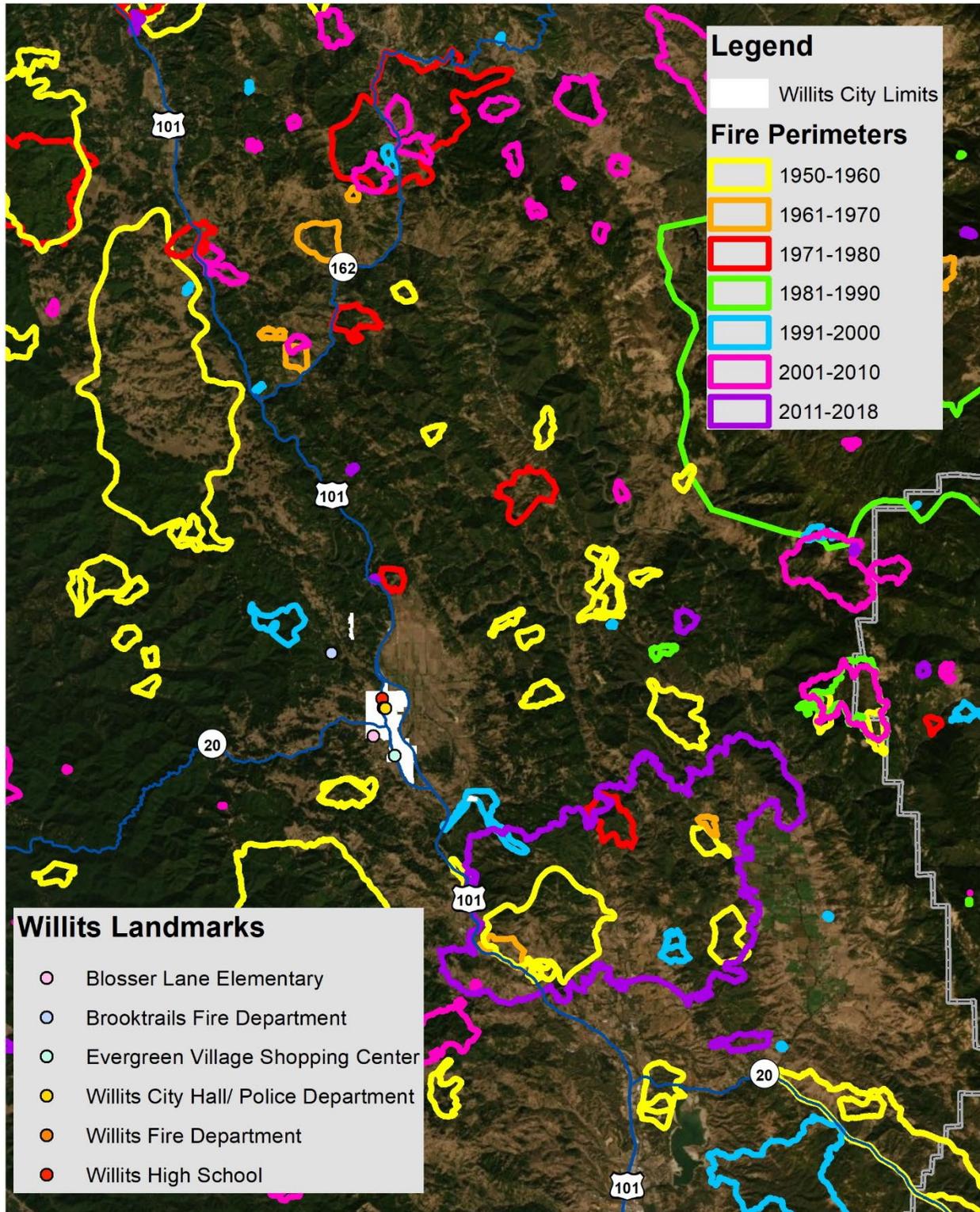


Figure S-6 Historic Wildfire Perimeters (1950-2018)

Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community



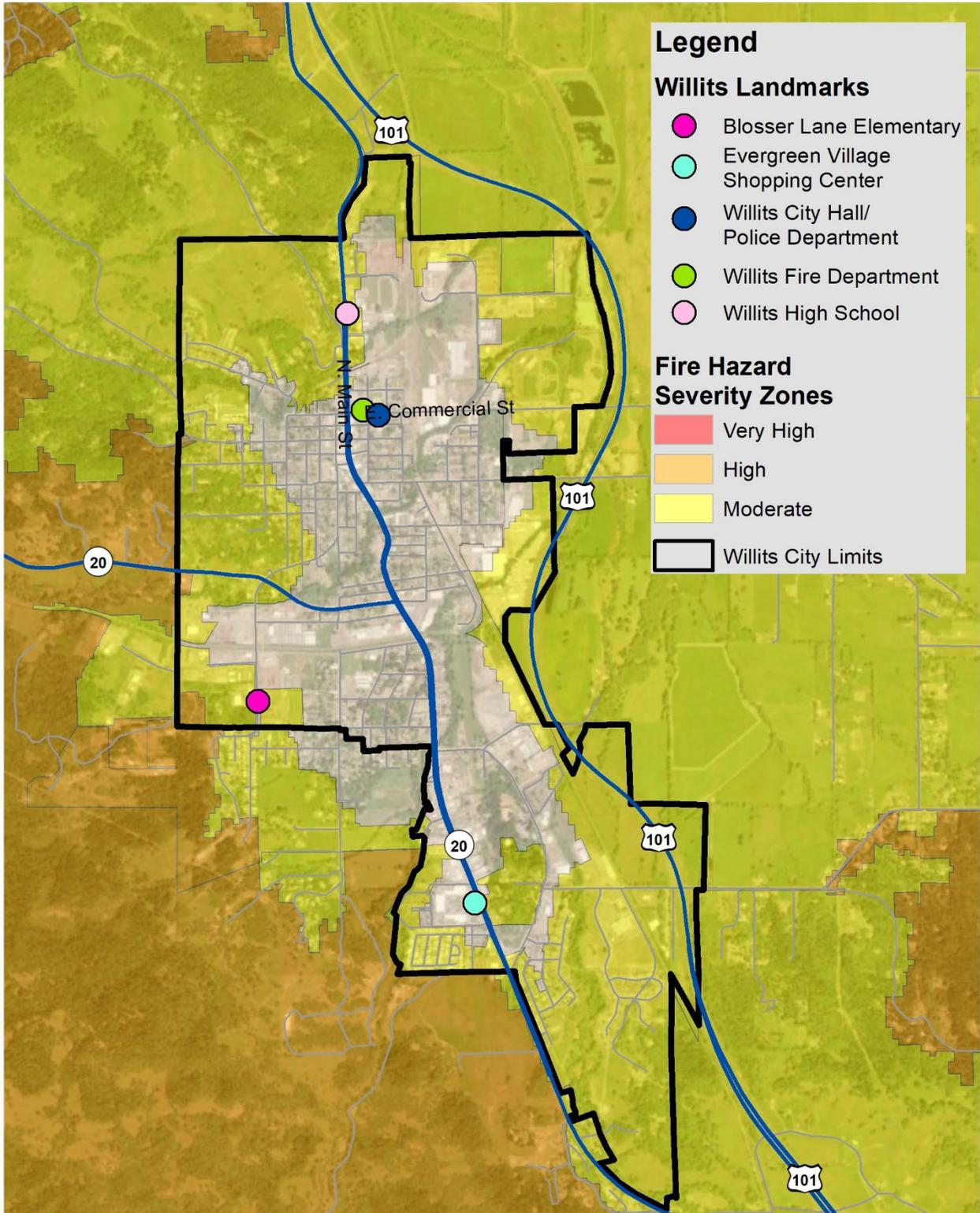


Figure S-7a Wildfire Hazard Zones



Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

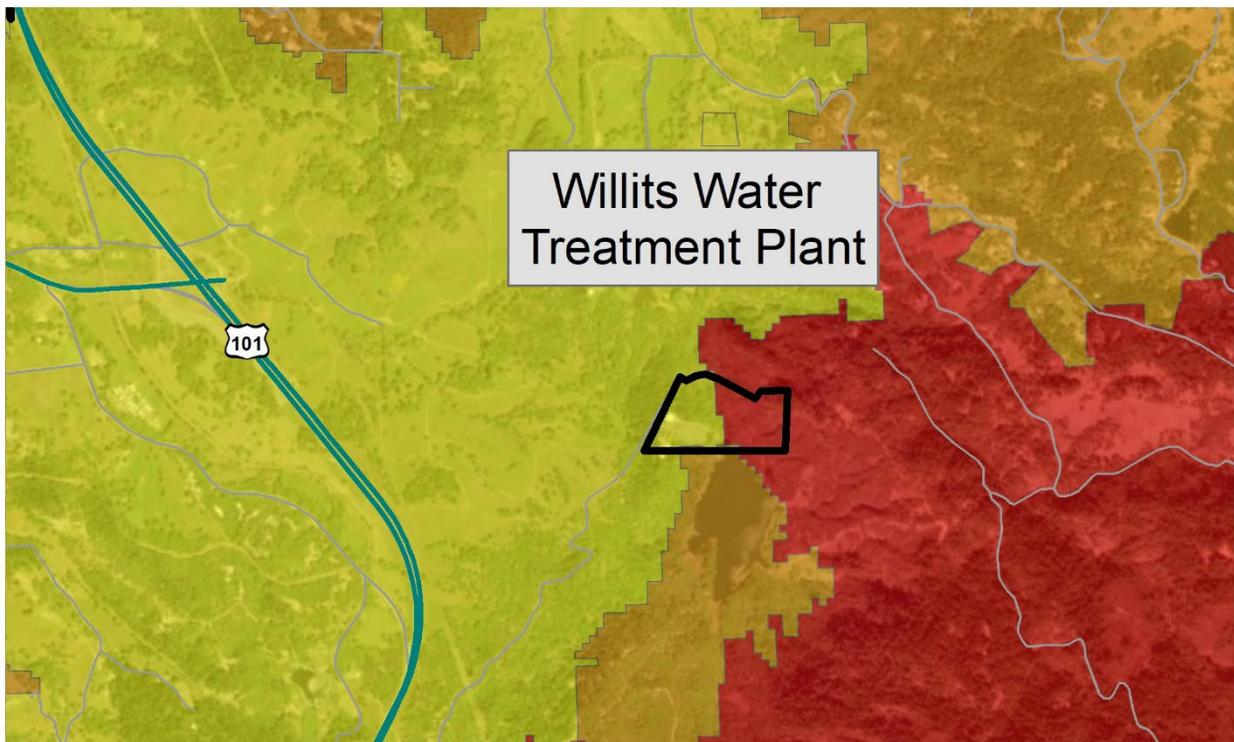
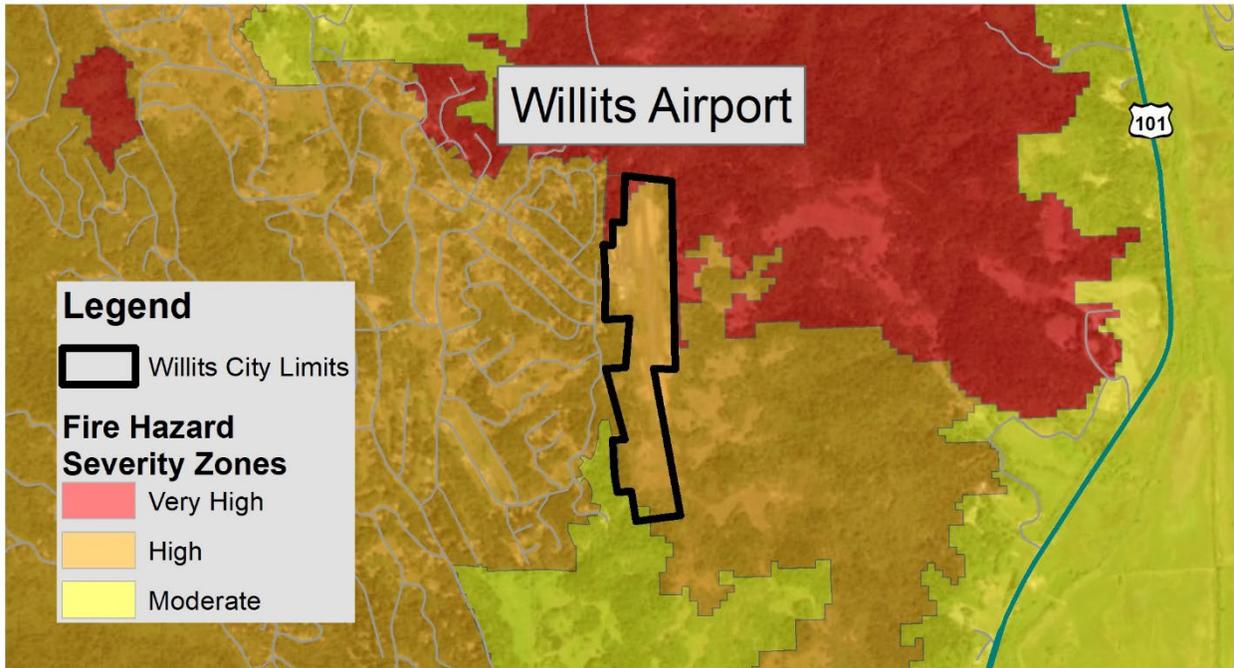


Figure S-7b Wildfire Hazard Zones

Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community, Seismic Hazards Program, California Geological Survey, California Department of Conservation



serves as a key evacuation location (for residents in the Brooktrails area) and may be critical to effective response and recovery to a regional disaster situation. Cal FIRE typically uses the airport during a significant regional wildfire event. As a result, close coordination of fire management activities will be important to ensure this facility is operational and resilient to future wildfire conditions.

Vegetation Management

Vegetation management is considered an effective method of wildfire hazard management and mitigation. To address vegetation management within the City, a Fire Protection Plan (FPP) approved by the fire code official, is required for all new development within and adjacent to High and Very High Fire Hazard Severity Zones within the City. FPPs are required to include mitigation strategies that take into consideration location, topography, geology, flammable vegetation, sensitive habitats/species, and climate of the proposed site. FPPs must address water supply, access, building ignition and fire resistance, fire protection systems and equipment, defensible space, vegetation management, and long-term maintenance. All required FPPs must be consistent with the requirements of the California Building Code Chapter 7A, International Wildland-Urban Interface Code, and the City of Willits Municipal Code.

Urban Fires

The possibility of an urban fire confronts every city. Many urban fires begin as isolated incidents caused by a faulty electrical appliance, an absentminded cooking mishap, or an industrial malfunction, but can spread to other buildings, if conditions permit. Many factors (age of construction, construction materials, and landscape placement) contribute to the severity and extent of an urban fire; however modern building codes and practices have reduced their effects over the years. Despite these improvements, it is important to acknowledge the risks associated with fires in urban areas. Any fire, no matter its size, can cause severe harm to people and damage buildings and other structures.

GOAL S-3 Safeguard the community from the threat of urban and wildfire hazards.

Policy S-3.1	Maintain up-to-date records and information on conditions in undeveloped and natural areas, especially areas considered part of the high and very high fire hazard severity zones.
Policy S-3.2	Promote comprehensive structural modification and fuel modification guidelines for new and existing (non-conforming) buildings and structures located within the high and very high fire hazard severity zones, in compliance with local and State Wildland-Urban Interface code requirements of the California Building Code, and any future updates.
Policy S-3.3	Restrict new development in high and very high fire hazard severity zones, unless designed using the most up to date wildfire mitigation techniques and code requirements, in compliance with local and State Wildland-Urban Interface code requirements.
Policy S-3.4	Coordinate wildfire response plans (i.e. Cal Fire Unit Fire Plan) with Local, State, Federal, and Tribal entities, as appropriate.
Policy S-3.5	Require all new development to comply with fire safety standards identified in Chapter 15.16 of the Willits Municipal Code.
Policy S-3.6	Identify key metrics and recommendations from the Little Lake Fire Protection District to ensure adequate service is provided to residents and businesses.

Policy S-3.7	Locate new critical facilities outside of the Very High Fire Hazard Severity Zones, unless no alternate location is available or feasible.
Policy S-3.8	Require all new development and major redevelopment/reconstruction within the high and very high wildfire hazard severity zones to prepare a Fire Protection Plan.
Policy S-3.9	Consider the relationship between existing and future development on the current and future demands for Fire and Emergency Services facilities and personnel.
Policy S-3.10	Coordinate vegetation management activities with Cal FIRE, LLFPD, and users of the railway, including the Skunk Train and ensure fire risk is reduced within the railroad right of way.
Policy S-3.11	Identify and establish fire breaks in key locations (prioritizing the City’s airport and water treatment plant) that preserve and protect critical infrastructure and reduce wildfire vulnerability for the City.

D. Climate Adaptation & Resiliency

In 2015, California Governor Jerry Brown approved Senate Bill (SB) 379, requiring cities to address climate adaptation and resiliency strategies in their general plan safety element. To help cities comply with the new mandate, SB 379 also allows cities to incorporate their Local Hazard Mitigation Plan, which addresses climate adaptation and resiliency in greater detail, into the safety element. This section addresses the impacts of climate change as they pertain to the City.

Climate Change Considerations

Although climate change is not itself a hazard, variations in environmental conditions can have an impact on some of the natural hazards affecting Willits. Projections of future conditions include increased temperatures, increased extreme heat days, greater amounts of precipitation, more extreme rainfall events, longer droughts, increased wildfire incidents and severity, and prolonged power outages. **Table S-1** identifies the current/historic conditions and projected conditions within Willits resulting from climate change.

Table S-1 – Potential Climate Change Effects for Willits

Historic Annual Mean (1961-1990)	69.4° F
Future Annual Mean (2070-2099)	73.2 to 76.3° F
Current Extreme Heat Days	4 days per year
Future Extreme Heat Days	15 to 30 days per year
Current Annual Mean Precipitation	51.9 inches
Future Annual Mean Precipitation	55.3 to 60.6 inches
Source: California Energy Commission. “Extreme Heat Days and Warm Nights.” http://cal-adapt.org/tools/extreme-heat/ . California Energy Commission. “Annual Averages.” http://cal-adapt.org/tools/annual-averages/	

Increasing temperatures associated with climate change act as a hazard multiplier. These increases are also anticipated to lead to increases in the number of extreme heat days and the incidence and duration of droughts. While temperatures are anticipated to increase in the coming decades, climate change projections also suggest that annual mean precipitation may increase, which could increase flooding. With changes in future precipitation, it is expected that changes to local vegetation may occur, which could impact drainages and increase the need for wildfire management activities.

Increased rainfall could increase the amount of flooding within the community or introduce flooding into areas that haven't experienced flooding before. One of the most vulnerable flooding locations is the City's wastewater treatment plant. This location is already prone to flooding and would experience greater flooding if projected precipitation increases occur. With greater and more intense precipitation, the City could also experience an increase in landslides/mudslides. Intense precipitation events could de-stabilize hillsides and drainages resulting in more landslides/mudslides and/or erosion along stream courses, impacting neighboring properties/structures.

Precipitation increases within the area, will lead to increased amounts of vegetation growth and changes to vegetation density and potential changes to dominant plant species. These vegetation changes could exacerbate future wildfire incidents. On average, the Willits region experiences wildfires on approximately 12.5 hectares annually. Based on climate change projections, this area could nearly double by the end of the century (an increase between 20.6 and 24.5 hectares) ⁱⁱⁱ.

GOAL S-4 Identify the most probable effects of climate change on local hazards and effectively mitigate their risks.

Policy S-4.1	Coordinate with regional, state, and federal agencies to monitor the indicators and impacts of climate change.
Policy S-4.2	Periodically review and update the City's Local Hazard Mitigation Plan to incorporate new information related to climate change, as necessary.
Policy S-4.3	Monitor flooding conditions that occur outside of the 100-year floodplain to identify new areas of risk as future conditions change.
Policy S-4.4	Monitor extreme heat event conditions, and identify key community assets (electrical lines, pump stations, City buildings, etc....) that may become vulnerable to changing future conditions.
Policy S-4.5	Monitor wildfire mapping and hazard conditions for changing future conditions as a result of climate change.
Policy S-4.6	Improve city staff understanding of how climate change may affect disproportionately vulnerable community members, including senior citizens, low-income persons, and persons with disabilities.
Policy S-4.7	Develop incentive programs to encourage property owners to retrofit their homes/businesses against climate-related hazards such as extreme weather, flooding, wildfire, etc.
Policy S-4.8	Prepare and periodically update a Climate Action Plan for the City that integrates climate adaptation and hazard mitigation information and analysis.

E. Emergency Preparedness

The ability to anticipate and evaluate potential risks posed by natural and human-caused hazards is paramount to a city's longevity. Although this element specifically addresses natural and human-caused hazards, emergency preparedness involves many more considerations beyond identifying the hazards themselves. The Emergency Preparedness section consolidates and briefly describes the City of Willits' hazard prevention and response strategies. For many incidents an important aspect is the potential for power loss during and after the event. Many businesses and residents can expect to go without power for 72 hours or longer, depending on the type and scale of incident. To counteract, the City can look towards alternative energy sources (solar, turbine (wind/water), batteries, generators, etc..) for prolonged backup

power. Other strategies may include expanding connections to Sonoma Clean Power and the development of a microgrid to further enhance power generation and distribution within the City. In addition to power generation, a key aspect of emergency preparedness is the identification of evacuation routes within the City of Willits. Key roadways that support evacuation include: Fort Bragg Road (State Highway 20), Main Street, and US Highway 101, East Commercial Street, and East Hill Road. Sherwood Road, which connects the City to the Brooktrails area within Mendocino County is a major evacuation roadway for the homes within this part of the County.

Emergency Operations Plan

The Emergency Operations Plan (EOP) is the document primarily responsible for informing the emergency management strategies for the City of Willits. These strategies are typically organized under four categories: mitigation, preparedness, response, and recovery.

Mitigation

While the EOP may also address this topic, the Mendocino County MJHMP identifies and assesses natural hazards that threaten the City and recommends proactive policy and procedural actions that reduce the risks associated with these hazards. This preemptive planning is intended to decrease the probability of emergency situations and minimize the effects should one occur. Examples of hazard mitigation can be found in many policies within the General Plan, but they are most prominently displayed in the numerous codes regulating construction and development.

Preparedness

Emergency preparedness focuses on activities that prepare a community for a disaster. These activities typically involve preparation of plans addressing life safety, emergency response, and evacuation; purchase and storage of emergency supplies; and training and exercise response activities.

Response

Emergency response activities typically focus on actions necessary to save lives and prevent further property damage during an emergency/disaster. Many of these activities are conducted in tandem with the standard emergency response procedures in place for Willits first responders. To guide response activities the City will rely on implementation of the EOP and work closely with City Departments, Mendocino County, and surrounding Cities (County Operational Area), which help orchestrate internal and external communications, logistics, and assistance during large scale emergencies.

Recovery

Recovery activities typically occur after an emergency/disaster event. These activities focus on reestablishing services to impacted areas, repair and/or reconstruction of damaged buildings and infrastructure, and assistance to residents and businesses with permitting and approvals of building plans. Depending on the scale and type of incident, recovery could occur in specific locations of the community and/or require specialized expertise to address the issues created.

GOAL S-5 Promote the well-being of all Willits community members through comprehensive emergency management.

- | | |
|---------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|
| Policy S-5.1 | Identify and maintain existing critical facilities to ensure proper functionality during and after an emergency. |
| Policy S-5.2 | Coordinate with key Willits Departments and other local utility companies to provide or restore essential services during and after emergency situations. |

Policy S-5.3	Periodically review and update the Emergency Operations Plan to address new or emerging issues within the community, as necessary.
Policy S-5.4	Establish and maintain an early warning communication system to allow for enhanced notification of emergency situations within the community.
Policy S-5.5	Ensure that redevelopment activities undertaken after a major disaster event comply with the most up to date City, State, and Federal standards and regulations.
Policy S-5.6	Identify and analyze potential backup power generation appropriate for the community, including the feasibility of developing alternative energy generation and the use of a microgrid to support critical city functions.
Policy S-5.7	Promote and enhance Sonoma Clean Power resources through the creation of new clean energy alternative power generation facilities that can support the local community during an emergency event.

F. Hazardous Materials and Wastes

Natural hazards are not the only threat to a community's safety. Human-caused hazards, such as release of hazardous materials and wastes, are often found throughout a community and can pose significant risks. Hazardous materials are identified as being toxic, flammable, explosive, corrosive, infectious, radioactive, or a combination of these characteristics. A hazardous waste is characterized as a waste with a chemical composition or other properties that make it capable of causing illness, death, or some other harm to humans and other life forms when mismanaged or released into the environment.

In the Community

Although common household chemicals pose little threat to the community at large, hazardous materials and wastes used by business and industry present a greater risk. Mechanical dealerships (automobile/heavy equipment), repair shops, gasoline and diesel fuel stations, and dry cleaners are some examples of businesses that regularly use and store chemicals or other hazardous materials. Pipelines within the City also transport chemicals (natural gas, sewage, etc.) through the City that could pose a risk, if failure occurs. These operations also tend to involve the transportation of raw materials and their byproducts either by pipeline, rail, or truck.

Major transportation routes that connect the City include US Highway 101 (north/south) and State Highway 20. These two roadways are considered truck routes by the State of California and convey a variety of chemicals and products through the region. Major rail service for the City is provided by the Historic Skunk Train, which provides tourist-oriented passenger service between Willits and Fort Bragg. Accidents releasing hazardous materials or wastes may occur along these roadways and/or rail lines but can also happen on local roads that lead to these regional connectors. Regulation of the use, storage, and transportation of hazardous materials and wastes rests on state and federal agencies; however, cities play a large role in minimizing the risks and impacts of exposure through careful planning and preparation. A critical element that assists with limiting exposure to Willits residents and businesses is the US Highway 101 bypass route, which diverts north/south bound traffic around Willits central business district.

In the Home

Exposure to hazardous materials is not uncommon, as many household cleaning products contain chemicals that have the potential to harm both humans and the environment. Through proper use, however, the health risks associated with these hazardous materials can largely be avoided. The proper storage of household cleaning products and other common hazardous materials, such as those used in automotive

and home repair, is also an important component of responsible management. Following the manufacturer’s instructions on packaging and keeping products out of the reach of children are two simple steps that can help reduce the risk of exposure.

GOAL S-6 Minimize the community’s risk of exposure to hazardous materials and wastes.

Policy S-6.1	Monitor facilities known to use, store, transport, process, or dispose of hazardous materials or wastes.
Policy S-6.2	Prohibit the construction and development of new facilities known to use, store, transport, process, or dispose of hazardous materials or wastes near residential areas and public-serving facilities, unless effectively mitigated.
Policy S-6.3	Coordinate hazardous materials and wastes management and disposal programs with relevant local, regional, state, and federal agencies.
Policy S-6.4	Promote public awareness of common household hazardous materials and wastes.
Policy S-6.5	Require due diligence studies for new development in sensitive areas or areas of heavy industrial use, to better understand and define potential contamination issues within these areas.
Policy S-6.6	Prohibit the transport of hazardous materials along Main Street north of State Route 20.

G. Aircraft Hazards

Airplane and helicopter emergencies are few and far between, but their occurrence can have a substantial impact on a community. Crash landings in populated areas such as Willits can harm bystanders and structures alike. Aircraft-related emergencies are most often caused by mechanical or electrical failure, but do not always result in a crash. On occasion, a plane or helicopter may be forced to make an emergency landing on a stretch of roadway or unoccupied piece of land. The presence of Willits Municipal Airport provides unique conditions that require consideration to ensure public health, safety and welfare is protected.

Willits Municipal Airport

The City owns and operates the Willits Municipal Airport (Ells Field [O28]). This facility is located three miles northwest of the City (approximately 120 nautical miles north of San Francisco).

The following characteristics describe this facility:

- Open to the Public: **Yes**
- Operations Initiated: **August 1964**
- Runway: **2,995 feet by 75 feet asphalt runway,**
- Control Tower: **No**
- Elevation: **2063 feet above mean sea level**

While a modest sized airport facility within this part of the State, Willits Airport has proven to be a key support facility used by fire departments and state agencies during major wildfire events.

GOAL S-7 Improve the community’s ability to effectively respond to aircraft hazards.

- Policy S-7.1** Incorporate aircraft emergency response procedures into the Willits Emergency Operations Plan.
- Policy S-7.2** Integrate aircraft programming into emergency planning and response preparations and trainings within the City/ Operational Area.
- Policy S-7.3** Maintain communication with appropriate authorities as airport services grow and expand.
- Policy S-7.4** Identify key vulnerabilities for the airport focused on wildfire hazards, roadway connectivity, and other critical hazards that could impact operations and use.
- Policy S-7.5** Identify and remove potential safety hazards within the flight path of the airport to ensure safe takeoff and landings.

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IV. Implementation Programs

Program 1: Preparation of a Community Wildfire Protection Plan

Develop and adopt a Community Wildfire Protection Plan (CWPP) to present a unified, community-based approach to wildfire risks.

Objectives:

- Mapping and sourcing of all fire suppression infrastructure (i.e. fire hydrants, pipes, sprinkler systems in critical facilities, water pumps, etc.)
- Identification of fire response constraints (private property access, roadway design issues (grade, width, materials, etc.), inadequate water supply infrastructure, and other conditions affecting fire response capabilities)
- Continuous surveillance of potential wildland fuels and fuel modification activities
- Designation of staff or volunteers to remove dead vegetation from roadways and drainage, in fire prone areas, and construction of fire breaks
- Public awareness of defensible space in landscape design for homes and businesses
- Development of a standardized plan of action for evacuating residents
- Creation of a fuel modification program that periodically conducts fuel reduction activities in natural areas and areas prone to wildfire conditions to better protect the City from wildfires
- Provide adequate development standards that allow for effective response from first responder agencies
- Identify potential funding sources for fire management activities for the City, County, and private property owners
- Identify required development and construction standards (fire sprinklers, fire resistant materials, etc..) that meet or exceed California Building Code Chapter 7A, International Wildland-Urban Interface Code or similar standard

Timeframe: 2021

Responsible Agency: Little Lake Fire Protection District, Community Development Department, City Manager

Funding Sources: General fund, Pre-Disaster Mitigation Grants (PDM), Hazard Mitigation Grant Program (HMGP), Fire Mitigation Assistance Grants (FMAG)

Program 2: Impaired Access Analysis and Circulation Requirements

Re-examine current roadway conditions and standards to ensure adequate ingress/egress for evacuation purposes

Objectives:

- Identify roadways within the City that currently do not meet current Local and State requirements
- Identify neighborhoods within the City that have limited access points or are vulnerable to isolation if access roads are impacted
- Identify vulnerable populations within Willits that may require transportation services or have limited mobility
- Identify available community services (ParaTransit, religious institutions, senior care) to support vulnerable populations
- Distribute vulnerable population information with City Departments that may support community needs during a hazard event
- Integrate deficient roadways and services into Capital Improvement projects and programs during annual budgeting

Timeframe: 2021

Responsible Agency: Little Lake Fire Protection District, Police Department, Community Development Department, Public Works Department, City Manager

Funding Sources: General Fund, Pre-Disaster Mitigation Grant (PDM), Hazard Mitigation Grant Program (HMGP)

Program 3: Prepare a Hazard Recovery Plan

To allow Willits to effectively recover from a disaster event, a Post-Disaster Recovery Plan should be prepared to expedite recovery activities and restore community functions as quickly as possible.

Objectives:

- Identify protocols and policies for re-development of properties damaged by a hazard event
- Identify specific actions necessary based on hazard impact type
- Integrate specific policies and actions necessary to assist vulnerable populations within the community rebuild after an event
- Establish streamlining provisions and code modifications deemed necessary and/or desirable to ensure expedited recovery
- Integrate the Willits Hazard Recovery Plan into the Emergency Operations Plan and Hazard Mitigation Plan
- Identify service providers to assist with mental health counseling and financial consulting for those affected by a hazard event

Timeframe: 2021

Responsible Agency: Little Lake Fire Protection District, Police Department, Community Development Department, Public Works Department, City Manager

Funding Sources: General Fund, Hazard Mitigation Grants (PDM, HMGP)

Program 4: Interjurisdictional Cooperation

Continue coordination with the Operational Area on a unified regional response to risks that affect Willits and other jurisdictions

Objectives:

- Continue enhancing interjurisdictional communication systems between first responder entities (Fire and Police) of surrounding communities
- Continue sharing data and information on developing issues or potential risks within Willits
- Participate in Operational Area trainings and share response procedures with other first responder entities
- Collaborate with other jurisdictions to consolidate grant applications and share funding, creating economies of scale benefits
- Coordinate with other planning departments, first responder entities, and emergency services providers on standard operating procedures and protocols to enhance regional benefits
- Coordinate with Cal FIRE on expanded use of Willits Airport for fire support activities during events in Mendocino County and/or Northern California
- Coordinate with Skunk Train operators and other users to ensure effective vegetation management along railroad rights-of-way

Timeframe: 2020 - ongoing

Responsible Agency: Little Lake Fire Protection District, Police Department, Community Development Department, Public Works Department, City Manager

Funding Sources: General Fund, Hazard Mitigation Grants (PDM, HMGP)

Program 5: Integrate Safety Element Issues into the Development Application Review Process

Expand feedback to project applicants during development review processes to ensure development activities are integrating best practices and hazard issues are identified early on during the design process.

Objectives:

- Develop hazard summary information to attach to both the Pre-Application Meeting Form and other planning applications that identify hazard areas and concerns that should be considered when development is proposed
- Require posting up to date hazard maps within City offices where development applications are submitted. Integrate up to date hazards mapping into the City's GIS infrastructure to ensure proposed development projects are identified in relation to mapped hazard areas
- Ensure that project applicants are well informed of the potential hazards of a potential site and the requirements to address those hazards effectively to reduce the need for additional mitigation during CEQA analysis
- Require mandatory landscape plan reviews for new developments and redevelopments that focus on reduced wildfire vulnerability and increased onsite water retention
- Require conditions of approval pertaining to water supply adequacy, emergency vehicle access, road widths, turning radii and building design features that require review by the Little Lake Fire Protection District
- Require inspection procedures to ensure that all grading and foundation work is observed and documented at critical stages of construction
- Ensure properties within seismic and geologic hazard zones incorporate mitigation and comply with design standards at or above the minimum State and Federal requirements

Timeframe: 2021-ongoing

Responsible Agency: Community Development Department, Little Lake Fire Protection District

Funding Sources: General Fund

Program 6: Integrate Infrastructure Assessment Practices into the Development Process and Hazard Mitigation Planning

Using the hazard mitigation planning process as a model, the City should integrate design review, hazard mitigation, and infrastructure assessments to ensure that Willits' critical infrastructure is upgraded to accommodate future conditions.

Objectives:

- Create an inter-departmental task force to identify capital improvement needs, development projects, and hazard mitigation needs that may be integrated together
- Establish periodic task force meetings to discuss projects and initiatives to increase community resiliency
- Periodically review and update the City's critical facilities inventory and add new infrastructure classes, as deemed necessary
- Integrate recommendations from the task force into existing schedules for inspection

Timeframe: 2021-ongoing

Responsible Agency: Community Development Department (co-lead), Public Works Department (co-lead), All Departments

Funding Sources: General Fund

Program 7: Identify potential hazard mitigation and seismic retrofit funding sources

Using the hazard mitigation planning process as a model, the City should integrate design review, hazard mitigation, and infrastructure assessments to ensure that Willits's critical infrastructure is upgraded to accommodate future conditions.

Objectives:

- Monetize retrofit funding sources from organizations like the California Earthquake Authority to provide options for businesses and homeowners within the City
- Identify funding sources for future fire management activities available with the adoption of a Community Wildfire Protection Plan (CWPP) [Implementation Program 1]
- Identify retrofit funding opportunities through existing PACE programs (i.e. Sonoma Clean Power) that could assist with future seismic enhancements
- Collaborate with Mendocino County and Non-Governmental Organizations to develop funding opportunities to enhance structures within the City and region

Timeframe: 2021-ongoing

Responsible Agency: Community Development Department (co-lead), Public Works Department (co-lead), All Departments

Funding Sources: General Fund, Federal Grant Funding Sources (CDBG, FEMA, HUD), State Grant Funding Sources (CEA, HCD)

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V. Sources

ⁱ H. Field, Edward & Biasi, G & Bird, Peter & E. Dawson, Timothy & R. Felzer, Karen & Jackson, David & Johnson, Kaj & Jordan, Thomas & Madden, Christopher & J. Michael, Andrew & Milner, Kevin & T. Page, Morgan & Parsons, Tom & M. Powers, Peter & Shaw, Bruce & R. Thatcher, Wayne & Weldon, Ray & Zeng, Yuehua. (2015). Long-Term Time-Dependent Probabilities for the Third Uniform California Earthquake Rupture Forecast (UCERF3). Bulletin of the Seismological Society of America. 105. 10.1785/0120140093.

ⁱⁱ Willits, City of. (1992). Vision 2020: Willits General Plan Revision.

ⁱⁱⁱ Cal-Adapt. 2019. Wildfires. https://cal-adapt.org/tools/wildfire/#climatevar=fire&scenario=rcp45&population=bau_mu&lat=39.40625&lng=-123.34375&boundary=locagrid&units=ha

Map Sources

Base Map Layers on All Maps

ESRI Basemap | Esri, HERE, Garmin, © OpenStreetMap contributors, and the GIS user community
http://goto.arcgisonline.com/maps/Reference/World_Boundaries_and_Places

State Highway Network | California State Department of Transportation
<http://hub.arcgis.com/search?tags=Caltrans>

City Limits | Division of Research, Innovation and System Information (DRISI) of California Department of Transportation (Caltrans); Tax Area Services Section (TASS) of the State of California Board of Equalization.

Figure S-1

California Geological Survey | CA Quaternary Faults

Earthquake Shaking Potential | D. Branum, R. Chen, C. Wills (California Geological Survey); M. Petersen (United States Geological Survey).

Figure S-2

Alquist-Priolo Fault Hazard Zones | Seismic Hazards Program, California Geological Survey, California Department of Conservation

Figure S-3

MS58_LandslideSusceptibility_Classes | California Geological Survey, California Department of Conservation

Figure S-4

FEMA Flood Map Service
<https://hazards.fema.gov/gis/nfhl/services>

Figure S-5

California Dams | California DWR, Division of Safety of Dams
https://gis.water.ca.gov/arcgis/rest/services/Structure/i17_California_Jurisdictional_Dams/FeatureServer

Cal OES Dam Inundation Areas
<http://services1.arcgis.com/4usxdjWKL0Lq9x6D/arcgis/rest/services/DamInundationAreas/FeatureServer>

California Lakes

https://map.dfg.ca.gov/arcgis/rest/services/Base_Hydrography/Hydrography/MapServer

Figure S-6

2017 Fire Perimeters 2017 | Cal FIRE, California Department of Forestry and Fire Protection

Figures S-7a and S-7b

Fire Hazard Severity Zones | Cal FIRE, California Department of Forestry and Fire Protection