

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

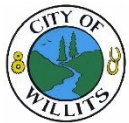
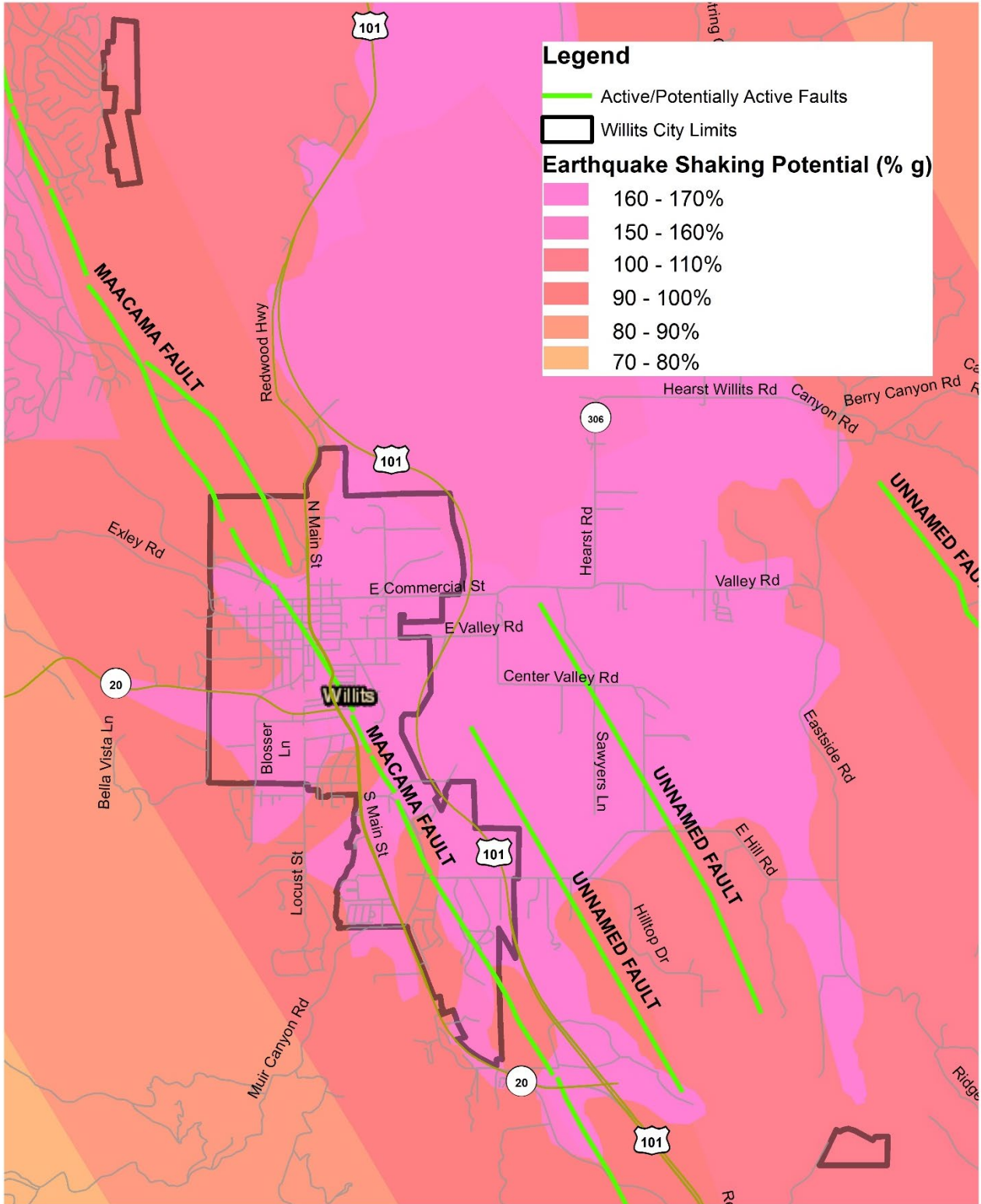
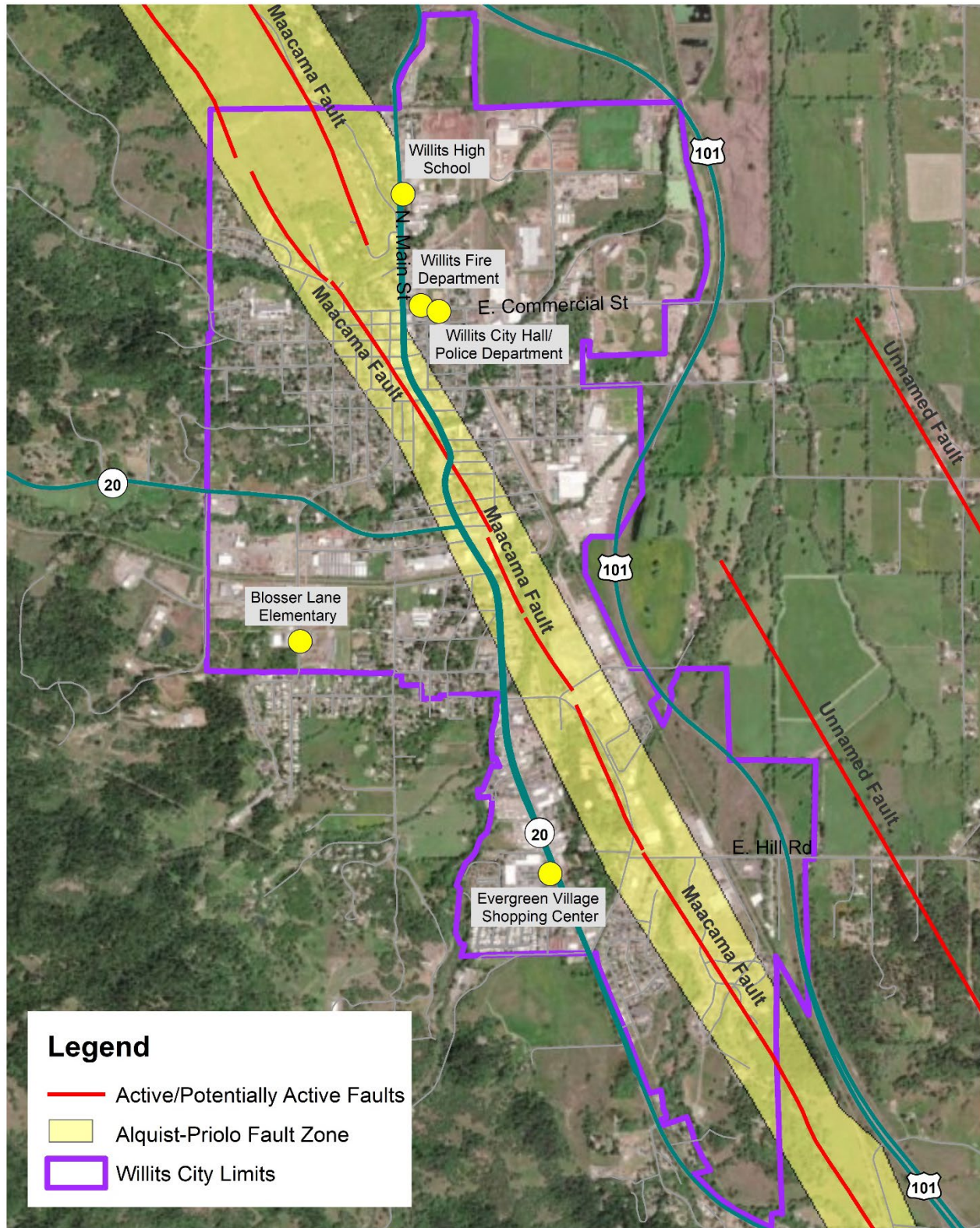


Figure S-1 Faulting and Seismicity

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

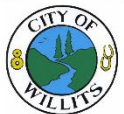


Figure S-2 Alquist-Priolo Special Study Zones

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

- **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,

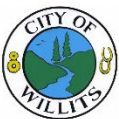
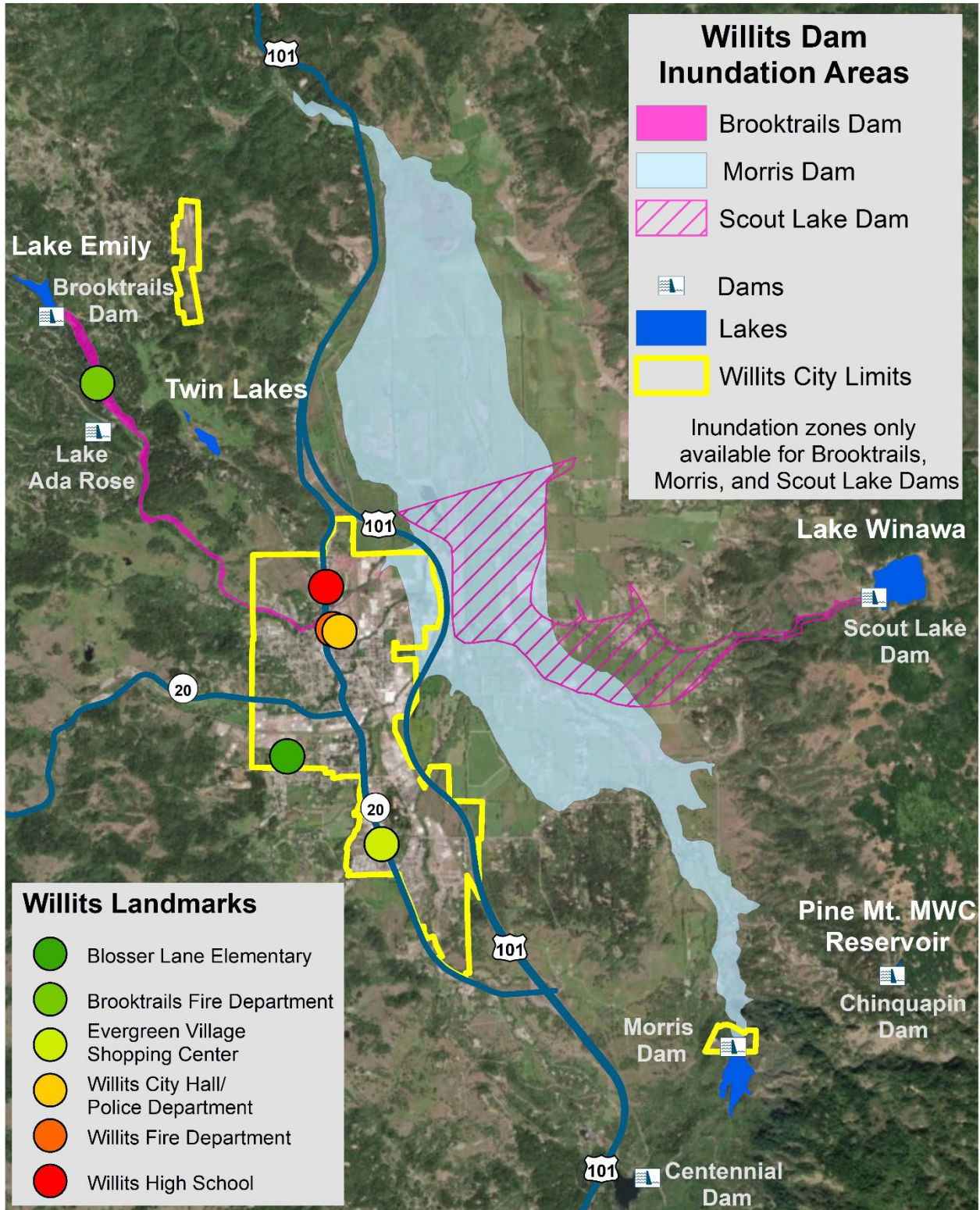


Figure S-5 Dam Inundation Zones

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



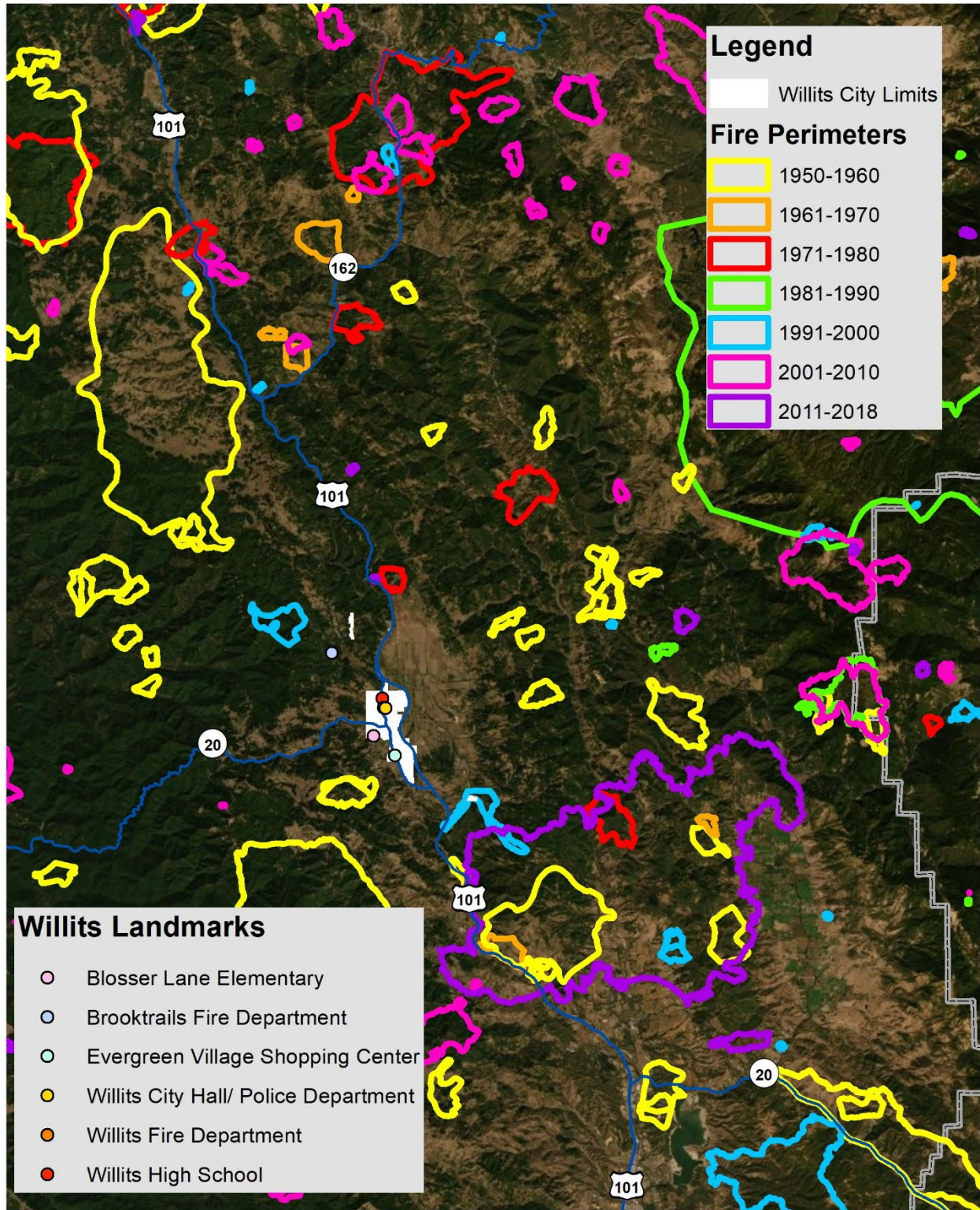


Figure S-6 Historic Wildfire Perimeters (1950-2018)

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



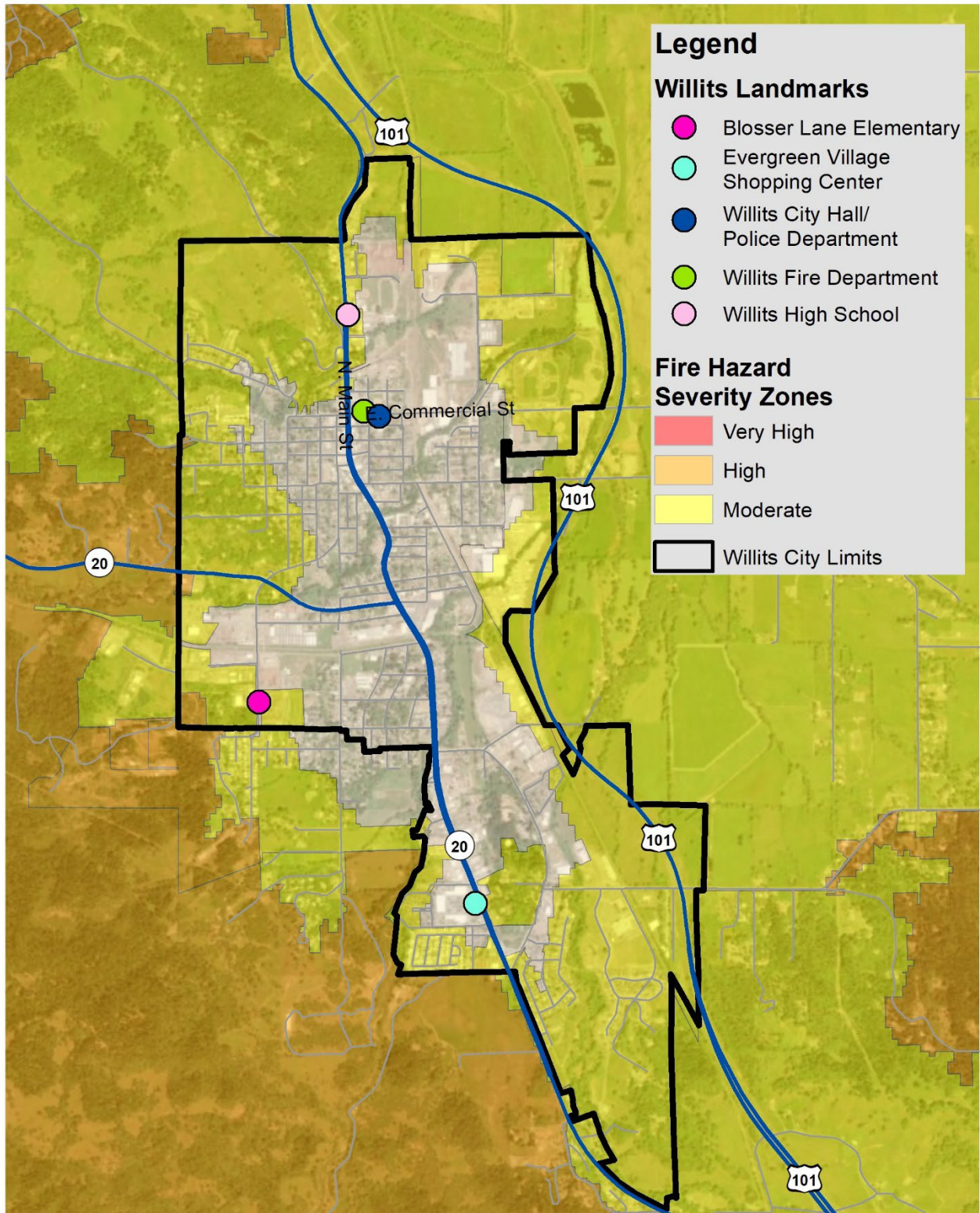


Figure S-7a Wildfire Hazard Zones



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

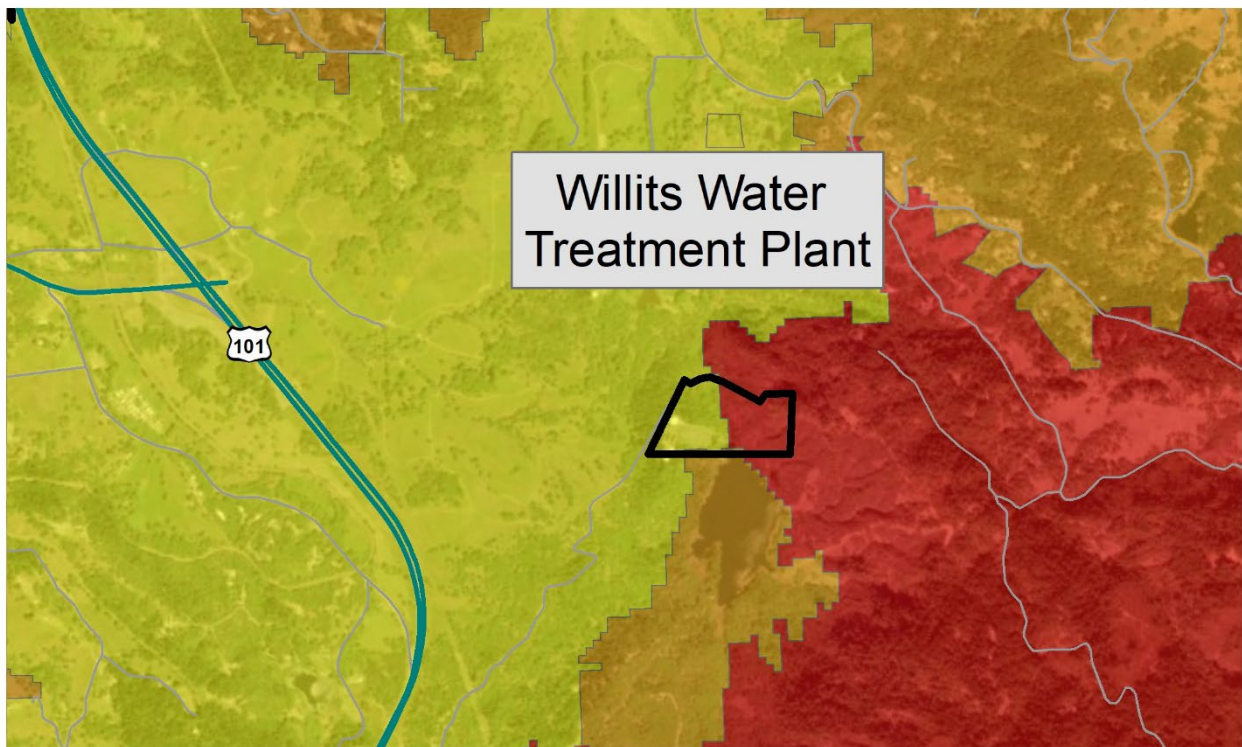
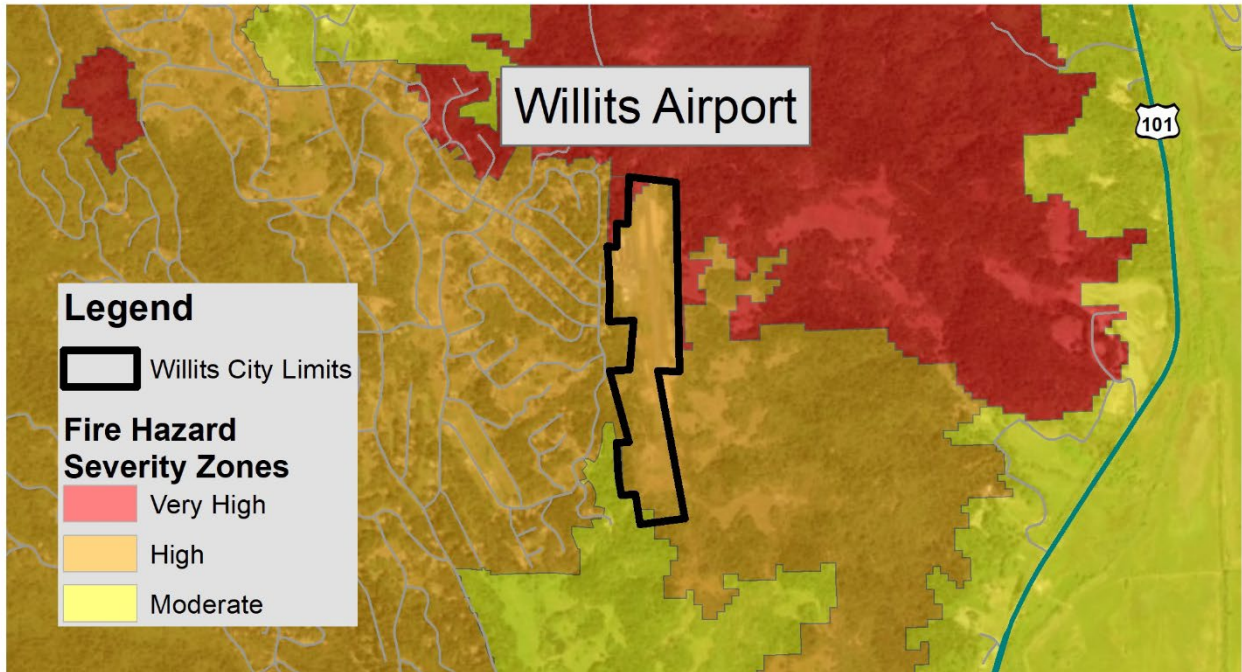


Figure S-7b Wildfire Hazard Zones

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.

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|---------------------|---|
| 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. |

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