

# Lake County Community Wildfire Protection Plan



**PREPARED FOR**

Lake County, Montana

**IN COOPERATION WITH**

Montana Department of Natural Resources and Conservation

Confederated Salish and Kootenai Tribes

**PREPARED BY**

Environmental Science Associates (ESA)

# SIGNATORIES

POSITION	NAME	SIGNATURE
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# LIST OF ACRONYMS

<b>BIA</b>	Bureau of Indian Affairs
<b>CSKT</b>	Confederated Salish and Kootenai Tribes
<b>CWPP</b>	Community Wildfire Protection Plan
<b>DNRC</b>	Montana Department of Natural Resources and Conservation
<b>eNVC</b>	expected net value change
<b>EOP</b>	Emergency Operations Plan
<b>ESA</b>	Environmental Science Associates
<b>FEMA</b>	Federal Emergency Management Agency
<b>FSA</b>	Fire Service Area
<b>GIS</b>	geographic information system
<b>HFRA</b>	Healthy Forests Restoration Act of 2003
<b>HIZ</b>	Home Ignition Zone
<b>HUC</b>	Hydrologic Unit Code
<b>MWRA</b>	Montana Wildfire Risk Assessment
<b>RFD</b>	Rural Fire District
<b>USDA</b>	U.S. Department of Agriculture
<b>USFS</b>	United States Forest Service
<b>VFD</b>	Volunteer Fire District
<b>WUI</b>	Wildland Urban Interface

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## CHAPTER 1.

# Introduction

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## 1.1 Background and Purpose

Lake County has an extensive history of large wildfires that have caused substantial damage and other challenges to the built and natural environment, human health and safety, private property, cultural and historic resources, and the local economy. A communitywide approach that promotes collaboration between fire managers, government agencies, homeowners and residents, and other landowners is critical to build individual and collective action to prevent, respond to, and recover from wildfires. A Community Wildfire Protection Plan (CWPP) is a community-driven plan focused on reducing the vulnerability of residents, businesses, and resources to wildfires. The framework for these plans was first identified by the national Healthy Forests Restoration Act of 2003 (HFRA). CWPPs must meet three minimum requirements:

1. Demonstrate collaboration between local and state agencies, in consultation with other interested parties.
2. Identify and prioritize hazardous fuel reduction treatments.
3. Recommend strategies to reduce the ignitability of structures.

Lake County published its first CWPP in 2005. Since then, Lake County has seen numerous changes such as increased population growth and residential development (e.g., housing, roads). There have also been more intense and destructive wildfires in the county. The 2024 Lake County CWPP builds upon the original plan by integrating a more refined understanding of wildfire risks, hazards, and effective management responses. The plan includes an updated definition of the Wildland Urban Interface (WUI) to reflect changing residential development and wildfire conditions. This CWPP is intended to establish a collaborative effort among county, state, tribal, and federal fire protection agencies and the residents of Lake County to reduce wildfire risk and to prioritize wildfire mitigation projects and strategies. This plan also positions Lake County to obtain state and federal funding for the implementation of projects identified.

## 1.2 Planning Process

The 2024 CWPP was developed with input by representatives from local, tribal, state, and federal agencies; local governments; landowners; residents; and community-based groups with a demonstrated commitment to reducing wildfire risk in Lake County.

The Core Team responsible for guiding this CWPP update process included a diverse group of individuals representing the Lake County Fire Mitigation Office, Lake County Office of Emergency Management, the Montana Department of Natural Resources and Conservation (DNRC), and the Confederated Salish and Kootenai Tribes (CSKT), with support from Environmental Science Associates (ESA) (**Table 1**). Core Team members were responsible for providing input on geographic information systems (GIS) data layers, review of iterative versions of the WUI boundary and draft plan, guidance on community outreach activities, and priorities for wildfire risk reduction projects. Public meetings were held on September 20 and November 8, 2023, to provide an overview of CWPPs and solicit community feedback on highly valued neighborhoods and resources at risk from wildfire. In addition, an online survey was available to gather public feedback on community concerns related to wildfires, including potential risk reduction measures. Throughout the CWPP update, the public was informed of opportunities for engagement via direct mailings and updates posted to the Lake County Fire Mitigation Office website (<https://www.lakemt.gov/384/Fire-Mitigation>).

An online Story Map explaining the CWPP development process, wildfire risk, and priority fire risk reduction activities is available at <https://tinyurl.com/LakeCountyCWPP>.

Funding for the development of this plan update was provided through a grant from the Montana DNRC.

**Table 1. Lake County CWPP Update Core Team.**

NAME	AGENCY/ORGANIZATION
Carey Cooley	Lake County Fire Mitigation Office
Marc Clary	Lake County Office of Emergency Management
David Wallace	Lake County GIS Department
Charles Headley	Lake County GIS Department/Arlee Volunteer Fire District
Steve Stanley	County Commissioner
Shawn Morgan	DNRC Northwestern Land Office
Whitney Malatare	CSKT Division of Fire
Darrell Clairmont	CSKT Division of Fire
Ron Swaney	CSKT Division of Fire
Rachel M. Gregg	ESA
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## 1.3 Alignment to Other Plans and Policies

The 2024 CWPP update has been prepared in compliance and alignment with several national, state, and county plans and policies.

### National

**National Fire Plan:** The National Fire Plan, developed in 2000, prioritizes firefighter safety, hazardous fuels reduction, collaboration between public and private entities, and rehabilitation of post-fire landscapes. It also encourages the creation of local CWPPs to guide wildfire risk reduction efforts. The 2024 CWPP adheres to the principles identified in the National Fire Plan.

**National Cohesive Wildland Fire Management Strategy:** The National Cohesive Wildland Fire Management Strategy calls for fire preparedness, response, and recovery activities to focus on three core goals: restoring and maintaining natural habitats (Resilient Landscapes), enabling fire-resilient human populations and infrastructure (Fire-Adapted Communities), and improving wildfire management (Safe, Effective, Risk-Based Wildfire Response). The 2024 CWPP and strategies align with these three goals.

### State

**Montana Forest Action Plan:** The Montana Forest Action Plan promotes landscape-scale forest restoration and management, including protecting communities from wildland fire while strategically using fire as a forest management tool (Montana Forest Action Advisory Council 2020). The plan calls for updating CWPPs, implementing local hazardous fuels reduction measures, and educating residents and homeowners on how to reduce wildfire risk in the home ignition zone. The 2024 CWPP aligns with these goals by identifying priority areas for fuels reduction projects and homeowner risk mitigation strategies.

### County

**Lake County Emergency Operations Plan (2010):** The Emergency Operations Plan (EOP) establishes a coordinated approach to prepare for, respond to, and recover from natural and human-caused disasters in the county. The EOP details the local response, recovery, and mitigation resources available to protect human health, safety, and property from various hazards, including wildfire. Firefighting operations are addressed by Emergency Support Function #4 and coordinated between county and rural fire districts and departments, the CSKT Division of Fire, U.S. Forest Service (USFS), and DNRC. These entities are supported by the County Sheriff's Department and Lake County Office of Emergency Management. The 2024 CWPP supports the preparedness, response, recovery, and mitigation operations identified in the EOP.

**Lake County Subdivision Regulations (2010):** The County's Subdivision Regulations include development standards to enable efficient local services (e.g., including fire protection and emergency medical services), such as limiting or avoiding development on steep slopes, within high fire hazard areas, or in areas not served by a fire district; providing adequate access for firefighting operations and fire suppression and containment (e.g., space and water supply); requiring developers to submit a Fire Prevention and Control Plan as part of preliminary plat approval within the WUI; and, where necessary, requiring developers to conduct fuels treatments and other best management practices (e.g., fire-safe roofing materials, defensible space requirements, etc.). The 2024 CWPP provides additional information on collaborative efforts to reduce wildfire risk, including homeowner risk mitigation strategies.

**Pre-Disaster Mitigation Plan for Lake County, Montana and the Incorporated Cities of Polson and Ronan and the Incorporated Town of St. Ignatius (2012):** The Pre-Disaster Mitigation Plan identifies wildfire as the most critical hazard in Lake County and the importance of CWPPs to reduce wildfire hazards through education and fuels reduction. The 2024 CWPP provides an updated WUI definition and supports efforts to reduce the risks and impacts of wildfire.

**Lake County Growth Policy (2018):** Natural Resources Goal 8 of the County's Growth Policy identifies the need to "protect lives and property from damage caused by wildfire." This includes working with firefighting personnel, land managers, and residents to strengthen residential development standards in the WUI (including required mitigation measures where necessary) and compiling and distributing information on best management practices for fire risk reduction strategies to landowners. The 2024 CWPP provides additional information on collaborative efforts to reduce wildfire risk, including homeowner risk mitigation strategies.

**Lake County Multi-Hazard Mitigation Plan (2019):** The Multi-Hazard Mitigation Plan identifies wildfire as the primary hazard in Lake County. The plan notes that the risks associated with wildfire are particularly challenging in the WUI where residents, structures, and critical infrastructure intermingle with vegetation. Wildfire risk is amplified by insect outbreaks and changing climate conditions (e.g., warmer and drier climate). The 2024 CWPP provides an updated WUI definition and supports efforts to reduce the risks and impacts of wildfire.

## Other Local CWPPs

The 2024 Lake County CWPP also supports and complements other local CWPPs, such as the Seeley-Swan Fire Plan 2019 Update, 2018 Missoula County CWPP, 2021 Flathead County CWPP, and the 2012 Sanders County CWPP. Collaborative management across county boundaries is key to reducing collective wildfire risk in Montana. Implementing fuels reduction projects and enhancing community understanding and engagement in fire mitigation efforts will reduce risk within Lake County and in adjacent counties.

## CHAPTER 2.

# Lake County Characteristics

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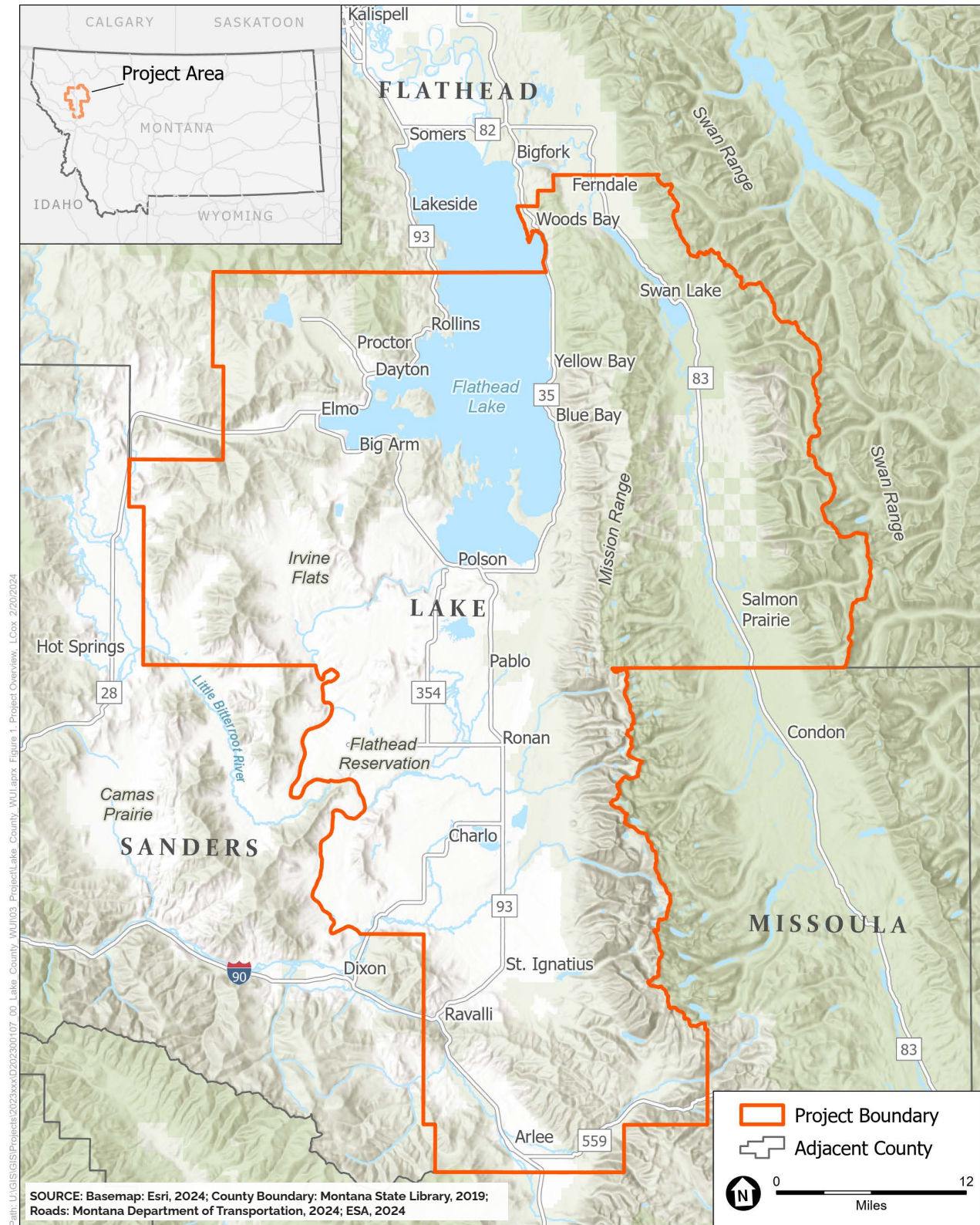


## 2.1 Overview

Lake County is surrounded by Flathead, Missoula, and Sanders counties in northwestern Montana (**Figure 1**). The county encompasses approximately 1,654 square miles, of which 164 square miles is water, including Flathead Lake. Lake County is situated at the southern end of the Flathead Basin, a watershed that drains approximately six million acres of northwestern Montana and southeastern British Columbia. The waters of the Flathead Basin play a vital role in the lives of Lake County's citizens and visitors, supporting fish and wildlife as well as domestic, municipal, irrigation, stock watering, manufacturing, and recreational uses.

Land within Lake County is owned and managed by a variety of individuals and agencies. Two-thirds of the county is within the Flathead Indian Reservation under the management and ownership of the CSKT and Bureau of Indian Affairs (BIA). **Figure 2** displays land ownership of local, state, federal, tribal, and private entities across the county. The remaining areas of the county are under federal (189,779 acres, under USFS, U.S. Fish and Wildlife Service, and National Park Service management); state (71,502 acres); local county and cities (1,856 acres); and private (290,600 acres) ownership (Pyrologix and DNRC 2022).

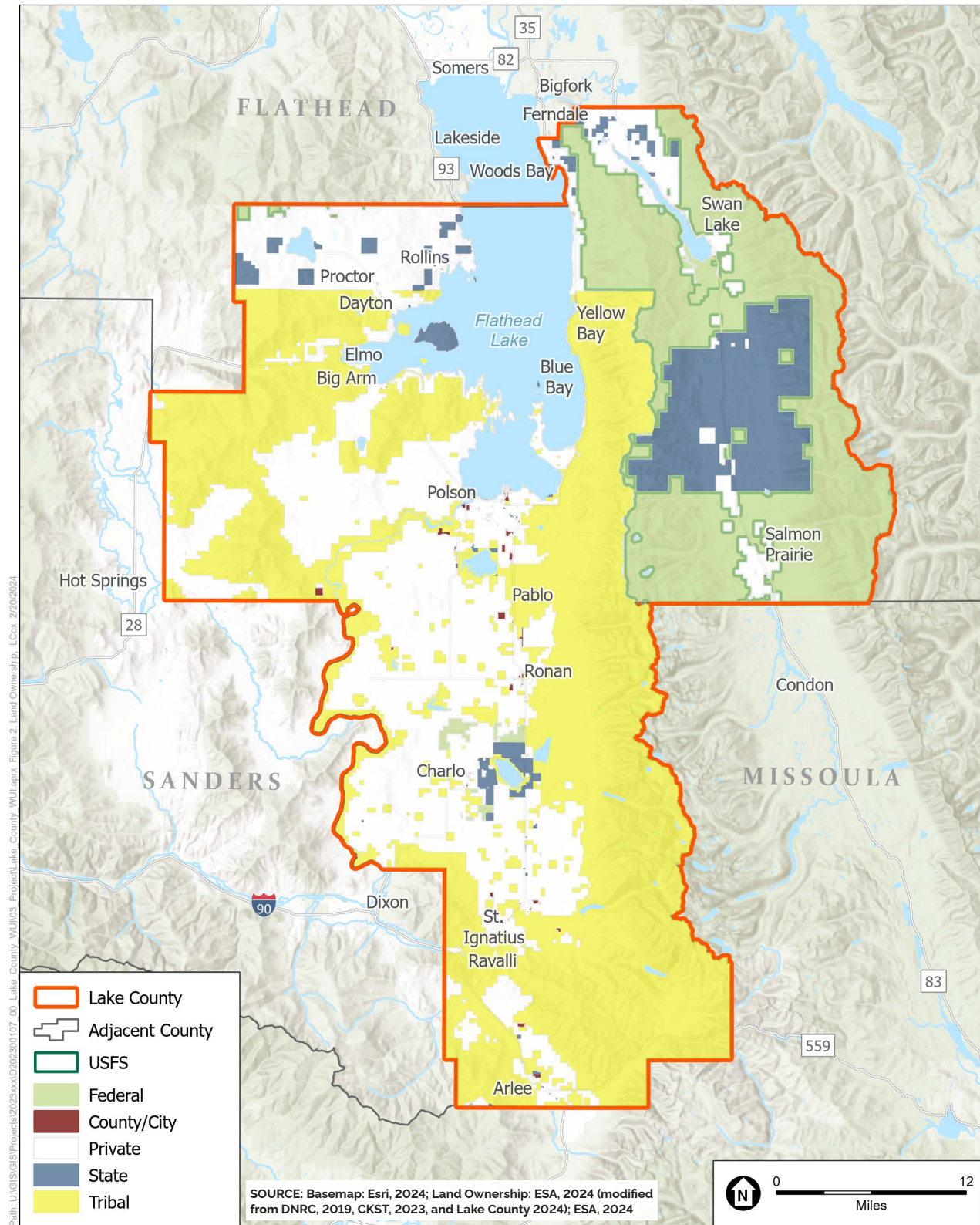




**Figure 1. Lake County, Montana**







**Figure 2. Land Ownership**





## 2.2 Demographics

The population of Lake County fluctuates seasonally as many reside in the county during warmer months while wintering elsewhere. The 2020 U.S. Census count shows the population of Lake County at 31,134 people (U.S. Census 2020), making it ninth in population for Montana counties. **Table 2** displays an overview of key demographic data for Lake County (Headwaters Economics 2024).

**Table 2. Overview of demographics in Lake County.**

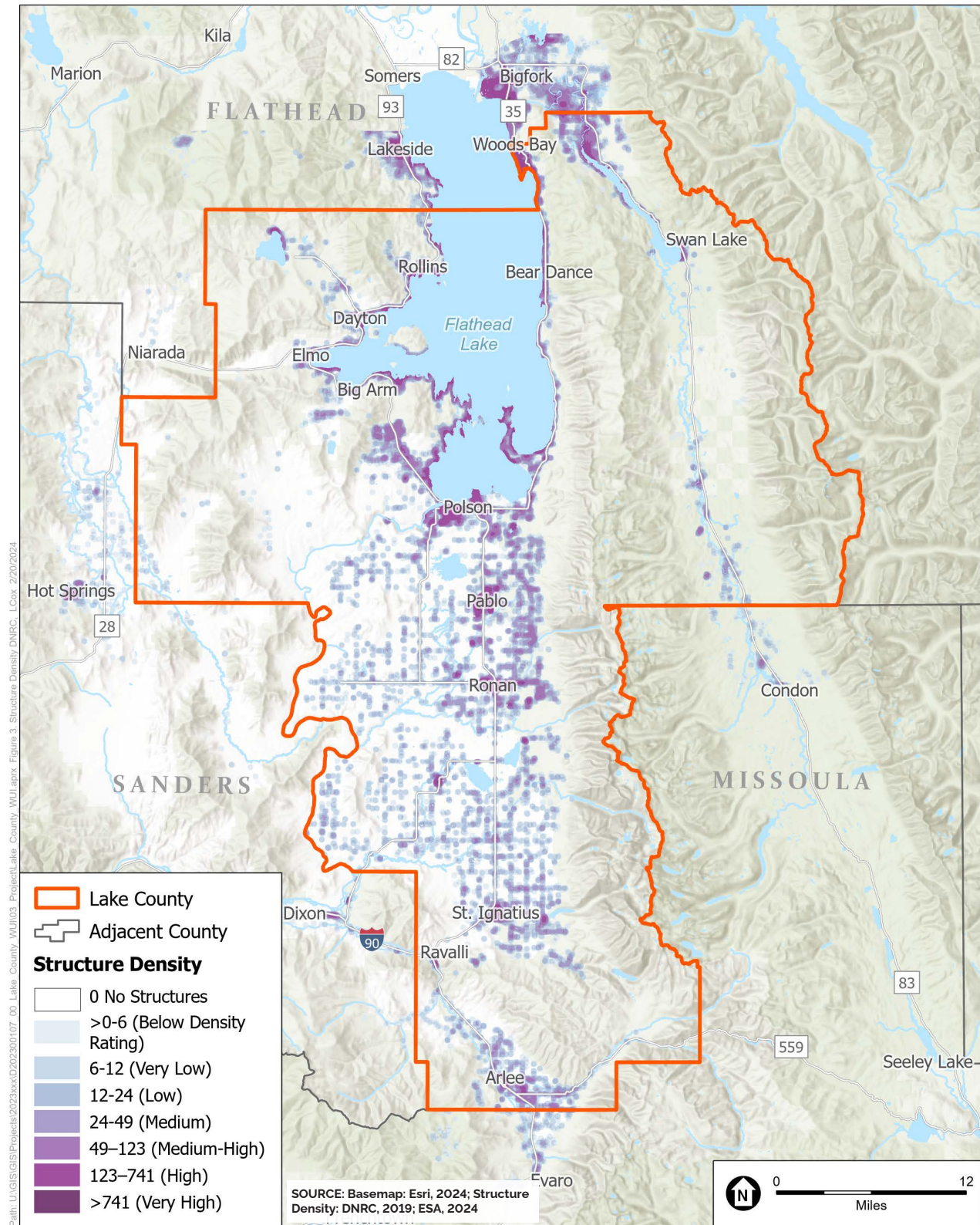
DEMOGRAPHIC METRIC	STATISTIC AND NOTES
<b>Median age</b>	<b>42.7 years</b> The median age has increased more than 4% since 2010. Around 22% of the county's population is 65 and older, which is an indicator of greater vulnerability to hazards such as wildfires due to compromised mobility and pre-existing illnesses.
<b>Poverty rate/status</b>	<b>19.1%</b> This number is about 1.5 times the rate of people living below poverty in the state and nationwide.
<b>Median household income</b>	<b>\$53,154</b> The national median household income is \$69,021.
<b>Total number of housing units</b>	<b>16,430</b> Approximately 21% of these houses are used for seasonal, recreational, or occasional purposes.

Lake County is more densely populated than Montana as a whole. The average population density of Lake County is 20.8 people per square mile (ACS 2021a), while the average population density of Montana is 7.6 people per square mile (ACS 2021b). The U.S. Census Bureau projects that population growth in Lake County will continue, totaling more than 5,000 new residents by 2040, a growth rate of roughly 17% over the 20-year time period (**Table 3**). By comparison, the state as a whole is expected to grow by 13% during the same time period (Montana Department of Commerce 2023).

**Table 3. Population projections for Lake County through 2040.**

YEAR	2020	2025	2030	2035	2040
<b>Projected Population</b>	31,134	34,096	35,554	36,258	36,482
<b>Percent Increase</b>	N/A	9.5%	14%	16.5%	17%
<b>Projected Number of New Residents (Cumulative)</b>		2,962	4,420	5,124	5,348

The largest communities in Lake County are situated along US-93. These include the incorporated cities and towns of Polson, Ronan, and St. Ignatius, and the unincorporated Pablo, Arlee, and Ravalli. Other smaller, unincorporated communities such as Rollins, Dayton, Elmo, and Big Arm are also located along US-93 on the western shore of Flathead Lake. On the eastern shore of Flathead Lake, Woods Bay, Finley Point, and Yellow Bay are accessible by MT-35. Communities in the northeastern portion of the county abutting Flathead National Forest along MT-83 include Ferndale, Swan Lake, and Salmon Prairie in the Swan Valley. In the southwest corner of the county, the communities of Charlo and Moiese are located along MT-212. **Figure 3** displays structure density data for Lake County, highlighting areas of concentrated residential, commercial, and governmental facilities; population density in Lake County is included in Appendix A (Figure A1).



**Figure 3. Structure Density**



## 2.3 Defining the Wildland Urban Interface

Defining a community's WUI is a critical step in the development of CWPPs. Federal Register guidelines describe the WUI as the areas in which *"humans and their development meet or intermix with wildland fuel."* This CWPP defines the WUI as areas where structures interface with forested vegetation. Buffers are applied where necessary to reduce increased risks of wildfire impacts on the community.

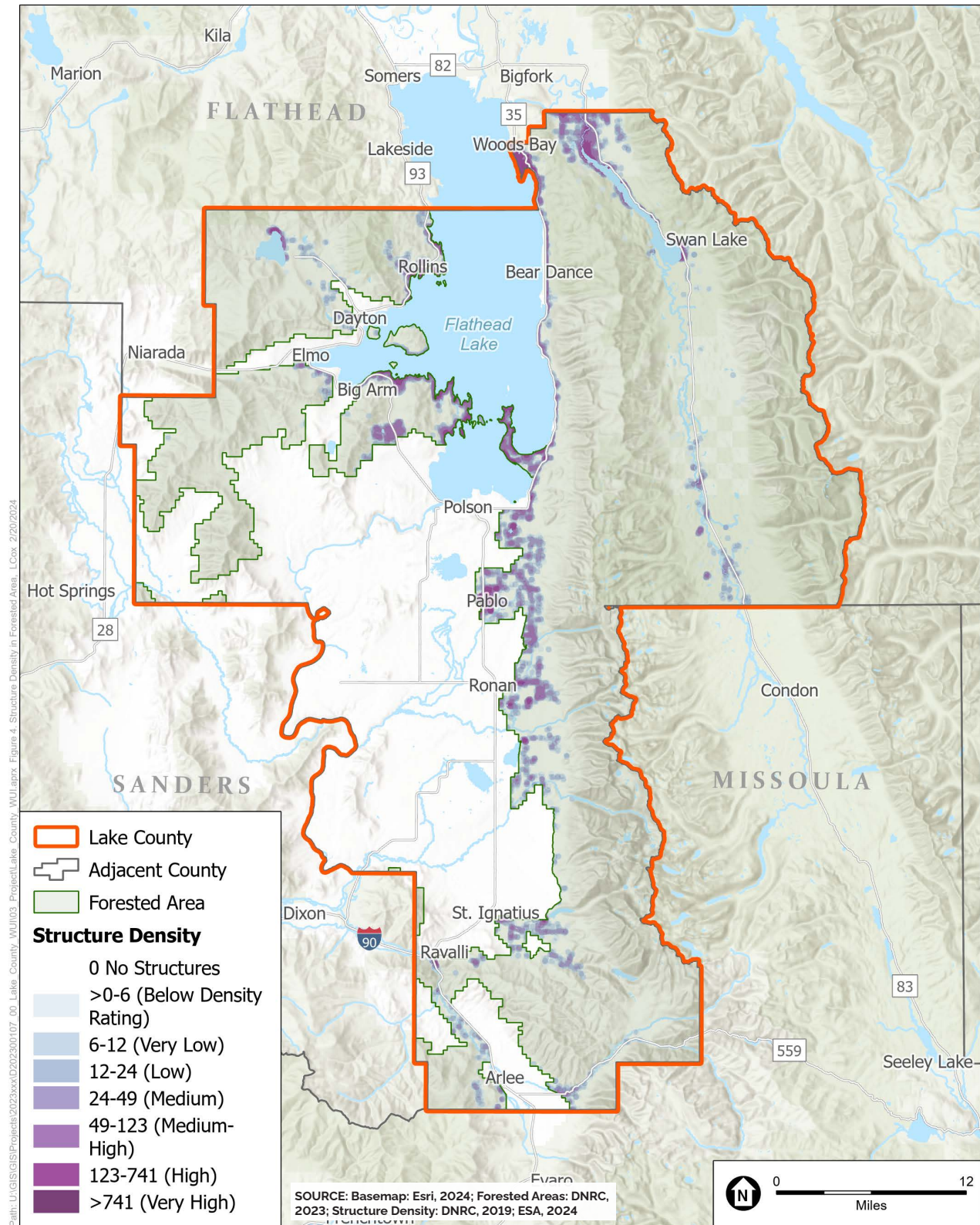
The components of the updated 2024 WUI definition include:

- **Forested Areas:** Lake County is applying the state definition of forested areas (Montana Code Annotated 76-13-102[3]): *"land that has enough timber, standing or down, slash, or brush to constitute in the judgment of the department a fire menace to life or property. Grassland and agricultural areas are included when those areas are intermingled with or contiguous to and no further than one-half mile from areas of forest land."* These forested areas are subject to the Forest Fire Assessment fee that is collected as a tax from residents to pay for forest fire protection provided by recognized firefighting agencies. These areas include highly flammable fuels, which are a high-priority target for fuel reduction projects. The forested areas also include the portions of the Flathead National Forest within Lake County's boundaries.
- **Structure Density:** This refers to structures in forested areas, including residential, commercial, or governmental facilities, with a 1-mile buffer to provide additional protection to structures and adjacent areas (**Figure 4**).
- **Critical Infrastructure:** This category includes roads, highways, railroads, and transmission lines, buffered by 0.5 mile from the center line.

**Figure 5** displays the updated WUI for Lake County, totaling 312,267 acres. The updated WUI also includes areas identified by residents through community meetings and survey responses such as Finley Point, Jocko Canyon, the west shore of Flathead Lake, and Swan Lake and Swan Valley.

**Figure 6** displays a comparison between the 2005 and 2024 WUI maps with an increase of 105,154 acres primarily focused in the Swan Valley, the northwestern portion of the county, and the south near Arlee. This expansion is due to increased population growth and development in forested areas. Implementing fuel treatments and promoting fire-adapted communities in the WUI are key to managing wildfire risks in the area.

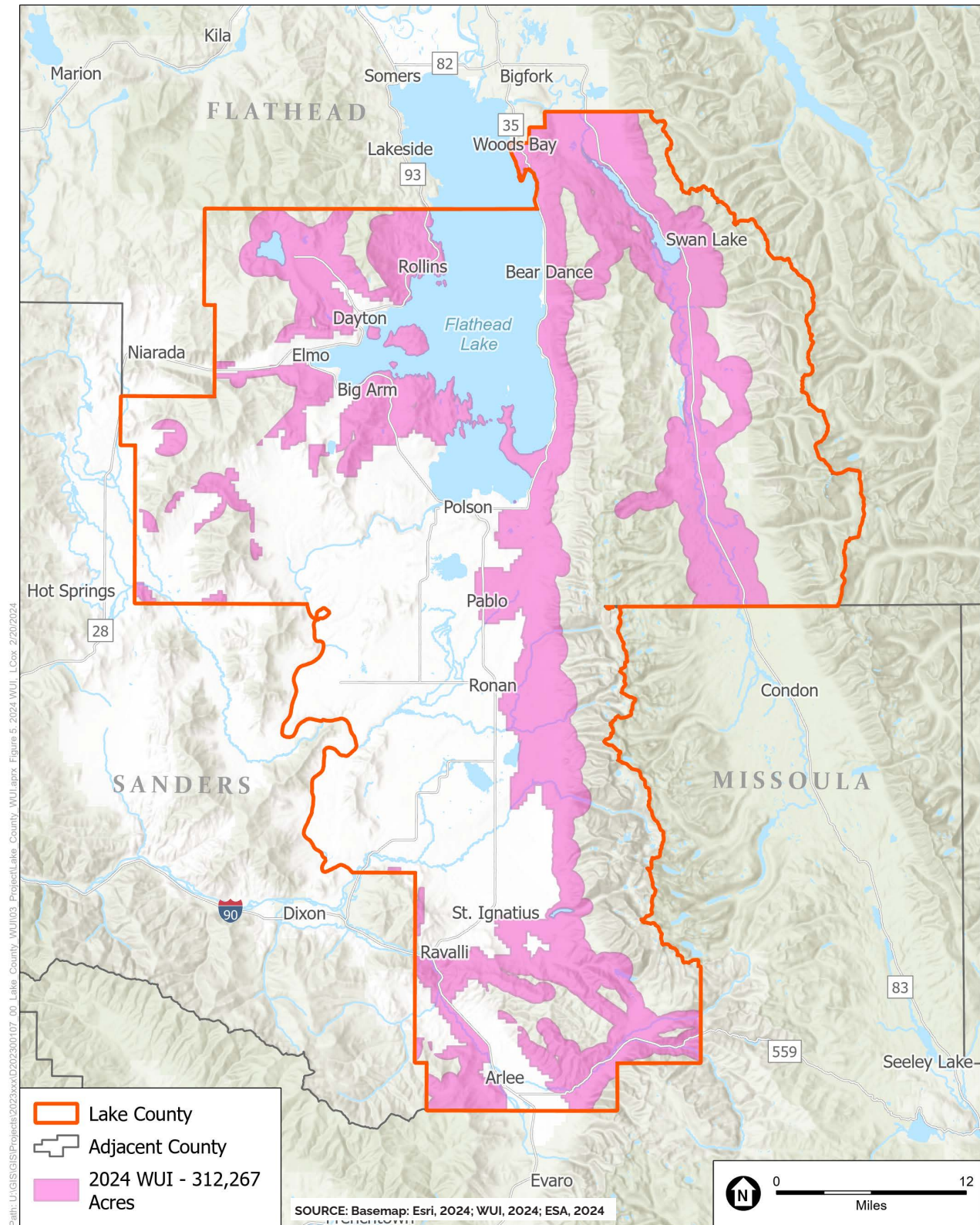




**Figure 4. Structure Density in Forested Areas**



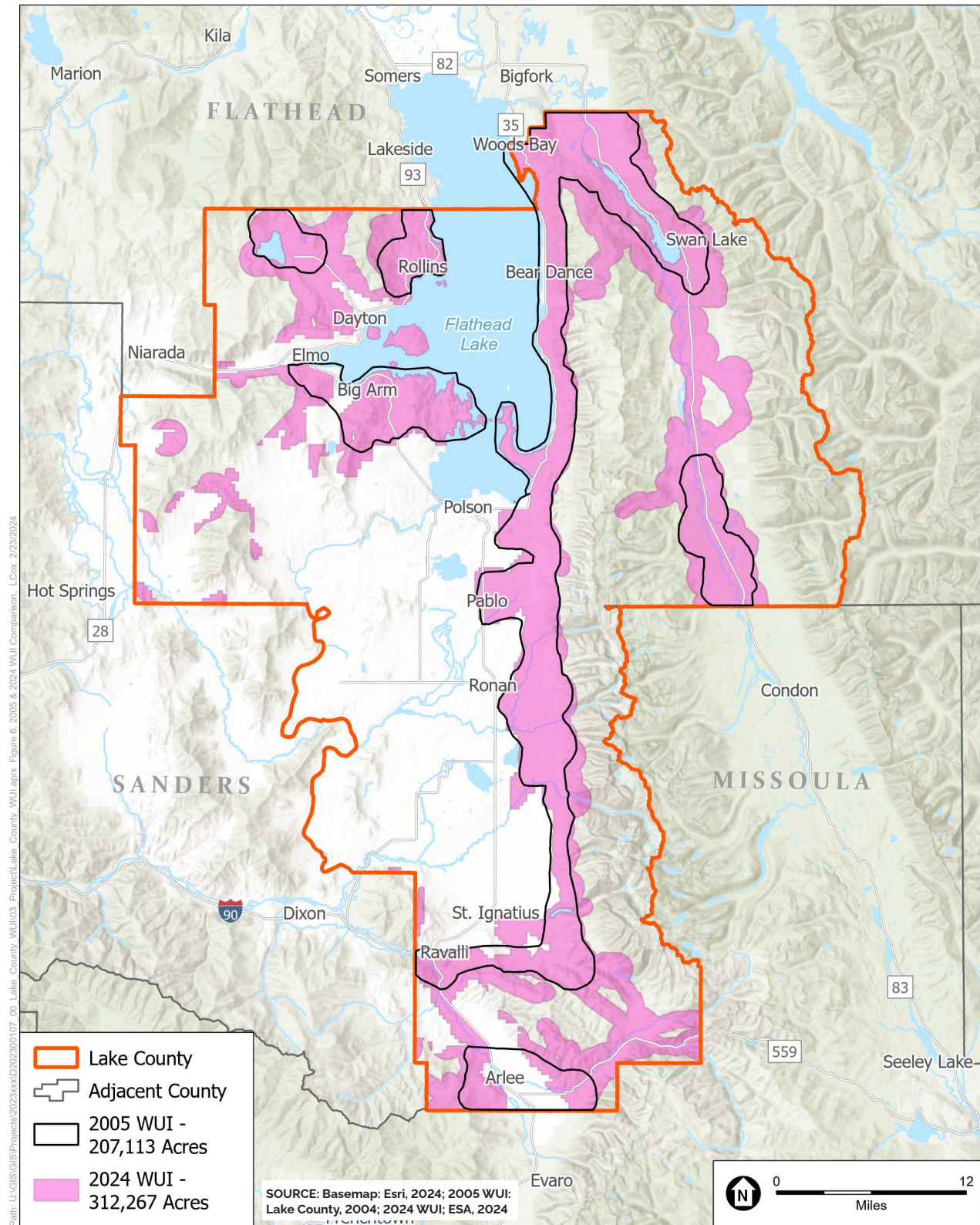




**Figure 5. 2024 Wildland Urban Interface**







**Figure 6. 2005 and 2024 WUI**



## 2.4 Wildland Fire Management

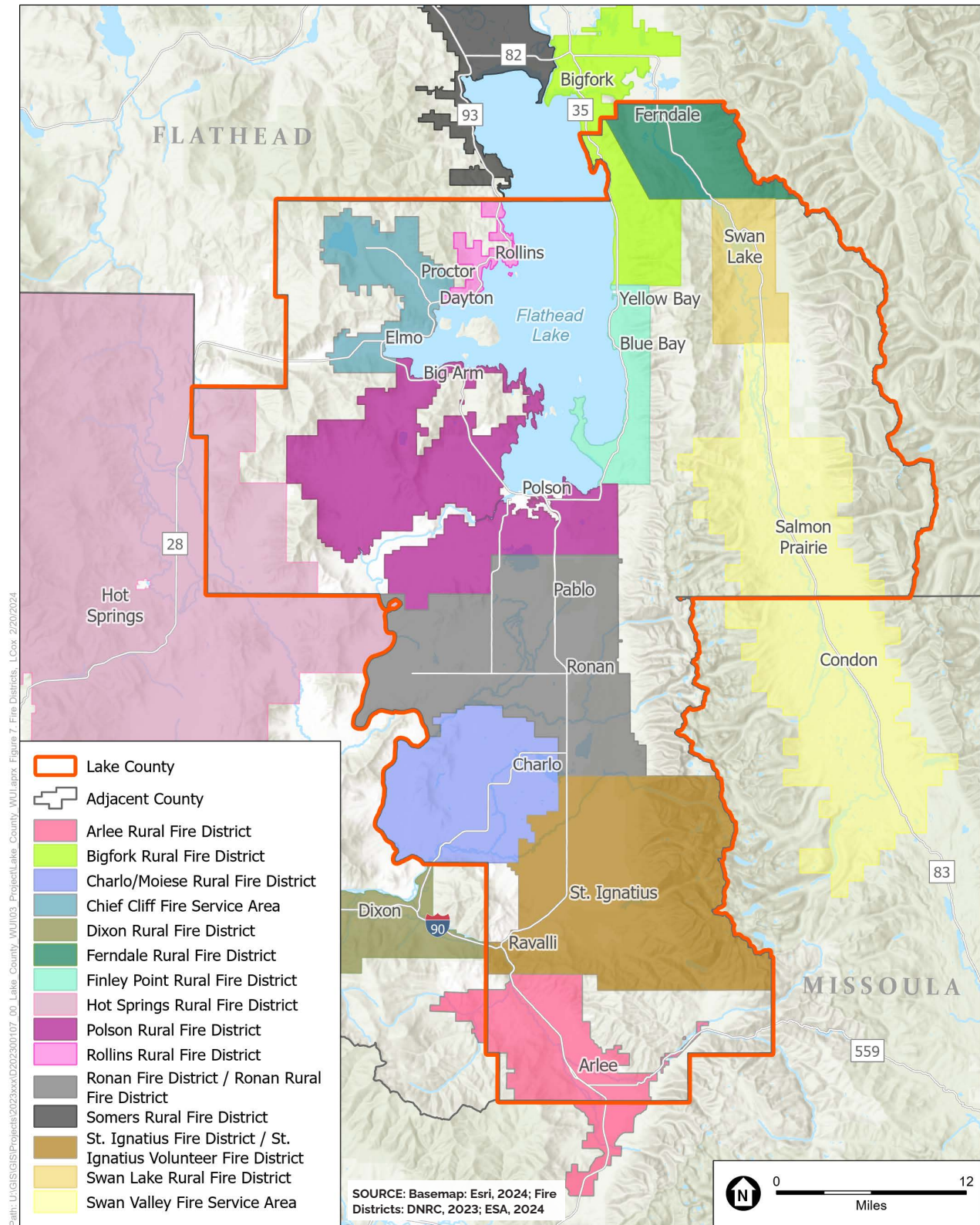
Numerous agencies and entities provide fire protection services in Lake County – local county fire districts and departments, the CSKT Division of Fire, DNRC’s Forestry Division, and the USFS-Flathead National Forest. These entities collaborate through mutual aid agreements on fire preparedness, response, and recovery activities in the county.

Local Lake County firefighting capacity is provided through the following fire districts and departments:

- Arlee Rural Fire District (RFD)
- Bigfork RFD
- Charlo/Moiese RFD
- Chief Cliff Fire Service Area (FSA)
- Ferndale RFD
- Finley Point RFD
- Hot Springs RFD (also services Sanders County)
- Polson RFD/Volunteer Fire District (VFD)
- Rollins RFD
- Ronan RFD/VFD
- St. Ignatius VFD
- Swan Lake RFD
- Swan Valley FSA

Additional RFDs that provide coverage to the border of Lake County (and therefore reduce wildfire risk) include Dixon RFD (servicing Sanders County) and Somers RFD (servicing Flathead County) (**Figure 7**). An RFD is a political subdivision having geographical boundaries established by a vote of the residents of an area. The operations of a district are funded by collection of a tax on all real property in the district. In accordance with state law, RFDs are responsible for the protection of all property within the district from fire with no distinction in the law regarding what type of fire, so all fires are included (e.g., structural, vehicular, and wildland). FSAs are also formed by submitting a petition to the County Commissioners, although the requirements (30 owners of real property in the proposed area) are much less strict than those for RFDs. FSAs are supported by a tax on individual structures or improvements. FSAs have no direct or implied wildland fire protection component. Unless there is a resolution to the effect that an FSA will conduct wildland fire protection, one should assume that they are not legally mandated to do so. However, most FSAs will respond to wildland fire calls within their boundaries, as it is prudent to stop the spread of a wildfire before it involves the structures they are all legally mandated to protect. In addition, Lake County’s Office of Emergency Management Coordinator is responsible for emergency planning and response coordination across a range of hazards, including wildfire.





**Figure 7. Fire Districts Within and Adjacent of Lake County**



## 2.5 Fire Environment

The nature of wildfire is strongly linked to landscape characteristics and conditions such as topography, vegetation, climate, ignition sources, and fire history. These factors heavily influence fire behavior and response tactics by dictating whether and how a fire starts, how intense it burns, where and how it spreads across the landscape, and how difficult it is to control.

### Topography

Lake County is bounded by the high-elevation, steep slopes of the Mission and Swan Mountain Ranges to the east and the Salish Range to the west. Elevations in the county range from 2,900 feet above sea level at Polson to 9,800 feet at McDonald Peak. Fire generally spreads faster uphill, with a resultant increase in flame lengths and fire intensity. The steeper the slope, the more difficult it is to control a fire and thus the risk is greater. The highest elevations in the Mission and Swan Mountain Ranges are covered by snow, ice fields, and rock that are devoid of vegetation.

Lakes and streams cover approximately 100,000 acres of Lake County, or just under 10% of the total area. The most prominent surface water features in Lake County are the southern two-thirds of Flathead Lake, the Flathead River, Swan Lake, the Swan River, Mission Creek, Post Creek, the Jocko River, and Lake Mary Ronan. Other sizeable lakes include McDonald, Loon, and St. Mary's. Lake County also contains several large reservoirs, including Pablo, Kicking Horse, Lower Crow, Mission, and Ninepipe, and numerous small reservoirs that are important for wildlife and agriculture. These water resources are critical to firefighting capacity.

### Vegetation Cover

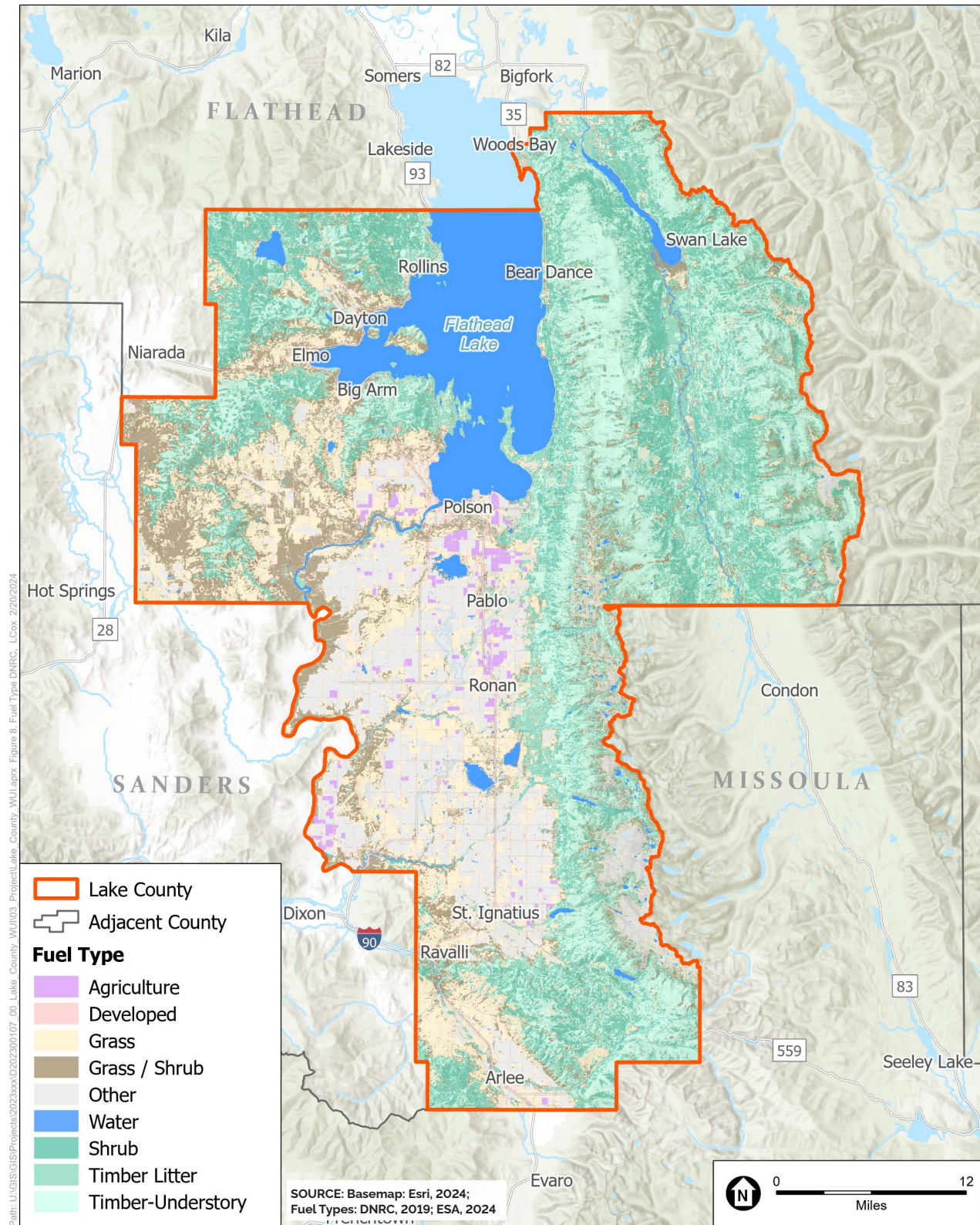
Lake County has diverse vegetative cover (Pyrologix and DNRC 2022; **Table 4**). Each of these cover types behaves differently during wildfire events and requires unique, targeted management practices. The largest land cover type by far is conifer forest, stretching along the east side of the county in the Mission and Swan Mountain Ranges. A pocket of conifer forest also exists in the Salish Mountains in northwest Lake County. Agricultural land is the second largest land cover type by area, dominating the lowlands of the county in the south end of the Flathead Basin. Shrubland and open water represent the next largest categories, with the western portions of the county representing the majority of the shrubland (particularly north of the Flathead River), and Flathead Lake representing the vast majority of open water. Grasslands are situated primarily along the western edge of the county. Developed lands (including roads) account for about 4% of all land in the county.

**Table 4. Vegetation cover by acreage in Lake County.**

VEGETATION TYPE	TOTAL LAND AREA (ACRES)	PERCENT OF TOTAL LAND AREA
Agricultural	183,252	17.3%
Barren	11,159	1.1%
Conifer	471,774	44.5%
Developed	27,844	2.6%
Developed - Roads	12,302	1.2%
Exotic Vegetation	25,110	2.4%
Grassland	76,328	7.2%
Hardwood	675	0.1%
Open Water	104,478	9.9%
Riparian	30,706	2.9%
Shrubland	105,686	10%
Snow-Ice	380	0.0%
Sparsely Vegetated	9,408	0.9%
Total	1,059,102	100%

More than a century of fire suppression practices have created overstocked and overgrown forests filled with highly burnable vegetation. Along with drought and disease and insect outbreaks, these unnaturally dense forests have created higher and more flammable fuel loads in the county. **Figure 8** displays the fuel types for Lake County according to the Montana Wildfire Risk Assessment (MWRA). (The MWRA is described in more detail in Section 2.6.) Different fuel types affect how fire behaves. For example, grasses can ignite and burn rapidly while timber-litter may take longer to burn.





**Figure 8. Fuel Types**





## Climate

Lake County generally experiences warm summers and cold, snowy winters, with most precipitation falling in December and January. Some areas of the county are wetter than others, overall, due to topographical features that affect rainfall. In addition, some areas are more exposed to winds while others are sheltered. Climate change, including increasing air temperatures and less rainfall, is causing warmer and drier conditions that favor higher fuel loads and increase the risk of larger, more frequent, and more intense wildfires in Lake County. Hotter, drier summers in particular are causing longer fire seasons in Montana.

## Fire History

In addition to topography, vegetation, and climate, fire occurrence is largely dictated by whether or not there are ignitions. **Figure 9** displays the county's fire ignition history between 1992 and 2023. More than 67% of fires have been human caused (intentional and accidental) and 32% caused by lightning strikes.

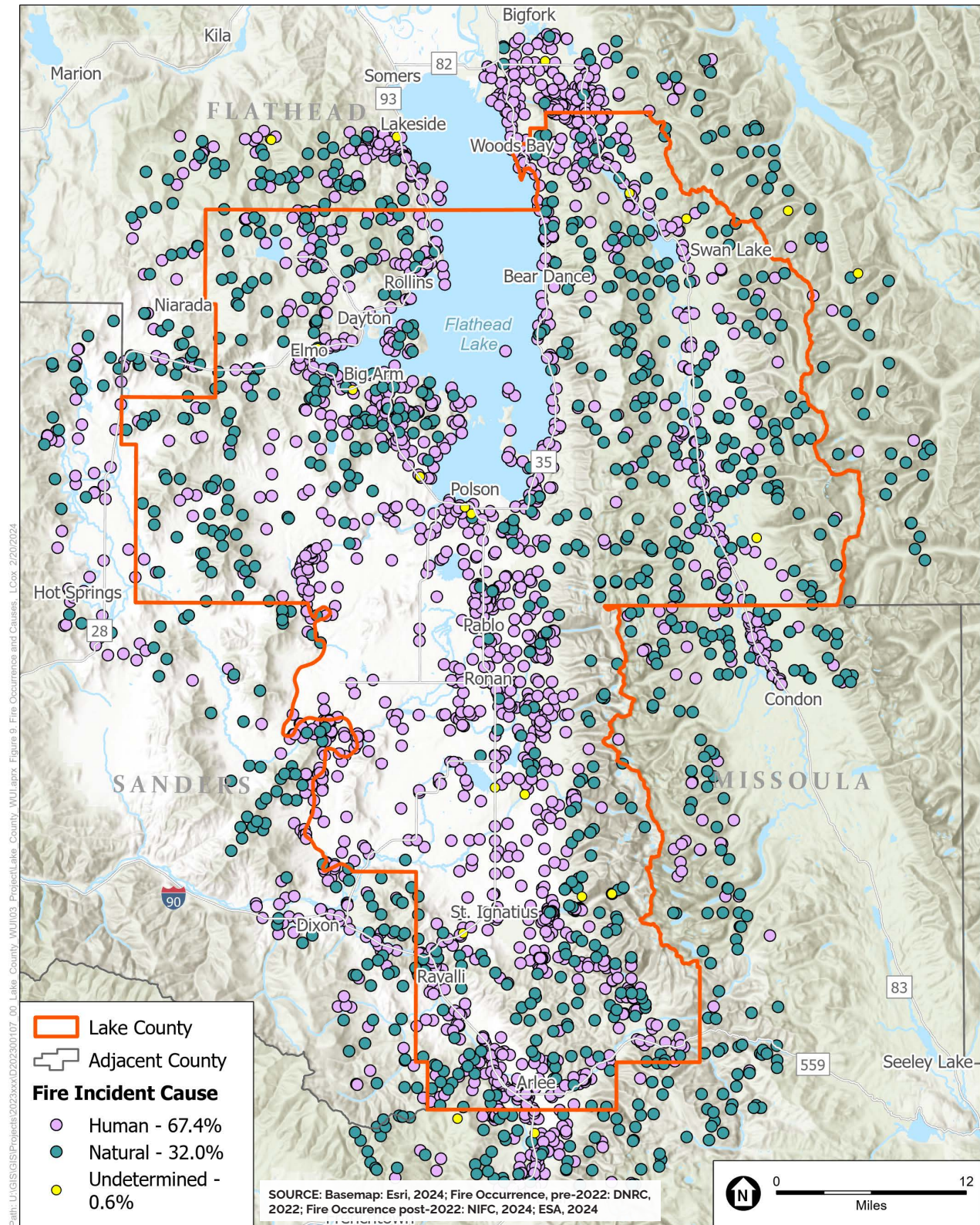
**Figure 10** displays the extent and location of wildfires occurring in Lake County between 1998 and 2023, totaling more than 168,000 acres.

Some of the largest and most damaging fires have occurred in more recent years, such as the 2021 Boulder 2700 Fire (2,067 acres), 2022 Elmo Fire (21,327 acres), 2022 Garceau Fire (6,717 acres), 2023 Niarada Fire (20,352 acres), and 2023 Middle Range Fire (14,138 acres) (**Table 5**).



**2022 Elmo Fire**

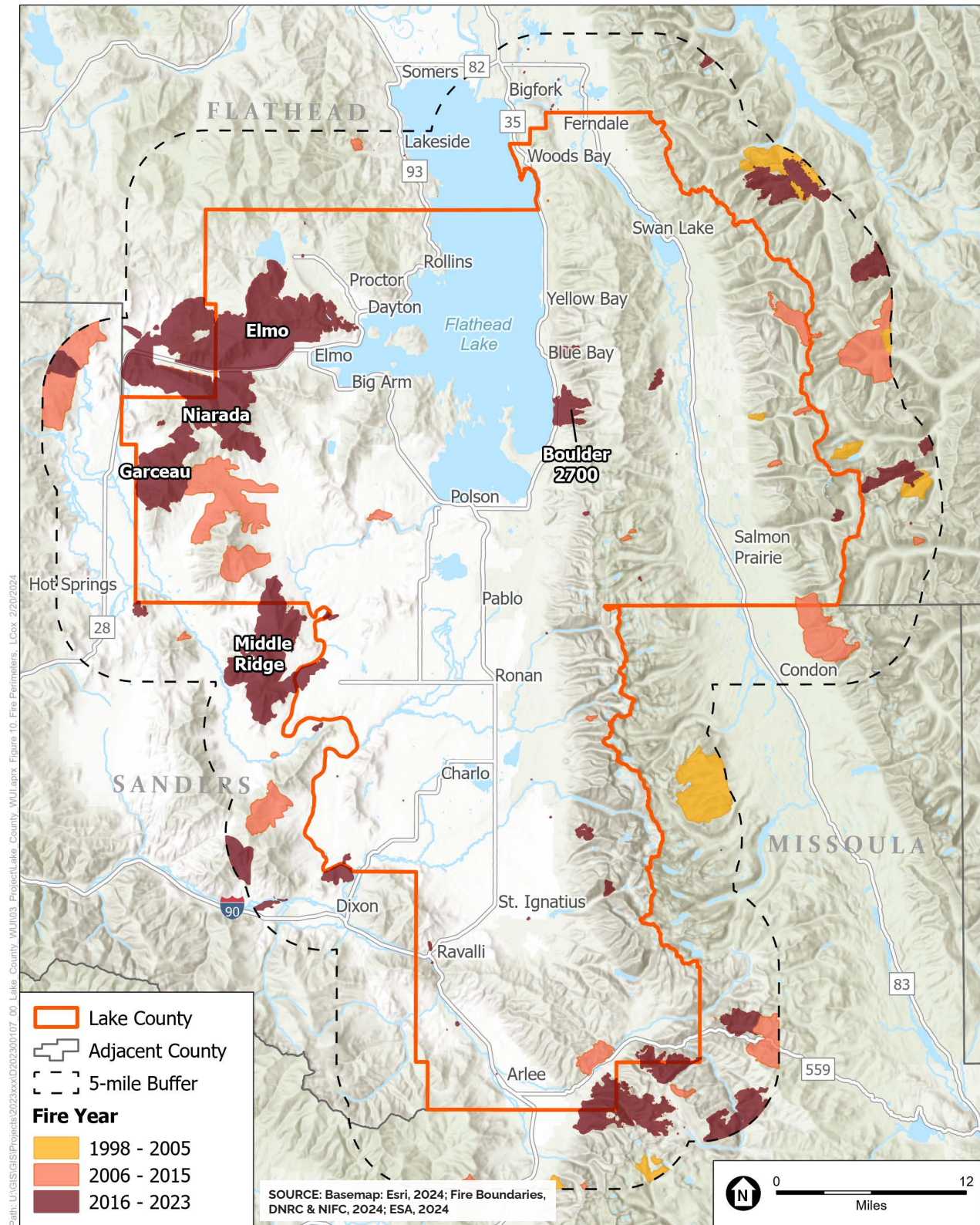




**Figure 9. Fire Occurrence by Cause from 1992-2023 Within 5 Miles of Lake County**







**Figure 10. Fires from 1998-2023 Within 5 Miles of Lake County**





**Table 5. Historic wildland fires in Lake County over 500 acres (1998-2023).**

YEAR	NAME	ACREAGE
2023	Niarada	20,352
	Middle Ridge	14,138
	Big Knife	7,267
	Sullivan	4,367
	Bruce	1,957
	Mill Pocket	1,327
	Communication Butte	1,039
	New House	825
	Kah Mountain	825
2022	Elmo	21,327
	Garceau	6,717
	Cannon	1,929.5
2021	Crooks	2,433
	Boulder 2700	2,067
2018	Rattlesnake	1,202
2017	Liberty	3,714
	Black	1,891
2016	Race Horse Gulch	1,960
2015	Bear Creek	6,019
	Melton 1	3,152
2013	Firestone Flats	1,567
2012	West Garceau	9,881
	Condon Mountain	5,493.5
2011	South Fork Lost Creek	1,846.5
2008	Deep Draw	2,029
2007	Chippy	7,629
	Garceau	2,855
	Jocko Lakes	2,854
2003	Crazy Horse	7,576
	Ball Creek	5,525
	Mineral-Primm	892
2001	Cannon	1,587
1998	Sunburst Lake	758

## 2.6 Wildfire Risk Assessment

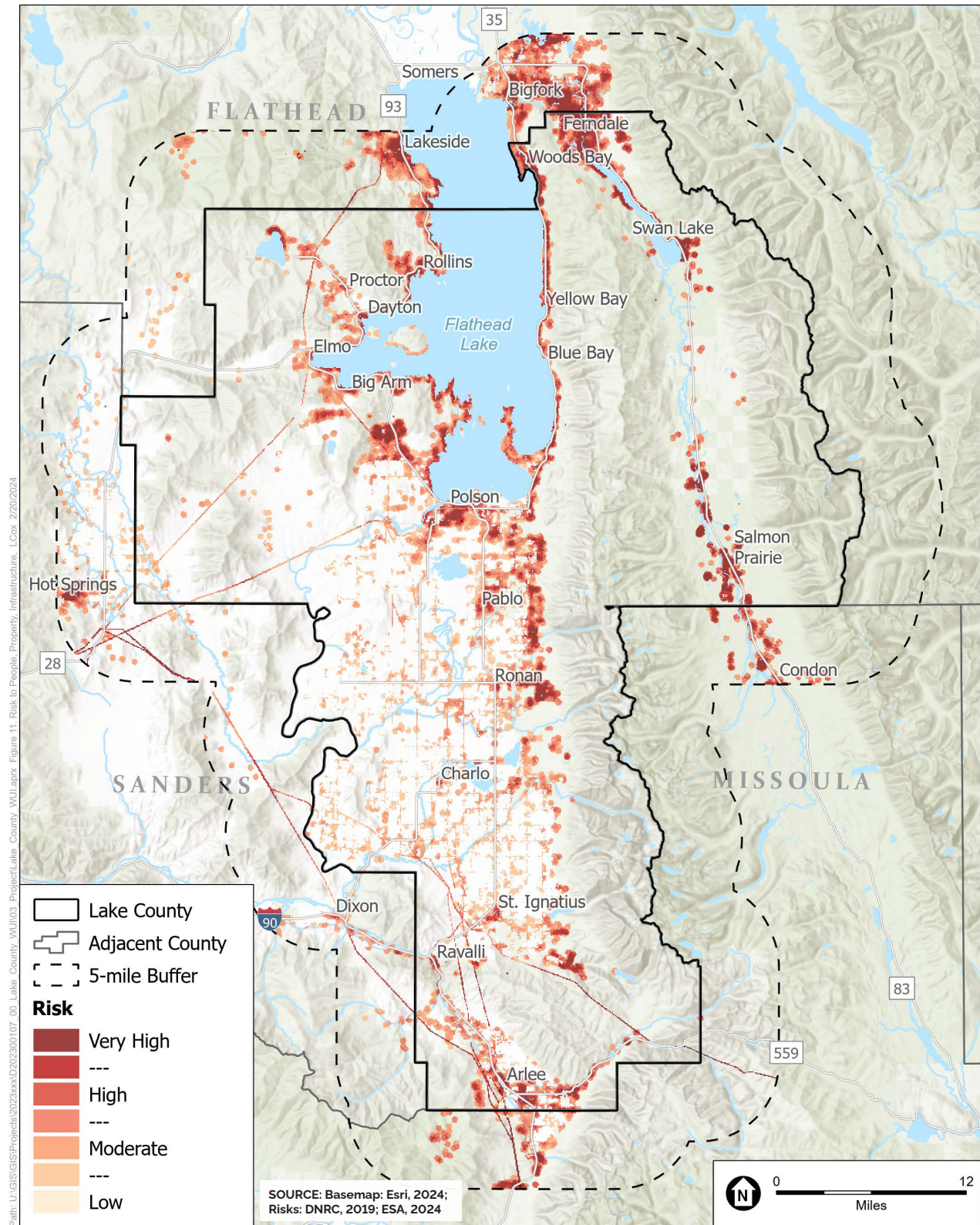
Forested areas of Lake County encompass more than 470,000 acres. Forest health challenges such as drought, warming air temperatures, and disease and insect outbreaks, along with a long history of fire suppression practices, have created denser forests and higher, more flammable fuel loads in the county. When wildfires occur, they also can dramatically alter landscape and ground conditions, making burned areas more susceptible to post-fire flooding and debris flows. In addition, most structures are built with highly flammable materials and are therefore contributors to wildfire spread in addition to being susceptible to wildfire damage. The Montana Wildfire Risk Assessment (MWRA) was conducted by Pyrologix LLC in collaboration with the DNRC in order to provide baseline information on wildfire hazards and risks across the state (Gilbertson-Day et al. 2020). The risk assessment considered several factors such as fire likelihood, fire intensity, exposure of assets and resources (e.g., homes, natural features) based on their location, and the susceptibility of assets and resources to wildfire. According to the MWRA, Lake County ranks fifth in the state for overall wildfire risk to assets and resources.

**Figure 11** displays the risk to people, property, and critical infrastructure in Lake County determined by the MWRA. The scale of Very High (dark red) to Low (pale yellow) considers risk across a few factors such as likelihood and intensity of fire, and the susceptibility of assets to fires of differing intensities. Areas of High to Very High risk are located in the northeastern portion of the county in Ferndale and Swan Lake, south along MT-83, clusters in communities ringing Flathead Lake, and south along US-93 through Ronan and down to Arlee. However, areas indicating Moderate to Low risk can still burn (e.g., Elmo and along MT-28). A similar figure that incorporates the updated WUI boundary can be found in Appendix A (Figure A2).

The MWRA also calculated the likelihood and consequence of wildfire on people, property, and critical infrastructure by the mean expected net value change (eNVC) summarized by watersheds (Hydrologic Unit Code [HUC] 12) throughout Montana. The scale of Extreme (red) to Low (green) reflects relative magnitude and distribution of risk associated with burn probability, fire intensity, and susceptibility of resources and assets. The majority of HUC 12 watersheds in Lake County fall within the High, Very High, or Extreme categories (**Figure 12**).

Some individuals and communities may be more at risk from wildfire due to other factors such as poverty, lack of quality housing and transportation options (including limited ingress/egress), age, and disability status.

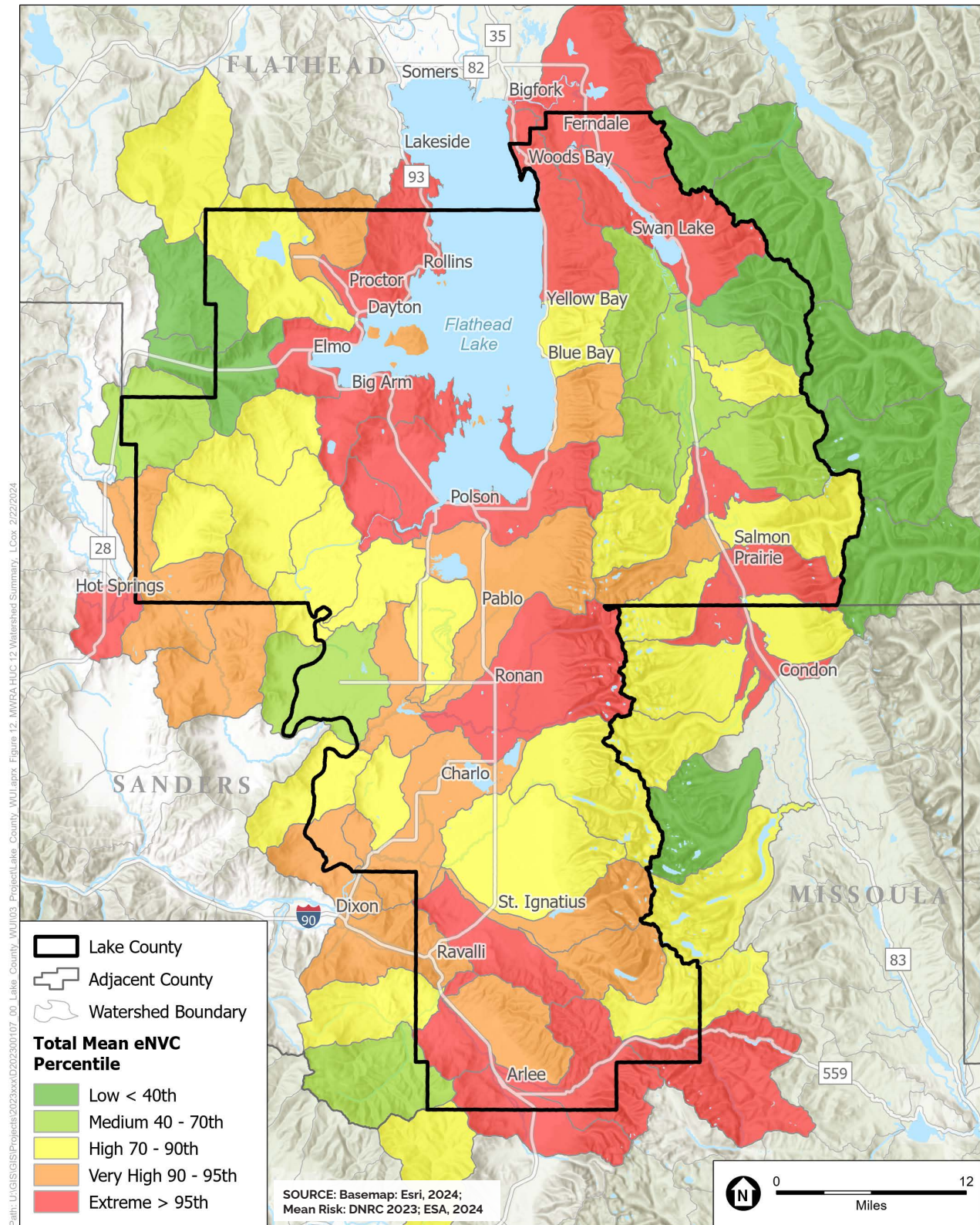
**Figure 13** displays communities within the WUI experiencing various levels of relative vulnerability based on the Centers for Disease Control's Social Vulnerability Index. The index uses U.S. Census data to summarize 16 social factors related to socioeconomic status, household characteristics, racial and ethnic minority status, and housing type/transportation. The majority of census tracts within the WUI are classified as having Moderate to Very High social vulnerability, with the highest concentrations along the US-93 corridor.



**Figure 11. Risk to People, Property, and Infrastructure Within 5 Miles of Lake County**



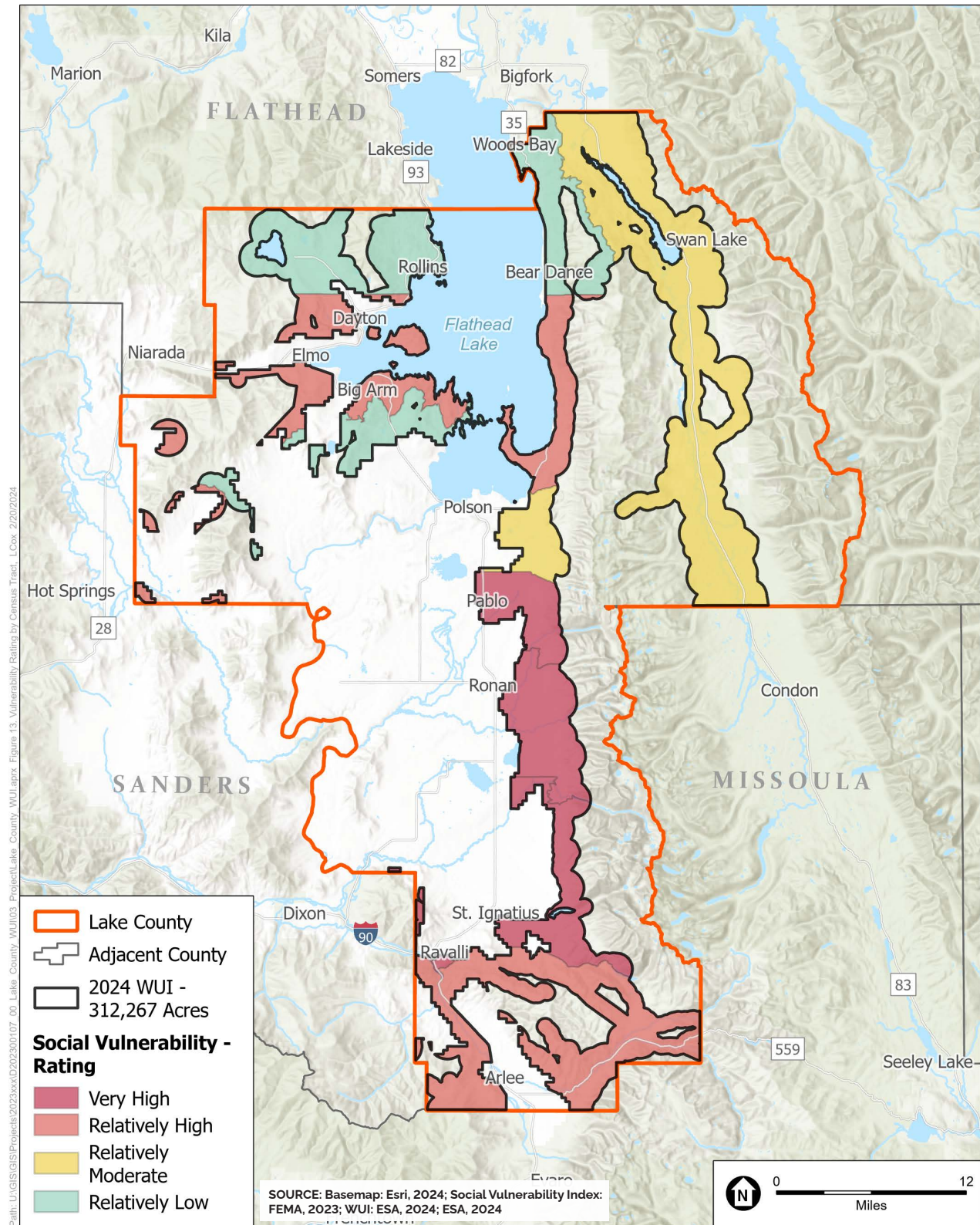




**Figure 12. Total Mean Risk by Watershed (HUC 12)  
Summarized by Mean Expected Net Value Change (eNVC)**







**Figure 13. Social Vulnerability by Census Tract Within the WUI**





## CHAPTER 3.

# Wildfire Mitigation: Implementation, Monitoring, and Evaluation

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2021 Boulder 2700 Fire

## 3.1 Overview

Crucial to the implementation of 2024 CWPP will be the implementation of hazardous fuels treatments directed at reducing the potential for loss of lives, property, and natural resources in Lake County due to wildfire.

Through the online survey and public meetings conducted during this 2024 CWPP update process, community members expressed the following priorities for implementation:

- Fuel treatments on public lands to reduce the amount of live and dead vegetation (92%).
- Cleanup of live and dead vegetation around homes by individual homeowners (85%).
- Community education on wildfire prevention and awareness (77%).
- Better firefighting equipment/increased personnel (39%).
- Home retrofits/hardening (using fire-resistant building and construction materials) (31%).
- Other options (e.g., addressing pine beetle infestations, banning fireworks, consider buried power lines if possible).

This CWPP is aligned with the three core objectives of the National Cohesive Wildland Fire Management Strategy, which prioritizes:

- Resilient Landscapes.
- Fire-Adapted Communities.
- Safe, Effective Wildfire Response.

### Resilient Landscapes

Vegetation management is a major component of any wildfire risk reduction strategy. Fuel treatments may include thinning, prescribed fire, commercial harvest, grazing, reseeding, and other tactics. The pace and scale of these restoration and maintenance activities need to increase to keep up with changing population, development, and climate conditions in order to limit wildfire impacts. Many of these tactics require significant investments of staff capacity, resources, and funding for implementation, so identifying priority areas and projects is key.

### Fire-Adapted Communities

Preventing and responding to wildfires is a shared responsibility between fire management agencies and the broader public. All people who live and work in the county need to be engaged in fire prevention, response, and recovery options. This includes implementing public outreach and education programs to limit human-caused ignitions, increase the application of fire-resilient homeowner landscaping techniques, and establish broad public support for policies and regulations to reduce wildfire risk such as home hardening and building codes.

### Safe, Effective Wildfire Response

In addition to reducing the likelihood of wildfires through creating fire-adapted communities and resilient landscapes, it is important to establish safe and effective fire response capacity. This includes preventing firefighter injuries and loss of lives through adequate infrastructure and staff capacity (e.g., access, water supply, equipment, firefighting partnerships).



## 3.2 Reducing Structural Ignitability and Improving Safe, Effective Wildfire Response

Land managers and homeowners can reduce wildfire risk and impacts by conducting hazardous fuels reduction projects, establishing fuel breaks and buffers, and creating ignition-resistant structures. Residents play a significant role in reducing fire ignition and spread potential in their Home Ignition Zone (HIZ), a 200-foot buffer around homes. Structural ignitability, rather than wildland fuels, is the principal cause of structural losses during wildland/urban interface fires. Key items are flammable roofing materials (e.g., cedar shingles) and the presence of burnable vegetation (e.g., ornamental trees, shrubs, wood piles) immediately adjacent to homes, open wooden decks and porches, uncovered eaves, and unprotected openings in the structure. Highly ignitable homes can be destroyed during lower-intensity wildfires, whereas homes with low home ignitability can survive high-intensity wildfires.

Recommended strategies for structure managers and homeowners include:

- Create and maintain a HIZ around homes to reduce ignition potential.
- Remove combustible debris/fuels from rooftops and gutters, prune lower tree limbs, and rake leaves away from homes.
- Create ignition-resistant structures by using fire-resistant construction materials (e.g., Class A roofing, non-flammable siding, double-paned windows, metal gutters).
- Place propane tanks and firewood away from structures.
- Maintain private driveways and small neighborhood routes to allow emergency response vehicles easy access to structures and evacuation of residents.
- Install Knox Boxes or special locks to allow fire personnel responding during an emergency to gain access to gated properties.
- Post large, legible home address numbers on homes and at the end of driveways.
- Request free wildfire home risk assessments and site visits from DNRC.
- Educating residents and visitors about the dangers of fireworks in forested areas.
- Develop family and neighborhood fire preparedness plans to coordinate communications and evacuation.
- Collaborate with neighbors to submit applications for fire reduction projects to the Lake County Fire Mitigation Office. Projects with broad neighborhood or community support are more likely to receive implementation funding.
- Sign up for the HyperReach mass notification text messaging system to receive emergency alerts ([https://signup.hyper-reach.com/hyper\\_reach/sign\\_up\\_page\\_2/?id=95122](https://signup.hyper-reach.com/hyper_reach/sign_up_page_2/?id=95122)).

### 3.3 Priority Project Areas

Reducing hazardous fuels can significantly minimize losses to life, property, and natural resources from wildfire. Removal of unnatural accumulations of dead and live vegetative matter, resulting from decades of effective fire suppression, reduces fire intensities while restoring fire-adapted ecosystems toward more natural conditions. Fire risk reduction projects in Lake County are closely coordinated and implemented by all Core Team members, primarily the Lake County Fire Mitigation Office and the CSKT Division of Fire. The Core Team identified 17 fuels reduction projects in high fire risk communities for near-term implementation, depending on access to funding (**Table 6**). High-risk communities include those at risk from wildfire within the WUI, and those experiencing heightened vulnerability due to access-related issues (e.g., limited critical ingress/egress transportation routes) and social factors such as poverty, lack of quality housing and transportation options, age, and disability status.

**Table 6. Priority fuels reduction project areas within the WUI identified by the Core Team.**

PROJECT NAME/ LOCATION	CORE TEAM IMPLEMENTATION PRIORITY LEVEL	ISSUES/REASONING	RELATIVE SOCIAL VULNERABILITY INDEX SCORE	ALIGNED WITH MONTANA FOREST ACTION PLAN PRIORITY AREAS
White Swan	Very High	<ul style="list-style-type: none"> <li>— High fuel loads</li> <li>— High structure density</li> <li>— Limited access roads</li> <li>— Strong homeowner support for treatment</li> <li>— Within drinking source watershed</li> </ul>	High	Yes
Woods Bay	Very High	<ul style="list-style-type: none"> <li>— Steep slopes</li> <li>— High structure density</li> <li>— Within drinking source watershed</li> </ul>	Low	Yes
Melita/Lindisfarne	Very High	<ul style="list-style-type: none"> <li>— Insect and disease issues</li> <li>— High fuel loads</li> </ul>	High	—
Peach Park	Very High	<ul style="list-style-type: none"> <li>— Extensive forested terrain</li> <li>— Limited access, poor road conditions with steep slopes</li> <li>— Opportunity for collaboration with large private landowner</li> </ul>	Low	Yes
Finley Point/Skidoo and MT-35	High	<ul style="list-style-type: none"> <li>— Constrained access: one way in/one way out</li> </ul>	High	Yes
Lake Mary Ronan	—	<ul style="list-style-type: none"> <li>— Hotspot for development</li> <li>— Within drinking source watershed</li> </ul>	Low	Yes

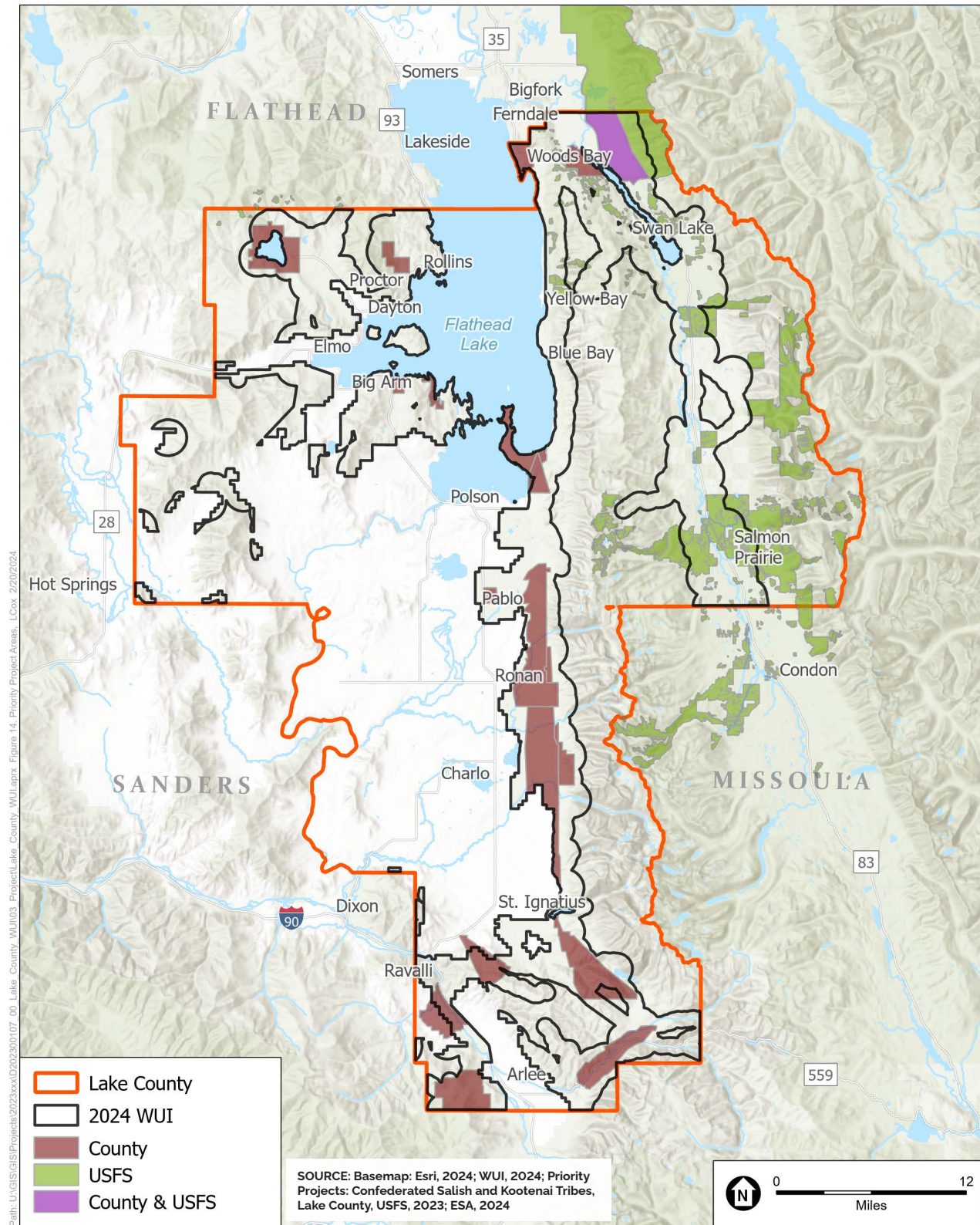
PROJECT NAME/ LOCATION	CORE TEAM IMPLEMENTATION PRIORITY LEVEL	ISSUES/REASONING	RELATIVE SOCIAL VULNERABILITY INDEX SCORE	ALIGNED WITH MONTANA FOREST ACTION PLAN PRIORITY AREAS
South Crow Creek Corridor	High	<ul style="list-style-type: none"> <li>— Buffers residential areas from forested areas</li> <li>— Insect and disease issues</li> <li>— High fuel loads</li> </ul>	Very High	Yes
Kicking Horse to St. Ignatius Corridor	High	<ul style="list-style-type: none"> <li>— Buffers residential areas from forested areas</li> <li>— Insect and disease issues</li> <li>— High fuel loads</li> </ul>	Very High	Yes
Pablo/US-93 Corridor	High	<ul style="list-style-type: none"> <li>— High structure density</li> </ul>	Very High	—
Swan River/MT-83	High	<ul style="list-style-type: none"> <li>— Insect and disease issues</li> </ul>	Moderate	Yes
West Swan	—	<ul style="list-style-type: none"> <li>— High fuel loads</li> </ul>	Moderate	Yes
Snider Hill Buffer Zone	High	<ul style="list-style-type: none"> <li>— Limited access: one way in/one way out</li> <li>— Insect and disease issues</li> <li>— High fuel loads</li> </ul>	Very High	Yes
Jocko River Corridor	—	<ul style="list-style-type: none"> <li>— High fuel loads</li> </ul>	High	—
Arlee Pines	High	<ul style="list-style-type: none"> <li>— Limited access: one way in/one way out</li> <li>— High fuel loads</li> </ul>	High	Yes
Jocko Canyon	High	<ul style="list-style-type: none"> <li>— Limited access</li> <li>— Insect and disease issues</li> <li>— High fuel loads</li> </ul>	High	Yes
St. Mary's Canyon (Mission Valley)	—	<ul style="list-style-type: none"> <li>— Buffers residential areas from forested areas</li> <li>— Insect and disease issues</li> <li>— High fuel loads</li> </ul>	Very High	Yes
Pistol Creek	—	<ul style="list-style-type: none"> <li>— High fuel loads</li> </ul>	High	—

The USFS has identified several priority project areas in the county, primarily in the Swan Valley area bordering Flathead National Forest, including Bug Creek, Cold Jim, Mid-Swan, and Swan Valley Bottom. Potential projects outside of the WUI were also identified, such as the Hot Springs Creek and Moiese Hills areas.

**Figure 14** displays the area covered by the planned fuels reduction priority projects identified by the Core Team and USFS. Figure A3 in Appendix A displays these projects along with their overlap with priority areas identified by the Montana Forest Action Plan. Visit the Story Map to view details on these project areas:

<https://tinyurl.com/LakeCountyCWPP>.





**Figure 14. Fuel Reduction Priority Projects**



As part of implementing these and other projects, it will be necessary to develop specific project-level plans and funding strategies. These plans may include tactics such as:

- Hazardous fuels reduction (e.g., thinning, prescribed burns);
- Creating fuel breaks to limit wildfire intensity and rate of spread;
- Post-fire recovery activities (e.g., seeding, regeneration);
- Community education and outreach workshops on risk reduction and effective emergency response; and
- Ongoing coordination between emergency management and fire response agencies.

## 3.4 Funding Opportunities

Several financial resources can support wildfire prevention, response, and recovery by both homeowners and wildland fire management agencies.

### Homeowner Funding Options

Private landowners and homeowners can receive funding from:

- DNRC Hazardous Fuels Reduction Grant
- National Fire Protection Association Wildfire Community Preparedness Day Grant

### Lake County Funding Options

Lake County can receive funding from:

- DNRC Cooperative Fire Protection Capacity Grant
- DNRC Rural Fire Capacity Grant
- DNRC Community Wildfire Defense Grant (planning and implementation grants)
- DNRC Landscape Scale Restoration Grant
- Western States WUI Grant
- Federal Emergency Management Agency (FEMA) Fire Management Assistance Grant
- FEMA Pre-Disaster Mitigation Grant Program
- Montana Disaster Emergency Services Hazard Mitigation Grant
- USDA Community Wildfire Defense Grant
- Fire House Subs Public Safety Foundation Grant

## 3.5 Monitoring and Evaluation

The CWPP Project Tracking Tool was created to help Lake County easily monitor and evaluate progress on wildfire mitigation projects. This Excel-based tool can be used for offline tracking and entries used to update the CWPP Story Map. Categories for tracking include:

- Project Name/Location
- Lead Agency/Organization Contact Information
- Partner Agencies/Organizations
- Project Type/Purpose (Wildland Fuels Treatment, Roadside Fuels Treatment, Defensible Space, Protect Critical Infrastructure, Post-Fire Mitigation/Recovery, Community Education and Outreach, Community Planning)
- Project Description/Approach (e.g., What will be done to reduce wildfire risk, How conditions will be improved)
- National Cohesive Strategy Project Type (e.g., Resilient Landscapes, Fire-Adapted Communities, Safe, Effective Wildfire Response)
- Estimated Acres
- Estimated Cost
- Funding Source(s)
- Surrounding Landowners
- Opportunities and Constraints
- Project Start Date
- Project Status (e.g., Proposed, Planned, In progress, On hold)
- Progress/Milestone Update Notes (e.g., acres treated, dollars spent, landowners engaged, number of educational events held)

The tool will help track updates on project progress and associated changes to the CWPP and/or Story Map can be made by Lake County to communicate with the broader public on implementation status. A general recommendation is to update CWPPs once every five years in order to adequately reflect updates in science and data as well as changes in the landscape.



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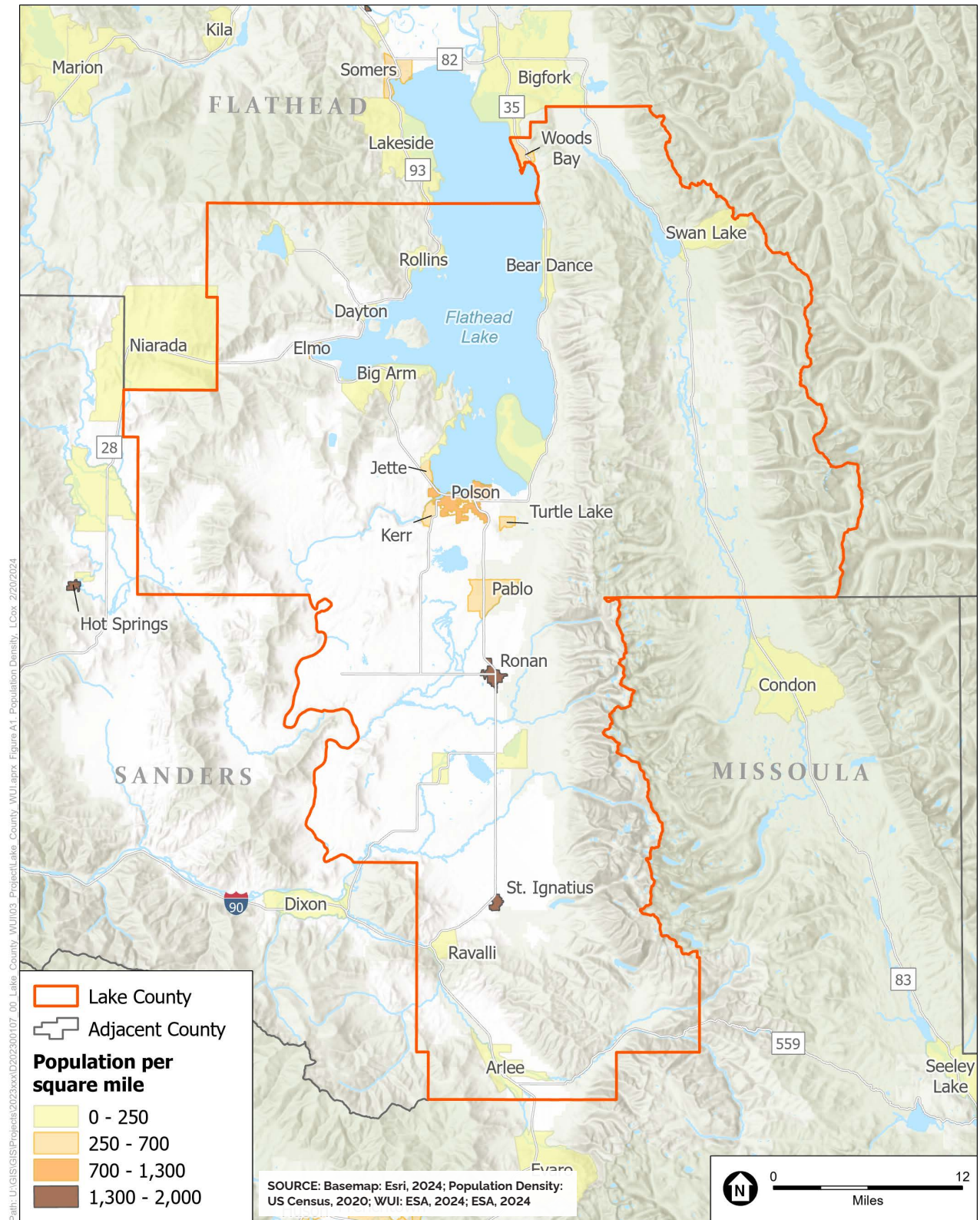
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## APPENDIX A.

# Additional Maps

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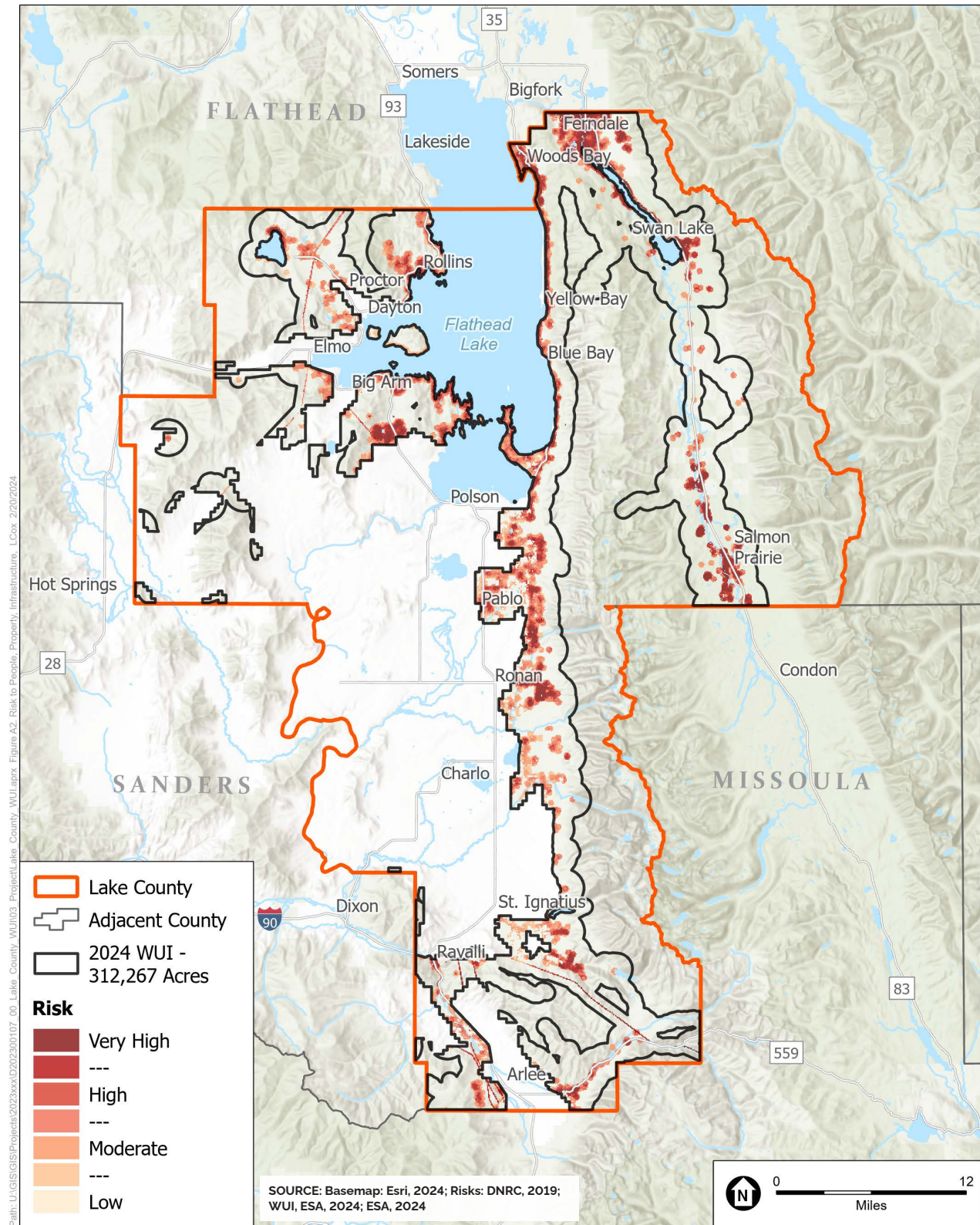




**Figure A1. Population Density Within and Nearby Lake County**



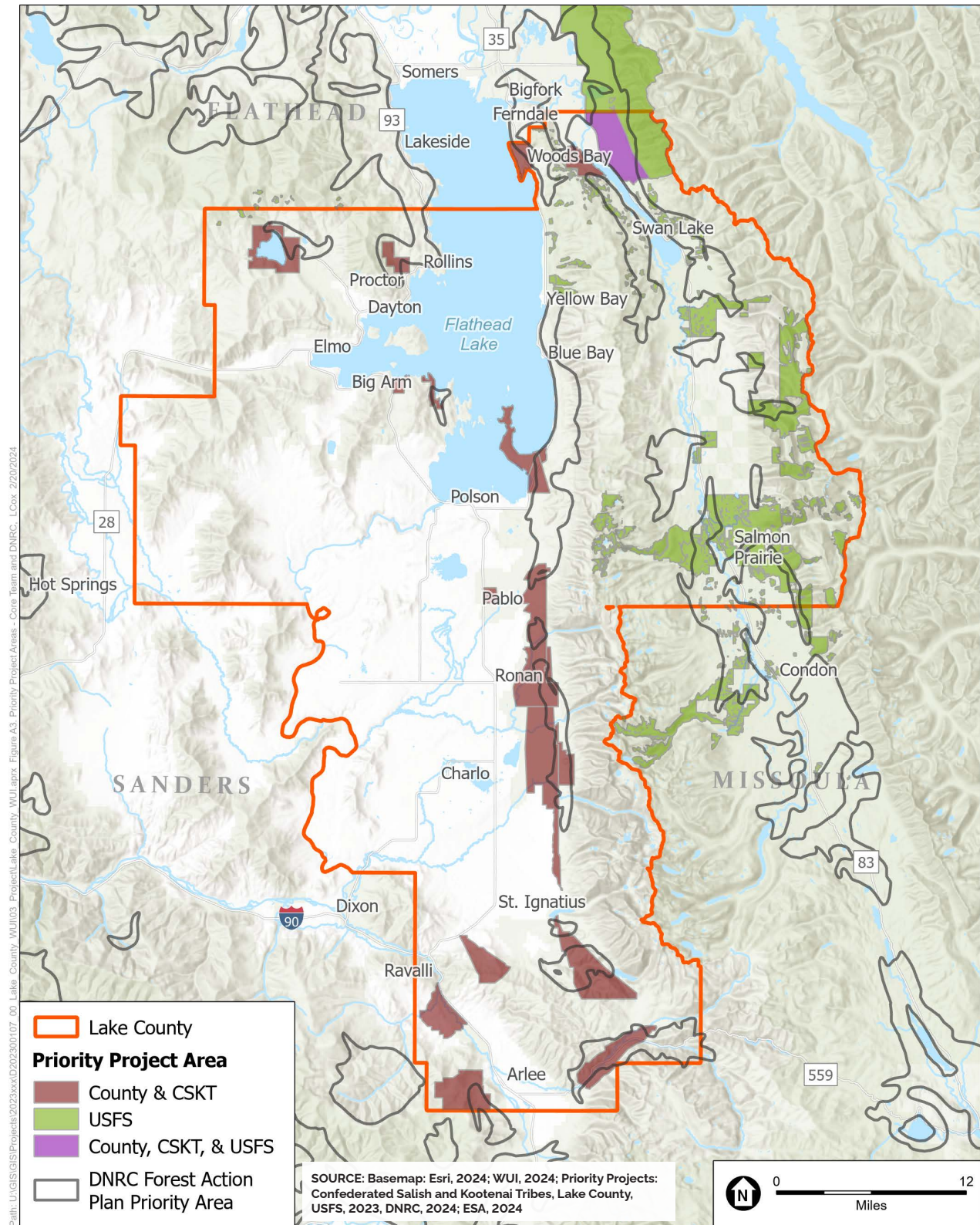




**Figure A2. Risk to People, Property, and Infrastructure Within the WUI**







**Figure A3. Fuel Reduction Priority Projects Compiled from CSKT, Lake County, USFS, and DNRC**





## **APPENDIX B.**

# **Lake County CWPP Fact Sheet**

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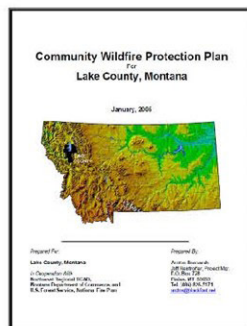
# Lake County Community Wildfire Protection Plan Update



*Wildfires in Montana are primarily caused by accidental human ignitions. One of the most useful tools for wildfire prevention are Community Wildfire Protection Plans (CWPP). Lake County adopted its current CWPP in 2005. In the last 18 years, many changes have occurred across the county, including the construction of new homes and infrastructure within wildfire risk areas. These changes can affect the way a community copes with fire and have prompted the need to update the CWPP.*



## What is the Lake County CWPP?



A Community Wildfire Protection Plan (CWPP) is a community-based plan focused on identifying and addressing the local threats of wildfire. The CWPP determines what is at risk and provides a roadmap of clear actions for the community. CWPPs have been a national standard of practice since 2003 when the Healthy Forests Restoration Act (HFRA) was signed into law.

Lake County adopted its current CWPP in 2005. The Montana Department of Natural Resources and Conservation (DNRC) recommends that CWPPs be updated every five years to account for the many changes that can take place in a community such as housing development, fuel treatments, wildfires, and new available data to better support decision making.

## Is an update underway?

Yes! Lake County is undergoing an update to its CWPP. This will include:

- Maps and figures of wildfire risk
- An updated definition of the Wildland Urban Interface (WUI)
- Recommendations to reduce risk at an individual homeowner and community-wide level
- Priority fuels reduction projects eligible for funding

### What is the Wildland Urban Interface (WUI)?

The WUI is the area where wildland fuels meet development, often in the form of homes, businesses, infrastructure (e.g., power lines, drinking water supplies), and other valuable assets. Targeting these areas for fire risk reduction projects is likely to have the greatest effect in protecting residents' homes, livelihoods, and valued natural resources.

Defining a WUI not only allows a county to focus its own resources on reducing wildfire risk in the most vulnerable areas, but also to direct management of federal lands within the county.

Lake County 2005 CWPP: <https://dnrc.mt.gov/docs/forestry/cwpp/LakeCWPP2005.pdf>

# Lake County Community Wildfire Protection Plan Update



## What will the CWPP require of me? Is this a policy or legal document?

CWPPs are plans—not policy documents or legally binding. They are intended to inspire collaborative efforts where groups and individuals within communities, including residents and homeowners' associations, fire protection districts, and government and business entities, work together to help make their communities safer from wildfire. Elected officials may use information and recommendations from CWPPs to create policy, but the plan itself does not contain binding or regulatory policies.



## Will the updated CWPP be used by insurance companies?

Concern is commonly expressed that CWPPs and the hazard assessments contained within them could be used by insurance companies when assessing homes or properties. To date, insurance companies have *not* used WUI designations to set insurance rates or determine eligibility for coverage. Instead, these companies are relying on the best available wildfire risk data and their own algorithms to determine coverage eligibility and pricing. Because CWPPs identify and prioritize projects that dramatically reduce fuel hazards, many insurance companies recognize the important difference these plans make in reducing wildfire risk and advocate for their development.

## Who is involved and how can I participate in the CWPP process?

The HFRA requires that a community use a collaborative process for establishing a CWPP. In addition to being a requirement, broad collaboration in the development of the CWPP can only support its implementation.

- Lake County
- Local Fire Departments
- Montana DNRC
- Confederated Salish and Kootenai Tribes of the Flathead Reservation

### Online Survey



Share your input online at  
<http://bit.ly/LakeCountyCWPP>.

### Public Comment Period



The draft CWPP update will be available in January 2024 for public review and comment. The final CWPP will be ready by March 2024.

Lake County 2005 CWPP: <https://dnrc.mt.gov/docs/forestry/cwpp/LakeCWPP2005.pdf>

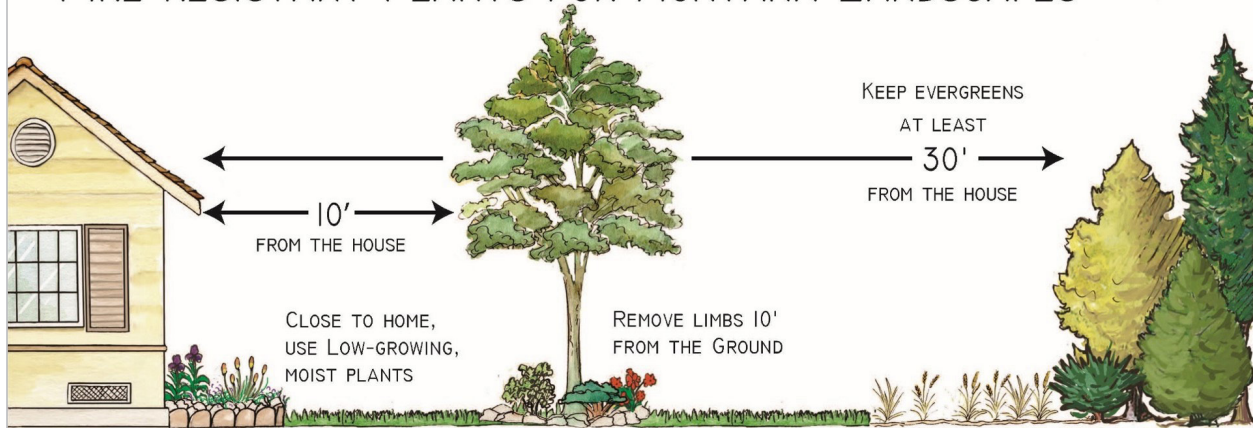


## APPENDIX C.

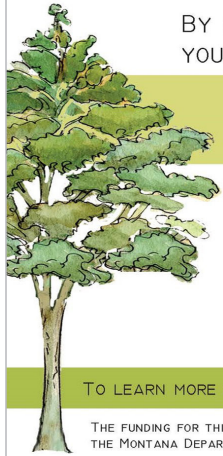
# Sample Homeowner Materials

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## FIRE-RESISTANT PLANTS FOR MONTANA LANDSCAPES



ADAPTED FROM CHOOSING THE RIGHT PLANTS FOR NORTHERN NEVADA'S HIGH FIRE HAZARD AREAS, PUBLICATION #EB-07-01, WITH PERMISSION FROM UNIVERSITY OF NEVADA COOPERATIVE EXTENSION AND THE LIVING WITH FIRE PROGRAM.



BY GARDENING WITH FIRE-RESISTANT PLANTS AROUND YOUR HOME, YOU CAN REDUCE THE RISK OF WILDFIRE IGNITION AND SPREAD

STUDIES HAVE FOUND AS MANY AS 80% OF HOMES LOST TO WILDLAND FIRE COULD HAVE BEEN SAVED BY OWNERS FOLLOWING A FEW SIMPLE FIRE-SAFE PRACTICES

GARDENS NEXT TO YOUR HOME SHOULD INCLUDE PLANTS THAT ARE:

LOW GROWING - LESS THAN 2 FEET TALL → LESS FUEL AND SHORTER FLAMES

DECIDUOUS - DROP LEAVES IN AUTUMN → MOST LACK FLAMMABLE CHEMICALS

LARGE, THICK LEAVES → HIGH MOISTURE CONTENT, TAKE LONGER TO IGNITE

TO LEARN MORE PLEASE VISIT: [MSUEXTENSION.ORG](https://msuextension.org) AND SEARCH FOR FIRE RESISTANT PLANTS

THE FUNDING FOR THIS PROJECT IS DERIVED IN PART FROM A FEDERAL AWARD OF THE U.S. FOREST SERVICE, DEPARTMENT OF AGRICULTURE, TO THE MONTANA DEPARTMENT OF NATURAL RESOURCES AND CONSERVATION, FORESTRY DIVISION. THIS INSTITUTION IS AN EQUAL OPPORTUNITY PROVIDER.



# Firescaping Checklist

Take this checklist with you when you go to your home improvement store, local nursery, or when consulting a professional landscaper. Use this list to ensure your yard and garden are within recommended standards, and are as fire safe as possible.

## Mulch and Landscaping

Ask for **non-woody, noncombustible mulch** and **hardscaping** options.

- Pea gravel, river rock stones, paving stones, and natural rock
- Utilize hardscaping techniques to break up plant continuity and create noncombustible zones. Retaining walls, patios etc.
- Ask your landscaping contractor for examples of previous projects they have done or search around online for creative inspiration



## Plant Selection

There are hundreds of options of fire resistant plants. When searching for plants, make sure the plants have the following characteristics:

- High in moisture content, saponins (soap), pectin and/or latex
- Small in size
- Minimal amounts of volatile oils and resins
- Ability to withstand drought
- Minimal horizontal spread



## Plant Spacing

- Try to remove all plants within the 5 feet of your home
- 2x the space between the plants as their fully grown height
- Create islands of plants with spaced by non combustible materials
- Plant in bunches creating adequate spacing between bunches and surrounding plants

## Trees and Forestry

- Create 6 feet of clearance between the ground and the limbs of trees, being careful to not cut more than the third of live limbs
- Within the intermediate zone (5-30 feet), create 18 feet of spacing between the tree's outermost limbs by removing trees and shrubs that may be creating continuous fuels
- Request a free home risk assessment from a professional at: <http://dnrc.mt.gov/fire>



# Wildfire Evacuation Checklist

Review this information now to prepare yourself for a quick and safe evacuation.

## GO BAG ESSENTIALS:

- ☐ Important documents (bank, IRS, trust, investment, insurance policy, birth certificates, medical records)
- ☐ ATM, credit and debit cards and cash in small bills
- ☐ Medications, Rx numbers and vaccination records for humans and pets
- ☐ Non-perishable food and water for 72 hours
- ☐ Driver's license, passport
- ☐ Computer backup files & passwords
- ☐ Inventory of home contents (consider making a video inventory now, prior to an emergency)
- ☐ Photographs of the exterior of the house and landscape
- ☐ Address book including medical and veterinarian contact information
- ☐ Cell phone charger, car charger and battery packs
- ☐ Personal toiletries
- ☐ Enough clothing for 3-5 days
- ☐ Family heirlooms, photo albums and videos
- ☐ Batteries

## PREPARE FAMILY MEMBERS:

- ☐ If possible, evacuate all family members not essential to preparing the house for wildfire
- ☐ Plan several evacuation routes from your home
- ☐ Designate a safe meeting place and contact person
- ☐ Relay your plans to a contact person
- ☐ Designate a "safe area" where people can wait out a wildfire (i.e., ballfields, irrigated pastures or parking lots)
- ☐ Register for a local emergency notification system such as "reverse 911" or "CodeRED"
- »Ask your county emergency management for details
- »Update personal information and cell phone numbers in databases

## WHAT TO WEAR:

- ☐ Wear only cotton or wool clothes, including long pants, long-sleeved shirt or jacket, a hat, and boots
- ☐ Carry gloves, water to drink, and goggles
- ☐ Keep your cell phone, a flashlight, and portable radio with you at all times
- ☐ Tune in to a local radio station and listen for instructions
- ☐ NIOSH N95 or P100 mask

## PREPARE VEHICLE:

- ☐ Keep your vehicle's gas tank full
- ☐ If you can lift your garage door manually, place vehicle in the garage pointing out with the keys in the ignition and disconnect the electric garage door opener. If not, park in your driveway facing out
- ☐ Roll up the car windows
- ☐ Close the garage door
- ☐ Place essential items in the car
- ☐ If you do not drive, make other arrangements for transportation in advance
- ☐ Close garage door when you leave

## INSIDE THE HOME:

- ☐ Close all interior doors
- ☐ Leave a light on in each room
- ☐ Remove lightweight, non-fire-resistant curtains and other combustible materials from around windows
- ☐ Close fire-resistant drapes, shutters, and blinds
- ☐ Turn off all pilot lights
- ☐ Move overstuffed furniture, such as couches and easy chairs, to the center of the room
- ☐ Close fireplace damper
- ☐ Close or block off any doggie-doors
- ☐ Lock-up firearms or valuables

Be prepared! It will likely be dark, smoky, windy, and hot. There may be airborne burning embers, no power or telephone, and poor water pressure. Remember, there is nothing you own worth your life! Please evacuate immediately when asked.

### OUTSIDE THE HOME:

- ☐ Place combustible patio furniture and barbecues in the house, garage or away from the home
- ☐ Shut off propane at the tank or natural gas at the meter, and clear the area of combustible material
- ☐ Close all exterior vents, doors, and windows
- ☐ Leave gates unlocked
- ☐ Turn on outside lights
- ☐ If available and if there's time, cover windows, attic openings, and vents with plywood that is at least one-half inch thick
- ☐ Ensure that all garden hoses are connected to faucets and turned off
- ☐ Don't leave sprinklers on, or water running; they can affect critical water pressure
- ☐ Ensure that house numbers and street signs are visible and reflective if possible

### PREPARE PETS:

- ☐ Have identification on your animal
  - » Many animal species can be microchipped (Microchipping is a permanent form of identification for your pet)
- ☐ Have veterinary records and medications in one easy-to-find place
  - » Pro Tip: A gallon ziplock bag can keep them dry and catch any pills that may fall out of a container that isn't securely shut
- ☐ Transport food, water and bowls in easy-to-carry, sealed containers
- ☐ Have a buddy system
  - » Can your neighbors help if you are not home during an evacuation?
  - » Do you have a family member or friend that can help house your animals should you need to be evacuated for an extended time? This can be especially helpful for livestock and poultry
- ☐ Dogs and small pets should be securely crated with only one animal per carrier
  - » Normally well-behaved pets can panic and run away during a stressful event; a carrier can keep them safe
- ☐ Remove any non-essential items from carriers or cages, as unsecured items can injure a pet during transport

### PREPARE HORSES, LIVESTOCK & OTHER LARGE ANIMALS:

- ☐ Have a livestock trailer and reliable vehicle for towing the trailer
- ☐ Practice loading your livestock into the trailer and towing it before an emergency

### IF YOU MUST LEAVE ANIMALS BEHIND, NOTIFY YOUR LOCAL ANIMAL SERVICE AGENCY AS SOON AS POSSIBLE

Remember, animals are likely to be stressed due to the smell of smoke, the sounds of sirens or the flashing lights of first responder vehicles. Remain calm and do not wait until the last minute to evacuate.



This checklist was adapted from Wildfire Evacuation Checklist, University of Nevada, Reno Extension publication #FS-06-07. Funding for this project provided in part by a Community Fire Assistance Agreement with the Bureau of Land Management – Nevada State Office in cooperation with University of Nevada, Reno Extension. University of Nevada, Reno is an EEO/AA Institution.