Community Wildfire Protection Plan (CWPP) 2020

FOR
FLATHEAD COUNTY MONTANA

Prepared by:
Flathead County Office of Emergency Services
625 Timberwolf Parkway
Kalispell, Montana 59901
June 2020

APPROVAL AND ADOPTION

The Flathead County Community Wildfire Protection Plan 2020 is hereby approved and adopted by the Flathead County Commissioners on June XX, 2020.

Pamela Holmquist, Chairperson _____

Randy Broedehl, Commissioner _____

Phil Mitchell, Commissioner _____

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_____

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Thank you for assisting us to improve the Flathead County Community Wildfire Protection Plan (CWPP) 2020.

COMMENTS/CORRECTIONS/SUGGESTIONS CONTINUED

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Introduction

EXECUTIVE SUMMARY

The Flathead County Community Wildfire Protection Plan (CWPP) 2020 is an update of the CWPP 2011, that was designed by a local group of stakeholders invested in the wildland fire threats to Flathead County. The group of stakeholders consists of representatives from local fire response agencies; local, state, and federal land management agencies (e.g. U.S. Forest Service, Montana DNRC); private property owners; Northwest Montana Hazardous Fuels program; and community organizations that help with grant funding for fuel reductions. Each of these representatives brings different perspectives regarding strategies to manage and mitigate risk associated with wildland fire.

The stakeholders identified the target audience for the CWPP to be primarily local landowners. The CWPP is a tool for large landowners and land management agencies. It helps identify the wildland fire risk in Flathead County and has recommendations for mitigation projects.

The layout of the CWPP is not intended to be read straight through from front to back. The CWPP is designed for landowners to review the first sections of Wildland Urban Interface and A Closer Look at the Flathead. Landowner Recommendations contains the specific details for each area. The county is divided into 6 areas, the next step is to find the area where the landowner's property is and review the information provided. Following this, the CWPP goes into depth on mitigation strategies for private landowners and large landowners. The intent is to provide the landowners with the information and/or links to make informed decisions on how to prepare for a wildland fire.

In August of 2018, the US Department of Agriculture Forest Service released the Shared Stewardship Strategy as an invitation to individual states to assist with coordinated management of forest lands. The State of Montana responded with the Forest in Focus 2.0 Initiative and committed to sharing this responsibility. The 2019 legislature supported funding to initiate the Good Neighbor Authority program, an agreement (and newly established Department of Natural Resources and Conservation Bureau program) that allows the State of Montana to assist with the administration of timber sales on Forest Service land.

In 2019, Governor Bullock initiated the Montana Forest Action Plan with direction to complete a statewide assessment of forest health and wildfire risk. A cross-disciplinary Forest Action Plan Advisory Council was established with a mission of assessing forest conditions and providing metrics for prioritization of cross-boundary land management projects based on wildfire risk, insect and disease occurrence, and watershed protection. The National Cohesive Wildland Fire Management Strategy (Farm Bill, 2014) continues to provide the framework for much of the work on federal, state, and private lands. It guides fire protection goals of fire adapted communities, resilient landscapes, and safe and effective wildland fire response.

The impact of wildfires on communities across the west is of growing concern. The goal of this Community Wildfire Protection Plan is to provide guidance for action that will ultimately:

- Protect lives
- Protect private property

- Protect critical community infrastructure
- Protect natural resources

To mitigate the effects of wildland fires, strategies to accomplish these goals, all of which are important, include:

- Creation and maintenance of the Home Ignition Zone (HIZ) around homes, outbuildings, and other important infrastructure.
- Treatment of land within and around communities and neighborhoods integrating fuel treatments and Home Ignition Zones to reduce fire risk and intensity.
- Promotion of healthy and resilient forest ecosystems, across all land ownership, that reduces fire intensity and allows for recovery after a fire has passed through.
- Evaluation of subdivision regulations to include multiple access ways and fuel reduction requirements.
- Neighborhood preparedness and community engagement.
- Coordinated prevention and education programs.

It is with this in mind, that the Flathead County Office of Emergency Services and the local interagency community group, FireSafe Flathead, identified a working group to undertake the review and revision of the Community Wildfire Protection Plan 2011 for Flathead County.

The CWPP 2020 provides important updates including:

- Refined definition of the Wildland Urban Interface (WUI)
- Updated WUI map
- Fire Risk map (Flame Length Map)
- Flathead County divided into six geographic areas with typical fire behavior
- Information, recommendations, and maps for each of the 6 areas to help landowners protect their property
- Evacuation plan
- Expanded mitigation section

The FireSafe Flathead will review the CWPP yearly and identify accomplishments and if there is a need to update any aspects of the CWPP.

INTRODUCTION

This is the second update to the Flathead County Community Wildfire Protection Plan (CWPP) first written in 2005 and updated in 2011. It is an opportunity to review the original strategy, evaluate the progress achieved, modify the strategy if needed, and identify and prioritize the work still to be done. This process was developed in response to the Healthy Forest Restoration Act (HFRA).

An objective of HFRA is to increase the resources available to, and the capacity of, the US Department of Agriculture and the US Department of the Interior to conduct hazardous fuels reduction projects on National Forest lands. The aim is to protect communities, watersheds, and certain other at-risk lands from catastrophic wildfire. It is also to address threats to forest and rangeland health (including

catastrophic wildfire) across the landscape. For more information on HFRA see the Related Plans and Documents section of this document.

The Flathead County Community Wildfire Protection Plan (CWPP) is a living document that will be updated as needed. The purpose of a CWPP is to continually improve wildland fire protection through collaborative identification, implementation, and monitoring of mitigation projects, programs, and policies. The resource Preparing a Community Wildfire Protection Plan was used for guidance in writing and revising the CWPP. A link to this resource can be found in the Resources section of this document. Work that has been done to accomplish the CWPP 2005 and CWPP 2011 is described in the Related Plans and Documents section of this document.

With many vegetation types in Flathead County, it is not a matter of ***if*** a wildfire will impact your home, but ***when***. Wildfires are a natural part of Flathead County's varied ecosystems. Many Flathead County communities are located in areas that were historically prone to frequent natural wildfires.

Living in the wildland requires more self-reliance than living in urban areas. Wildfire does not recognize property lines. If fire risk is effectively reduced for a property, it may help save a neighbor's home and vice versa. Wildfires can impact entire communities. Linked Home Ignition Zones (HIZ) and fuel reduction projects are a key community protection strategy. It may take longer for a fire engine to reach an area, and a small or rural fire department may be overwhelmed during an escalating wildfire. Planning ahead and taking actions to reduce fire hazards can increase safety and help protect property. As more people choose to live in areas prone to wildfire, additional homes and lives are potentially threatened every year.

Montanans have a long and proud tradition of individual freedom and private property rights, but with those rights and freedoms comes responsibility. The Home Ignition Zone is largely owned by the homeowner in residential development. That means the responsibility for reducing vulnerability to wildfire rests with the homeowner. Thus, Wildland Urban Interface (WUI) fire disasters cannot be prevented without homeowners actively creating and maintaining Home Ignition Zones with low home ignition potential.

FIRESAFE FLATHEAD

FireSafe Flathead is an inclusive group of individuals, organizations, businesses, agencies, and wildland fire professionals working to support the creation and maintenance of fire-adapted communities and resilient landscapes in the Flathead area. FireSafe Flathead provides the primary forum for public involvement in evaluating and updating the Community Wildfire Protection Plan. It plays an integral role in recommending collaborative projects within the county.

Current participants include representatives from:

- Concerned Landowners and Residents
- Flathead County Fire Agencies
- Flathead County Office of Emergency Services
- Forest Industry Representatives
- Glacier National Park
- Homeowners' Associations

- Independent Forest Contractors
- Montana Department of Natural Resources and Conservation
- Natural Resources and Conservation Service
- Northwest Montana Hazardous Fuels Program
- USDA Forest Service, Flathead National Forest

Other individuals and organizations are invited to join. FireSafe Flathead maintains a website (www.firesafeflathead.com). This site contains meeting minutes, announcements of upcoming events, information on fire prevention training, education, and technical resources in Northwest Montana. Collaboration with FireSafe Flathead and its interagency representation is the preferred way to propose a treatment.

FireSafe Flathead has been very successful in its outreach and educational efforts by raising public awareness of wildfire risk and recommending actions that may reduce the risk of loss of life and/or property. FireSafe Flathead participants have clearly identified the need to address the fire risk facing individual homes and sometimes entire subdivisions. Homeowners working together in a collaborative effort are much more effective than an individual homeowner working alone. Incorporating multiple properties can create a cost savings and have a greater impact on fire intensity.

WILDLAND URBAN INTERFACE (WUI)

Flathead County defines the Wildland Urban Interface (WUI) as:

> *"The Wildland Urban Interface is any location where a fire can readily spread from vegetation (wildland fuels) to manmade structures (urban fuels). This is generally measured geographically as a 1.5-mile zone around areas with structures (e.g. homes, businesses, and outbuildings); public works facilities (e.g. drinking water and sewer); and critical infrastructure (e.g. power lines, gas lines, pipelines, bridges, railways, emergency communication sites, and watersheds)."*

Flathead County also classifies community escape routes, evacuation routes, and Home Ignition Zones as part of the WUI.

A 1.5-mile buffer was used to create the WUI map because the vast timber stands in Flathead County are prone to single tree and/or group torching. These timber stands may experience stand replacement fires which primarily kill most or all of the trees in the stand and produce large quantities of embers. Embers may travel up to a mile or more, land on receptive fuels (including structures), and start new fires. It is for this reason that the WUI is clearly defined and collaborative efforts focus on fuels treatments and community education in these areas. More on embers may be found in the Recommended Projects section.

The perception of fire is often of "forest fires," while the reality is that *all* wildland fuels burn including grass, brush, and timber. Lighter grass and brush fuel types often result in fast-moving fires. For this reason, and with support from firefighting personnel, the newly defined WUI layer includes the valley bottom areas that were excluded in previous versions of the Community Wildfire Protection Plan.

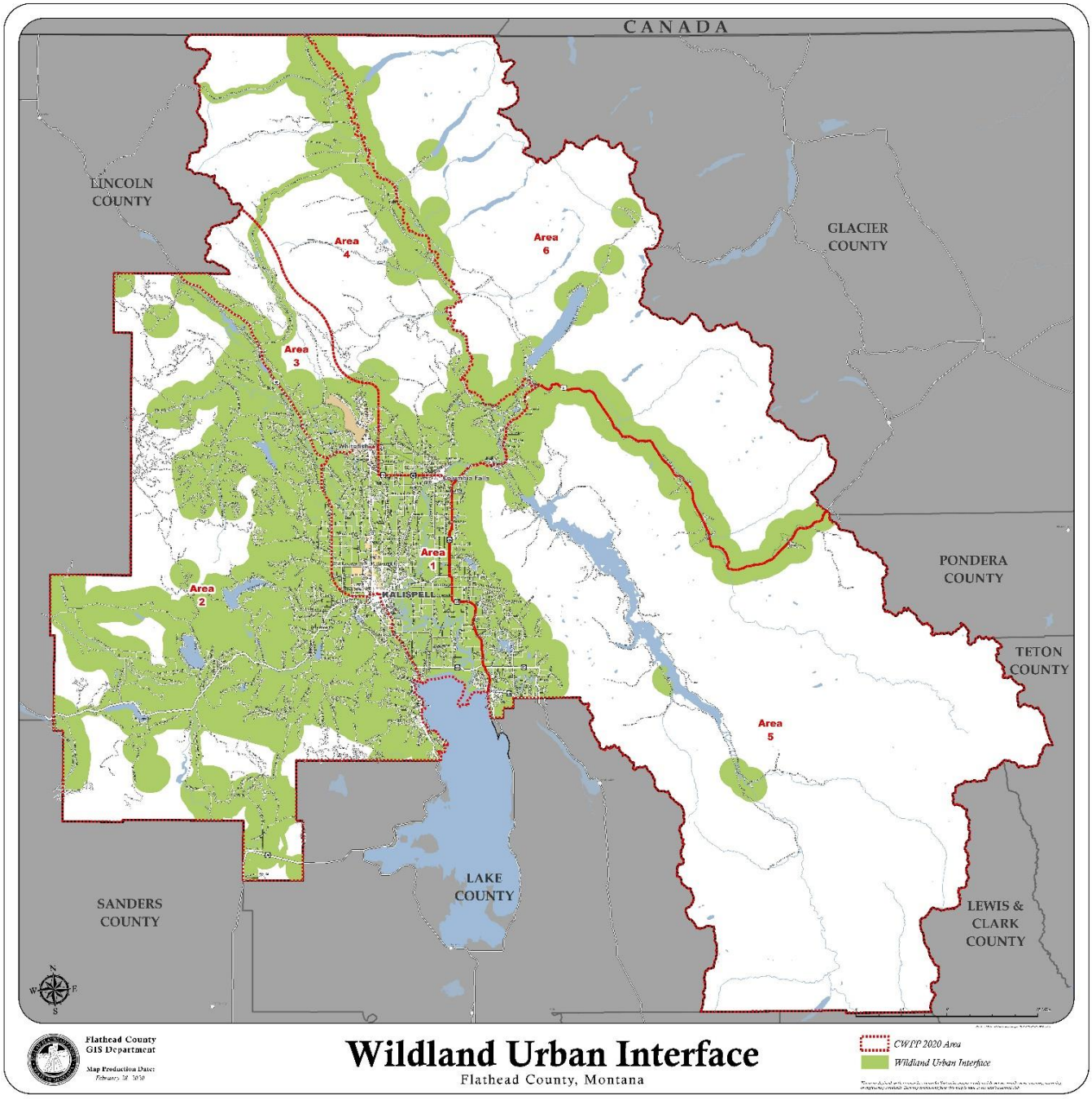
To produce the WUI map for Flathead County, the State of Montana Cadastral and Computer Assisted Mass Appraisal (CAMA) data were queried for individual parcels with structures. Parcels that met the structure criteria, along with identified critical facilities and infrastructure (power lines, railways, and highway corridors), were then mapped with a 1.5-mile buffer, thus defining the WUI boundary. The resulting GIS product is the new WUI Map for Flathead County (see figure 1).

The WUI zone has expanded with population growth across the county during the past 20 years. The risk to property and life has increased as well. Wildfire scenarios impacting people are occurring in Flathead County and will continue to increase as more people seek the experience of living in a wilderness setting.

The Wildland Urban Interface area in the WUI Map is a large area that includes most of the private land in the county. The map shows the need for private landowners and agencies to work together. Coordination is needed across all landownership for projects such as fuel treatment, which reduces fire intensity and increases the health and resiliency of forest ecosystems, as well as work on Home Ignition Zones (HIZ).

Wildland fires are becoming more complicated due to the buildup of fuels and the increasing number of homes in the interface. Coordinating fuels work with adjacent landowners, whether private or agency, enhances the work on all properties, and increases public safety. Firefighters can be more effective in areas with fuels treatments.

Figure 1
Map of Flathead County Wildland Urban Interface (WUI)



Source: Flathead County GIS Department. *Wildland Urban Interface*. Map. Flathead County. February 2020

A Closer Look at Flathead County

FLATHEAD COUNTY IN 2020

Flathead County is the third most populated and second fastest growing county in Montana. According to Flathead County's official website, the county's population increases by 40% June through August. According to the 2010 Census the population of Flathead County is 90,928. The population is clustered near the three incorporated communities and a few smaller unincorporated towns primarily located in the valley bottoms, along the rivers or adjacent to lakes. The 2010 populations for the three incorporated cities were Kalispell (19,927); Whitefish (6,357); and Columbia Falls (4,688).

The Community Wildfire Protection Plan 2020 addresses the expansive and diverse land base of Flathead County along with its growing population.

Flathead County encompasses 5,088 square miles of land, roughly the size of Connecticut. Approximately 94% of the land is managed for specific purposes: as a national park, as federal or state forest land, as wilderness, as agricultural production, or as corporate timber land. This results in development being confined to the remaining 6% of the area (see table 1).

The largest landowner in Flathead County is the US Forest Service, Flathead National Forest. Any effective and sustainable wildland fire and fuel hazard mitigation plan requires collaboration between private landowners and federal land management agencies. While most of the population for Flathead County is concentrated in the central valley floor on private land, growth patterns show an increase in population within the Wildland Urban Interface (WUI). Developed areas are often positioned adjacent to state or federally owned forest lands.

Table 1
Flathead County Land Ownership

Flathead County Land Ownership			
Owner	**Acres**	**Square Miles**	**Percentage**
US Forest Service	1,760,584	2,750.9	52.4%
National Park Service	619,612	968.1	18.4%
Private*	415,237	648.8	12.3%
Industrial Timber Lands*	297,580	464.9	8.8%
State Trust Lands	130,239	203.5	3.9%
Water	94,942	148.3	2.8%
Tribal Land	28,641	44.8	0.9%
US Fish & Wildlife Service	11,472	17.9	0.3%
Other State Land	2,889	4.5	0.1%
Other Federal Land	292	0.5	0.0%
Private Conservation	168	0.3	0.0%
Local Government	155	0.2	0.0%
Totals	**3,361,810**	**5,252.8**	**100%**

*Industrial Timber Lands and Private Lands reflect some timber lands categorized as private in this table.
Source: Montana Natural Resource Information System.

An increasing number of land ownership configurations exist in which private lands, structures, and entire subdivisions are adjacent to lands at risk for wildland fire events. This ownership matrix requires effective; cross-boundary strategies for targeted fuel treatment prescriptions, which meet the management objectives of the agency, primarily US Forest Service and the MT-DNRC. It should be noted that cross-boundary approaches are mutually beneficial, as the number of human-caused fires increases with development. Wildland fires burn from private to government agency land just as they do from government agency to private lands.

WILDFIRE RESPONSE AND RESOURCES

Flathead County and all fire departments use the annually updated Cooperative Wildfire Management Plan as a framework to provide standard operating procedures and to define responsibilities for wildland fire management in conjunction with agencies in Flathead County. The plan includes: Mutual AID, Wildland Qualifications, Duties, Preparedness Levels, Severity (Extreme Fire Danger), Information (coordinated joint press releases), Communications, Aviation, Training, Personnel and Equipment, Fire Prevention and Education, and Reimbursement. This plan enables all partners to coordinate efforts on all wildland fire management activities.

Flathead County has 17 Rural Fire Districts, 3 Municipal Fire Departments, 2 Fire Service Areas (FSA), Glacier Park International Airport Fire (GPIA), and Glacier National Park Structure Fire Department.

The 3 Municipal Fire Departments, Kalispell Fire, Whitefish Fire, and Columbia Falls, as well as Glacier Park International Airport Fire and Evergreen Rural Fire have sole jurisdiction of their areas.

The 16 other rural fire districts have some or all of their district in dual jurisdiction with MT-DNRC for wildland fire. Dual jurisdiction is when the fire district and MT-DNRC each have jurisdiction for wildland fire equally and work together on wildland fire.

The Flathead County FSA and the Whitefish FSA both contract fire resources to provide the fire response in their FSAs. Flathead County FSA has responsibility for homes and 100 feet around them. It is not responsible for the wildland fire response to the FSA. Most of the Whitefish FSA includes homes and 100 feet around the homes. Whitefish FSA has sole jurisdiction around some of the area around Whitefish Stage Road.

With the dual jurisdiction with MT-DNRC, U.S. Forest Service, and rural fire departments on many lands in Flathead County, it is important that all departments and agencies maintain and train for cooperative interagency response to fires.

Flathead County has a high degree of potential for extended fire seasons – ranging from March through November. Rural fire districts, municipal fire departments, and fire service areas provide fire and emergency services throughout the county. Depending upon wildfire size, location, available resources, and other factors, Flathead County coordinates and works effectively with the Montana Department of Natural Resources and Conservation (MT-DNRC); Glacier National Park; Flathead National Forest; Kootenai National Forest; the Confederated Salish and Kootenai Tribes; the Blackfeet Nation; surrounding counties including Glacier, Lake, Lincoln, and Sanders, and several Canadian provinces. Flathead County also participates in the Montana Mutual Aid Program.

Planning and implementation of collaborative projects, whether undertaking fuels treatments, community outreach, or suppression operations, is instrumental for success. Wildfire knows no boundaries and it is imperative that partners work together to accomplish mutually beneficial goals.

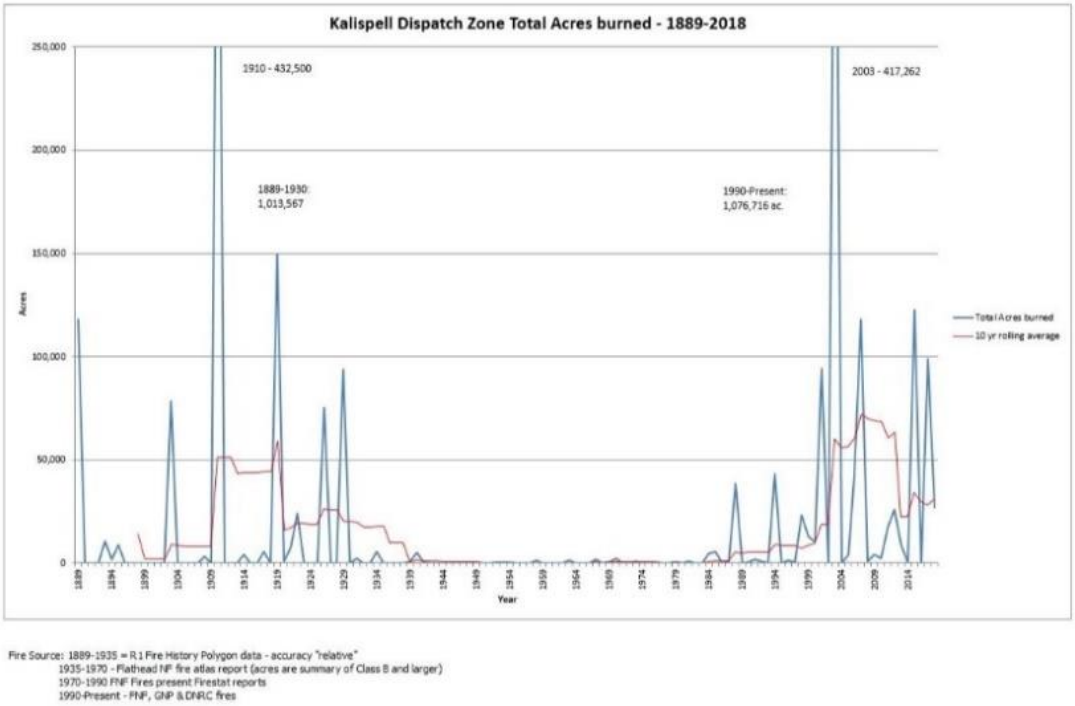
FIRE HISTORY

The fire history of Flathead County has been characterized by periods of significant acreage being burned, interspersed with periods of relatively few acres burning (see figure 2). In the late 1800s through 1930, according to historic documents that the Flathead National Forest has reviewed, approximately 1 million acres burned across all land ownership in Flathead County.

In comparison, the years between 1930 to the late 1980s were interspersed with periods of relatively few acres burned. There were roughly 60,000 acres burned during this time. These decades were characterized by cooler and wetter conditions. Agencies were also boosting their firefighting capabilities.

Looking at the same records from the Flathead National Forest, the total acreage burned once again soared to 1.1 million acres between 1990 to 2018.

Figure 2
Kalispell Dispatch Zone Total Acres Burned 1889-2018

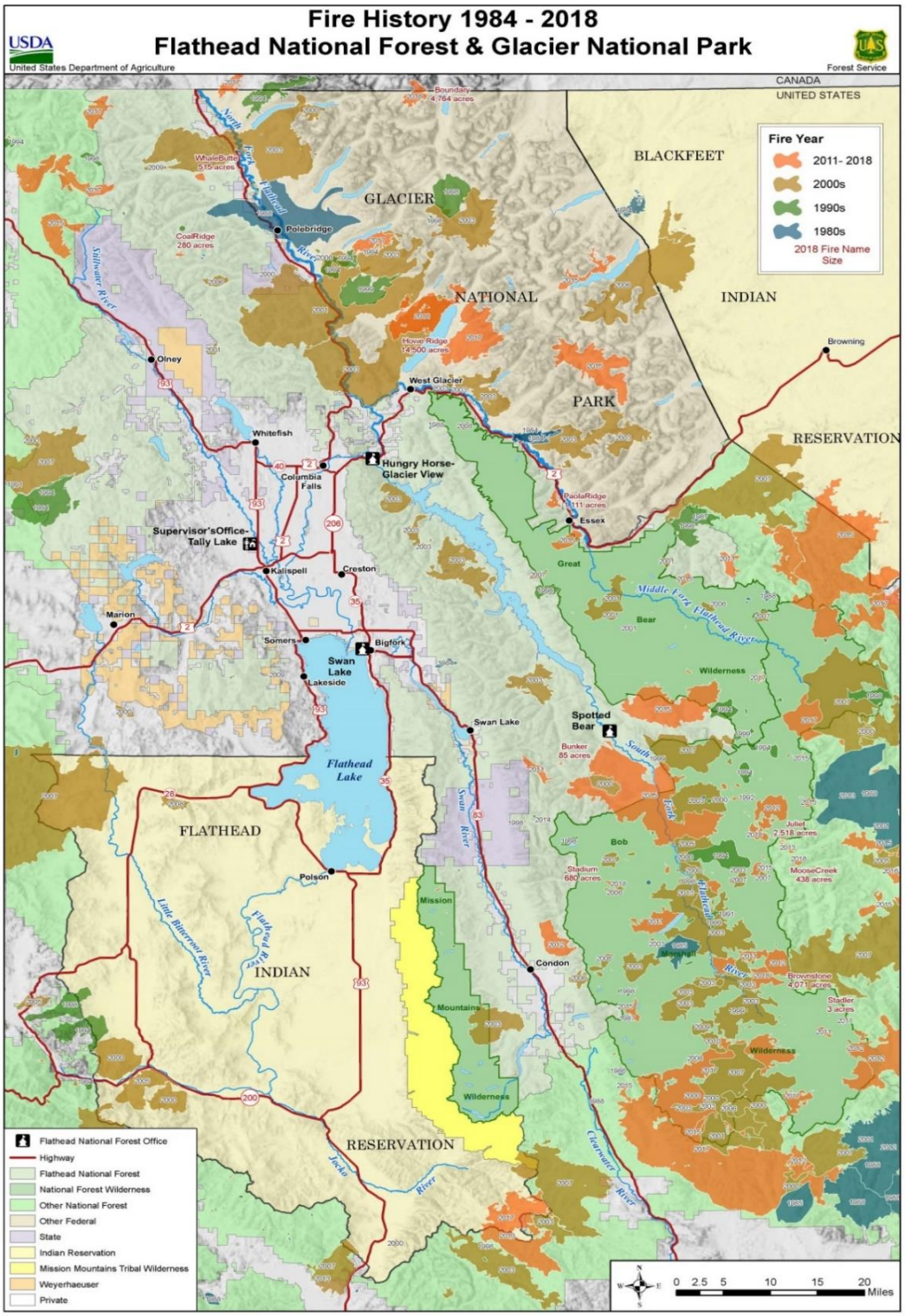


Source: Flathead National Forest. *Kalispell Dispatch Zone Total Acres Burned 1889-2018.*

Northwest Montana and most of Flathead County has a fire regime classified as mixed to high severity, which means that larger fires can be high intensity and/or stand replacement fires. This type of fire burns everything and requires time to regenerate vegetation.

Through the years 1984 to 2018, fires in the Flathead National Forest and Glacier National Park burned in areas that had burned in the past. Looking at the Fire History map (see figure 3) there is a lot of overlapping of fires. Most fires move from the southwest to the northeast because of the predominant southwest wind in the summer.

Figure 3
Fire History 1984-2018 Flathead National Forest and Glacier National Park



Source: United States Forest Service. *Fire History 1984-2018 Flathead National Forest and Glacier National Park*. Map. United States Department of Agriculture.

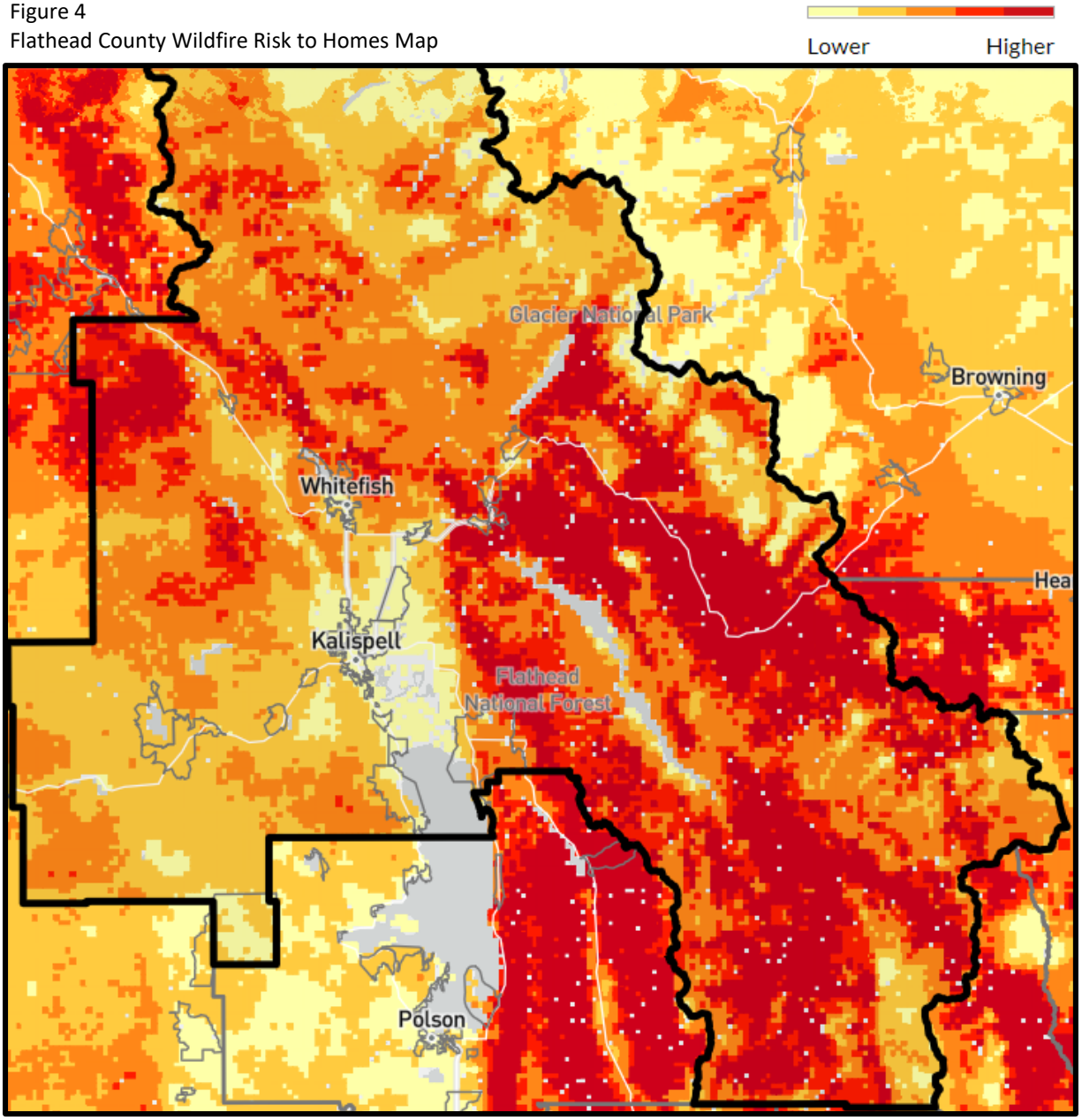
FIRE RISK

There are many significant factors driving wildfire risk that are noncontrollable. These are notably topography, climate conditions, historical land and fire management, lightning-caused ignitions, and fire weather.

However, the most critical factor when evaluating wildfire risk is not how fires start or how many might occur, but rather the ability to identify the probability of wildfire risk for an individual property. There will always be homes constructed in rural, wildland areas, and the associated risk tends to be acknowledged by homeowners in those particular locations. However, the unprecedented expansion of urban areas over the past 50 years has greatly increased the opportunity for homes to be damaged by wildfire activity due to their location near high wildfire risk areas.

One way to evaluate the fire risk at a location is to look at the Flathead County Wildfire Risk to Homes Map (see figure 4). This map measures wildfire intensity levels in Flathead County. Wildfire intensity is a measure of the energy expected from a wildfire. Intensity is largely a condition of the physical landscape (topography) and vegetative fuel available to burn. For example, a crown fire on a forested hillside can produce a greater wildfire intensity than grasses on flat ground. While wildfire intensity is technically measured in units of heat transfer per length of fire perimeter, it is more easily observed and expressed in terms of flame length. *Wildfire Risk to Communities* uses wildfire intensities calculated in fire behavior modeling simulations. This map is intended for general planning purposes but not for specific individual structure assessment or site specific needs for fuel treatment around homes. This map is available online for further exploration at https://wildfirerisk.org/explore/0/30/30029/.

Figure 4
Flathead County Wildfire Risk to Homes Map



Source: Scott, Joe H.; Gilbertson-Day, Julie W.; Moran, Christopher; Dillon, Gregory K.; Short, Karen C.; Vogler, Kevin C. 2020. Wildfire Risk to Communities: Spatial datasets of landscape-wide wildfire risk components for the United States. Fort Collins, CO: Forest Service Research Data Archive. https://doi.org/10.2737/RDS-2020-0016

EVACUATION

Getting people out of harm's way in a fire is critical. In the unfortunate event that residents must evacuate their homes due to wildfire there are important things to know about evacuation. These include how to make an evacuation plan, when to leave, and how an evacuation progresses. The Ready, Set, Go! program is a resource to consult when considering preparedness for wildfire evacuation.

DEVELOP A FAMILY EVACUATION PLAN

A Family Evacuation Plan should be simple enough to be followed when under stress. It should be detailed enough to cover these key elements and be understood by everyone.

Identify evacuation routes with at least two ways out of the neighborhood.

Post 3 inch reflective numbers on your driveway.

Develop a Family Communication Plan to plan how to stay in contact with family as well as how to send and receive information.

Make a list of what should be taken in the evacuation. List important documents and valuables and place them where they are easily accessible. Have containers ready to pack items. Items to include are:

1. Personal:
    - Cell Phone
    - Wallet
    - Important phone numbers/address book
    - Will
    - Living Will
    - Power of Attorney
    - Medicines and Prescriptions
2. Identification:
    - Driver's License
    - Passport
    - Social Security Card
3. Financial Info:
    - Cash/Checks
    - Debit/Credit Card
    - Account Numbers for Banks, Utilities, and Services
    - Contact Information for Banks, Utilities, and Services
    - Insurance Policies
    - Contracts
    - Deeds
    - Stock Information
    - Bond Information
    - Tax Returns
4. Inventory of household goods (pictures are best)
5. Photo albums and keepsakes

6. External hard drives
7. Family Records:
    - Birth Certificates
    - Marriage Certificate
    - Death Certificates
    - Immunization Records

Identify a family meeting place. A family meeting place should be:

1. A temporary place to assemble before moving on to an evacuation center.
2. Safely outside of the evacuation area.
3. Away from emergency response activities.
4. Easily traveled to by family members.

Remember family members may be coming from different locations such as work, school, appointments, as well as home. If unable to reach home, all family members must have a place to meet and regroup.

Special consideration and planning is strongly recommended for the following:

1. Children and infants
2. Elderly
3. Dependent adults
4. Persons with special needs (such as medical or functional needs)
5. Pets, livestock, and horses

Work with neighbors to plan and develop the assistance that may be needed during an evacuation. Identify those living alone or those needing special assistance and plan today what they will need to evacuate during an emergency.

WHEN TO EVACUATE

Be aware of an approaching wildfire. Evacuate when you become aware of an approaching wildfire, you feel threatened by a wildfire, or when public safety officials advise you to leave the area. Leave as soon as evacuation is recommended by law or fire officials to avoid being caught in fire, smoke, or road congestion. If they advise to leave, don't hesitate. Evacuating the wildland fire area early helps firefighters keep roads clear of congestion and lets them move more freely to do their job.

EVACUATION NOTIFICATIONS

Residents will be advised of potential evacuations as early as possible. Take the initiative to stay informed and be aware of nearby wildfires. The InciWeb website is a good source of information regarding wildfires in the area. Listen to the radio/TV for announcements from law enforcement and emergency personnel. The Sheriff may send messages with IPAWS, the Integrated Public Alert and Warning System, to send alerts to cell phones and land lines in the area. The American Red Cross has an Emergency app that can be downloaded onto a phone. This has information about alerts as well as tools to help people after an emergency.

USE OF 911

Dial 911 for emergencies only. The 911 line is not for informational purposes. Please do not tie up this line seeking information. For information on evacuations or other emergencies call the Flathead County Office of Emergency Services Citizen Information Line 406-758-2111.

HOW TO EVACUATE

Law enforcement agencies are responsible for enforcing an evacuation order. Follow their directions promptly and exactly. They are not available to help evacuate people, pets, or livestock. Follow the Family Evacuation Plan that was created. When outside, wear protective clothing including sturdy shoes, cotton or woolen clothing, long pants, long sleeved shirt, gloves, and a handkerchief to protect the face. Consult the "Home Evacuation Checklist" for suggestions that will help protect a home during a wildfire evacuation. These include leaving hoses hooked up to the home, turning off propane tanks, and propping a ladder up to the roof for use by firefighters.

The evacuation routes determined by authorities will be dependent upon many factors, including which way the wildfire is moving. When heavy smoke reduces visibility, movement may be restricted only to escorted convoys. Residents may be directed to a temporary assembly place outside the area to await information and directions to an evacuation center. Evacuation center locations will be determined by public safety officials at the time of the evacuation and will be based upon the location of the wildfire, evacuation routes used, and numbers of evacuees anticipated.

EVACUATION STAGES

1. Evacuation Warning – Good probability of the need to evacuate. It is recommended to move persons requiring extraordinary care, large mobile property, and livestock (if feasible). This phase will be implemented under the following conditions: active fire in the area that could affect the area determined by the Sheriff.

2. Evacuation Order –The Sheriff has determined that it is in the best interest of the citizens to be evacuated. Access to the affected area is prohibited to anyone not authorized by the Sheriff or a designee. This phase will be implemented under the following conditions: fire would impact evacuation routes within 8 to 12 hours.

3. Shelter in Place - This is not used in wildland fire unless HIZ work and Fuels work has been completed. It means selecting an interior room or rooms within your facility, or ones with few or no windows, and taking refuge there. In many cases, local authorities will issue advice to shelter-in-place via TV or radio.

   Close exterior doors and windows, air vents, and fireplace dampers. Turn outside lights on. Turn off all fans, heating and air conditioning systems, and clothes dryers. Some systems automatically provide for exchange of inside air with outside air.

4. Maintenance Phase – (Evacuation Order in effect) Perimeter roadblocks are maintained, and evacuated area(s) are patrolled 24 hours a day. Regular incident status briefings are provided for evacuees at pre-designated sites. Limited access for evacuees to return for specified periods

may be allowed if conditions and responder resources permit and if directed by the Incident Commander, in conjunction with the County Sheriff.

5. Recovery Phase - (Evacuation Order is Lifted) Evacuees are allowed to return only after a fire is no longer a danger to the area and hazards have been mitigated, such as power lines and hazard trees. This is determined by the response agencies and the Sheriff. During this phase, general public access to certain areas will be restricted, as determined by the Incident Commander and the County Sheriff. Local officials will follow a Re-Entry Plan in working towards getting residents back into their neighborhood. Re-entry will take place when it is safe for residents, emergency personnel, and utility workers. Routes will be open and accessible. Utilities must be repaired and in service; sewer and sanitation must be repaired; running water and essential services must be available. These things take time. BE PATIENT. The safety of residents and the safety of emergency service personnel are the priority.

RECOMMENDATIONS FOR RETURNING HOME

- Be alert for downed power lines and other hazards.
- Check propane tanks, regulators, and lines before turning gas back on.
- Check your residence carefully for hidden embers or smoldering fires.
- Contact your insurance company if you have suffered loss or damage.
- Contact the American Red Cross of Montana 1-800-272-6668.

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Landowner Recommendations

The FireSafe Flathead Community Wildfire Protection Plan working group determined that prioritization and implementation of future projects in Flathead County could be more effectively accomplished if planners, policy makers, current and prospective landowners, and firefighters had updated and more complete information about specific areas of the county.

Rather than address the county as a whole, six areas were created by considering how wildfires have burned on the landscape over the past 50 years (see figure 5). By dividing the areas according to similar burn patterns, using major travel routes and topography, it was possible to set recommended actions for the types of treatments that would be most effective in reducing the risk of catastrophic fires.

Recommended projects and actions that address the mitigation goals of the Flathead County CWPP are included at the end of each area. The funding mechanism for DNRC, USFS, NRCS, and GNP is directed toward projects that show collaboration among private landowners and organizations, counties, tribes, state, and federal partners.

In addition to targeted fuel reduction plans for prioritized areas, it is also important to note that continued, on-going efforts toward homeowner education using programs such as Firewise USA are key to addressing risk reduction in mixed or multi-ownership settings. This is a critical strategy for protecting communities from large-scale fires that increasingly threaten homes across the county.

FUELS REDUCTION PROGRAMS

Private landowners have an opportunity to manage fuels to reduce fire intensity. Local cost-share programs are available to offset the expense of this work. Nationally, fuels-reduction work on adjacent properties has shown to be useful.

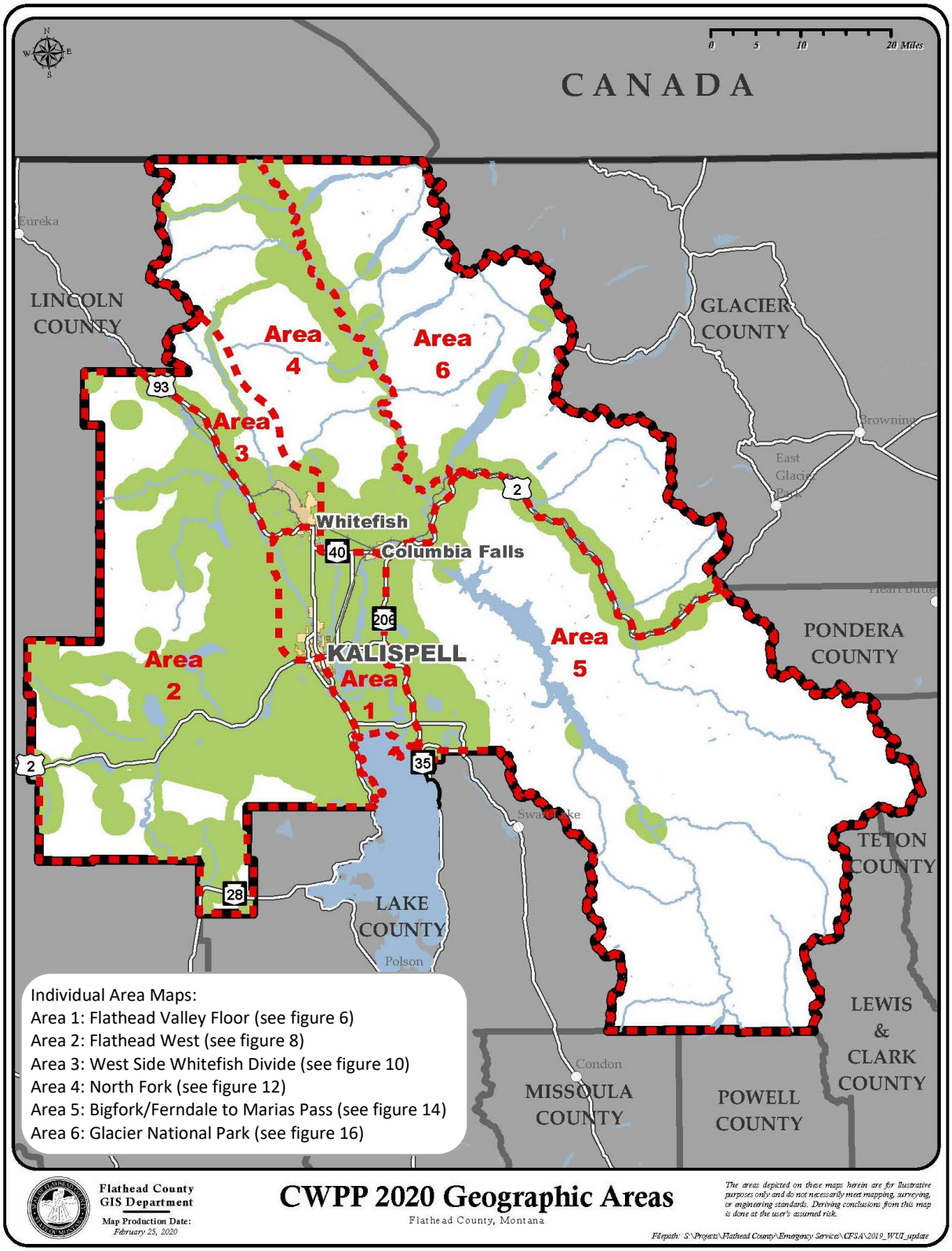
Landowners may contact Flathead County program providers to determine whether they are currently eligible for funding.

- Northwest Montana Hazardous Fuels Program—(406) 892-8155
- USDA Natural Resources Conservation Service (NRCS)—(406) 752-4242
- Montana Department of Natural Resources & Conservation (DNRC) —(406) 751-2246

FireSafe Flathead has become the central point for project collaboration. Monthly meetings bring representation from the Flathead National Forest, Flathead County, Montana DNRC, cost-share partners, fire departments, and homeowner associations. Efforts are being made to better coordinate fuels-reduction and community engagement.

The demand for cost-share funding for hazardous fuels reduction on private properties has recently outstripped the financial assistance available, raising the likelihood that funders and grant-administrators will have to strategically prioritize and target treatment activities.

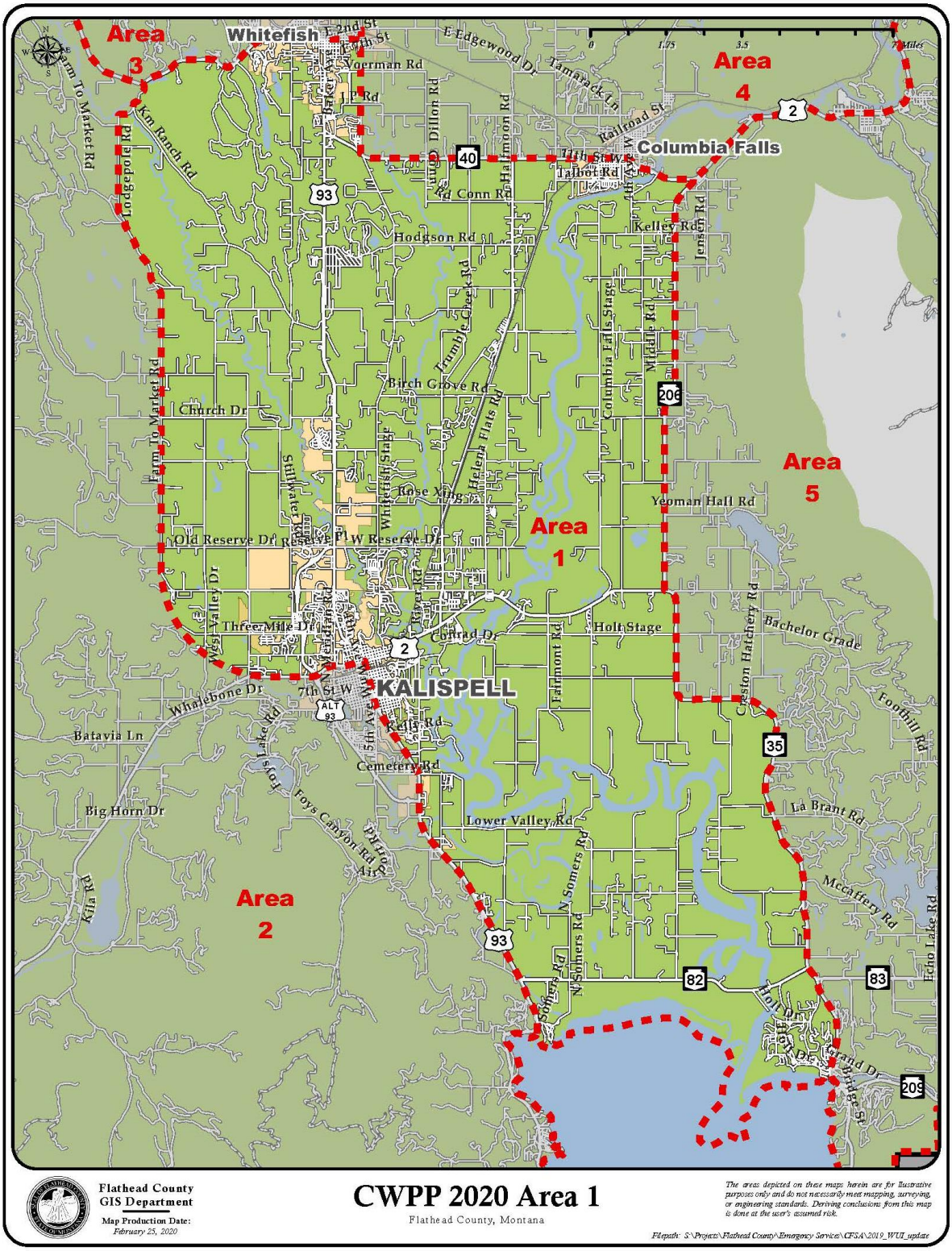
Figure 5
Overview Map of Flathead County CWPP 2020 Areas 1-6



Source: Flathead County GIS Department. *CWPP 2020 Geographic Areas*. Map. Flathead County. February 2020.

AREA 1 - FLATHEAD VALLEY FLOOR

Figure 6
Map of CWPP 2020 Area 1 - Flathead Valley Floor



Source: Flathead County GIS Department. *CWPP 2020 Area 1*. Map. Flathead County. February 2020

Area 1 Description

Once heavily forested, the Valley Floor Area still has scattered pockets of timber. The dominant land use is residential subdivisions. This is intermixed with commercial areas, farm, and ranch lands. Uncultivated vegetation is mostly open grassland, brush, and pockets of timber.

Area 1 Watersheds

- Flathead River
- Flathead Lake
- Stillwater River
- Whitefish River

Figure 7
Flathead Valley Floor

Source: Chute, Lincoln. Flathead Valley Floor. 2020.JPEG

Area 1 Communities

- Bigfork
- Columbia Falls (south of US Hwy 2)
- Creston
- Evergreen
- Kalispell
- Somers
- Whitefish

Area 1 Infrastructure

- Homes and Businesses
- Highways US 2, US 93, MT 40, MT 206, and MT 35 all carry substantial local and through traffic loads – business, freight, and (particularly during the summer) visitors/tourists
- Bonneville Power Administration transmission lines
- Rail line from Columbia Falls to Kalispell freight only
- Numerous cell towers and other electronic sites
- Two hospitals (Kalispell and Whitefish)
- Numerous schools
- Drinking water and sewage treatment facilities
- Two airports (one commercial, one general aviation)
- Many large commercial, industrial, and recreational facilities

Area 1 Community Values at Risk

- US HWY 93 North Corridor Happy Valley Area
    - Access for residents, tourists, commercial transportation, and emergency services

Area 1 Land Ownership

- Private land: The most common use for the area is small lots and subdivisions. There are areas of commercial business along main roads.
- MT-DNRC: There are some large timberland parcels of state lands along Farm to Market Road and KM Ranch Road.
- US Forest Service: There are some small parcels of Forest Service land along Flathead River.

- Montana Fish, Wildlife & Parks: These lands are primarily managed as recreation areas and/or boat launch sites within the valley floor.
- US Fish & Wildlife Service: These lands are waterfowl production areas north of Flathead Lake.
- Flathead County Park: These lands are primarily managed as recreation areas within the valley floor.

Area 1 Fire Behavior
The valley floor has the highest frequency of human-caused fires in the county. Response times are short because numerous local fire departments (mostly volunteer) and other firefighting resources and equipment are located in this area.

Area 1 Factors Influencing Fire Behavior
Most fires move quickly through the widespread fine fuels (grasses, brush, and pockets of timber). Fires in this area usually affect smaller acreages due to the ready availability of firefighting resources and quick response times. Even so, because of the fast-burning fuels that characterize the area, homes have been lost in the short time before fire responders arrived.

Area 1 Most Recent Large Fire
See figure 3 for a map of fires in Flathead County from 1984-2018.

- 2015 Evergreen Fire: 8 Acres; wind driven fire; 2 homes and 7 sheds lost

Area 1 Fire Organizations with Jurisdictional Responsibility

- Bad Rock Rural Fire District
- Bigfork Fire Department
- Columbia Falls City Department
- Columbia Falls Rural Fire District
- Creston Rural Fire District
- Evergreen Rural Fire District
- Kalispell Fire Department
- MT-DNRC
- Somers Rural Fire District
- South Kalispell Rural Fire Department
- West Valley Rural Fire District
- Whitefish City Fire
- Whitefish Fire Service Area

Area 1 Recommended Actions

Private Landowner Checklist

- ☐ Create and maintain Home Ignition Zone (HIZ) for all buildings.
- ☐ Modify vegetation by reducing grasses, shrubs, and trees. The more adjacent properties that have fuels reduction work done on them, the greater the safety of the entire neighborhood. Working in connection with neighbors can benefit all parties. Connecting properties together that have fuels work done can improve the safety of all.
- ☐ Manage larger tracts of timberland to promote healthy forest ecosystems to reduce fire intensity.
- ☐ Maintain driveways so that large emergency response vehicles can access the entrance and drive to the home. It is preferred that there is room for the truck to turn around.
- ☐ Post 3-inch reflective home address numbers at the end of your driveway.
- ☐ Prepare a Family Evacuation Plan.

MT-DNRC

1. Evaluate MT-DNRC land to determine the level of wildfire risk present to MT-DNRC land and adjacent properties.
2. Treat those lands appropriately to protect adjacent owners. This is particularly important along KM Ranch Road and Kuhns Wildlife Management Area.
3. Provide public information and fire prevention campaigns to residents and landowners. Provide information on status of fire danger and any current wildfires in the area.

US Forest Service

1. Evaluate US Forest Service land to determine the level of wildfire risk present to US Forest Service land and adjacent properties.
2. Identify and prioritize areas in the interface that can be treated.
3. Utilize thinning, prescribed fire, and other fuel reduction techniques along the edge of the Wildland Urban Interface and where needed.
4. Provide public information and fire prevention campaigns to residents and landowners. Provide information on status of fire danger and any current wildfires in the area.
5. Provide and communicate the Flathead National Forest Integrated Vegetation Management Plan to the public (see figure 24).

US Fish & Wildlife Service

1. Evaluate US Fish & Wildlife Service land to determine the level of wildfire risk present to US Fish & Wildlife Service property and adjacent properties.
2. Prepare fuels reduction projects to promote healthy land ecosystems and reduce fire intensity.

Montana Fish, Wildlife & Parks

1. Evaluate Montana Fish Wildlife & Parks land to determine the level of wildfire risk present to Montana Fish Wildlife & Parks property and adjacent properties.
2. Prepare fuels reduction projects to promote healthy land ecosystems and reduce fire intensity.

Flathead County Parks

1. Evaluate Flathead County Parks land to determine the level of wildfire risk present to Flathead County Parks property and adjacent properties.
2. Prepare fuels reduction projects and maintenance plans to promote healthy land ecosystems and reduce fire intensity.

Flathead County Fire Warden/Fire Service Area Manager

1. Provide public information and mitigation recommendations to residents and landowners.
2. Evaluate Flathead County owned land to determine the level of wildfire risk present to Flathead County property and adjacent properties.
3. Assist with fuels reduction projects on county land to promote healthy land ecosystems and reduce fire intensity.

Area 1 Focus Projects

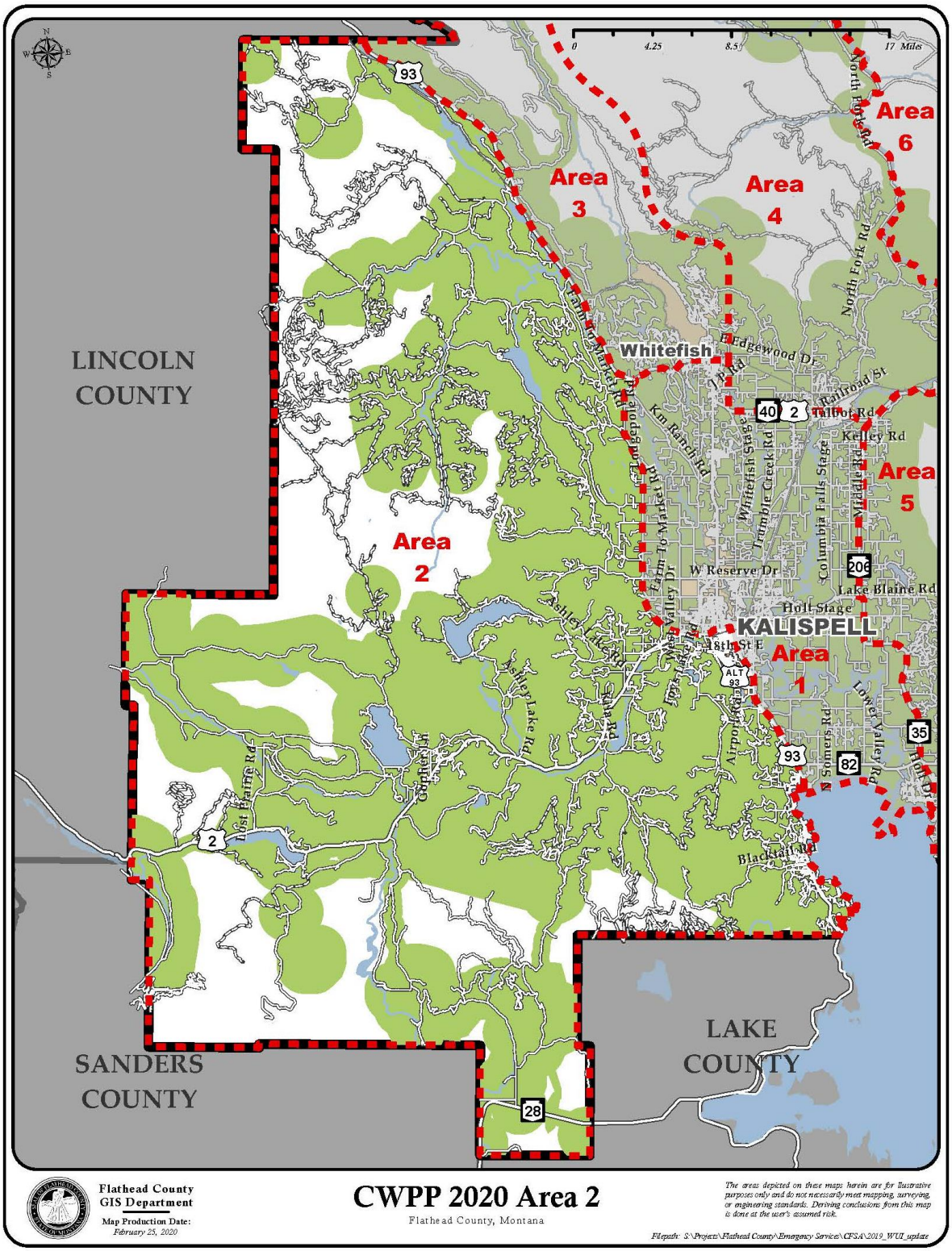
AREA 1	1.1 Happy Valley	
Project Type: Fuels Reduction HIZ work around structures	Project Description: There is heavy timber with a high live to dead ratio intermixed with homes in the area. Recommend working with homeowners on HIZ work around structures and fuel reductions along driveways. Fuel reductions reduce fire intensity and promote healthy forest ecosystems. When HIZ and fuel reductions projects are linked together the protection increases for the community.	
Project Coordinators: Whitefish FSA West Valley Fire District	Support from: MT-DNRC OES/Fire Warden	Target Date:

AREA 1	1.2 Kuhns Wildland Management Area
Project Type: Fuel Reductions	Project Description: The lands around the Kuhns Wildland Management Area (KWMA-State Land) are private with structures and agriculture fields that would be threatened if a fire starts in the KWMA. Evaluate the area to determine the risk level that wildfire presents to the property and adjacent properties. Prepare fuel reductions project to reduce fire intensity and enhance healthy forest ecosystems.
Project Coordinator: MT-DNRC	Target Date:

AREA 1	1.3 KM Ranch Road /Spencer Lake area
Project Type: Fuel Reductions	Project Description: DNRC has completed a substantial amount of work in this area on the state land and is planning more. There is a need to work with the adjacent landowners to promote HIZ work and fuels work on private lands and agency lands to reduce fire intensity and enhance healthy forest ecosystems.
Project Coordinator: MT-DNRC	Target Date:

Area 2 - Flathead West

Figure 8
Map of CWPP 2020 Area 2 - Flathead West



Source: Flathead County GIS Department. *CWPP 2020 Area 2*. Map. Flathead County. February 2020.

Area 2 Description

The Flathead West Area generally comprises the area west of US Highway 93 between the Lake County line in the south and the Lincoln County line in the north. Lower elevations are a mix of grass, brush, and timber. The higher elevations are mostly timberlands.

Area 2 Watersheds

- Fisher River
- Flathead Lake
- Lower Clark Fork River
- Lower Flathead River
- Upper Kootenai River

Figure 9
Tally Lake Area

Source: Chute, Lincoln. Tally Lake Area. 2019. JPEG

Area 2 Communities

- Kalispell (west of the US 93 bypass)
- Kila
- Lakeside
- Marion
- Olney
- Somers
- Star Meadows

Area 2 Community Values at Risk

- US HWY 2 West Corridor and HWY 93 Corridor
    - Access for residents, tourists, commercial transportation, and emergency services

Area 2 Infrastructure

- Homes and Businesses
- Blacktail communications site
- Blacktail Ski Area
- BNSF and Amtrak main east/west railway from Chicago to the Pacific Northwest
- Bonneville Power Administration distribution lines from Hungry Horse Dam
- US Highway 2 business corridor
- US Highway 93 business corridor

Area 2 Land Ownership

- Private land: The lower elevations are a mix of grass, brush, and timber that has been subdivided into an average 5 to 10 acre lots. The higher elevations are mostly timberlands with 10 plus acre lots. Sections of private industrial timberlands are mixed in with state land.
- MT-DNRC: The Stillwater State Forest is located in the northern part of the area. There are scattered sections of state timberlands throughout the rest of the area.
- US Forest Service: The Island Unit in the Blacktail area and Tally Lake forest service land are mostly timberlands.

- US Fish & Wildlife Service: The Lost Trail National Wildlife Refuge is located in Lost Prairie. The Flathead Waterfowl Production Area is at the north end of Flathead Lake. Smith Lake Waterfowl Production Area is near Kila.
- Montana Fish, Wildlife & Parks: These lands are primarily managed as recreation areas and/or boat launch sites. The State Park at Lone Pine is heavy timber.
- Flathead County Parks: These lands are primarily managed as recreation areas.

Area 2 Fire Behavior
Large fires driven by southwestern winds are the most common threat to communities and individual homes in this area.

Area 2 Factors Influencing Fire Behavior
Heavy lightning paths have historically impacted the area south of US 2 and west of Somers/Lakeside. Large fires in the recent past have been both wind-driven and fuels-driven. Most of the fires have been stand replacement in which fires primarily kill most or all of the trees in the stand. The active management of the large areas of industrial forest lands has been a significant factor in reducing the severity and rate of spread of fires within this area. Heavy timber harvesting of the dead lodgepole in the 1990s helped break up the continuity of fuels and continuous canopies throughout this area. Numerous roads in this area enhance accessibility. Some of the industrial lands are being sold and replaced by subdivisions and scattered individual ownerships, resulting in a significantly expanding Wildland Urban Interface in this area.

Area 2 Most Recent Large Fires
See figure 3 for a map of fires in Flathead County from 1984-2018.

- 1994 Little Wolf Fire (15,400 acres)
- 2007 Brush Creek Fire (30,000 acres)
- 2007 Chippy (90,000 acres)
- 2009 Baldy Fire (220 acres)
- 2016 Bierney Creek Fire (80 acres)

Area 2 Fire Organizations with Jurisdictional Responsibilities

- Flathead County Fire Service Area
- Marion Rural Fire Department
- MT-DNRC
- Olney Rural Fire Department
- Smith Valley Rural Fire Department
- Somers Rural Fire Department
- South Kalispell Rural Fire Department
- US Forest Service
- West Valley Rural Fire Department
- Whitefish Fire Service Area

Area 2 Recommended Actions

Private Landowner Checklist

- ☐ Create and maintain Home Ignition Zone (HIZ) for all buildings.
- ☐ Modify vegetation by reducing grasses, shrubs, and trees. The more adjacent properties that have fuels reduction work done on them, the greater the safety of the entire neighborhood. Working in connection with neighbors can benefit all parties. Connecting properties together that have fuels work done can improve the safety of all.
- ☐ Thin fuels on all roads and driveways. This should be done on both sides of the road at a minimum of 50 feet from the edge of the road, to allow access for emergency responders and escape for residents.
- ☐ Maintain driveways so that large emergency response vehicles can access the entrance and drive to the home. It is preferred that there is room for the truck to turn around.
- ☐ Post 3-inch reflective home address numbers at the end of your driveway.
- ☐ Prepare a Family Evacuation Plan.

Private Industrial/ Large Acreage Landowner

1. Continue to cut and manage industry lands creating shaded fuel breaks to the west and south of Lakeside, Somers, Kalispell, Marion, Kila, Whitefish, Star Meadows, and Olney.
2. Do a thorough cleanup on industry properties that are being sold to private homeowners and developers.
3. Extend existing fuel breaks and develop new ones where needed. Landscape-level fuel breaks will be critical in fighting fires approaching this area from the west.
4. Timberland owners can utilize prescribed fire in areas that have had fuels work done. This will help manage slash piles that need to be removed to reduce fire intensity.

MT-DNRC

1. Evaluate MT-DNRC land to determine the level of wildfire risk present to MT-DNRC land and adjacent properties.
2. Treat MT-DNRC lands with timber harvests to enhance the shaded fuel breaks to the west of the interface area.
3. Provide public information and fire prevention campaigns to residents and landowners. Provide information on status of fire danger and any current wildfires in the area.

US Forest Service

1. Evaluate US Forest Service land to determine the level of wildfire risk present to US Forest Service land and adjacent properties.
2. Identify and prioritize areas in the interface that can be treated.
3. Utilize thinning, prescribed fire, and other fuel reduction techniques along the edge of the Wildland Urban Interface and where needed.
4. Provide public information and fire prevention campaigns to residents and landowners. Provide information on status of fire danger and any current wildfires in the area.
5. Provide and communicate the Flathead National Forest Integrated Vegetation Management Plan to the public (see figure 24).

US Fish & Wildlife Service

1. Evaluate US Fish & Wildlife Service land to determine the level of wildfire risk present to US Fish & Wildlife Service property and adjacent properties.
2. Prepare fuels reduction projects to promote healthy land ecosystems and reduce fire intensity.

Montana Fish, Wildlife & Parks

1. Evaluate Montana Fish Wildlife & Parks land to determine the level of wildfire risk present to Montana Fish Wildlife & Parks property and adjacent properties.
2. Prepare fuels reduction projects and maintenance plans to promote healthy land ecosystems and reduce fire intensity.

Flathead County Parks

1. Evaluate Flathead County Parks land to determine the level of wildfire risk present to Flathead County Parks property and adjacent properties.
2. Prepare fuels reduction projects and maintenance plans to promote healthy land ecosystems and reduce fire intensity.

Flathead County Fire Warden/Fire Service Area Manager

1. Provide public information and mitigation recommendations to residents and landowners.
2. Evaluate Flathead County owned land to determine the level of wildfire risk present to Flathead County property and adjacent properties.
3. Assist with fuels reduction projects on county land to promote healthy land ecosystems and reduce fire intensity.

Area 2 Focus Projects

AREA 2	2.1 Private land from Somers to Lake County line adjacent to US Forest Service Island Unit (Blacktail Mountain Area)	
Project Type: Fuels Reduction HIZ work	Project Description: USFS has completed a substantial amount of work in this area and is planning more. There is a need to work with the adjacent landowners to promote HIZ work and fuels work on private lands and agency lands to reduce fire intensity and enhance healthy forest ecosystems.	
Project Coordinators: USFS Somers Fire District	Flathead County FSA MT-DNRC	Target Date:

AREA 2	2.2 Roads that run into the mountains that have homes along them. Example- Rhodes Draw, Truman Creek, McMannamy Draw and Browns Meadow.	
Project Type: Fuels Reduction Fuel treatment HIZ work	Project Description: Fuel treatment is needed along roads and driveways. These roads are examples of roads in Area 2 that start in the valley and move up hill with homes along the length of the road. Evaluate the risk of wildland fire along the roadway that would be used to evacuate the area. Depending on the slope and the fuels, thin 20 to 50 feet on each side of the roadway for safe travel into and out of residential areas. There is a need for landscape timber treatments on large sections, HIZ around structures, and fuels reduction on private lands to reduce fire intensity and enhance healthy forest ecosystems.	
Project Coordinators: Smith Valley Fire Department West Valley Fire Department Olney Fire Department Somers Fire Department South Kalispell Fire Department	Marion Fire Department Whitefish FSA Flathead County FSA USFS MT-DNRC	Target Date:

AREA 2	2.3 Talley Lake Area / Bootjack Lake area	
Project Type: Fuels Reduction Fuel treatment HIZ work	Project Description: USFS and DNRC have completed a substantial amount of work in this area and are planning more. There is a need to work with the adjacent landowners to promote HIZ work and fuels work on private lands and agency lands to reduce fire intensity and enhance healthy forest ecosystems.	
Project Coordinators: Whitefish FSA MT-DNRC Flathead County FSA USFS		Target Date:

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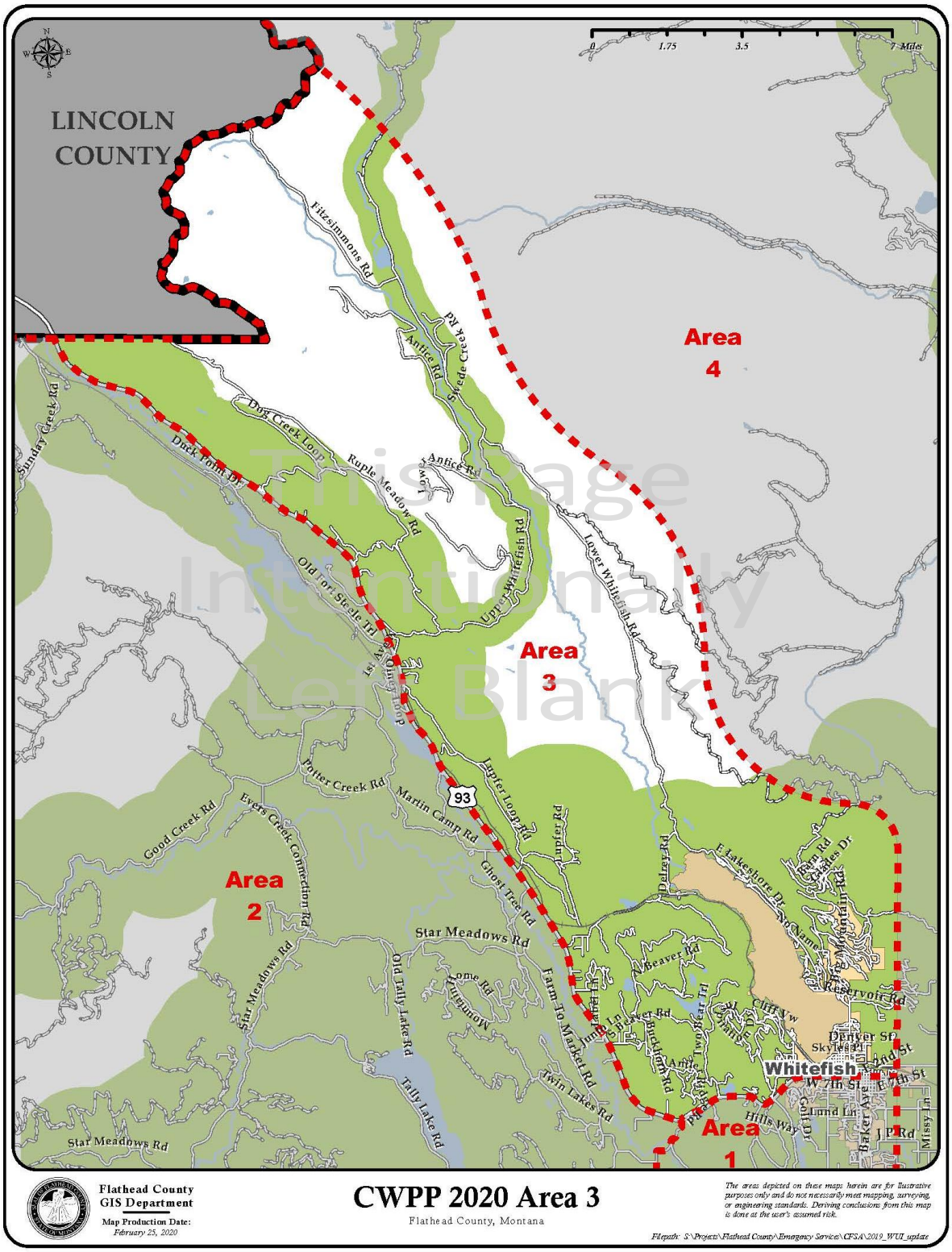
Area 3 - West Side Whitefish Divide

Figure 10
Map of CWPP 2020 Area 3 - West Side Whitefish Divide

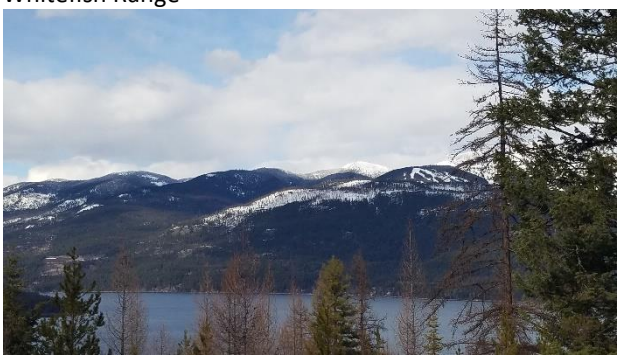


Source: Flathead County GIS Department. *CWPP 2020 Area 3*. Map. Flathead County. February 2020.

Area 3 Description

This heavily timbered area extends from US Highway 93 in an easterly direction to the top of the Whitefish Divide. It includes the area north of Whitefish to the Lincoln County line.

Figure 11
Whitefish Range



Source: Chute, Lincoln. Whitefish Range. 2019. JPEG

Area 3 Watersheds

- Stillwater/Haskill Basin

Area 3 Communities

- Big Mountain
- Olney
- Whitefish

Area 3 Community Values at Risk

- US HWY 93 North Corridor
  - Access for residents, tourists, commercial transportation, and emergency services
  - Travel to and from Canada through the Port of Roosville
  - Access to and from Northwestern Lincoln County

Area 3 Infrastructure

- Homes and Businesses
- BNSF east/west main line
- Electronic sites on Taylor Peak and Werner Peak
- Scattered small businesses (retail, tourism-related, and light manufacturing)
- Stillwater State Forest facilities
- US Highway 2 business corridor
- US Highway 93 business corridor
- Werner Peak Lookout
- Whitefish Mountain Resort

Area 3 Land Ownership

- Private Lands: In the area west of Whitefish to the Lincoln County line most of the private land is along Hwy 93. This land is heavy timber. Around Whitefish Lake there are subdivisions and small acreages of timberlands. There is a large amount of private industrial timberlands.
- MT-DNRC: The Stillwater State Forest is by far the largest landowner in Area 3, almost all of the lands have heavy timber.
- US Forest Service: The Forest Service has very little land in this area most is on the Whitefish Divide. It is all heavy timber.
- Montana Fish, Wildlife & Parks: These lands are primarily managed as recreation areas and/or boat launch sites.
- Flathead County Parks: These lands are primarily managed as recreation areas.

Area 3 Fire Behavior

A fire starting in the US 93 corridor could move very rapidly through the rather narrow Wildland Urban Interface, even faster if a strong southwest wind were pushing it. The corridor includes the heavily used BNSF railroad and has the potential for human-caused fires. Many of the homes along the eastern edge of the corridor have only one-way in and one-way out because of the train tracks. That may be the single most critical element of concern in this geographic area.

Area 3 Factors Influencing Fire Behavior

There is a strong lightning path from west to east through Olney and Stryker and continuing through Area 3 into Areas 4 and 6.

Area 3 Most Recent Large Fires

See figure 3 for a map of fires in Flathead County from 1984-2018.

- 2001 Werner Peak fire complex (730 acres)
- 2017 Gibralter (13,000 Acres)

Area 3 Fire Organizations with Jurisdictional Responsibility

- Big Mountain Fire Department
- Flathead County Fire Service Area
- MT-DNRC
- Olney Rural Fire Department
- Whitefish Fire Department
- Whitefish Fire Service Area
- US Forest Service

Area 3 Recommended Actions

Private Landowner Checklist

Treatments for properties that have only once access route in and only one escape route out.

- ☐ The following recommendations are for fuels treatments of these properties and are equally important.
  - Treat and maintain the Home Ignition Zone (HIZ) for all buildings. Consider treating the entire property to reduce fire intensity if you are unable to get out in a wildfire.
  - Thin trees on both sides of roads and driveways a minimum of 50 feet from the edge of the road, to allow access for emergency responders and escape for residents.
  - Modify vegetation by reducing grasses, shrubs, and trees. The more adjacent properties that have fuels reduction work done on them, the greater the safety of the entire neighborhood. Working in connection with neighbors can benefit all parties. Connecting properties together that have fuels work done can improve the safety of all.
- ☐ Maintain driveways so that large emergency response vehicles can access the entrance and drive to the home. It is preferred that there is room for the truck to turn around.
- ☐ Post 3-inch reflective home address numbers at the end of your driveway.
- ☐ Prepare a Family Evacuation Plan.

Treatments for properties that have more than one way out.

- Treat and maintain the Home Ignition Zone (HIZ) for all buildings.
- Modify vegetation by reducing grasses, shrubs, and trees. The more adjacent properties that have fuels reduction work done on them, the greater the safety of the entire neighborhood. Working in connection with neighbors can benefit all parties. Connecting properties together that have fuels work done can improve the safety of all.
- Thin trees on both sides of roads and driveways a minimum of 50 feet from the edge of the road, to allow access for emergency responders and escape for residents.
- Post 3-inch reflective home address numbers at the end of your driveway.
- Prepare a Family Evacuation Plan.

MT-DNRC

1. Evaluate MT-DNRC land to determine the level of wildfire risk present to MT-DNRC land and adjacent properties.
2. Provide public information and fire prevention campaigns to residents and landowners. Provide information on status of fire danger and any current wildfires in the area.
3. Continue to develop shaded fuel breaks along the Highway 93 corridor. This can help firefighters contain a fire on initial attack within the corridor and prevent the loss of homes and critical infrastructure.
4. Continue to manage the state forest to reduce the intensity of fires moving down the valley toward homes. This is particularly important just to the east and north of Whitefish. Most of this area has been treated, but may require maintenance.
5. Modify vegetation by reducing grasses, shrubs, and trees on state lands around neighborhoods and communities to promote healthy forest ecosystems and reduce fire intensity.

US Forest Service

1. Evaluate US Forest Service land to determine the level of wildfire risk present to US Forest Service land and adjacent properties.
2. Identify and prioritize areas in the interface that can be treated.
3. Utilize thinning, prescribed fire, and other fuel reduction techniques along the edge of the Wildland Urban Interface and where needed.
4. Provide public information and fire prevention campaigns to residents and landowners. Provide information on status of fire danger and any current wildfires in the area.
5. Provide and communicate the Flathead National Forest Integrated Vegetation Management Plan to the public (see figure 24).

Montana Fish, Wildlife & Parks

1. Evaluate Montana Fish Wildlife & Parks land to determine the level of wildfire risk present to Montana Fish Wildlife & Parks property and adjacent properties.
2. Prepare fuels reduction projects and maintenance plans to promote healthy land ecosystems and reduce fire intensity.

Flathead County Parks

1. Evaluate Flathead County Parks land to determine the level of wildfire risk present to Flathead County Parks property and adjacent properties.
2. Prepare fuels reduction projects and maintenance plans to promote healthy land ecosystems and reduce fire intensity.

Flathead County Fire Warden/Fire Service Area Manager

1. Provide public information and mitigation recommendations to residents and landowners.
2. Evaluate Flathead County owned land to determine the level of wildfire risk present to Flathead County property and adjacent properties.
3. Assist with fuels reduction projects on county land to promote healthy land ecosystems and reduce fire intensity.

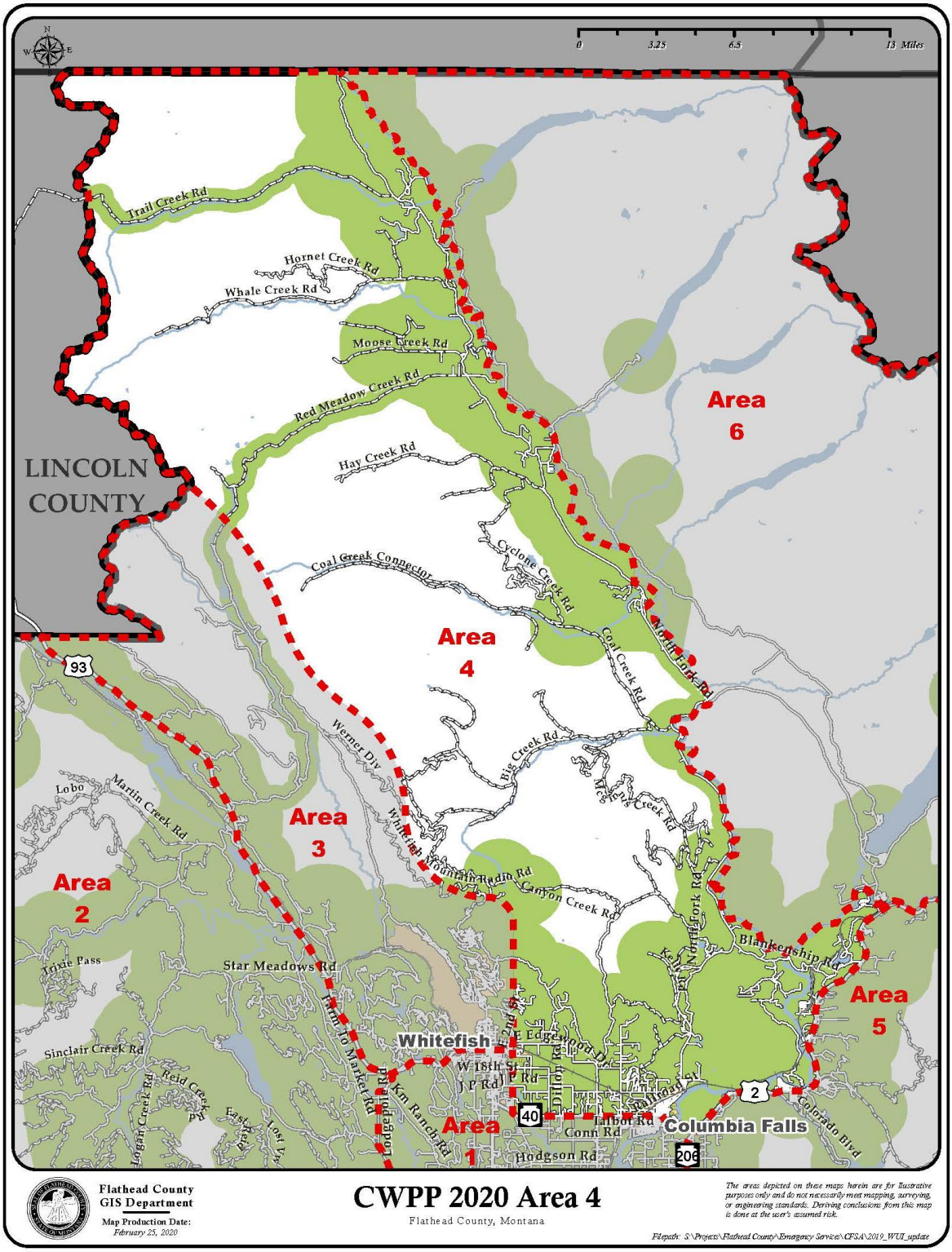
Area 3 Focus Projects

AREA 3	3.1 Lands Uphill from Whitefish Lake to Whitefish Mountain	
Project Type: Fuels Reduction Fuel treatment HIZ work	Project Description: The area has a south aspect and steep slopes that will increase the behavior of a wildland fire. The road to Whitefish Mountain is the only access in or out for residents and visitors. Evaluate the risk of wildland fire along the roadway that would be used to evacuate the area. Depending on the slope and the fuels, thin 20 to 50 feet on each side of the roadway for safe travel into and out of residential areas. There is a need for landscape timber treatments on large sections, HIZ around structures, and fuels reduction on private lands and agency lands to reduce fire intensity and enhance healthy forest ecosystems with a mosaic timber pattern.	
Project Coordinators: USFS MT-DNRC Big Mountain Fire	Whitefish FSA Flathead County FSA	Target Date:

AREA 3	3.2 Beaver Lake Area	
Project Type: Fuels Reduction Fuel treatment HIZ work	Project Description: DNRC has completed a substantial amount of work in this area and is planning more. Evaluate the risk of wildland fire along the roadway that would be used to evacuate the area. Depending on the slope and the fuels, thin 20 to 50 feet on each side of the roadway for safe travel into and out of residential areas. There is a need to work with the adjacent landowners to promote HIZ work and fuels work on private lands and agency lands to reduce fire intensity and enhance healthy forest ecosystems.	
Project Coordinators: MT-DNRC Big Mountain Fire	Whitefish FSA Flathead County FSA	Target Date:

AREA 4 - NORTH FORK

Figure 12
Map of CWPP 2020 Area 4 – North Fork

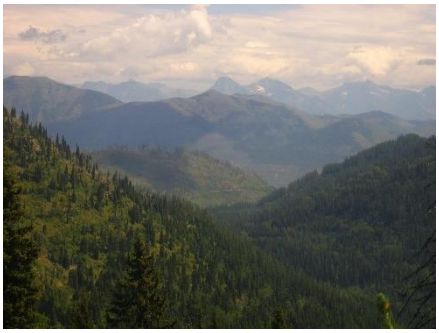


Source: Flathead County GIS Department. *CWPP 2020 Area 4*. Map. Flathead County. February 2020.

Area 4 Description

This area is bounded on the east by the North Fork of the Flathead River and on the west by the Whitefish Mountain Divide. Its northern boundary is the Canadian border, and its southern boundary is US Hwy 40 and Us Hwy 2. This is a heavily timbered area with most of the private properties within 1.5 miles of the North Fork Road. The southern part of the area between Whitefish and Columbia Falls is heavy timber with homes and includes the Haskill Basin Watershed that provides Whitefish City municipal water.

Figure 13
North Fork



Source: Rau, Jennifer. North Fork. 2020. JPEG

Area 4 Watersheds

- North Fork Flathead River
- Haskill Basin (Whitefish municipal water supply)

Area 4 Communities

- Blankenship
- Columbia Falls
- Polebridge
- Whitefish

Area 4 Community Values at Risk

- North Fork Road
  - Access for residents, tourists, commercial transportation, and emergency services
- Trail Creek Road and Red Meadow Road
  - Emergency evacuation route to HWY 93
- Historic Structures
  - Sonderson Community Hall
  - Wurtz Cabin
  - Ford Cabin and Schoolhouse
  - Polebridge Mercantile
- Haskill Basin Watershed
  - Whitefish City Public Water supply

Area 4 Infrastructure

- Homes and Businesses
- BNSF and Amtrak main east/west railway from Chicago to the Pacific Northwest
- Bonneville Power Administration distribution lines from Hungry Horse Dam
- Bridges
- Emergency communication sites on Cyclone Lookout and Big Mountain
- Glacier Institute
- Historic cabins and other structures
- Sonderson Community Hall

Area 4 Land Ownership

- Private Landowners: Most of this land is heavy timber. On the North Fork Road, the private land is located along the main road and a few feeder roads. In the southern part of the area small lots of 5 to 20 acres are common. The land from Whitefish to Columbia Falls north of Hwy

40 has been subdivided into mostly 10 to 20 acres of heavy timber. This is characterized by one-way in/one-way out roads and few fuel breaks. There is a large amount of private industrial timberland in the Haskill Basin area.
- MT-DNRC: Coal Creek State Forest is heavy timber.
- US Forest Service: These lands border private lands along the North Fork Road and run west to the Whitefish Divide. The land has heavy timber with limited roads. Red Meadow Road and Trail Creek Road run from the North Fork Road to Hwy 93 and have been identified as escape routes. US Forest Service also has land north of Whitefish extending to Teakettle Mountain. This borders private land that is heavy timber.
- Montana Fish, Wildlife & Parks: These lands are primarily managed as recreation areas and/or boat launch sites.
- Flathead County Parks: These lands are primarily managed as recreation areas.

Area 4 Fire Behavior
Wildfires have burned more acres in Area 4 than any other area in Flathead County. Numerous large fires have burned from near the Whitefish Divide eastward across the valley floor and into Glacier National Park. The southern part of Area 4 between Whitefish and Columbia Falls is a Focus Area that has the potential for a fire to move from the west to the east like the Half Moon Fire did in 1929.

Area 4 Factors Influencing Fire Behavior
A strong lightning path that passes through the southern portion of this area (near Big Creek) has ignited numerous large fires over the years. Strong west-southwest winds push fires to the east. Running crown fires have been common. Because of heavy fuels and closed canopies, torching and spotting commonly hastens fire spread with trees being consumed in flames quickly from the base and smaller fires starting ahead of the main fire. In these fuel types, fires primarily kill most or all of the trees in the stand (stand replacement) under severe conditions and are of mixed severity in less volatile conditions.

Area 4 Most Recent Large Fires
See figure 3 for a map of fires in Flathead County from 1984-2018.
- 1929 Half Moon Fire (103,00 acres)
- 1967 Apgar Range/Huckleberry Ridge Fire (19,000 acres)
- 1988 Red Bench Fire (37,000 acres)
- 2001 Moose Fire (71,000 acres)
- 2003 Robert Fire (52,900 acres)
- 2003 Wedge Canyon Fire (54,400 acres)

Area 4 Fire Organizations with Jurisdictional Responsibilities
- Blankenship Rural Fire Department
- Flathead County Fire Service Area
- MT-DNRC
- US Forest Service
- Whitefish FSA

Area 4 Recommended Actions

All Landowners

The North Fork Road, Trail Creek Road, and Red Meadow Creek Road are essential as escape/evacuation routes in the North Fork. Fuels treatment 50 feet on either side of these roads through all ownership is a priority to allow the public safe passage out of the North Fork during emergencies as well as allowing emergency responders reasonable access.

Private Landowner Checklist

Larger landowners have been treating properties within the interface area. This has provided protection for their homes as well as their neighbors' homes. Treating properties breaks up the fuels and reduces the fire severity if fire should break out.

- ☐ Create and maintain Home Ignition Zone (HIZ) for all buildings.
- ☐ Thin fuels on all roads and driveways. This should be done on both sides of the road at a minimum of 50 feet from the edge of the road, to allow access for emergency responders and escape for residents.
- ☐ Post 3-inch reflective home address numbers at the end of your driveway.
- ☐ Prepare a Family Evacuation Plan.
- ☐ Maintain driveways so that large emergency response vehicles can access the entrance and drive to the home. It is preferred that there is room for the truck to turn around.

Additional Recommendations for Specific Neighborhoods

West of the North Fork Road

- ☐ Creation of fuel breaks between US Forest Service and private lands. This may involve both thinning and commercial timber harvest. Engage private landowners along the west edge of the WUI to try to connect shaded fuel breaks to better defend private property.

East of the North Fork Road

- ☐ Homeowners in the old burn areas need to thin their properties to break up the continuous fuels that could carry fire under extreme conditions.
- ☐ Ensure that access roads are treated to allow escape during active fire events. Treat entire property to provide survivable space if access/escape routes are cut off.

Haskill Basin to Columbia Falls

- ☐ Work with other landowners and agencies to develop access and escape routes that are adequate to get people out if needed.
- ☐ Modify vegetation by reducing grasses, shrubs, and trees. The more adjacent properties that have fuels reduction work done on them, the greater the safety of the entire neighborhood. Working in connection with neighbors can benefit all parties. Connecting properties together that have fuels work done can improve the safety of all.

MT-DNRC

1. Evaluate MT-DNRC land to determine the level of wildfire risk present to MT-DNRC land and adjacent properties.
2. Continue harvest activities on all state lands.
3. Create shaded fuel breaks to help break up the continuous fuels that carry a fire.
4. Treat access and escape routes for homeowners that have to drive through state lands to get to their homes.
5. Treat pre-commercial timber in old burn areas to slow a fire that could move through the area.
6. Provide public information and fire prevention campaigns to residents and landowners. Provide information on status of fire danger and any current wildfires in the area.

US Forest Service

1. Evaluate US Forest Service land to determine the level of wildfire risk present to US Forest Service land and adjacent properties.
2. Identify and prioritize areas in the interface that can be treated. Include Trail Creek and Red Meadow escape routes, untreated fuels north of Trail Creek, and fuels around private lands in Moose Creek and Whale Creek as well as private roads permitted through Forest Service lands.
3. Utilize thinning, prescribed fire, and other fuel reduction techniques along the edge of the Wildland Urban Interface and where needed.
4. Provide public information and fire prevention campaigns to residents and landowners. Provide information on status of fire danger and any current wildfires in the area.
5. Provide and communicate the Flathead National Forest Integrated Vegetation Management Plan to the public (see figure 24).

Montana Fish, Wildlife & Parks

1. Evaluate Montana Fish Wildlife & Parks land to determine the level of wildfire risk present to Montana Fish Wildlife & Parks property and adjacent properties.
2. Prepare fuels reduction projects and maintenance plans to promote healthy land ecosystems and reduce fire intensity.

Flathead County Parks

1. Evaluate Flathead County Parks land to determine the level of wildfire risk present to Flathead County Parks property and adjacent properties.
2. Prepare fuels reduction projects and maintenance plans to promote healthy land ecosystems and reduce fire intensity.

Flathead County Fire Warden/Fire Service Area Manager

1. Provide public information and mitigation recommendations to residents and landowners.
2. Evaluate Flathead County owned land to determine the level of wildfire risk present to Flathead County property and adjacent properties.
3. Assist with fuels reduction projects on county land to promote healthy land ecosystems and reduce fire intensity.

Area 4 Focus Projects

AREA 4	4.1 Trail Creek to Border	
Project Type: Fuels Reduction Fuel treatment HIZ work	Project Description: USFS and DNRC have completed a substantial amount of work in this area and are planning more. Evaluate the risk of wildland fire along the roadway that would be used to evacuate the area. Depending on the slope and the fuels, thin 20 to 50 feet on each side of the roadway for safe travel into and out of residential areas. There is a need to work with the adjacent landowners to promote HIZ work and fuels work on private lands and agency lands to reduce fire intensity and enhance healthy forest ecosystems with a mosaic timber pattern. Evaluate the risk of wildland fire along Trail Creek Road and Red Meadows Road. These roads could be used to evacuate the area, look for places that need fuels treatment to provide for safe evacuation.	
Project Coordinators: USFS MT-DNRC Flathead County FSA		Target Date:

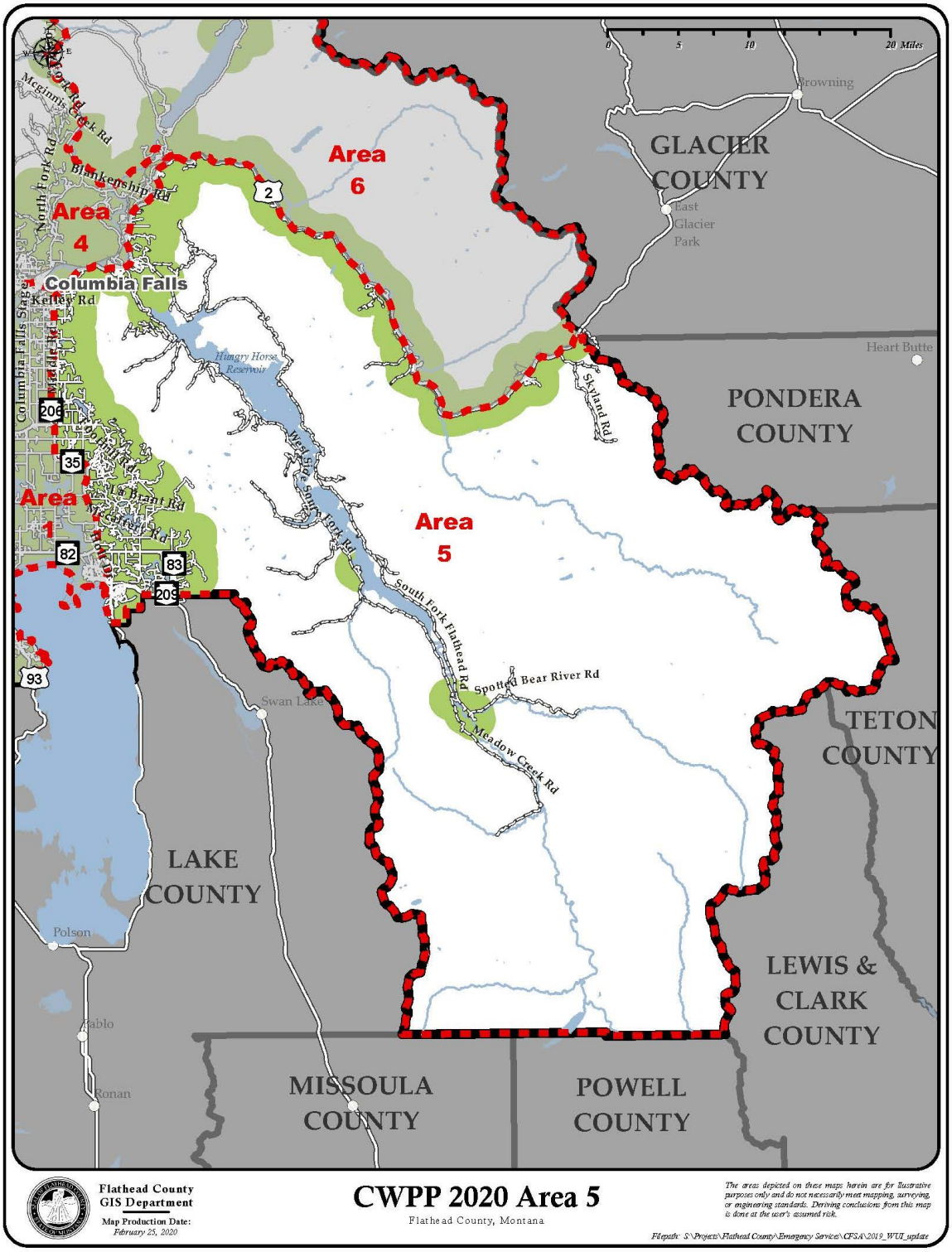
AREA 4	4.2 Haskill Basin to Columbia Falls	
Project Type: Fuels Reduction Fuel treatment HIZ work	Project Description: The USFS has plans in place for work on the Haskill Basin watershed. These need to be supported and expanded. The area is in an historic wildfire path. The Half Moon Fire ran from between Whitefish and Columbia Falls then east into the Middle Fork area past West Glacier. Evaluate the risk of wildland fire along the roadway that would be used to evacuate the area. Depending on the slope and the fuels, thin 20 to 50 feet on each side of the roadway for safe travel into and out of residential areas. There is a need to work with the adjacent landowners to promote HIZ work and fuels work on private lands and agency lands to reduce fire intensity and enhance healthy forest ecosystems.	
Project Coordinators: USFS Whitefish FSA Columbia Falls FD MT-DNRC Blankenship FD County FSA		Target Date:

AREA 4	4.3 Teakettle Mountain	
Project Type: Fuels Reduction Fuel treatment HIZ work	Project Description: Reduce fuel loads that would support large fast fire build up that could move up the mountain and spot on the east side. Evaluate the risk of wildland fire along the roadway that would be used to evacuate the area. Depending on the slope and the fuels, thin 20 to 50 feet on each side of the roadway for safe travel into and out of residential areas. There is a need to work with the adjacent landowners to promote HIZ work and fuels work on private lands and agency lands to reduce fire intensity and enhance healthy forest ecosystems. There is a need for landscape fuels reduction on Teakettle Mountain to break up the fuel continuity to limit the buildup of large fire that could spot onto the east side of the mountain off of Rabe Road and Teakettle Road.	
Project Coordinators: USFS MT-DNRC Blankenship FD	Columbia Falls FD Flathead County FSA	Target Date:

AREA 4	4.4 Lake Five Area	
Project Type: Fuel treatment HIZ work	Project Description: There are some large lodgepole timber stands in the area that need landscape treatment to reduce fire intensity. Evaluate the risk of wildland fire along the roadway that would be used to evacuate the area. Depending on the slope and the fuels, thin 20 to 50 feet on each side of the roadway for safe travel into and out of residential areas. There is a need to work with the adjacent landowners to promote HIZ work and fuels work on private lands and agency lands to reduce fire intensity and enhance healthy forest ecosystems.	
Project Coordinators: USFS MT-DNRC	Coram/West Glacier FD Flathead County FSA	Target Date:

AREA 5 – BIGFORK/FERNDALE TO MARIAS PASS

Figure 14
Map of CWPP 2020 Area 5 - Bigfork/Ferndale to Marias Pass



Source: Flathead County GIS Department. *CWPP 2020 Area 5*. Map. Flathead County. February 2020.

Area 5 Description

The majority of private property in this area is concentrated less than five miles from the highways that define its northern (Hwy 2) and northwestern (Hwy 35 and Hwy 206) boundaries. The density of homes and communities is greatest in that area. The Wildland Urban Interface is a narrow strip (less than five miles wide) along those boundaries (see figure 4). This area contains a higher percentage of Flathead National Forest lands than any of the other areas. It includes the Great Bear Wilderness and the northern portion of the Bob Marshall Wilderness.

Area 5 Watersheds

- Middle Fork of the Flathead River
- South Fork of the Flathead River
- Swan River

Figure 15
Swan Range

Source: Chute, Lincoln. Swan Range. 2019. JPEG

Area 5 Communities

- Bigfork
- Coram
- Creston
- Ferndale
- Hungry Horse
- Martin City
- West Glacier

Area 5 Community Values at Risk

- US HWY 2 East and BNSF Rail Corridor
  - Access for residents, tourists, commercial transportation, and emergency services
  - Transportation between East and West sides of Glacier National Park
  - BNSF freight and Amtrak Passenger main lines
  - Travel between the Highline and Northwest Montana
  - The natural gas pipeline supplying all of Flathead County
- US HWY 83 S Corridor
  - Access for residents, tourists, commercial transportation, and emergency services
  - Travel between Flathead County and the communities of Swan Lake and Seeley Lake

Area 5 Infrastructure

- Homes
- Businesses along all highway corridors
- Desert Mountain and Mount Aeneas emergency communication sites
- BNSF east/west main line
- Bonneville Power Administration distribution lines from Hungry Horse Dam

Area 5 Land Ownership

- Private land: From Hwy 2 west of West Glacier up the Middle Fork of the Flathead River the private lands are along the highway. The land is mostly timber and averages 10 to 20 acre lots. From West Glacier to Marias Pass the area is mostly US Forest Service land with small private

lots along the road. From Bad Rock Canyon to West Glacier the private land runs from the Flathead River to the foot of the mountains.

- MT-DNRC: This includes about 9 to 10 Sections (each Section equals 640 acres or 1 square mile) of land east of Bigfork with most of it being close to US Forest Service land.
- US Forest Service: This land is next to private land along the Swan Mountain Range from Bigfork to the Bad Rock area. US Forest Service manages the land around Hungry Horse Reservoir, Bob Marshal Wilderness, and the Great Bear Wilderness. There is also land that runs down to Hwy 2 along the Middle Fork of the Flathead River.
- Montana Fish, Wildlife & Parks: These lands are primarily managed as recreation areas and/or boat launch sites.
- Flathead County Park: These lands are primarily managed as recreation areas.

Area 5 Fire Behavior

With homes being close to the western and northern boundaries of this area, the most concerning fires are ones that would start along the western edge of the area and be driven by southwest winds that could push the fires quickly through this area. This is of greatest concern in the area from Columbia Falls south to the Lake County Line. From Columbia Falls to Marias Pass the Wildland Urban Interface area is narrow, but it is not as exposed to direct southwest winds. Although less direct, the winds would be more erratic in the narrow canyon through which the Middle Fork of the Flathead River flows.

Area 5 Factors Influencing Fire Behavior

The geography from Bigfork to West Glacier is directly affected by strong southwest winds. Fires starting near any of the highways would rapidly burn through the area and onto US Forest Service lands. The other threat to the area would be from a backing fire that started on US Forest Service lands above the interface area. To mitigate that concern, the US Forest Service, MT-DNRC, and private landowners have worked hard to create shaded fuel breaks above the interface area.

Area 5 Most Recent Large Fires

See figure 3 for a map of fires in Flathead County from 1984-2018.

- 2003 Flathead Fire Zone (FM-2494) (145,000 acres in GNP; 165,000 acres outside GNP)
- 2007 Skyland Fire (70,000 acres)
- 2011 Puzzle Creek Fire (2,300 acres)
- 2015 Sheep Fire (2,495 acres)
- 2015 Bear Creek (70,000 acres)
- 2015 Trail Creek (22,000 acres)
- 2017 Paola Creek (1,100 acres)

Area 5 Fire Organizations with Jurisdictional Responsibilities

- Bad Rock Rural Fire Department
- Bigfork Fire Department
- Coram/West Glacier Rural Fire Department
- Creston Rural Fire Department
- Ferndale Rural Fire Department
- Flathead County FSA

- Flathead National Forest
- Hungry Horse Rural Fire Department
- Martin City Rural Fire Department

Area 5 Recommended Actions

Private Landowner Checklist

Treatments for properties that have only once access route in and only one escape route out.

- ☐ The following recommendations are for fuels treatments of these properties and are equally important.
  - Treat and maintain the Home Ignition Zone (HIZ) for all buildings. Consider treating the entire property to reduce fire intensity if you are unable to get out in a wildfire.
  - Thin trees on both sides of roads and driveways a minimum of 50 feet from the edge of the road, to allow access for emergency responders and escape for residents.
  - Modify vegetation by reducing grasses, shrubs, and trees. The more adjacent properties that have fuels reduction work done on them, the greater the safety of the entire neighborhood. Working in connection with neighbors can benefit all parties. Connecting properties together that have fuels work done can improve the safety of all.
- ☐ Maintain driveways so that large emergency response vehicles can access the entrance and drive to the home. It is preferred that there is room for the truck to turn around.
- ☐ Work with other landowners and agencies to develop access and escape routes that are adequate to get people out if needed.
- ☐ Post 3-inch reflective home address numbers at the end of your driveway.
- ☐ Prepare a Family Evacuation Plan.

Treatments for properties that have more than one way out.

- ☐ Treat and maintain the Home Ignition Zone (HIZ) for all buildings.
- ☐ Modify vegetation by reducing grasses, shrubs, and trees. The more adjacent properties that have fuels reduction work done on them, the greater the safety of the entire neighborhood. Working in connection with neighbors can benefit all parties. Connecting properties together that have fuels work done can improve the safety of all.
- ☐ Thin trees on both sides of roads and driveways a minimum of 50 feet from the edge of the road, to allow access for emergency responders and escape for residents.
- ☐ Post 3-inch reflective home address numbers at the end of your driveway.
- ☐ Prepare a Family Evacuation Plan.

MT-DNRC

1. Evaluate MT-DNRC land to determine the level of wildfire risk present to MT-DNRC land and adjacent properties.
2. Provide access/escape route treatments for state land that private homeowners go through to access their properties.
3. Continue to create and/or expand shaded fuel breaks on MT-DNRC land.
4. Provide public information and fire prevention campaigns to residents and landowners. Provide information on status of fire danger and any current wildfires in the area.

US Forest Service

1. Evaluate US Forest Service land to determine the level of wildfire risk present to US Forest Service land and adjacent properties.
2. Identify and prioritize areas in the interface that can be treated.
3. Utilize thinning, prescribed fire, and other fuel reduction techniques along the edge of the Wildland Urban Interface and where needed.
4. Provide public information and fire prevention campaigns to residents and landowners. Provide information on status of fire danger and any current wildfires in the area.
5. Provide and communicate the Flathead National Forest Integrated Vegetation Management Plan to the public (see figure 24).

Montana Fish, Wildlife & Parks

1. Evaluate Montana Fish Wildlife & Parks land to determine the level of wildfire risk present to Montana Fish Wildlife & Parks property and adjacent properties.
2. Prepare fuels reduction projects and maintenance plans to promote healthy land ecosystems and reduce fire intensity.

Flathead County Parks

1. Evaluate Flathead County Parks land to determine the level of wildfire risk present to Flathead County Parks property and adjacent properties.
2. Prepare fuels reduction projects and maintenance plans to promote healthy land ecosystems and reduce fire intensity.

Flathead County Fire Warden/Fire Service Area Manager

1. Provide public information and mitigation recommendations to residents and landowners.
2. Evaluate Flathead County owned land to determine the level of wildfire risk present to Flathead County property and adjacent properties.
3. Assist with fuels reduction projects on county land to promote healthy land ecosystems and reduce fire intensity.

Area 5 Focus Projects

AREA 5	5.1 Hungry Horse Dam to North End of Columbia Mountain
Project Type: Fuels Reduction Fuel treatment HIZ work	Project Description: Reduce fuel loads that would support large fast fire build up that could move up the mountain and spot on the east side. There is a need for landscape fuels reduction on Columbia Mountain south to around the Hungry Horse Dam area. With no roads, this area will be a challenge. Prescribed fire would be the most cost effective. Evaluate the risk of wildland fire along the roadway that would be used to evacuate the area. Depending on the slope and the fuels, thin 20 to 50 feet on each side of the roadway for safe travel into and out of residential areas. There is a need to work with the adjacent landowners to promote HIZ work and fuels work on private lands and agency lands to reduce fire intensity and enhance healthy forest ecosystems with a mosaic timber pattern at the base of the mountain.
Project Coordinators: USFS Bad Rock FD MT-DNRC Hungry Horse FD	Target Date:

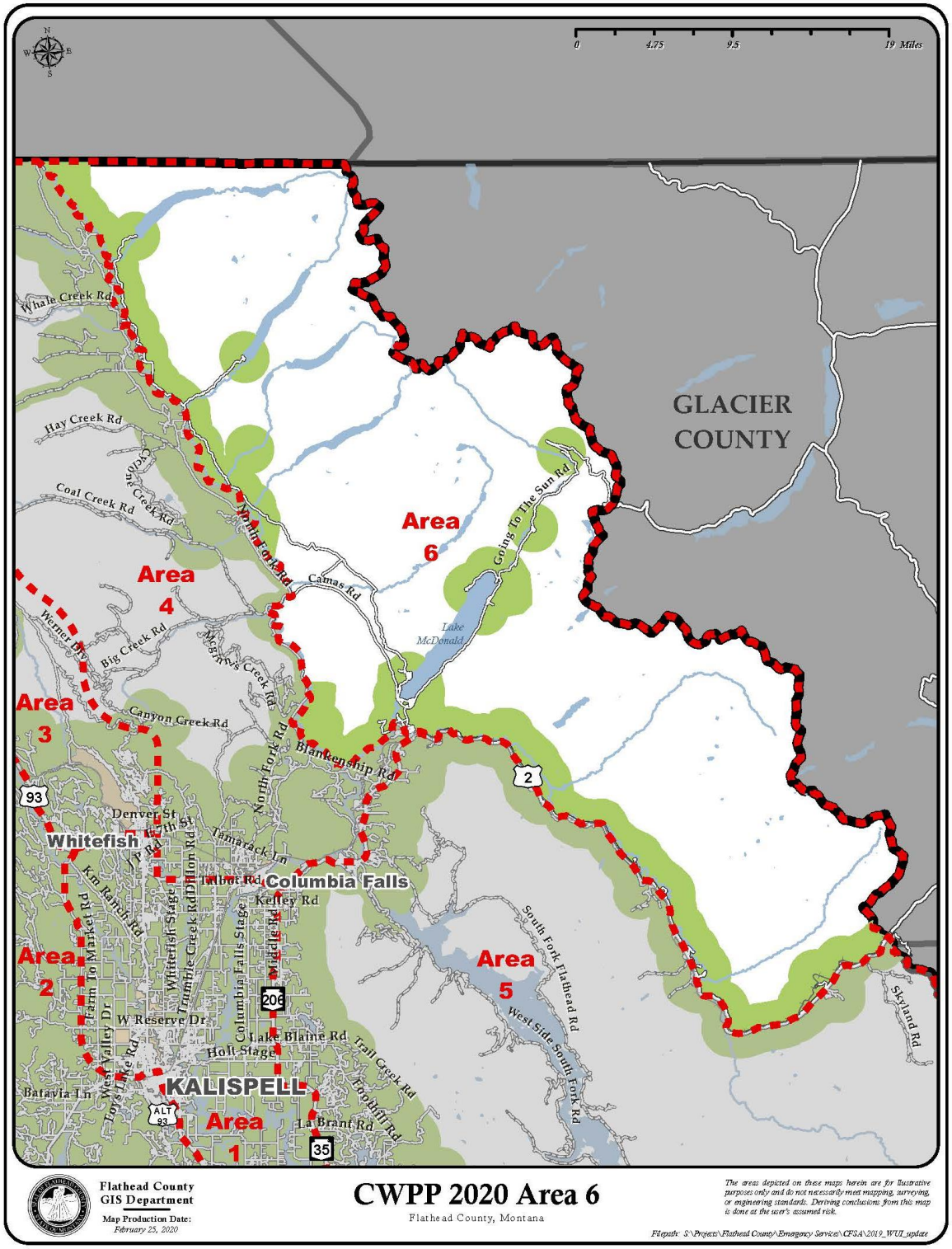
AREA 5	5.2 Swan Mountain Range from Bigfork north to the Lake Blaine area and the base of the mountain on Foothills Road.
Project Type: Fuels Reduction Fuel treatment HIZ work	Project Description: Reduce fuel loads that would support large fast fire build up that could move north and south along the mountain. There is a need for landscape fuels reduction on the mountain range to create a mosaic pattern to break up the continuance fuels. Evaluate the risk of wildland fire along roadway that would be used to evacuate the area. Depending on the slope and the fuels, thin 20 to 50 feet on each side of the roadway for safe travel into and out of residential areas. There is a need to work with the adjacent landowners to promote HIZ work and fuels work on private lands and agency lands to reduce fire intensity and enhance healthy forest ecosystems with a mosaic timber pattern at the base of the mountain.
Project Coordinators: USFS Bigfork FD MT-DNRC Ferndale FD Bad Rock FD Creston FD Flathead County FSA	Target Date:

AREA 5	5.3 Coram Experimental Forest Area / Lion Lake Area
Project Type: Fuels Reduction Fuel treatment HIZ work	Project Description: Reduce fuel loads that would support large fast fire build up that could move into the WUI. There is a need for landscape fuels reduction in both areas to create a mosaic pattern to break up the continuance fuels. Evaluate the risk of wildland fire along the roadway that would be used to evacuate the area. Depending on the slope and the fuels, thin 20 to 50 feet on each side of the roadway for safe travel into and out of residential areas. There is a need to work with the adjacent landowners to promote HIZ work and fuels work on private lands and agency lands to reduce fire intensity and enhance healthy forest ecosystems.

Project Coordinators:		Target Date:
USFS	Martin City FD	
MT-DNRC	Coram/ West Glacier FD	
Hungry Horse FD	Flathead County FSA	

AREA 6 – GLACIER NATIONAL PARK

Figure 16
Map of CWPP 2020 Area 6 - Glacier National Park



Source: Flathead County GIS Department. *CWPP 2020 Area 6*. Map. Flathead County. February 2020.

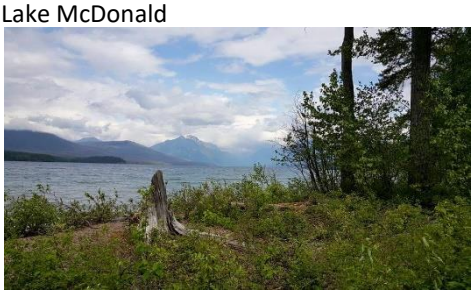
Area 6 Description
Located in the northeast corner of Flathead County, nearly all of Area 6 is in Glacier National Park (GNP). The area is mountainous with heavy timber wilderness.

Area 6 Watersheds
- Middle Fork of the Flathead River
- North Fork of the Flathead River

Area 6 Communities and Developments
There are small communities and park developments including:
- Apgar Village
- Grist Road
- Kelly Camp Road
- Lake McDonald Lodge Area
- Polebridge Ranger Station
- West Glacier Headquarters Complex
- Walton Ranger Station

Communities bordering this area include:
- Big Prairie
- Blankenship
- Essex
- Pinnacle
- Polebridge
- West Glacier

Figure 17
Lake McDonald



Source: Rau, Jennifer. Lake McDonald. 2020. JPEG

Area 6 Community Values at Risk
- US HWY 2 East and BNSF Rail Corridor
  - Access for residents, tourists, commercial transportation, and emergency services
- Going to the Sun Road
  - Transportation between East and West sides of Glacier National Park
- Historic Structures

Area 6 Infrastructure
- Homes and Businesses
- Campgrounds
- Backcountry cabins
- Fire lookouts
- Radio repeater sites
- Structures and wooden walking trails

Area 6 Land Ownership

- Private landowners: These are small private inholdings that are bordered by Glacier National Park lands.
- Glacier National Park: The Park owns all the land except for the private inholdings in the area.

Area 6 Fire Behavior

The largest and highest intensity fires in this area have started in Area 4 near the Whitefish Range and have moved east across the North Fork of the Flathead River into Glacier National Park.

Area 6 Factors Influencing Fire Behavior

There is a lightning path that crosses area 4 at Big Creek and continues into the southern portion of Glacier National park. Fuels and fire behavior are consistent with those discussed in Area 4. Accessibility in Glacier National Park is much more limited than any of the other areas of Flathead County. This area is managed as Wilderness by the National Park Service, and the use of equipment and retardant is restrictive. Glacier National Park's Fire Management Plan provides the full spectrum of fire management options within much of this area. Wildfire management strategies range from full perimeter control to managing fires for ecological benefit. Fires in this area typically spread from west to east moving away from private lands and developments.

Area 6 Most Recent Large Fires

Multiple large fires have burned in this area over the past 30 years. See figure 3 for a map of fires in Flathead County and Glacier Park from 1984-2018.

Those fires greater than 5,000 acres include:

- 1988 Red Bench* (27,500/37,500 acres)
- 1999 Anaconda (10,812 acres)
- 2001 Moose* (27,600/71,000 acres)
- 2003 Wedge Canyon* (30,012/52,974 acres)
- 2003 Robert * (39,384/52,747 acres)
- 2003 Harrison (5,900 acres)
- 2003 Double Mountain (21,000 acres)
- 2017 Sprague (16,790 acres)
- 2018 Howe Ridge* (14,522 acres)

Area 6 Fire Organizations with Jurisdictional Responsibilities

- Glacier National Park (wildland)
- Flathead County Fire Service Area (structural fire in the park on private lands)

* Fires that originated outside Glacier National Park and then spread into it. The first number is the number of National Park Service acres burned, and the second is the total number of acres burned.

Area 6 Recommended Actions

Private Landowner Checklist

- ☐ Create and maintain Home Ignition Zone (HIZ) for all buildings.
- ☐ Modify vegetation by reducing grasses, shrubs, and trees. The more adjacent properties that have fuels reduction work done on them, the greater the safety of the entire neighborhood. Working in connection with neighbors can benefit all parties. Connecting properties together that have fuels work done can improve the safety of all.
- ☐ Work with other landowners and agencies to develop access and escape routes that are adequate to get people out if needed.
- ☐ Thin fuels on all roads and driveways. This should be done on both sides of the road at a minimum of 50 feet from the edge of the road, to allow access for emergency responders and escape for residents.
- ☐ Post 3-inch reflective home address numbers at the end of your driveway.
- ☐ Prepare a Family Evacuation Plan.

Glacier National Park

1. Evaluate Glacier National Park land to determine the level of wildfire risk present to Glacier National Park and adjacent properties.
2. Reduce wildland fuels in critical areas adjacent to homes, commercial properties, and infrastructure to break up the continuity of wildland fuels and reduce wildfire intensity.
3. Create and maintain the Home Ignition Zone (HIZ) for all GNP structures.
4. Encourage and advise private landowners to create and maintain HIZ on their properties.
5. Evaluate access and escape improvement opportunities on one-way in/one-way out roads where landowners gain access through Park land.
6. Utilize prescribed fire in areas where fire has been identified as an appropriate land management tool.
7. Provide public information and fire prevention campaigns to residents and landowners. Provide information on status of fire danger and any current wildfires in the area.

Flathead County Fire Warden/Fire Service Area Manager

1. Provide public information and mitigation recommendations to residents and landowners.
2. Evaluate Flathead County owned land to determine the level of wildfire risk present to Flathead County property and adjacent properties.
3. Assist with fuels reduction projects on county land to promote healthy land ecosystems and reduce fire intensity.

Area 6 Focus Projects

AREA 6	6.1 North End of Lake MacDonald
Project Type: Fuels Reduction Fuel treatment HIZ work	Project Description: There is a need to work with Glacier National Park and adjacent landowners to promote HIZ work and fuels work on private lands and park lands. Evaluate the risk of wildland fire along the roadway that would be used to evacuate the area. Depending on the slope and the fuels, thin 20 to 50 feet on each side of the roadway for safe travel into and out of residential areas.
Project Coordinators: GNP Flathead County FSA	Target Date:

AREA 6	6.2 Grist Road Area
Project Type: Fuels Reduction Fuel treatment HIZ work	Project Description: There is a need to work with Glacier National Park and adjacent landowners to promote HIZ work and fuels work on private lands and park lands. Evaluate the risk of wildland fire along the roadway that would be used to evacuate the area. Depending on the slope and the fuels, thin 20 to 50 feet on each side of the roadway for safe travel into and out of residential areas.
Project Coordinators: GNP Flathead County FSA	Target Date:

AREA 6	6.3 Kelly Camp Area	
Project Type: Fuels Reduction Fuel treatment HIZ work	Project Description: There is a need to work with Glacier National Park and adjacent landowners to promote HIZ work and fuels work on private lands and park lands. This area was burned in the Howe Ridge Fire and will need to be evaluated on the danger of dead trees. Evaluate the risk of wildland fire and hazard trees along the roadway that would be used to evacuate the area. This will allow for safe travel into and out of residential areas.	
Project Coordinators: GNP Flathead County FSA		Target Date:

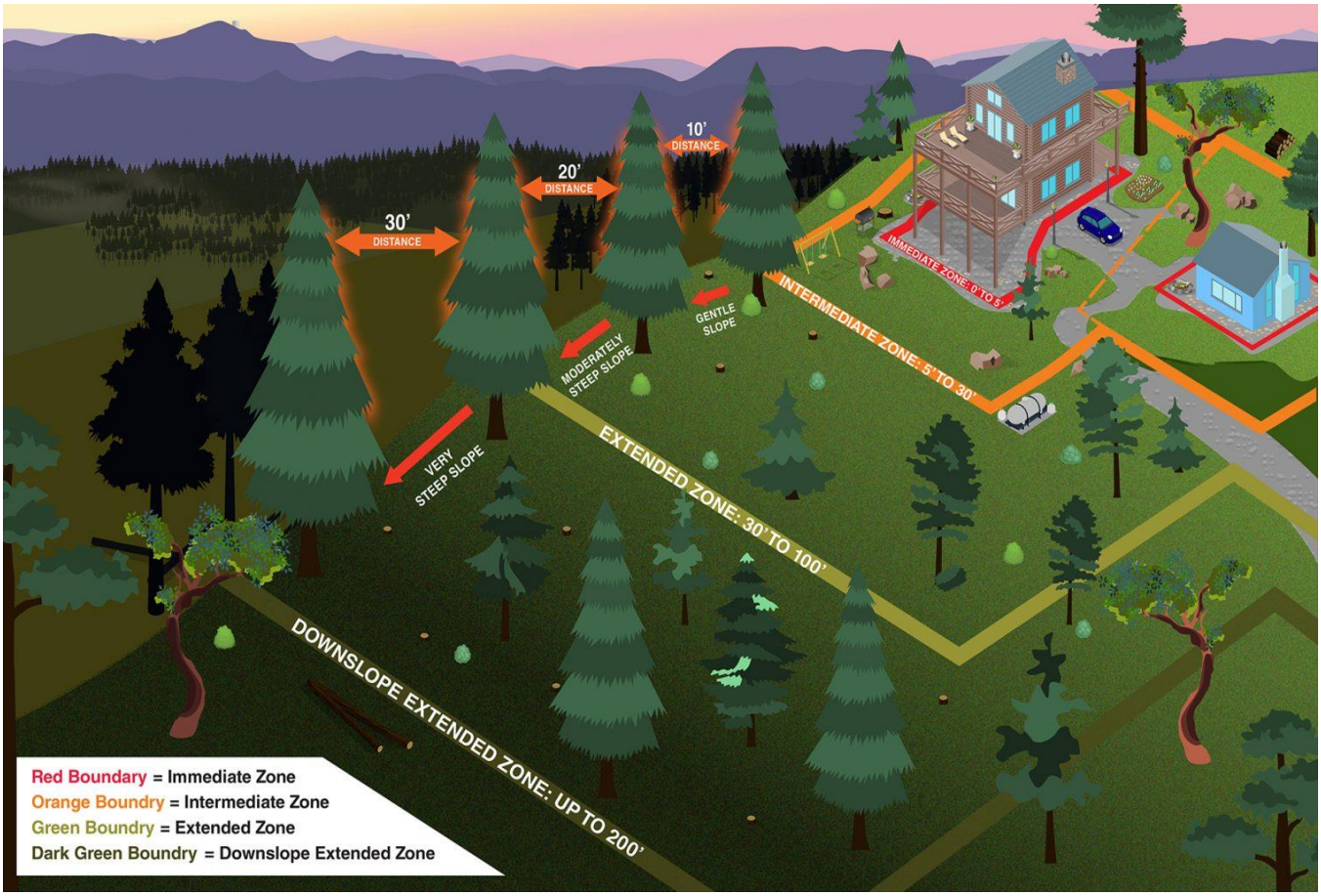
Mitigation Strategies for Private Landowners

HOME IGNITION ZONE (HIZ)

Over the past few decades, Jack Cohen, physical fire scientist at the Missoula Fire Sciences Lab, conducted wildfire research using post-fire investigations, lab studies, and crown fire experiments. His research resulted in the Home Ignition Zone (HIZ) concept. The Home Ignition Zone is the area from 0 to 100 or 200 feet around your home, divided into 3 zones (see figure 18). In a wildfire, most homes are lost to low-intensity ground fires or the blizzard of embers associated with a wildfire. Maintenance of the HIZ can reduce the intensity of fire and allow for safer, more effective firefighting efforts.

Creation and maintenance of the Home Ignition Zone is the most important action to take when preparing for wildfire. Slope and fuel conditions will affect the size of the Home Ignition Zone, as homes near steep slopes and in heavy fuels should clear additional vegetation to mitigate the effects of wildfire.

Figure 18
Home Ignition Zone



Source: Santa Clara County FireSafe Council. "Home Ignition Zone." JPEG.

ZONE 1 - Immediate Zone
0-5 feet: Maintain a noncombustible perimeter around all structures

1. Repair or replace loose siding and caulk any cracks to prevent embers from accumulating.
2. Replace rotten deck boards, clear spaces between decking of debris, and keep decks clear of combustibles during peak fire season. Embers landing and accumulating on decks are frequently the cause of home ignition.
3. Install ⅛-inch metal screening on gable, eave, and foundation vents. This is recommended to prevent large embers from passing through into the home. Standard screening is ¼-inch and should be replaced.
4. Gutters and roofs should be cleaned annually before fire season. Leaves and needles land, accumulate, and bake in the summer sun. This makes them receptive to ember ignition.
5. Maintain a noncombustible perimeter and move any flammable materials away from exterior walls. Remove anything stored under decks or porches. The ground under decks should be non-flammable.

ZONE 2 - Intermediate Zone
5-30 feet: Incorporate ignition-resistant landscaping/hardscaping concepts

1. Keep grass mowed to 4 inches or less.
2. Remove all tree branches or "ladder fuels" 6 to 8 feet from the ground.
3. Trim shrubs and remove any dead material.
4. Space trees to a minimum clearance of 10 feet between crowns (the longest branches).
5. Maintain adequate driveway clearance 20 feet wide. Thin fuels 50 feet from each side of the driveway by removing vegetation to decrease the fire intensity.

ZONE 3 - Extended Zone
30-100 or 200 feet around the home (depending on topography)
The goal is to manage this area and decrease fire intensity to a surface fire that will stay on the ground, produce fewer embers, and allow most of the trees to survive.

1. Remove heavy accumulations of forest fuels.
2. Remove small conifers (ladder fuels) growing between mature trees.
3. Remove vegetation adjacent to outbuildings.
4. Maintain 10 feet between tree crowns.

Zone 3 is the property perimeter buffer which is 100 feet to the property line for lots 2.5 acres or less or 60 feet to 200 feet around the perimeter of lots larger than 2.5 acres. This serves as a transition zone to reduce the wildfire rate of spread and intensity. It moves the fire from a crown fire into a ground fire so that fire department resources can safely respond.

EMBER AWARE
Windblown embers and low-intensity surface fires, fires that burn debris on the surface, are the primary cause of structure loss in a wildfire. Embers often precede the flaming fire front. They can be carried by high winds that distribute a blizzard of embers or transport firebrands (burning pinecones, branches, or shingles) over long distances. These embers fall or are wind-driven onto receptive fuels (dry leaves, needles, grasses, bark mulch) at structures. They often smolder and go undetected for some time. As the fire front passes, embers may ignite new spot fires, fires ignited outside the area of

the main fire, that spread to homes. Once a home has ignited, home-to-home ignition is common and difficult to extinguish. For further information see Be Embers Aware in the Resource section.

Figure 19
Leaves on a Roof

Source: Rau, Jennifer. Leaves on a Roof. 2020. JPEG.

BUILDING MATERIALS/ FIREWISE CONSTRUCTION

A home may be vulnerable to a wildfire because of its design, construction, and/or location. There are steps a developer, architect, builder, or landowner can take to reduce the likelihood of a home igniting as well as resisting further damage if it does catch fire.

In the spring of 2019, the Insurance Institute for Business and Home Safety (IBHS) conducted a series of tests to explore how embers get into various home construction materials. The tests illustrated the threats presented by embers. Preparedness steps residents can take are found in the resource "Protect Your Home From Wildfire". This contains recommendations for building materials and designs for homes being built or retrofitted in the Wildland Urban Interface (see figure 20).

These recommendations include:

- Create and maintain Home Ignition Zone around your home.
- Use noncombustible roofing and gutters. Keep both clean of leaves and pine needles.
- Examine your windows and replace single pane windows. Install screens to protect from embers.
- Choose noncombustible materials for your deck and keep it maintained. Replace rotting decking and keep the area under the deck noncombustible.
- Ensure that your siding is at least 8 inches from the ground. Keep the area from the ground to the siding clear of any material that could catch on fire.
- Construct fences and gates of noncombustible materials.
- Install ⅛ inch screens behind all house vents to prevent embers from entering.

Figure 20
Wildfire-Resistance: Make the "RIGHT" Choices

Source: "Wildfire-Resistance: Make the "RIGHT" Choices." *DisasterSafety.org*, Insurance Institute for Business & Home Safety (IBHS), www.disastersafety.org/wildfire/protect-your-home-from-wildfire/.

FIRE-RESISTANT LANDSCAPING

Fire-resistant landscaping involves designing the area within your Home Ignition Zone so that it is less likely to burn. This considers types of fire-resistant materials to use such as plants, trees, and shrubs as well as materials to use in between the landscaped areas such as brick paths, rock walls, and landscaping stone.

Some steps to improve your current landscape for fire-resistance include:

- Rake and remove dead leaves.
- Prune trees so the lowest branches are 6-8 feet off the ground.
- Keep firewood stacked away from buildings, plants, and flammable materials.
- Reduce ladder fuels, grasses and shrubs around the base of trees, which allow fire to climb up trees.

Using hardscape materials such as concrete, brick, stone, and metal to design a yard can be advantageous to maintaining the Home Ignition Zone. Paved or gravel driveways and walkways can act as a fire break. Rock walls can also provide a fire break. Stone or tile patios can help prevent embers from gathering and spreading a fire. Landscape stone around a home instead of cedar mulch can prevent embers from gathering next to the home and starting it on fire. Water features in a yard provide areas where embers cannot build up. Irrigated lawn systems can keep grasses and trees from drying out. ("The Ultimate Guide to Fire-Safe Landscaping")

Focusing on using fire-resistant plants, shrubs, and trees in a yard is very helpful in maintaining the Home Ignition Zone. Common fire-resistant plants include; Coneflower, Coral Bells, Hens and Chicks, Honeysuckle, Wooly Thyme, and Lilac. Common fire-resistant trees include; Cherry, Hawthorn, Maple, Poplar, and River Birch. Grouping plants by similar height and watering needs will also help to slow the spread of fire. ("Fire and Your Landscape")

FOREST MANAGEMENT

Homes in the Wildland Urban Interface may have a better chance of surviving a wildland fire if the wildland areas near them have been treated to reduce fuel. The desirable pro-active treatment of structures and vegetation *in* the Home Ignition Zone was described earlier, but just as important are the treatments that should be done *outside* of that zone.

The forested landscape in northwest Montana has changed drastically over the last century. Many forests are overpopulated with trees due to fire exclusion policies dating back to the early twentieth century. This resulted in widespread continuous forests of the same age class with on average smaller trees and much greater fuel loads. Areas that were once openings became forested which reduced the historic diversity of the forest. The trees in these now widespread continuous forests compete with each other for sunlight, nutrients, and water which slows tree growth and increases susceptibility to insects, disease, and high intensity wild fires (see figures 21 and 22).

Figure 21
Forest Without Fuels Treatment

Source: Chute, Lincoln. Forest Without Fuels Treatment. 2019. JPEG

Figure 22
Forest After Fuels Treatment

Source: Chute, Lincoln. Forest After Fuels Treatment. 2019. JPEG

There are several forest types found in Flathead County:

- Dry Montane – This type is warm and dry with sites generally found in the valley floor. It consists of Ponderosa Pine, Douglas Fir, and Western Larch.
- Moist Montane – This type is cool and moist with sites found on the north facing hills between 3,000-5,000 feet elevation. It consists of Douglas Fir, Engelmann Spruce, and Lodgepole Pine.
- Lower Subalpine – This type is cool with moist sites between 5,000-7,000 feet elevation. It consists of Alpine Fir and Engelmann Spruce.
- Upper Subalpine – These are cooler sites, generally above 7,000 feet to the upper timberline. It consists of Dwarfed Alpine Fir and Engelmann Spruce.

When a fire burns in the current widespread continuous forest, it tends to move through it with a greater intensity than what would have happened historically. It increases the resistance for firefighters to control a fire and leaves very few if any live trees in its wake. This is because of the

amount of fuel on the ground and in the canopy due to the fire exclusion policies of the past. Homes within or adjacent to these areas have a greater chance of survival when Home Ignition Zone work and fuel treatments around the home and property have been completed. When neighbors or adjoining property owners and land managers work together to connect fuel treatments, they can reduce fire intensity on a landscape level. This approach can benefit entire communities and neighborhoods not just individual property owners.

The benefits of forest management and fuel treatments include but are not limited to:

- Lower fire intensity is less of a threat to people and property.
- Increased firefighter safety and effectiveness.
- Lower intensity fires have a tendency to kill fewer trees than a crown fire.
- Connected fuels treatments create landscape level reduced fire intensity.
- Increased forest health and diversity by reduced competition for water, nutrients, and sunlight.
- Noxious weed management to encourage the growth of native species and healthier landscapes.

There are four basic principles of forest fuel reduction treatments.

- Reduce surface / ground fuels
    - Accumulations of twigs, tree limbs, downed trees, dead brush
- Reduce ladder fuels
    - Small and mid-sized trees and tree limbs that enable fire to move from the ground to the crowns of the larger trees
- Thin crown fuels
    - Break up the continuity of the tree crowns
- Retain large fire resistant trees
    - Generally, Ponderosa Pine, Western Larch, Douglas Fir, Birch, Cottonwood, and Aspen

Fuels treatments once completed require maintenance to remain effective. Once initial treatment has occurred it is much more cost effective to maintain on an annual basis because it is less labor intensive.

Fuel reduction forest management methods generally vary by forest type, condition, and age.

- General labor handwork (homeowner and /or contractor)
    - Handsaw, loppers, chainsaw, chipping, hand piling, pile burning
- Mechanized logging equipment (usually a forest management contractor)
    - Whole tree removal or in woods processing
    - Consult with a MT-DNRC service forester and/ or a professional forester
- Prescribed Fire
    - Hand piles
    - Slash or machine pile burning from mechanized logging work
    - *Broadcast burning (reduce surface and ground fuel from mechanized logging work))
    - *Ecosystem/ landscape burning (to promote ecosystem health, benefit wildlife, reduce accumulation of fuels, and break up the continuity of continuous forests.)

*Broadcast and ecosystem landscape burning is usually accomplished by land management agencies with equipment and trained professionals.

Some key points to take into consideration before burning smaller areas and brush piles:

- Check local regulations, a permit may be required. State law requires residents to check air quality before burning. In Flathead County call 406-751-8144 or go to Flathead City-County website. The DNRC has burn permit applications and information at the FireSafe Kalispell website. The DNRC also has safety information at this website. http://dnrc.mt.gov/divisions/forestry/fire-and-aviation/fire-prevention-and-preparedness/debris-burning-safety
- Household trash, plastic, tires, and construction materials are illegal to burn
- Choose a safe burning site away from power lines, overhanging limbs, buildings, vehicles, and equipment. Vertical clearance should be at least 3 times the height of the pile.
- Keep the area surrounded by the burn watered down and have a shovel close by.
- Keep piles small and manageable. Add additional debris as the fire burns down.
- Be courteous of neighbors and the smoke that is produced. Always stay with the fire until it is completely out. Drown the fire with water, turn over the ashes with a shovel, and drown it again. Repeat several times.
- Check the burn area regularly over the next several days and up to several weeks following the burn, especially if the weather is warm, dry, and windy.

For more information on Forest Management visit these sites:

- Montana Department of Natural Resources and Conservation (DNRC)
- Montana Logging Association
- Montana State University Extension
- National Park Service
- Natural Resources Conservation Service (NRCS)
- Northwest Montana Hazardous Fuels Program
- U.S. Forest Service (USFS)

Mitigation Strategies for Large Landowners

AGRICULTURE COMMUNITY AND GRAZING

Flathead County can expect the continued spread of fires from timbered grounds, such as State and US Forest Service lands, onto private land. State and federal agencies should strive to continue to work with the agriculture community to promote best practices when harvesting operations are happening in very high and extreme fire danger or during fire restrictions.

Landowners should be encouraged to sustain grass ecosystems through grazing and to control tree encroachment in those areas, particularly where they are adjacent to heavily timbered federal lands.

Recommendations for the agricultural community include:

- Carry a fire extinguisher and shovel on all equipment. Have a way to quickly communicate with 911 at all times.
- Start harvesting at the outer edge of fields to create a fire control line. If possible, have tillage equipment at the location to build a fire line.

TIMBER PRODUCTS INDUSTRY

Flathead County has an abundance of forested lands. The timber industry is a valuable resource that can be used on a wildland fire. The timber equipment that is built to work in the woods is the perfect tool to use on a wildland fire. It can be used to build a fire line or a shaded fuel break. The equipment can thin fuels faster and safer than by hand. The majority of Montana's logging contractors are very highly skilled foresters. They take great pride in the finished product that they leave. Flathead County is fortunate to still have local mills. This infrastructure is needed to process the timber when thinning. It allows agencies and landowners to recoup costs when doing fuel reductions on private property. The timber industry can also assist state and federal agencies and private landowners with managing the land.

Proper timber harvest techniques, combined with the Best Management Practices (BMPs), result in a healthy forest that supports fish, wildlife, clean water, and healthy ecosystem processes. Reducing tree densities will result in greater soil moisture resources. This will make forests more resilient to drought, insect infestation, and disease. A healthy managed forest often allows the wildland fire intensity and severity to be reduced.

Severe wildland fires may result in a large movement of surface ash and soil into streams which, depending on the time of year and watershed, can have major short-term impacts on water quality and quantity. Landowners and state and federal agencies should consider post fire salvage logging immediately after a wildfire that includes leaving a reasonable amount of logging debris (chips, needles, bark, small branches) in close contact with fire-affected soils. This can help stabilize soils, minimize erosion, and retain moisture on the site.

Private timber industry land management in Area 2, west of Hwy 93, has created valuable fuel breaks for the west side of Flathead County. As this area continues to be harvested, it will create more shaded fuel breaks. The sale of private industry lands throughout the county continues to create more subdivisions and expand the Wildland Urban Interface.

PRESCRIBED FIRE

Fire has always been a part of the environment, and as one of the most important natural agents of change, fire plays a vital role in maintaining certain ecosystems. Native Americans understood this and used fire to run game, maintain prairies, and keep ecosystems healthy. Prescribed fires refer to the controlled application of fire by a team of fire experts under specified weather conditions that helps restore health to ecosystems that depend on fire. State and federal agencies should utilize prescribed fire whenever possible to restore and maintain the historic character of the forest. More information can be found at the US Forest Service website.

Prescribed fires help our lands and surrounding communities by:

- Safely reducing excessive amounts of brush, shrubs, trees, leaves, and needles.
- Breaking up the continuity of the widespread continuous forest at a landscape level
- Encouraging the new growth of native vegetation
- Maintaining the many plant and animal species whose habitats depend on periodic fire

Some key points to take into consideration before burning large areas:

- Check local regulations, a permit may be required. In Flathead County call 406-751-8144 or go to Flathead City-County website. Burn permit applications and information can be found at the FireSafe Kalispell website. The DNRC also has safety information for debris burning at its website.
- Have a plan that includes:
    1. A method to ignite the fire.
    2. Steps to hold the fire within the boundary of the prescribed area.
    3. Contacting neighboring landowners and fire protection agencies. Contacting the fire department to participate in these burns, when practical, improves their training, qualifications, and experience in wildland fire management
- Prepare the worksite to reduce the ability of the fire to escape.
    1. Check the conditions.
    2. Don’t burn when it’s windy or when vegetation is very dry.

Figure 23
Prescribed Fire West of Ashley Lake After Timber Harvest

Source: Chute, Lincoln. Prescribed Fire West of Ashley Lake After Timber Harvest. 2019. JPEG.

SMOKE MANAGEMENT

The goal of smoke management is to not adversely affect the public with smoke. This is accomplished by considering conditions such as ventilation, wind, fuel moisture, weather, and size of the burn area. Short term burning helps control the amount of smoke that is put into the atmosphere.

In the Wildland Fire and Air Quality pamphlet, April 2016, smoke management is described as follows.

"Attempts to suppress all wildfires in the past have resulted in unintended consequences, including increased risks to both people and ecosystems. Wildfire smoke can result in significant air quality impacts to public health, particularly for at-risk groups. It also impacts safety and transportation through diminished visibility on roads and aviation corridors. In contrast, prescribed fires provide an opportunity to adjust the timing of fire and some ability to manage the amount of smoke and its path, thereby reducing the impact of fire emissions. Prescribed fire, managed using basic smoke management practices, can reduce the impacts on air quality while meeting fire-related objectives." ("Wildland Fire and Air Quality" 3)

The groups that do large prescribed burns, USFS, DNRC, GNP, and Industrial Timber Companies, all coordinate in northwest Montana when planning prescribed fire. They coordinate with county and state air quality to plan burns when the smoke will be ventilated out of the valley and have the least effect on the public.

Residents should check the Flathead City-County Health Department web site before burning to make sure there are no restrictions.

County, State, and Federal Projects

PROGRESS TOWARD ACCOMPLISHMENT OF FLATHEAD COUNTY'S CWPP 2011 GOALS AND OBJECTIVES

The overarching principle of the CWPP remains to ensure the safety of the public and firefighters. Closer coordination of wildfire response planning with public and/or private fire prevention and hazard mitigation efforts is being achieved. On-going, collaborative implementation activities (modified, as appropriate, when financial resources and/or on the ground conditions change) include:

- Reducing wildland fuels in and around neighborhoods and communities.
- Coordination of multi-agency fire responses across all jurisdictions has continued to be successful.
- Promoting healthy forest and rangeland ecosystems by reducing hazardous fuels.
- Educating community members in how to prepare for wildland fire and how to mitigate wildland fire damage.
- Implementing the Flathead County CWPP 2011.
- Identifying, designating, updating, and mapping the Wildland Urban Interface areas in the county.
- Identifying, coordinating, and implementing hazardous fuels reduction projects in concert with private landowners in Flathead County. Financial assistance through competitive grants is helping to fund this work.

The CWPP 2011 Chapter 10 Mitigation Strategy- The Action Plan identified projects to be completed in the WUI. The projects were reviewed in preparing the CWPP 2020 update. A list was made of those that had been completed, cancelled, modified, or ongoing. Some projects were cancelled because they were unattainable. The Fuel Modification Projects that were modified are small pockets or subdivisions of land. They were incorporated into a larger geographic area. This gave a wider project area instead of looking at one subdivision that needed treatment (see table 2). The 2011 CWPP can be referenced to review the projects.

Table 2
CWPP 2011 Project Update

CWPP 2011 PROJECT UPDATE *					
Category	Project Number	Completed	Cancelled	Modified	Ongoing
Wildland Urban Interface	10.5.1.1	X			
	10.5.1.2	X			
Fuel Modification Projects	10.5.2.1				All Areas
	10.5.2.1.1			X	All Areas
	10.5.2.1.2			X	All Areas
	10.5.2.1.3			X	5.3
	10.5.2.1.4			X	2.1
	10.5.2.1.5			X	
	10.5.2.1.6			X	4.1
	10.5.2.1.7			X	
	10.5.2.1.8		X		
	10.5.2.1.9			X	
	10.5.2.1.10		X		
	10.5.2.1.11			X	All Areas
	10.5.2.1.12			X	
Industrial Resource Management	10.5.3.1	X			
	10.5.3.2	X			
Biomass Utilization	10.5.4.1		X		
	10.5.4.2		X		
Safety Zones	10.5.5.1		X		
	10.5.5.2		X		
Infrastructure Improvements					
Water Supply	10.5.6.1	X			
	10.5.6.1.1	X			
	10.5.6.1.2	X			
	10.5.6.1.3	X			
Utilities	10.5.6.2.1	X			All Areas
	10.5.6.2.2	X			All Areas
	10.5.6.2.3	X			All Areas
Emergency Response	10.5.6.3.1	X			All Areas
	10.5.6.3.2	X			All Areas
	10.5.6.3.3		X		
	10.5.6.3.4	X			All Areas

CWPP 2011 PROJECT UPDATE (continued)					
Category	Project Number	Completed	Cancelled	Modified	Ongoing
Fire Stations	10.5.6.3.1.1	X			All Areas
	10.5.6.3.1.2	X			
	10.5.6.3.1.3		X		
Training, Certification, and Qualification	10.5.6.3.2.1	X			All Areas
Operational Procedures and Programs	10.5.6.3.3.1		X		
Staffing	10.5.6.3.4.1	X			All Areas
	10.5.6.3.4.2		X		
Access	10.5.6.4.1	X			All Areas
	10.5.6.4.2	X			All Areas
	10.5.6.4.3	X			
Asset Protection Zone	10.5.7.1	X			
	10.5.7.2		X		
Recommended Building Materials	10.5.8.1	X			All Areas
Fire-Resistant Landscaping	10.5.9.1	X			All Areas
	10.5.9.2		X		
Evacuation Plan	10.5.10.1	X			All Areas
Public Education	10.5.11.1	X			All Areas
	10.5.11.2	X			All Areas
	10.5.11.3	X			All Areas
	10.5.11.4				Firesafe Flathead
	10.5.11.5	X			All Areas
	10.5.11.6	X			All Areas
Legal Requirements	10.5.12.1.1	X			All Areas
	10.5.12.1.2	X			All Areas
	10.5.12.1.3	X			All Areas
	10.5.12.1.4		X		
Agreements, MOUs & Operating Plans	10.5.12.2.1	X			All Areas

* CWPP 2011 project information is found in the CWPP 2011 in the Resource Section.

FEDERAL AND STATE PARTNER MITIGATION PROJECT UPDATES

MONTANA DEPARTMENT OF NATURAL RESOURCES AND CONSERVATION

The Montana Department of Natural Resources and Conservation Forest Management Bureau manages Montana's forested State Trust Lands to maximize long-term revenue for the school trust, while promoting healthy and diverse forests on over 780,000 acres. Revenue from forested trust lands is derived mainly from the sale of forest products.

Program goals are determined by an annual *sustained yield calculation* that defines a target volume. The Northwest Land Office of the DNRC currently has a target volume of 38.1 million board feet (mmbf), the majority of the 56.9 mmbf statewide total. That is about 7,620 acres of timberlands.

Timber sales are identified and designed with several considerations in mind: forest insect and disease activity, fuels reduction opportunities, as well as general stand health and vigor.

In addition to harvesting timber, forest improvement is a priority for the forest management bureau. This work consists of post-harvest planting of seedlings; pre-commercial thinning of regenerating stands; site preparation through pile burning, prescribed fire, or scarification; road maintenance; invasive weed management; and other measures. This is all done with the intent of maintaining healthy, productive forested state lands and to provide a sustainable timber volume that will benefit future generations of Montanans.

GLACIER NATIONAL PARK

Fuels management in Glacier National Park in 2019 was focused primarily on hazardous fuels reduction around structures and adjacent to values at risk. Some ecological restoration burning, and cultural resource protection was also completed. Locations included Saint Mary, Apgar, West Glacier, Polebridge, and the backcountry. Several types of treatment included:

- 99 acres of broadcast burning
- 20 acres of piles burned
- 24 acres of thinning
- 22 acres of piling completed

The foremost outcome of hazard fuels reduction activities is enhancement of firefighter and public safety. In addition, real property and natural and cultural resources are afforded better protection from future wildland fires.

FLATHEAD NATIONAL FOREST

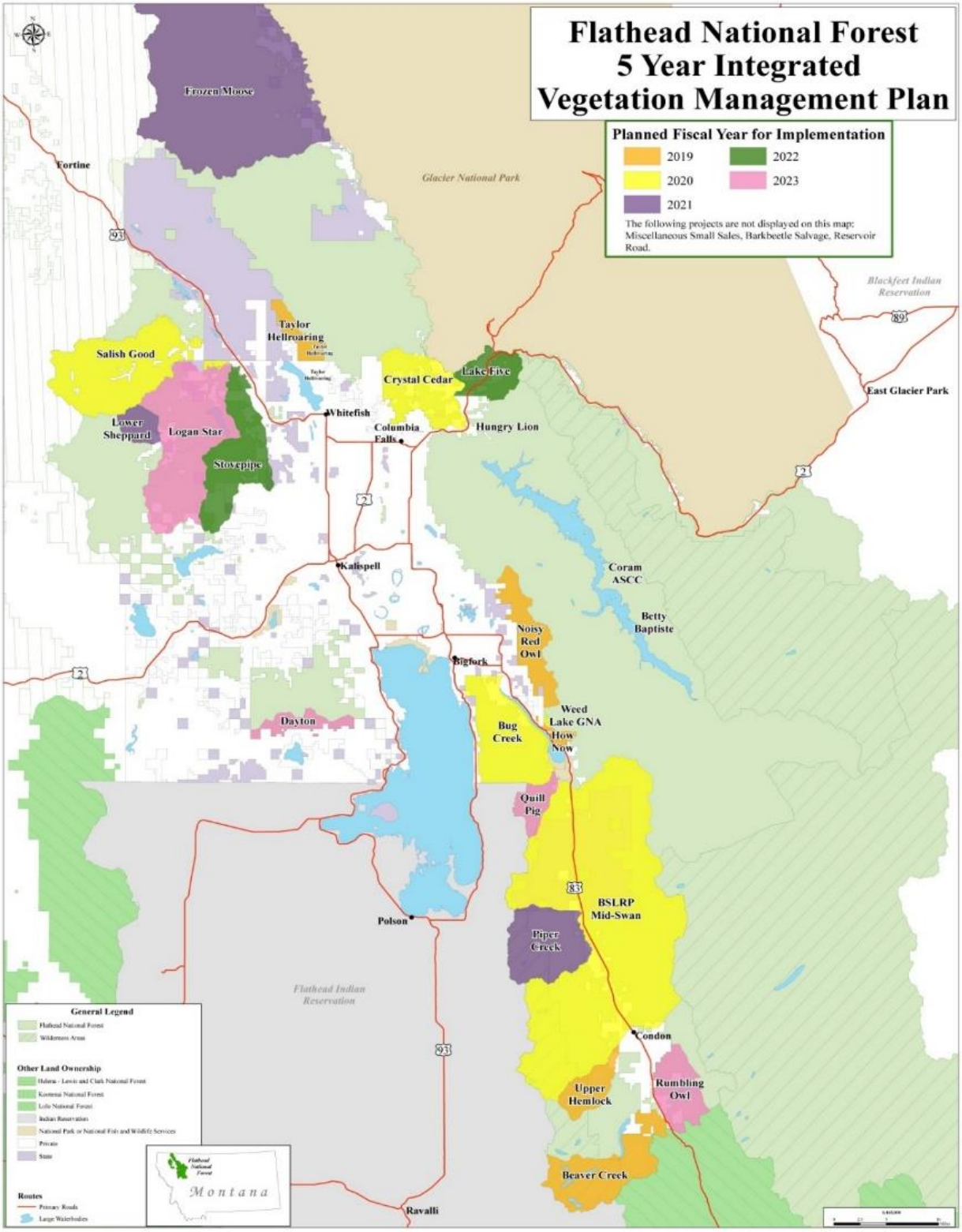
In 2019, the Flathead National Forest completed a variety of hazardous fuel reduction work. It was a part of active management to promote healthy vegetation, change the way wildfire moves through our forest, and reintroduce fire as part of our natural ecosystem.

- 1,250 acres burned through prescribed fire
- 1,080 acres of piles burned
- 4,384 acres thinning/slashing completed
- 640 acres of piling completed
- 4,955 acres of treatment contributed through timber harvest

A couple of key projects were hand slashing and piling 64 acres for the Hungry Lion project located near the town of Coram and hand slashing 100 acres on the Slippery Bill project near Pinnacle Creek that will be jack pot burned. The Logan prescribed fire in the spring of 2019 treated 300 acres near Tally Lake.

Please refer to the cross boundary map for USFS activities from 2000 to the present. A link to this website is included in the Resource section of this document. There are several projects active across the forest currently. Please refer to the Flathead National Forest 5 Year Integrated Vegetation Management Plan Map for future projects (see figure 24). Note that the Flathead National Forest periodically changes priorities on projects planned for implementation for various reasons.

Figure 24
Flathead National Forest 5 Year Integrated Vegetation Management Plan



Source: United States Forest Service. *Flathead National Forest 5 Year Integrated Vegetation Management Plan.* Map. United States Department of Agriculture.

FLATHEAD ECONOMIC POLICY CENTER (FEPC)
Initially the Northwest Regional Resource and Conservation District (RC&D), based in Libby, was the organization receiving funding from the Montana Department of Natural Resources (DNRC) and Conservation for hazardous fuels reduction projects in Flathead, Lincoln, and Sanders Counties.

When that organization's board voted in late 2011 to cease operations, it still had several uncompleted hazardous fuels reduction grants from DNRC. The agency approached FEPC to ask if the center would be willing to take over administration of those grants. In January 2012 it transferred management of the existing grants to FEPC and encouraged the center to compete for future grants as well. FEPC was already involved in Flathead County's CWPP process as a result of other on-going projects it was carrying out.

Since then, it has had the following accomplishments through DNRC's continued funding of hazardous fuels reduction in Flathead County (in addition to its work in Lincoln and Sanders Counties).

HASKILL BASIN -originally awarded to the RC&D with a goal of 280 acres to be treated in Flathead County. The grant was for $210,550.14. FEPC grantees accomplished work on 383.0 acres.

WIN-WIN -originall**y** awarded to the RC&D with a goal of 300 acres to be treated in Flathead County. The grant was for $232,184.59. FEPC grantees accomplished work on 411.2 acres, generating a match of $501,940.08 in private dollars from participating landowners.

NORTH FORK FLATHEAD -originally awarded to the RC&D with a goal of 101 acres. The North Fork Fire Mitigation Committee worked with FEPC on an application to continue the funding, which was approved in November 2011. In addition to creating defensible space around homes, project activities were designed wherever possible to create or expand landscape level fuel breaks (frequently across multiple private lands and/or linking with existing or planned fuel breaks on federal or state forest lands), and to improve safe ingress and egress to/from properties. The grant was for $99,637.00, but the total project cost was $166,084.06, with the landowners contributing the balance either in cash or their own labor.

FLATHEAD WEST -was identified in the first Flathead CWPP as a critical area in need of treatment because of its history of large wildfires, significant new residential and commercial development, and critical infrastructure (major highways, power distribution lines, etc.). The key outcome of the award was to be "fuels mitigation on 248 acres of private property." Cost-share agreements were completed on 668.7 acres. The Western States grant was for $270,000.00, but landowners' contributions (either in payments to contractors and/or in their own donated labor) brought the total project cost to $1,231,136.76.

BIG MOUNTAIN TO MARIAS PASS -was identified in the CWPP as an area at high risk of a large, catastrophic wildfire burning from the south/southwest. Allowable activities included "fuels reduction and hazard mitigation activities associated with the threat of wildland fire" and "activities associated with homeowner education, fire prevention, and restoration of fire-adapted ecosystems." The key outcome of this competitive Western States project was to be completion of fuels mitigation on 270 acres of private property within the project area. In the end the project treated 694.43 acres at a cost of $1,052,129.61, with DNRC contributing $270,000.00 and landowners the balance of $782,129.61

NORTH FORK–HUNGRY HORSE WILDLAND URBAN INTERFACE -The North Fork Landowners Association's Fire Mitigation Committee worked closely with FEPC in developing and implementing the grant for this project. The primary emphasis was to improve the egress along the Trail Creek Road and connect shaded fuel breaks in the Trail Creek area, both to help slow a fire moving through the target area, and to provide an alternate escape route for evacuation in the event that the main North Fork Road was blocked by fire. To enable implementation of this grant, committee members personally talked with all of the landowners along Trail Creek to secure their participation in the critical egress route. The individual landowner agreements that enabled project implementation included a requirement that homeowners maintain their treatments for 10 years following initial completion of their cost-share projects. Flathead County's Roads Department and its Office of Emergency Services were significant contributors to this project. They were involved in both the planning and implementation stages. The DNRC grant provided $91,098.00, and landowners and others contributed $196,392.32 in cash, labor, and/or equipment use.

FLATHEAD SOUTH -This Western States competitive grant built on the hazardous fuels' reduction work completed with past grants in the area, as well as complementary work done on US Forest Service, State, and industrial forest lands. Activities included creating defensible space, providing safe ingress and egress, and constructing landscape-level fuel breaks to reduce the risk to the communities in the area. The key outcome of the project was to complete "fuels mitigation on 275 acres of private property" as well as marketing and public educational awareness of the project." Although 515.3 acres were treated, demand far outstripped the available financial resources. The DNRC grant provided $270,000.00, which generated a match of $756,607.70 in cash or labor.

MARTIN-RADNOR -The purpose of this project was to "establish mutually agreeable terms and conditions, specifications, and requirements…for community protection and fuels mitigation projects on non-federal lands adjacent to federal fuels mitigation projects (prescribed fire) in Flathead County." The outcome of the project was to be treatment of 80 acres, but cost-share agreements were completed on 126.4 acres**.** Defensible space was created around homes, together with the development of new or expansion of existing landscape-level fuel breaks, and improvement of ingress and egress from treated properties. The majority of landowners in this area have not had direct experience with a wildfire, unlike others in areas within Flathead County. It was encouraging to see the support of the federal and state foresters and fire managers. DNRC provided $90,300.00 in grant funds, to which was added $125,066.90 provided in cash or in labor by participating landowners.

FLATHEAD NORTH -is a current Western States project, the key outcome of which is to be "completion of fuels mitigation on 275 acres of private property within the project area." The budget is $270,000.00 in DNRC funding with a match requirement of $90,000.00. As of January 1, 2020, expenses totaled $193,212.18, with $138,144.27 of that amount in cost-share payments to landowners.

MANY LAKES -is our most recent Western States project, focused on the part of Flathead County east of Highways 35 and 206. This project can be used to address important hazardous fuels reduction activities in other parts of the county. The key outcome is completion of approximately 66 projects on a minimum of 240 acres of private property. The funds became available on January 17, 2020, so FEPC is still in the early stages of contracting with landowners applying for funding,

OVERLOOK SUBDIVISION -is the first of a new type of grant from DNRC, targeted at subdivisions and other clustered areas where landowners have already tentatively agreed to participate and are prepared to start work immediately. Overlook will provide $43,450.00 to facilitate implementation on an estimated 40 acres, with the expectation that work will be completed by all participants within a year of the award. Overlook was approved on October 21, 2019, and on-the-ground work was to commence on January 1 and be completed by December 31,2020, although an extension may be granted if FEPC can show good cause (defined as external factors preventing completion of the work).

SUNCREST SUBDIVISION -was approved for $26,900.00 on January 14, 2020 and calls for completion of 37 acres of private property within the Suncrest area by December 31, 2020. FEPC received no funds for its advance expenditures but can receive $2,200.00 for staff salary and benefits during implementation, as well as $500.00 for operating expenses.

PTARMIGAN VILLAGE -was also approved for $44,300.00 on January 14, 2020, with a completion date for work on the ground of December 31,2020. The expected outcome is treatment of 50 acres in the project area.

PUBLIC EDUCATION

The local, state, and federal agencies will share and jointly work together to deliver fire prevention programs. Activities may include joint press releases, Smokey Bear programs, campaigns such as One Less Spark or One Less Wildfire, and local education programs. The state and federal agencies will share the cost of prevention activities as agreed to and documented in local operating plans or supplemental fire project agreements.

COORDINATED PREVENTION AND PROTECTION PROJECTS

Future efforts in planning and implementation of prevention, mitigation, and response projects should be closely coordinated with FireSafe Flathead and their cooperating partners; MT-DNRC, US Forest Service, Glacier National Park, Flathead County, and Flathead County Fire Departments. It is likely that some projects would be more effective if implemented on the lands of two or more jurisdictions rather than by a single entity. Cooperation and coordination will also result in avoiding duplicating efforts or overlooking opportunities to protect values at risk.

In an effort to reduce new fire starts during periods of very high or extreme fire danger, there is a statewide process for instituting fire restrictions and closures by zone in the Northern Rockies Geographic area. Flathead County and its co-operators are coordinated in this process through the Northwest Zone of the Northern Rockies Coordinating Center, to ensure close communications and common actions occur during critical periods of fire danger.

Related Plans and Documents

HEALTHY FOREST RESTORATION ACT (HFRA)

The Healthy Forest Restoration Act describes the active, collaborative role that communities, tribes, and public land managers play in accomplishing the purposes of the act. To facilitate that involvement, it gives the Forest Service (USFS) incentive to take into account the priorities of local communities as they develop forest management and hazardous fuels reduction projects across the landscape.

To participate fully in the HFRA process and implement needed projects on both public and private lands, the concerned agencies, communities, and other interested parties must work together to develop a community wildfire protection plan (CWPP). HFRA provides considerable flexibility in the development of the plan itself. There are only three mandatory elements.

1. The plan must be developed in consultation with interested parties and the Federal land management agencies managing land in the vicinity of the at-risk community. This will happen within the context of the collaborative agreements and the guidance established by the Wildland Fire Leadership Council and will be agreed to by the applicable local government, local fire department, and State agency responsible for forest management.
2. The plan must identify and prioritize areas for hazardous fuels reduction treatments. It will recommend the types and methods of treatment on Federal and non-Federal land that will protect one or more at-risk communities and essential infrastructure.
3. The plan must recommend measures to reduce structure ignitability throughout the at-risk community.

This community-based approach allows for the local definition of the Wildland Urban Interface (WUI), identification of communities-at-risk, and prioritization of hazardous fuel reduction projects.

FLATHEAD COUNTY'S CWPP 2005 AND CWPP 2011

The CWPP 2005 remains a valuable reference document. It was developed by a broadly based, 15-member steering committee, to which Flathead County and the Northwest Montana Resource Conservation and Development District (RC&D) provided the funds necessary to hire GCS Research, a geospatial information technology firm, to facilitate the public involvement effort.
Numerous public meetings were held around the county to get residents' input, and in-depth consultations were conducted with representatives of all fire districts and fire service areas in the county as well as with concerned federal and state land management agencies. Analyzing that information, the planners identified the Wildland Urban Interface as the main area of concern, and mapped priority treatment areas for hazardous fuels reduction. Key criteria used to make that determination were:

1. Life safety concerns
2. Fuel hazards at both individual and community levels
3. Related environmental factors, such as slope and prevailing winds

The steering committee focused its efforts on:

- Encouraging public involvement.
- Using the best available GIS technology for data aggregation and analysis.

- Adapting and building on nationally respected homeowner fire protection information and guidance (e.g. Firewise USA).
- Presenting their findings and recommendations in a document that would energize, inform, and provide direction for implementation of the CWPP.

The first addendum to the CWPP was an area-specific plan for the fire-prone and sparsely settled area west of the North Fork of the Flathead River. Its development was the product of a major effort by the Fire Mitigation Committee of the North Fork Improvement Association, in collaboration with the Flathead National Forest, Glacier National Park, MT-DNRC, and private landowners in the area. Subsequent additions to the plan were the Elkhorn CWPP, which covers the Elkhorn subdivision in Whitefish and the Whitefish Area CWPP 2009.

The CWPP 2011 update was launched largely in response to Congressional passage of the Federal Land Assistance, Management and Enhancement (FLAME) Act of 2009, and the collaborative development of a companion document, A National Cohesive Wildland Fire Management Strategy. The accompanying report to Congress says that three primary factors present both the greatest challenges and the greatest opportunities for making a positive difference in addressing wildland fire problems and costs:

- **Restoring and maintaining resilient landscapes** – Landscapes across all jurisdictions become and remain resilient to fire-related disturbances in accordance with management objectives.
- **Creating fire-adapted communities** – Human populations and infrastructure will be able to withstand a wildfire without loss of life and property.
- **Wildfire response** - All jurisdictions will participate in making and implementing safe, effective, efficient, risk-based wildfire management decisions.

The first update, CWPP 2011, was prepared with the assistance of Fire Logistics, a fire protection consulting service. It proposed many possible actions that could be taken toward accomplishment of the specific goals identified in the Cohesive Strategy. While various public agencies and private entities effectively implemented some of the proposed actions, there was limited coordination and communication among them.

The current need for a second update, CWPP 2020, recognizes the growth and changes that have occurred in Flathead County since 2011 and addresses the ever-increasing demand for information, technical assistance, and cost-shared funding of needed mitigation activities to reduce the risk of loss of life and/or property in the event of wildfire.

LEGAL REQUIREMENTS

The Flathead County Subdivision Regulations addresses growth in the Wildland Urban Interface. These regulations also outline requirements for subdivision review by fire districts for roads, emergency vehicle access and escape plan, water supply for fire protection, and fuel reduction plans. It is recommended that fire districts require fuel reduction projects for dedicated park lands in subdivisions. It is also recommended that subdivisions be maintained in a fire resistive state with on-going fuel management actions and plans. Flathead County Subdivision Regulations can be viewed online at the Flathead County Planning Department website.

AGREEMENTS, MEMORANDA, AND OPERATING PLANS

All agreements and memorandums of understanding should be reviewed with cooperators. Those that have not yet been updated need to be followed up on to insure annual operating plans are completed when specified.

FIVE YEAR TIMELINE

The Disaster Mitigation Act of 2000 requires that the CWPP and similar plans be updated every five years. The County Fire Warden is responsible for annually reviewing and updating the CWPP. The Warden must also maintain a prioritized project list.

INCORPORATION INTO LOCAL JURISDICTIONAL PLANS

The CWPP should be adopted by Flathead County. CWPP recommendations should be coordinated with planning mechanisms, such as County Growth Policies and Pre-Disaster Mitigation Planning.

References

Agee, James K. *Fire Ecology of Pacific Northwest Forests*. Island Press, 1996.

Bell, Hunter. *Structure Assessments and Response Plans*. September 10, 2018.

"Fire & Your Landscape Firescaping Resources for Montana Homeowners." *The Montana Department of Natural Resources & Conservation* , Montana Nursery & Landscape Association, http://dnrc.mt.gov/divisions/forestry/docs/fire-and-aviation/prevention/fireandyourlandscape.pdf.

"Firewise Construction Checklist." *Oregon Department of Forestry*, http://www.oregon.gov/ODF/Documents/Fire/FirewiseLandscapingChecklist.pdf.

"Firewise Landscaping Checklist." *Oregon Department of Forestry*, http://www.oregon.gov/ODF/Documents/Fire/FirewiseLandscapingChecklist.pdf.

"Protect Your Home From Wildfire." *DISASTERSAFETY.ORG*, 19 Nov. 2019, http://disastersafety.org/wildfire/protect-your-home-from-wildfire/.

"Smoke Management." *National Interagency Fire Center*, http://www.nifc.gov/smoke/.

"Stats Report Viewer." *National Parks Service*, U.S. Department of the Interior, https://irma.nps.gov/STATS/SSRSReports/Park%20Specific%20Reports/Park%20YTD%20Version%201?Park=GLAC

"U.S. Census Bureau QuickFacts: Flathead County, Montana." *Census Bureau QuickFacts*, www.census.gov/quickfacts/flatheadcountymontana.

"The Ultimate Guide to Fire-Safe Landscaping - HomeAdvisor." *Home Improvement Tips & Advice from HomeAdvisor*, HomeAdvisor, 2 Dec. 2019, http://www.homeadvisor.com/r/ultimate-fire-safe-landscaping-guide/.

"Wildland Fire and Air Quality." USDA. April 2016. https://www.epa.gov/sites/production/files/2016-04/documents/2016_04_04_joint_wildland_fire_air_quality_messages.epa_usda_doi.final_.pdf.

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Resources

WILDFIRE

United States Department of Agriculture, Forest Service Wildland Fire
https://www.fs.usda.gov/main/conservationeducation/about/education-themes/wildland-fire

United States Fire Administration Wildfire Safety Outreach Materials
https://www.usfa.fema.gov/prevention/outreach/wildfire.html

National Fire Protection Association Public Education
https://www.nfpa.org/Public-Education

Department of Homeland Security -Wildfires
https://www.ready.gov/wildfires

FEMA How to Prepare for a Wildfire
https://www.fema.gov/media-library-data/1409003859391-0e8ad1ed42c129f11fbc23d008d1ee85/how_to_prepare_wildfire_033014_508.pdf

Fire History 1984-2018 Flathead National Forest and Glacier National Park Map
https://www.fs.usda.gov/Internet/FSE_DOCUMENTS/fseprd569537.pdf

USDA Wildfire Risk to Communities
https://wildfirerisk.org/explore/0/30/30029/

EVACUATION PREPARATION

Ready, Set, Go!
http://dnrc.mt.gov/divisions/forestry/docs/fire-and-aviation/prevention/final-montana-rsg-guide.pdf

Develop a Family Evacuation Plan
https://www.ready.gov/plan

Develop a Family Communication Plan
https://www.fema.gov/media-library-data/1440449346150-1ff18127345615d8b7e1effb4752b668/Family_Comm_Plan_508_20150820.pdf

Department of Homeland Security- Preparing Pets and Livestock for Emergencies and Evacuation
https://www.ready.gov/pets

Home Evacuation Checklist
https://www.readyforwildfire.org/prepare-for-wildfire/go-evacuation-guide/pre-evacuation-preparation-steps/

National Fire Protection Association –Preparing Homes for Wildfire
https://www.nfpa.org/Public-Education/Fire-causes-and-risks/Wildfire/Preparing-homes-for-wildfire

InciWeb Fire Information
https://inciweb.nwcg.gov/

America Red Cross of Montana
https://www.redcross.org/local/montana.html

HOME IGNITION ZONE

Be Embers Aware
https://www.fema.gov/media-library-data/1519061366309-725c32a4ffea6d6a9c03ebf33735a5d3/BE-EMBER.PDF

National Fire Protection Association- Firewise USA
https://nfpa.org/Public-Education/Fire-causes-and-risks/Wildfire/Firewise-USA

Firewise Construction Tips
http://www.oregon.gov/ODF/Documents/Fire/FirewiseLandscapingChecklist.pdf.

Firewise Resistant Construction Guide
https://firesafemt.org/img/Ignition-Resistant-Construction-Guide-FINAL.pdf

Firewise Landscaping Tips
http://www.oregon.gov/ODF/Documents/Fire/FirewiseLandscapingChecklist.pdf.

Montana Nursery & Landscape Association -Fire & Your Landscape
http://dnrc.mt.gov/divisions/forestry/docs/fire-and-aviation/prevention/fireandyourlandscape.pdf

FireSafe Montana -Living with Fire
https://firesafemt.org/img/LivingwFireFSM20091.pdf

Is Your Home Protected?
https://www.nfpa.org/Public-Education/Fire-causes-and-risks/Wildfire/Preparing-homes-for-wildfire

Institute of Business and Home Safety Rocky Mountain Retrofit Guide
https://disastersafety.org/wp-content/uploads/2019/03/Wildfire-Retrofit-Guide-Rocky-Mountain_IBHS.pdf [disastersafety.org]

LAND MANAGEMENT

Montana Department of Natural Resources & Conservation -Best Management Practices
http://dnrc.mt.gov/divisions/forestry/forestry-assistance/forest-practices/best-management-practices-bmp-2

Montana Department of Natural Resources & Conservation -Forest Practices
http://dnrc.mt.gov/divisions/forestry/forestry-assistance/forest-practices/best-management-practices-bmp-2

Montana Department of Natural Resources &Conservation -DNRC Service Foresters
http://dnrc.mt.gov/divisions/forestry/forestry-assistance/dnrc-service-forester%20-%20Services

Montana Logging Association
https://www.logging.org/

Montana State University Extension
http://forestry.msuextension.org/

Northwest Montana Hazardous Fuels Program
https://firesafemt.org/northwest-montana-hazardous-fuels-program

DEBRIS BURNING INFORMATION
Prescribed Fire
https://www.fs.fed.us/managing-land/prescribed-fire

Burning Information
http://firesafekalispell.com/

Flathead City-County Health Department Air Quality and Burn Restrictions
https://flatheadhealth.org/environmental-health/burn-restrictions/

Fire Restrictions
https://firerestrictions.us/

National Interagency Fire Center 2019 Smoke Management
https://www.nifc.gov/smoke/

Burning Safety
http://dnrc.mt.gov/divisions/forestry/fire-and-aviation/fire-prevention-and-preparedness/debris-burning-safety

LEGISLATION
Healthy Forests Restoration Act (HFRA)
https://www.fs.fed.us/projects/hfi/field-guide/web/page03.php

Federal Land Assistance, Management and Enhancement (FLAME) Act of 2009
https://www.forestsandrangelands.gov/documents/strategy/reports/2_ReportToCongress03172011.pdf

A National Cohesive Wildland Fire Management Strategy
https://www.forestsandrangelands.gov/strategy/thestrategy.shtml

The Disaster Mitigation Act of 2000
https://www.fema.gov/media-library/assets/documents/4596

COMMUNITY WILDFIRE PROTECTION PLANS
Preparing a Community Wildfire Protection Plan
https://www.forestsandrangelands.gov/documents/resources/communities/cwpphandbook.pdf

Flathead County CWPP-2011
https://flathead.mt.gov/fireservice/documents/FlatheadCWPP2011.pdf

North Fork CWPP-2018
http://nflandowners.com/nflawp/wp-content/uploads/2018/07/draft-2018-North-Fork-CWPP-Strategy-Section.pdf

Whitefish Area CWPP-2009
http://wafsc.com/docs/FinalWhitefishCWPP.pdf

ORGANIZATIONS
United States Department of Agriculture Forest Service (USFS)
https://www.fs.usda.gov/flathead/

United States Department of Agriculture Forest Service (USFS) cross boundary map
https://usfs.maps.arcgis.com/apps/MapSeries/index.html?appid=957c121cf2b84ccf9a0c52f19124a598

Glacier National Park
https://www.nps.gov/glac/index.htm

Flathead County Office of Emergency Services
https://flathead.mt.gov/oes/

FireSafe Flathead
https://www.firesafeflathead.com/

The Montana Department of Natural Resources & Conservation (MT-DNRC)
http://dnrc.mt.gov/divisions/forestry/fire-and-aviation

Northern Rockies Coordinating Center
https://gacc.nifc.gov/nrcc/

Flathead County Planning Department
https://flathead.mt.gov/planning_zoning/

Attachments

Elkhorn CWPP

North Fork CWPP

Whitefish CWPP

Appendix A

RESOLUTIONS