

CHAPTER 13: WILDLAND-URBAN INTERFACE

This Chapter articulates The City of Helena's commitment to mitigating the impacts of wildland fires in urban areas.



City of Helena

Section 76-1-601 (3) (j) MCA requires a Growth Policy to include an evaluation of the potential for fire and wildland fire in the jurisdictional area. This evaluation must include an analysis of whether or not there is a need to delineate the Wildland-Urban Interface, and whether there is a need to adopt regulations to require, defensible space around structures, adequate ingress and egress to and from structures and developments to facilitate fire suppression activities, and adequate water supply for fire protection.

GENERAL OVERVIEW:

The Wildland-Urban Interface (WUI) is defined as the area where houses or businesses or where humans and their development meet or intermix with wildland or vegetative fuel. This makes the Wildland-Urban Interface a focal area for human-environment conflicts such as wildland fires, habitat fragmentation, and invasive plant species.

Fires in the wildland urban interface have become much larger and burned with greater intensity due to decades of aggressive fire prevention and suppression, extended periods of drought, high seasonal temperatures, and high winds, altering the normal fire regime. Wildland fires are also more intense today because of development that intermixes or intermingles with the WUI, the accumulation of fuels on the ground or, extensive stands of trees displaying ladder fuels, a closed canopy, and a high vulnerability to fire from human activities and natural causes.

Further, the secondary effects of a wildland fire can be seen long after the flames have been extinguished, such as soil erosion, the spread of noxious weeds, flash flooding, landslides and loss of wildlife habitat. Therefore, these areas may not return to pre-fire conditions for decades.

EVALUATION OF THE POTENTIAL FOR FIRE AND WILDLAND FIRE IN THE CITY OF HELENA:

The City of Helena contains a forested area along the South Hills, this area is approximately 7 miles long. A portion of the South Hills shares a border with the Helena National Forest which is approximately 3-4 miles long. The portion of the South Hills area located within and adjacent to the City of Helena contains many of the conditions associated with a WUI setting. This area includes a Ponderosa Pine-type forested area with an under-story of Douglas Fir intermixes and grasses as well as varied topographical features. The predominant use of this area is residential and recreational open space uses. The South Hills also provide the community with a valued view shed and community backdrop.

As population and recreational uses increase along the South Hills, the number of fires and potential impact from a fire may also increase. Due to the accumulation of fuels from urban development and the wildland setting, varied topography, and areas with limited access, a fire starting in or spreading to this area could quickly grow beyond the capabilities of area firefighting resources.

Recent wildland fires from the summer of 2007 have made clear the immediate threat that these types of fires pose to urban areas within the City of Helena. The 2007 fires spread or had the potential to spread into the WUI threatening many homes and prompting evacuation orders. These 2007 fires were the Fort Harrison artillery range in July, the Orofino Gulch and the Spring Meadow Lake fires in September. The previously mentioned wildland fires along with the successive increase in wildland fires near population centers (for example, the Cave Gulch and Bucksnot fires of 2000 in eastern Lewis and Clark County) over the past decade have increased the level of awareness and the need for mitigation in the WUI setting.

The Community Wildfire Protection Plan (CWPP), adopted in 2005 by the City of Helena and Lewis and Clark County, establishes the basis from which hazards are identified and mitigation priorities are established. The CWPP states the Tri-County Fire Safe Working Group (TCFSWG) consisting of Lewis and Clark, Broadwater and Jefferson Counties, identified the WUI as an important area for reducing fuel hazards. The CWPP also details methods for fuel hazard reduction and recommends treatment options for mitigation of fires in a WUI setting.

The City of Helena Open Lands Management Plan, adopted in 2003, identifies several areas where thinning programs could benefit forested areas on public and private land in and around the City of Helena. Several of the public and private areas identified within the WUI area as a thinning project have been completed by the City of Helena Parks and Recreation Department through joint efforts with the Federal Emergency Management Agency (FEMA), Bureau of Land Management (BLM), United States Forest Service (USFS), Montana Department of Natural Resources and Conservation (DNRC), and the Tri-County Fire Safe Working Group (TCFSWG). Further, these projects will continue as funding and grant opportunities become available.

Emergency response plans and interagency agreements with other rural fire departments and fire-related agencies are in place and continue to be updated. The City of Helena has acquired equipment and continues to train for initial response to fires in the WUI setting. With these in place, the City is better able to respond to WUI fire events.

The City of Helena Public Works Department role in emergency services associated with Urban Wildland Interface Fires is primarily defined in Section III, Annex 11 of the Lewis and Clark County Disaster and Emergency Services - Emergency Operations Plan. Through this plan, the City of Helena Public Works Department assistance is primarily associated with debris clean up following an event as well as providing assistance as needed for road closures and signing. Department operators and heavy equipment are available on-call to the Police and Fire Departments to aid in fire fighting as needed.

The City of Helena's Water Utility Division provides operation and maintenance of water reservoirs, distribution piping and fire hydrants. Hydrants are provided on all City streets including those in the Urban Wildland Interface for the exclusive use of the Helena Fire Department. Available fire flows and volumes are consistent with modern urban standards as defined in the International Fire Code.

In addition the City of Helena Fire Department and the TCFSWG have conducted numerous public education efforts and events. These efforts include publications describing wildfire protection recommendations, such as defensible space and adequate ingress and egress for homeowners who live in the WUI setting.

DELINEATION OF WILDLAND-URBAN INTERFACE:

The City of Helena is vulnerable to wildfire due to increased fuel load accumulations, topography, high-winds, changes in climate and urban development along the South Hills. This area is approximately 7 miles long and traverses from Interstate 15 to Mount Helena and beyond. The width cannot be accurately defined due to the various fuel types and structures that intermix or intermingle across this area.

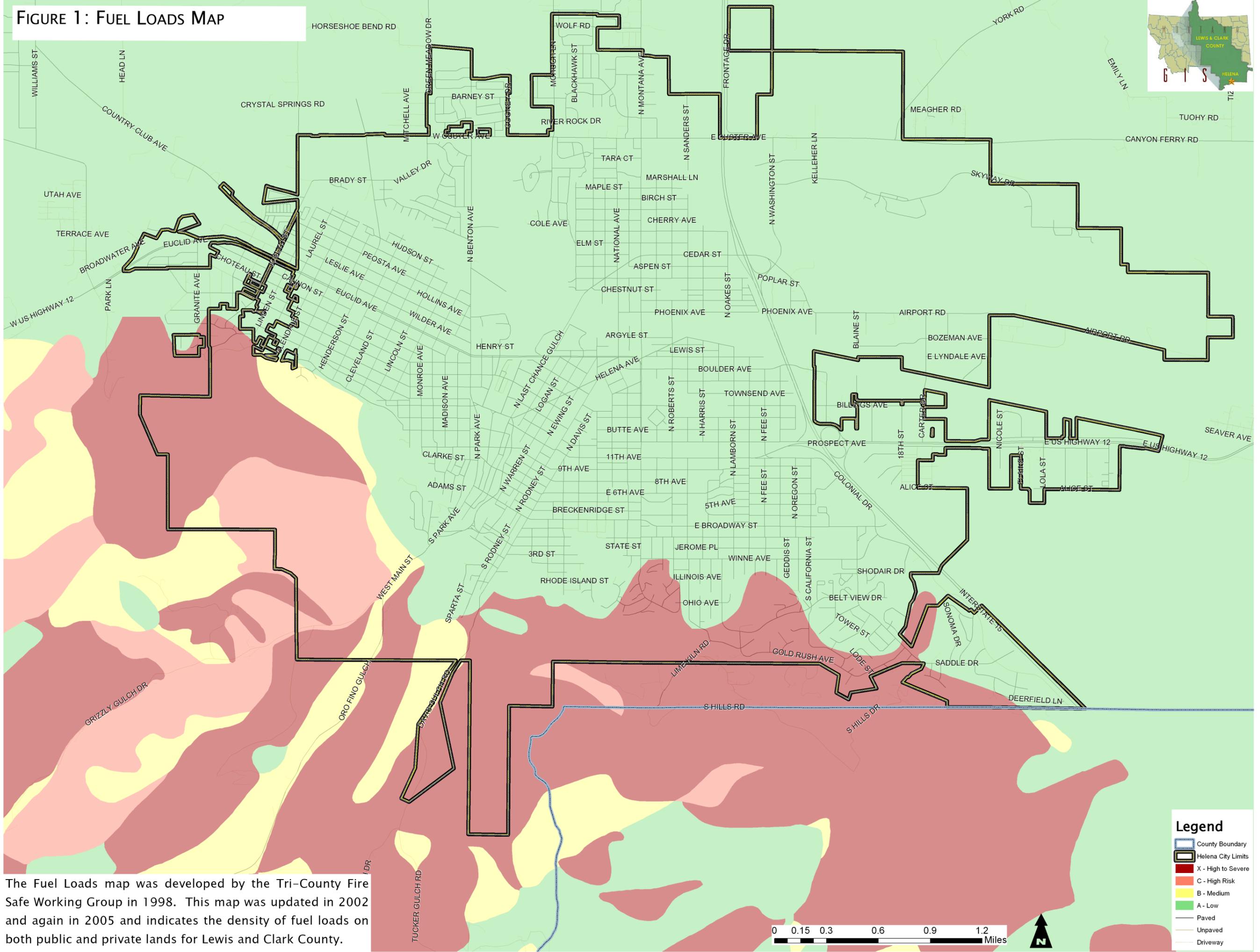
Therefore, the City of Helena has determined the need to delineate the WUI. To that end the following efforts have been made. The Tri-County Fire Safe Working Group produced a fuel loads map in 1998 (Figure 1). This map was updated in 2002 and again in 2005 for its inclusion as part of the Community Wildfire Protection Plan. This map indicates the density of fuel loads on both public and private lands for Lewis and Clark County. Further, the map also identifies the fuel load conditions throughout the south hills.

The City of Helena Fire Department conducted an inventory of structures with wood shake roofs, a potential fuel source. This inventory identified approximately 1081 properties that would be at an increased fire risk due to roof materials that are not considered compatible in a WUI setting.

In 2006 the Helena National Forest using the “Behave” computer-modeling program conducted a study to determine the spotting potential from a wildland fire in these areas from spot fires (fire embers blowing from the fire location and starting another fire where they land). This scientific model takes into account various factors including topography, available fuels, elevation, and weather. The map generated from the “Behave” computer-modeling program (Figure 2) indicates the potential for spot fires resulting from a fire in the urban interface areas.

Upon careful review and thorough analysis of the City of Helena WUI area a conceptual WUI Delineation Map has also been developed (Figure 3).

FIGURE 1: FUEL LOADS MAP



The Fuel Loads map was developed by the Tri-County Fire Safe Working Group in 1998. This map was updated in 2002 and again in 2005 and indicates the density of fuel loads on both public and private lands for Lewis and Clark County.

Legend

- County Boundary
- Helena City Limits
- X - High to Severe
- C - High Risk
- B - Medium
- A - Low
- Paved
- Unpaved
- Driveway

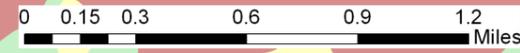
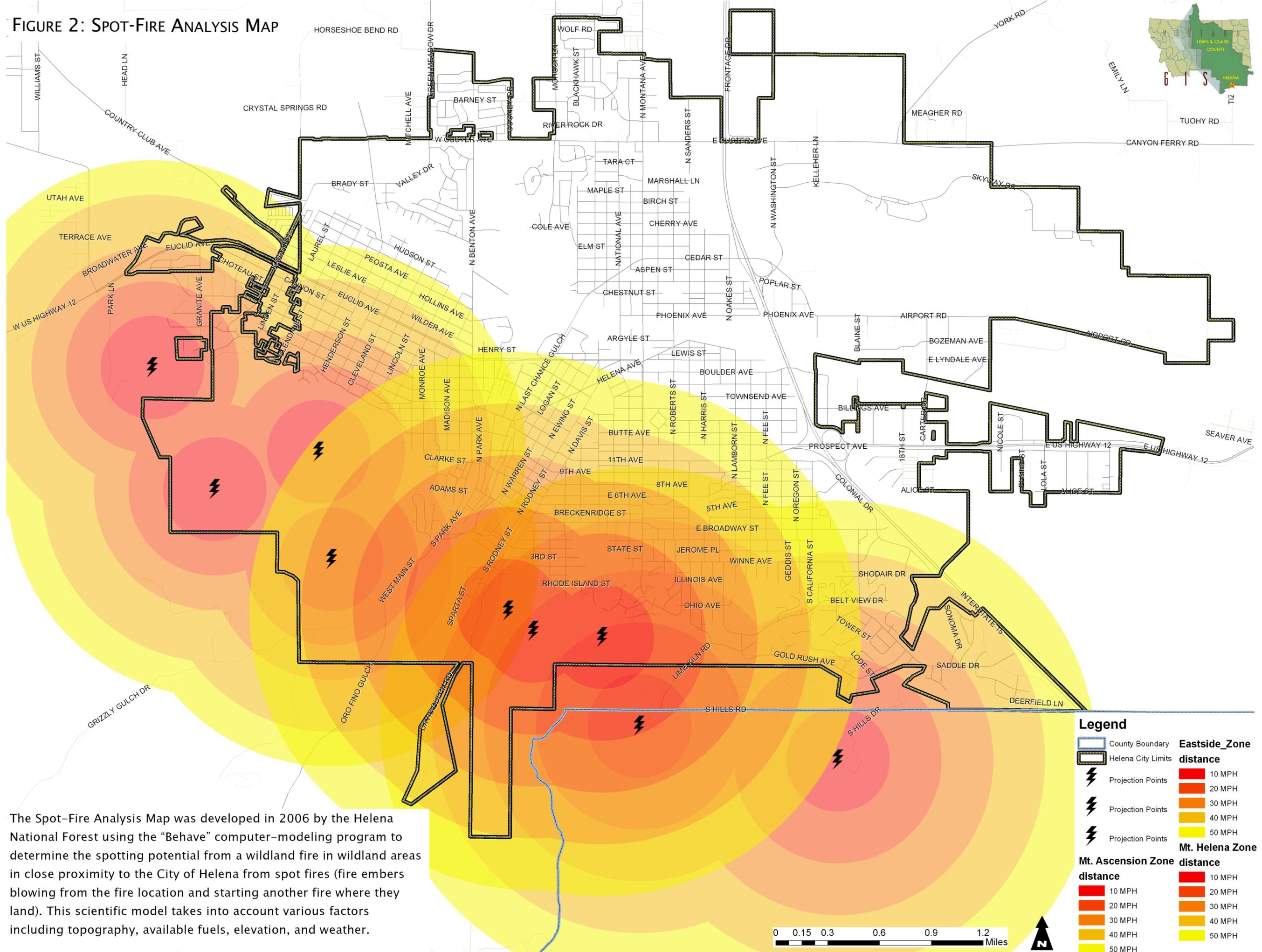


FIGURE 2: SPOT-FIRE ANALYSIS MAP



The Spot-Fire Analysis Map was developed in 2006 by the Helena National Forest using the "Behave" computer-modeling program to determine the spotting potential from a wildland fire in wildland areas in close proximity to the City of Helena from spot fires (fire embers blowing from the fire location and starting another fire where they land). This scientific model takes into account various factors including topography, available fuels, elevation, and weather.

Legend

- County Boundary
- Helena City Limits
- Projection Points
- Projection Points
- Projection Points

Eastside_Zone distance

- 10 MPH
- 20 MPH
- 30 MPH
- 40 MPH
- 50 MPH

Mt. Helena Zone distance

- 10 MPH
- 20 MPH
- 30 MPH
- 40 MPH
- 50 MPH

Mt. Ascension Zone distance

- 10 MPH
- 20 MPH
- 30 MPH
- 40 MPH
- 50 MPH

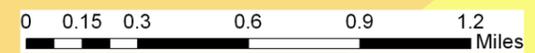
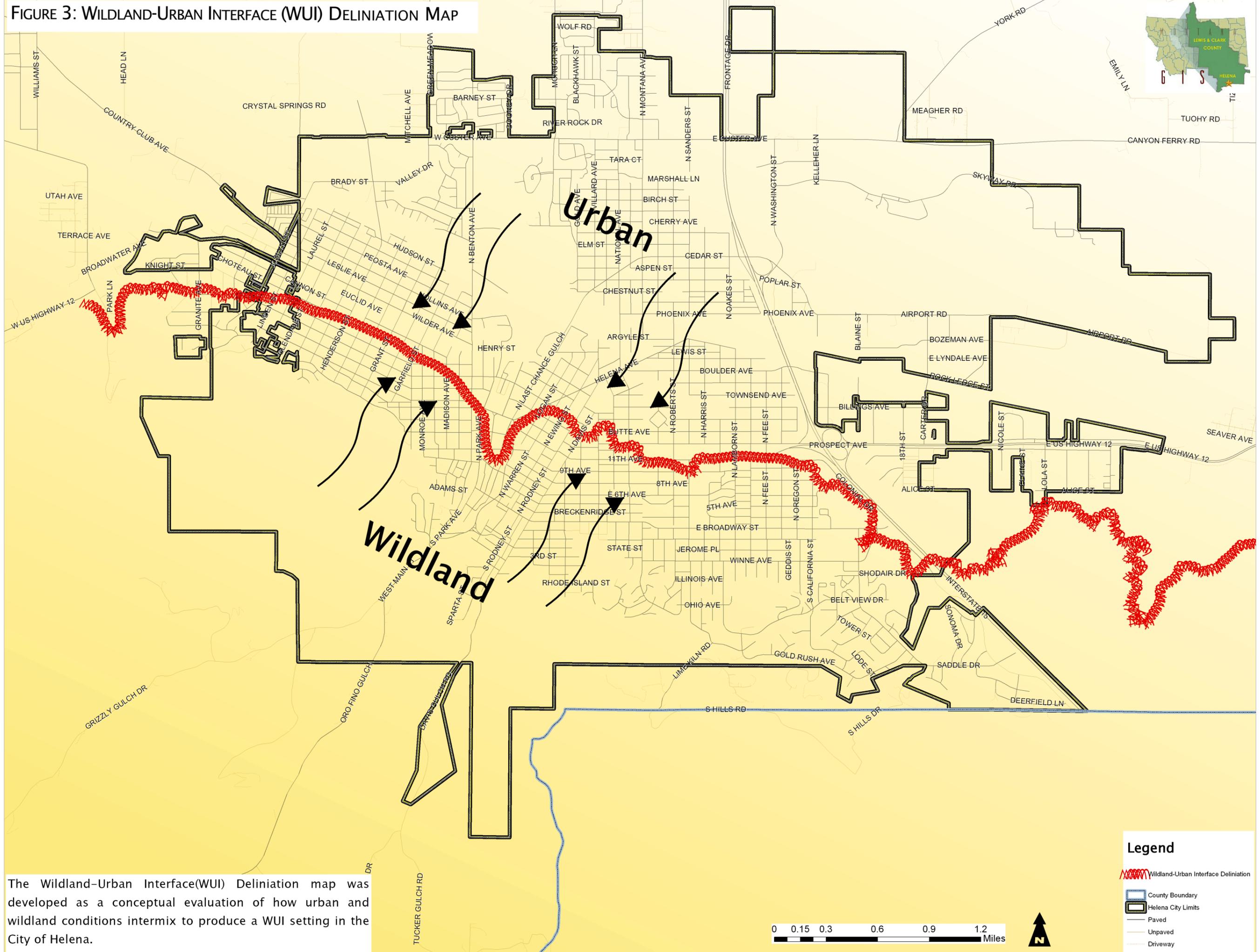


FIGURE 3: WILDLAND-URBAN INTERFACE (WUI) DELINIATION MAP



The Wildland-Urban Interface(WUI) Delimitation map was developed as a conceptual evaluation of how urban and wildland conditions intermix to produce a WUI setting in the City of Helena.

Legend

- Wildland-Urban Interface Delimitation
- County Boundary
- Helena City Limits
- Paved
- Unpaved
- Driveway

0 0.15 0.3 0.6 0.9 1.2 Miles



APPLICABLE REGULATIONS:

Section 76-1-601(3) (j) requires a jurisdiction to evaluate whether or not there is a need to adopt regulations that require:

- (A) defensible space around structures;
- (B) adequate ingress and egress to and from structures and developments to facilitate fire suppression activities; and
- (C) adequate water supply for fire protection

(A) Defensible space around structures:

The City of Helena's adopted Zoning Ordinance contains the following criteria for a zoning district: yard setbacks, lot area and width, landscaping, building coverage and building height. However, these regulations may not be specific enough to address development criteria for the WUI.

(B) Adequate ingress and egress to and from structures and developments to facilitate fire suppression activities:

The City's Subdivision Regulations currently require two accesses for subdivisions that generate more than 200 daily vehicle trips. The Subdivision Regulations also establish design standards for streets and street grades. Further, the adopted Engineering Standards of June 2006 for the Public Works Department establish the requirements for street construction and improvements within the City of Helena.

(C) Adequate water supply for fire protection:

The Public Works Department maintains the City water mains and fire hydrants. The Engineering Standards adopted by the Public Works Department in June 2006 establish design standards for construction of infrastructure and established fire flows that are in compliance with the adopted version of the Uniform Fire Code.

In conclusion the City has determined a need for regulations to address defensible space, adequate ingress and egress to facilitate fire suppression and adequate water supply for fire protection. This includes current regulations that address these areas of concern.

GOALS, OBJECTIVES AND POLICIES:

The goals, objectives and policies in this Chapter help current and future community decision-makers and stakeholders implement relevant policies and regulations for the Wildland-Urban Interface area in the City of Helena.

GOAL:

Prevent loss of life, property and increased costs to the public from a Wildland-Urban Interface fire on public and private land located in and around the City of Helena.

OBJECTIVE:

1. Mitigate the threat from a Wildland-Urban Interface fire.

POLICIES:

1a. Coordinate with other jurisdictions, agencies, and organizations on education of the public about the threat from a Wildland-Urban Interface fire.

1b. Educate the public about construction and landscaping techniques that mitigate risks associated with a Wildland-Urban Interface.

1c. Coordinate with other jurisdictions, agencies, and organizations in the mitigation of conditions that increase the threat from a Wildland-Urban Interface fire.

1d. Mitigate conditions on City of Helena-owned land that increases the threat from a Wildland -Urban Interface fire.

1e. Seek to secure funding for educational and mitigation programs.

1f. Maintain an on-going effort to review and reassess wildfire threat, impacts, and mitigation efforts.

1g. Promulgate zoning, subdivision regulations and other standards or regulations that mitigate the spread of a Wildland-Urban Interface fire.

OBJECTIVE:

Maintain an effective emergency response system to respond to and recover from a Wildland-Urban Interface fire and that ensures safe and orderly evacuation of areas threatened by a wildland-urban interface fire.

POLICIES:

- 2a. Update emergency response plans as conditions and threats from a Wildland-Urban Interface fire change.
- 2b. Continue Wildland-Urban Interface training of emergency service personnel.
- 2c. Coordinate with other jurisdictions and agencies in responding to and recovering from a Wildland-Urban Interface fire.
- 2d. Educate the public on safe and orderly emergency evacuation.
- 2e. Assist residents and neighborhoods in preparing emergency evacuation plans.

ACKNOWLEDGEMENTS:

The following departments and organizations provided guidance and support throughout the development of the Wildland-Urban Interface chapter.

CITY OF HELENA:

Building Division
City Attorney's Office
Community Development
Fire Department
Parks and Recreation
Public Works Department

LEWIS AND CLARK COUNTY:

Geographic Information Systems (GIS) Office

ORGANIZATIONS:

Bureau of Land Management (BLM)
Federal Emergency Management Agency (FEMA)
Montana Department of Natural Resources and Conservation (DNRC)
Tri-County Fire Safe Working Group (TCFSWG)
Helena National Forrest (HNF)
United States Forest Service (USFS)