

Northwest Angle Community Wildfire Protection Plan



The Northwest Angle of the Lake of the Woods County completed a Community Wildfire Protection Plan in 2014. Participants in the planning process identified the risk of wildfire and the vulnerability of assets in their community. Finally, participants identified strategies and created a Plan for Action to reduce the risk of fire occurrence and reduce the vulnerability of assets in their community to wildland fire.

Lake of the Woods County

206 8th Ave SE Baudette, MN 56623

218.634.4570

11/25/2014

Thank You

We extend a special thank you to the Minnesota DNR for providing funding and assisting with the development of this plan.

Grant funder of this project is the Minnesota DNR Firewise program with resources provided by the USFS, State, and private funders.

This plan was prepared by:
The Headwaters Regional Development Commission
PO Box 906
Bemidji, MN 56619



Chapter 1: Introduction

Purpose

Wildfire mitigation can be defined as those actions taken to reduce the likelihood of loss due to wildfire. Effective wildfire mitigation can be accomplished through a variety of methods including managing wildland fuels, creating strategic fuel breaks, utilizing fire-resistant building materials and creating defensible space landscaping for homes, enhancing emergency preparedness and response capabilities, upgrading current infrastructure, and developing programs that foster community awareness and neighborhood activism.

Scope

This document shall be known as the Northwest Angle Community Wildfire Protection Plan. It serves the geography of the Northwest Angle of Lake of the Woods County. It specifically addresses wildfire risk and vulnerability in the Angle Inlet and island communities. It does not address wildfire risk and vulnerability on the lands of the Red Lake Band of Chippewa Indians.

About the Angle

The Northwest Angle is a unique place, only one of two places in the contiguous 48 states located north of the 49th parallel. The mainland of the Northwest Angle is separated from the remainder of Lake of the Woods County by the lake, Lake of the Woods. Transportation to the Northwest Angle is primarily by highway, through Manitoba, Canada. Other modes of transportation include flight and watercraft. By highway the Angle Inlet is located 2 hours and 20 minutes' drive (100 miles) through Warroad and Manitoba from the county seat in Baudette, and another 320 miles the state capital in St. Paul.

The Northwest Angle is home to seasonal and full-time residents on the mainland and islands. The largest of the islands include Mangusons Island, Brush Island, Flag Island, and Oak Island. Islands are developed with homes, but no roads or formal passages through the island cores.

Map 1 in **Appendix I** depicts the location of the Northwest Angle.

Planning Authority and Stakeholder Engagement

Planning Authority

The decision makers for this Community Wildfire Protection Plan include:

- Lake of the Woods County, Board of Commissioners
- Brian McKeever, Northwest Angle Fire Department
- John Faulkner, MN DNR, Area Forest Supervisor

Public and Multi-Jurisdictional Input

Federal Entities

- Bureau of Land Management – Invited to review and comment of the planning document on December 8, 2014.
- Bureau of Indian Affairs – Invited to review and comment of the planning document on December 8, 2014.

State Entities

- MN Department of Natural Resources was consulted during grant application developed, provided resources prior to the May 24th meeting on the Northwest Angle, participated in the May 24th meeting on the Northwest Angle, and was invited to review and comment on the document on December 8, 2014.

Local Entities

- Lake of the Woods County. The Emergency Manager participated in the grant application developed, provided resources prior to the May 24th meeting on the Northwest Angle, participated in the May 24th meeting on the Northwest Angle, and was invited to review and comment on the document on December 8, 2014. The Board approved the plan on ____.
- The HRDC presented to the Northwest Angle Land Owners Association meeting on May 24th asking for input on engaging residents, presented risk and vulnerability information, and requested input on potential mitigation strategies.
- The HRDC presented to the County Board and others at the June 17th meeting of the Board on the Northwest Angle, presented risk and vulnerability information, and requested input on potential mitigation strategies.
- Residents of the Northwest Angle participated in a meeting on the Northwest Angle on May 24th, and landowners were mailed a survey. They were presented with risk and vulnerability information and were asked to provide input on potential mitigation strategies.

Chapter 2: Background

History of Fire

The Northwest Angle has experienced six fires since 1988. Of those fires, five resulted from camp fires getting out of control. In 1996 a lightning strike on Oak Island started a fire. Two structural fires, in the early 2000s on Oak Island also posed a hazard.

Land Ownership

Land ownership is depicted in **Map 2** in **Appendix 1**. Much of the land of the Northwest Angle is tribal or federal land held in tribal trust. The populated areas are private lands. These areas are typically just the shoreline in the Angle Inlet area and the shore lines of the islands.

Land Cover

Table 1a. Angle Inlet (Main Land)

Land Cover	Percent
Open Water	0.06
Developed Open Area	0.18
Developed Low Intensity	0.01
Developed Medium Intensity	0.00
Developed High Intensity	0.00
Barren	0.00
Deciduous Forest	12.48
Evergreen Forest	1.06
Mixed Forest	0.00
Shrub	0.06
Grassland	0.18
Pasture/Hay	0.31
Cultivated Crops	0.00
Woody Wetlands	82.87
Emergent Wetlands	2.79
Total of "Developed Area"	100.00

Table 1b. Oak Island

Land Cover	Percent
Open Water	0.01
Developed Open Area	0.00
Developed Low Intensity	0.00
Developed Medium Intensity	0.00
Developed High Intensity	0.00
Barren	0.00
Deciduous Forest	46.51
Evergreen Forest	27.79
Mixed Forest	0.00
Shrub	1.31
Grassland	0.20
Pasture/Hay	0.00
Cultivated Crops	0.00
Woody Wetlands	19.09
Emergent Wetlands	5.10
Total of 1562 Acres	100.00

Table 1c. Flag Island

Land Cover	Percent
Open Water	0.06
Developed Open Area	0.00
Developed Low Intensity	0.00
Developed Medium Intensity	0.00
Developed High Intensity	0.00
Barren	0.00
Deciduous Forest	45.25
Evergreen Forest	21.43
Mixed Forest	0.00
Shrub	0.87
Grassland	0.23
Pasture/Hay	0.00
Cultivated Crops	0.00
Woody Wetlands	18.28
Emergent Wetlands	13.90
Total of 705 Acres	100.00

Table 1d. Brush Island

Land Cover	Percent
Open Water	0.00
Developed Open Area	0.00
Developed Low Intensity	0.00
Developed Medium Intensity	0.00
Developed High Intensity	0.00
Barren	0.68
Deciduous Forest	36.27
Evergreen Forest	27.50
Mixed Forest	0.00
Shrub	0.00
Grassland	0.00
Pasture/Hay	0.00
Cultivated Crops	0.00
Woody Wetlands	24.08
Emergent Wetlands	11.42
Total of 234 Acres	100.00

Table 1e. Magnuson's Island

Land Cover	Percent
Open Water	0.10
Developed Open Area	0.00
Developed Low Intensity	0.00
Developed Medium Intensity	0.00
Developed High Intensity	0.00
Barren	0.00
Deciduous Forest	57.58
Evergreen Forest	3.11
Mixed Forest	0.00
Shrub	1.31
Grassland	0.00
Pasture/Hay	0.00
Cultivated Crops	0.00
Woody Wetlands	2.04
Emergent Wetlands	35.94
Total of 495 Acres	100.00

The tables above describe land covers on the Northwest Angle, on the major islands and on the mainland area of Angle Inlet. The area included in this table for the Angle Inlet is the area within 2000 feet of roadways in the developed area of the Angle Inlet. The area included for each island is the entire island land mass.

Land cover is depicted in **Map 3** in **Appendix 1**. This was developed using data available from the MN DNR, mapped in the National Land Cover Database 2001.

Predominant Fuels

The predominant fire fuels are described in the following tables to the nearest five percent. In the Angle Inlet area the predominant fuels are deciduous forests and woody and emergent wetlands. Magnuson's Island is most similar, but the other islands are more forested with both evergreen and deciduous forest and also have a fair amount of woody and emergent wetlands.

Table 2a. Angle Inlet

Fuel Class Summary (Nearest 5%)	Percent Cover
Open Water	0
Developed Open Area	0
Deciduous Forest	10
Evergreen Forest	0
Pasture/Hay/Grassland	0
Cultivated Crops	0
Woody/Emergent Wetlands	85

Table 2b. Flag Island

Fuel Class Summary (Nearest 5%)	Percent Cover
Open Water	0
Developed Open Area	0
Deciduous Forest	45
Evergreen Forest	20
Pasture/Hay/Grassland	0
Cultivated Crops	0
Woody/Emergent Wetlands	40

Table 2c. Oak Island

Fuel Class Summary (Nearest 5%)	Percent Cover
Open Water	0
Developed Open Area	0
Deciduous Forest	45
Evergreen Forest	30
Pasture/Hay/Grassland	0
Cultivated Crops	0
Woody/Emergent Wetlands	25

Table 2d. Magnuson's Island

Fuel Class Summary (Nearest 5%)	Percent Cover
Open Water	0
Developed Open Area	0
Deciduous Forest	60
Evergreen Forest	5
Pasture/Hay/Grassland	0
Cultivated Crops	0
Woody/Emergent Wetlands	35

2e. Brush Island

Fuel Class Summary (Nearest 5%)	Percent Cover
Open Water	0
Developed Open Area	0
Deciduous Forest	35
Evergreen Forest	30
Pasture/Hay/Grassland	0
Cultivated Crops	0
Woody/Emergent Wetlands	35

MN DNR Assessment and Operations Plan 2012

In May of 2012 the MN DNR completed an operations plan to prepare for future fire events on the Northwest Angle. The Plan identifies protection zones, zones A-D on the mainland, and zone E which includes the islands. In zones A-D, structures were mapped, assessments of structures were completed, evacuation points were identified, and other operational issues were identified. Zones are shown in **Map 4** in **Appendix 1**.

Most pertinent to this plan is the assessment of structures.

Response Area A includes the area surrounding Crow Creek and Angle Inlet. It also includes Sage's Angle West Resort and Prothero's Resort. The plan identifies that most of the 132 structures in this area are defensible with access to water.

Response Area B includes the area surrounding Pine Creek including Sleepy Hollow, the County Road Department, the dump/recycling area, and areas north of Jim's Corner. In this area most of the 61 structures are not defensible and do not have access to water.

Response area C includes Angle Outpost Resort, surrounding cabins, and the structures north of the Dawson Road. In this area of 10 structures, about half are defensible and half have access to water.

Response Area D includes the structures within the vicinity of Young's Bay Drive. In this area of 13 structures, about half are defensible and half have access to water.

Response Area E includes all areas accessible only by water. These areas include Bear and Harrison Creeks, Magnuson Island, Moose Bay, Brush Island, Hackett Island, Flag Island, and Oak Island. In this area, only 98 structures were evaluated. They have mix of defensible space and water availability, but water only access is a challenge to response.

Recommendations

The DNR made recommendations specific to some structures. One common recommendation was to install fire suppression sprinklers.

Northwest Angle Land Owner Survey

Land owners on the Northwest Angle were mailed a survey to complete for the purpose of learning of owner's understanding of Firewise practices and gauging their interest in learning more about fire risk and vulnerability and how to mitigate them. The survey is described in more detail in **Appendix 2**. Included in the survey was informational materials designed to rate a homes' risk related to wildfires.

Survey results indicated that property owners had varied levels of understanding regarding concepts like "clean and green", "defensible space", "fire resistant building materials" and wildfire sprinkling systems. Respondents were very interested in learning more about factors that contribute to wildfire risks, with almost 90% indicating interest. Only 6% of survey respondents recall the DNR assessing their property in 2012.

Chapter 3: Risk and Vulnerability

This plan uses this framework to evaluate risk and vulnerability.

Geographic Units

Geographic units for assessing fire risk and vulnerability were identified matching the response areas identified in the MN DNR 2012 Operations Plan. They include:

- **Response Area A** includes the area surrounding Crow Creek and Angle Inlet. It also includes Sage's Angle West Resort and Prothero's Resort. The plan identifies that most of the 132 structures in this area are defensible with access to water.
- **Response Area B** includes the area surrounding Pine Creek including Sleepy Hollow, the County Road Department, the dump/recycling area, and areas north of Jim's Corner. In this area most of the 61 structures are not defensible and do not have access to water.
- **Response area C** includes Angle Outpost Resort, surrounding cabins, and the structures north of the Dawson Road. In this area of 10 structures, about half are defensible and half have access to water.
- **Response Area D** includes the structures within the vicinity of Young's Bay Drive. In this area of 13 structures, about half are defensible and half have access to water.
- **Response Area E** includes all areas accessible only by water. These areas include Bear and Harrison Creeks, Magnuson Island, Moose Bay, Brush Island, Hackett Island, Flag Island, and Oak Island. In this area, only 98 structures were evaluated. They have mix of defensible space and water availability, but water only access is a challenge to response.

Assessment Factors

Each geographic unit was evaluated based on several factors to develop an overall risk/vulnerability rating to understand the fire risk and vulnerability of structures in the communities. The factors assessed are listed below:

1. The risk of fire occurrence based on historic fire data.
2. The vulnerability of structures and other assets to fire.
3. Known fuel hazards.
4. Fire suppression capacity.

Each factor is rated with a low, medium, or high relative risk.

Fire Risk

Fire risk is assessed based on historic instances of fire, where they are located and the relative severity. Fire history in the Northwest Angle is limited, with six documented fires, two of which were on Oak Island.

Structural Vulnerability

The 2012 MN DNR Operations Plan discusses structural vulnerability thoroughly, assessing each structure based on defensible space, water access, building construction materials, hazardous materials, and other considerations. The results are described above. Not all island structures were assessed.

Known Fuel Hazards

Table 2 describes fuels on the mainland and on each island. Each island varies in their cover type. The protection zones on the mainland (A-D) vary, the predominant fuel is emergent wetlands (85% cover) with 10% cover of deciduous forest.

Fire Suppression Capacity

Fire suppression capacity varies throughout the Angle. Pumps are located at strategic locations, at private residences, throughout the mainland and island. The fire department is a loose association of residents and business owners committed to protecting life and property. However, maintaining training and interest in participating on the fire department is difficult, perhaps related to the low number of historic fires. Generally, areas on the mainland have a lower risk related to fire suppression capacity. Water access only sites have a higher risk.

It is also important to note that business owners communicate fire risk to their customers and are careful to manage campfires.

Results

Overall Risk

The risk and vulnerability assessment resulted in an overall risk rating. This rating included the factors described previously. The results are shown below in **Table 3** and in **Map 2** of **Appendix 1**.

Table 3. Risk and Vulnerability Assessment

Community, Structure, or Area	Historic Fire Risk	Structural or Asset Vulnerability	Known Fuel Hazard	Risk Re Fire Suppression Capacity	Overall Risk and Vulnerability
Response Area A	Low	Low	High	Moderate	Moderate
Response Area B	Low	High	Moderate	High	High
Response Area C	Low	Moderate	Moderate	Moderate	Moderate
Response Area D	Low	Moderate	Moderate	Moderate	Moderate
Response Area E	Moderate	High	Moderate	High	High

Key Issues

1. The history of fire events is very limited. It may contribute to residents and visitors not being aware of fire risk. It is also a testament to the care taken to manage fire appropriately.
2. Access to water to suppress fires varies throughout the mainland and islands. Water-access-only sites will have increased response times.
3. Further assessment of structures is needed on the islands.
4. The majority of structures are weatherized with combustible materials. Fuel tanks create an additional risk. Education and the cost of installing fire resistant building materials and sprinkler systems seems to be the primary barrier.

Chapter 4: Plan for Action

Hazards Fuels Treatment Strategies

No areas were identified for specific fuel treatments. Areas may be identified in future iterations of this plan.

Non- Fuels Treatment Strategies

Table 5. Mitigation Strategies (Non-Fuel Reduction)

	Community, structure or area at risk	Agency/ Landowner	Funding Needs	Time Table	Responsible Party/Agency
Education and Awareness					
Review survey responses and respond to those interested in learning more.					
1	All	N/A	Staff time, printed materials	Ongoing	BJ Gotchie
Advertise, promote, and execute brush collection and hazard tree removal in areas where site assessments reveal the need to remove brush around structures or remove tree that threaten structures. The logistics of this will be complex given the isolation of the community and will require some creative thinking amongst the locals, county, and MN DNR. If enough interest develops resulting from the assessments this may be funded in part through a Firewise grant.					
2	Areas identified by site assessments and property owner interest	Individual Property Owners	Advertisement, Labor	Spring 2016	LoW HSEM, LoW Public Works, MN DNR

Assessment

Continue assessment by assessing island properties not previously assessed in 2012.					
3	Area E	Private property owners	LoW HSEM staff time, NWA fire dept. time, CWPP grant resources, DNR assistance	Ongoing	LoW HSEM

Review survey responses and respond to those interested in further educational materials or assessments of their property.

4	All	Private property owners	LoW HSEM staff time, NWA fire dept. time, CWPP grant resources, DNR assistance	Spring 2015	LoW HSEM
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Structural Resistance

Provide educational materials about fire resistant building materials and sprinkler systems with building permits.

5	All	Private property owners	Staff time. Coordinate with DNR to stock educational materials.	Ongoing	LoW Land and Water Planning
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Promote fire resistant building materials on private properties. Begin by reviewing survey responses and then further identify those that are interested, initially approaching resort owners. Identify a group of interested parties and pursue FEMA and Firewise funding to assist with material and construction costs.

6	All	Private property owners.	Staff Time for Grant Management, FEMA and Firewise funding for materials and installation.	Ongoing	LoW HSEM
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Increase Suppression Capacity

Assist Northwest Angle Fire Department in seeking grant funding to provide a "compensated volunteer" fire position to promote involvement in the fire department.

7	All	All	Staff time for grant application and management. Aid to Firefighter grants, and SAFER grants programs.	Ongoing	LoW HSEM
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Plan Maintenance

This section outlines the procedure for updating, amending, and appending the plan. It also identifies the parties that are responsible for the maintenance as well as the frequency the plan is to be reviewed.

- The planning team will review the plan annually. The history of fire events over the last 12 months should be reviewed. The risk assessment will be reviewed for each assessment area. Strategies will be reviewed to include best practices or successful strategies that have come to light in the last 12 months. Each page should be dated as to when the most current revisions were adopted. A log of revision and maintenance activities should be completed.
- The Plan for Action will be reviewed. Each responsible party will be asked to inform the group on the status of the project, whether the project is still relevant, or if it needs to be changed or removed from the plan. New strategies can be added to the plan at this time.
- The updated plan will be presented to the Council by the Firewise specialist as it pleases the Council. The plan will then be made available for a 30 day review period and pending no significant comments it will then be adopted.

This procedure is not intended to be cumbersome and should not take more than one meeting of the planning team to prepare for a presentation to the Council.

Revisions or updates may be completed at any time prior to the 12 month cycle if there is interest.

Plan Approval

The Northwest Angle Community Wildfire Protection Plan:

- Was collaboratively developed.
- Identifies and prioritizes areas for hazardous fuel reduction treatments and recommends the types and methods of treatment that will protect the Northwest Angle.
- Recommends measures to reduce the ignitability of structures throughout the area addressed by the plan.

The following entities mutually agree with the contents of this Community Wildfire Protection Plan:

- Lake of the Woods County Board of Commissioners
- Brian McKeever, Northwest Angle Fire Department
- Forrest Boe, Minnesota DNR Forestry Director



_____, County Board Chair

Brian McKeever, Northwest Angle Fire Dept.

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Brian McKeever, Northwest Angle Fire Dept.



Forrest Boe, MN DNR Forestry Director

Plan Approval

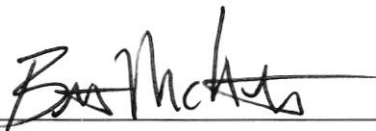
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Brian McKeever, Northwest Angle Fire Dept.

Forrest Boe, MN DNR Forestry Director

Appendix I: Maps

Map 1: The Northwest Angle

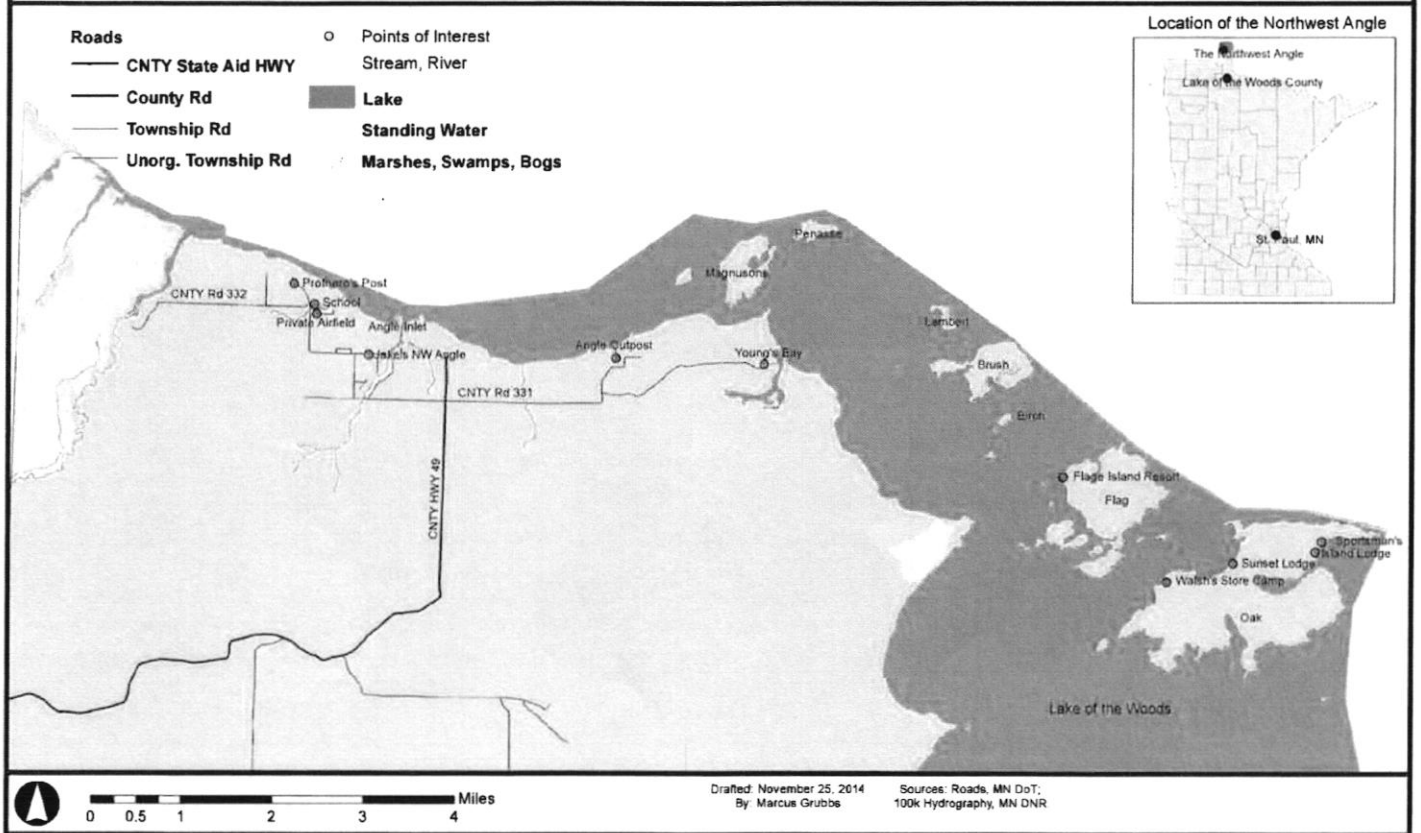
Map 2: Land Ownership

Map 3: Land Cover

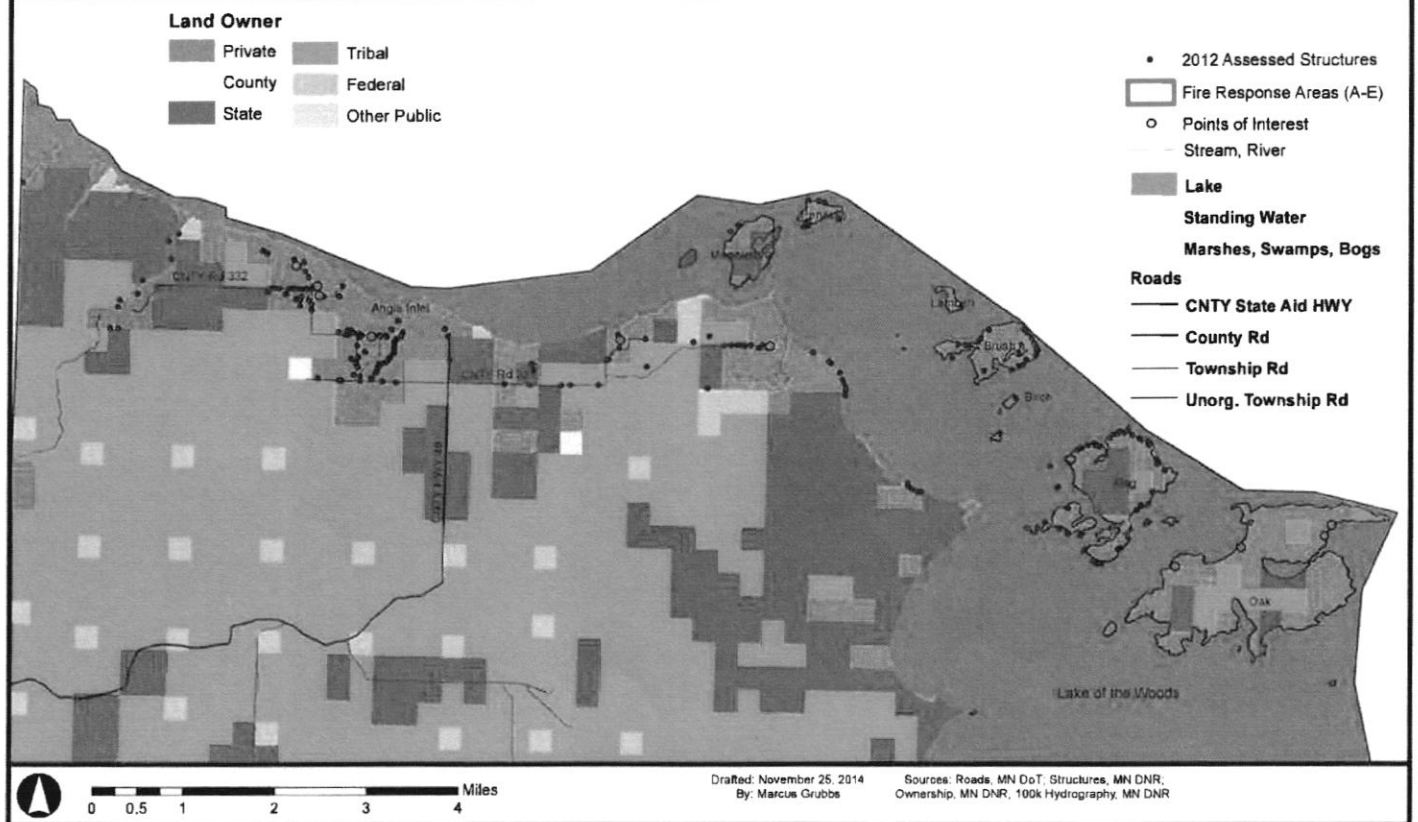
Map 4: Fire Response Areas

Map 5: Overall Risk and Vulnerability

Map 1. The Northwest Angle, Lake of the Woods, MN



Map 2. Land Ownership



Map 3. Land Cover

Land Cover

- Open Water
- Developed
- Barren
- Shrub
- Deciduous Forest
- Coniferous Forest
- Mixed Forest
- Grassland, Hay, Crops
- Woody, Herbaceous Wetlands

2012 Assessed Structures

Fire Response Areas (A-E)

Points of Interest

Stream, River

Lake

Standing Water

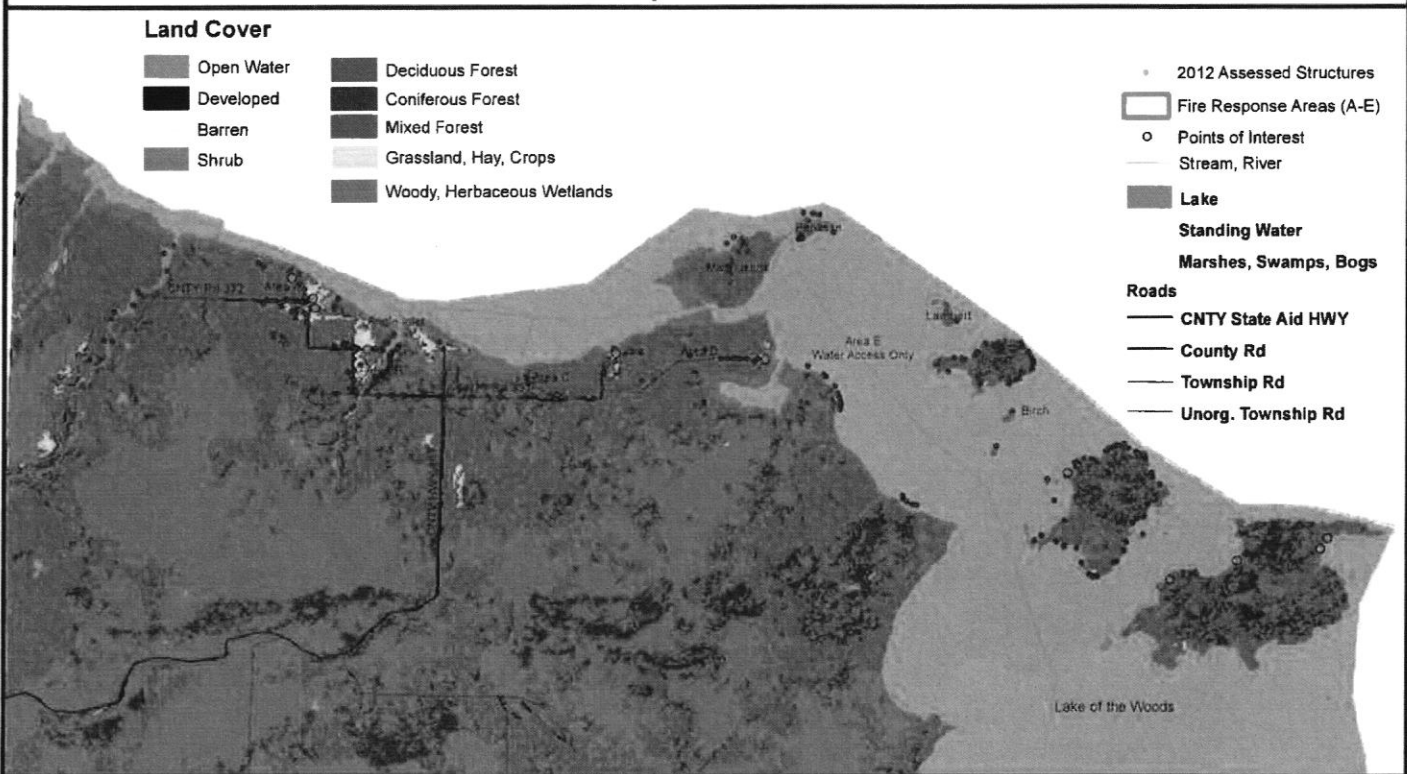
Marshes, Swamps, Bogs

Roads

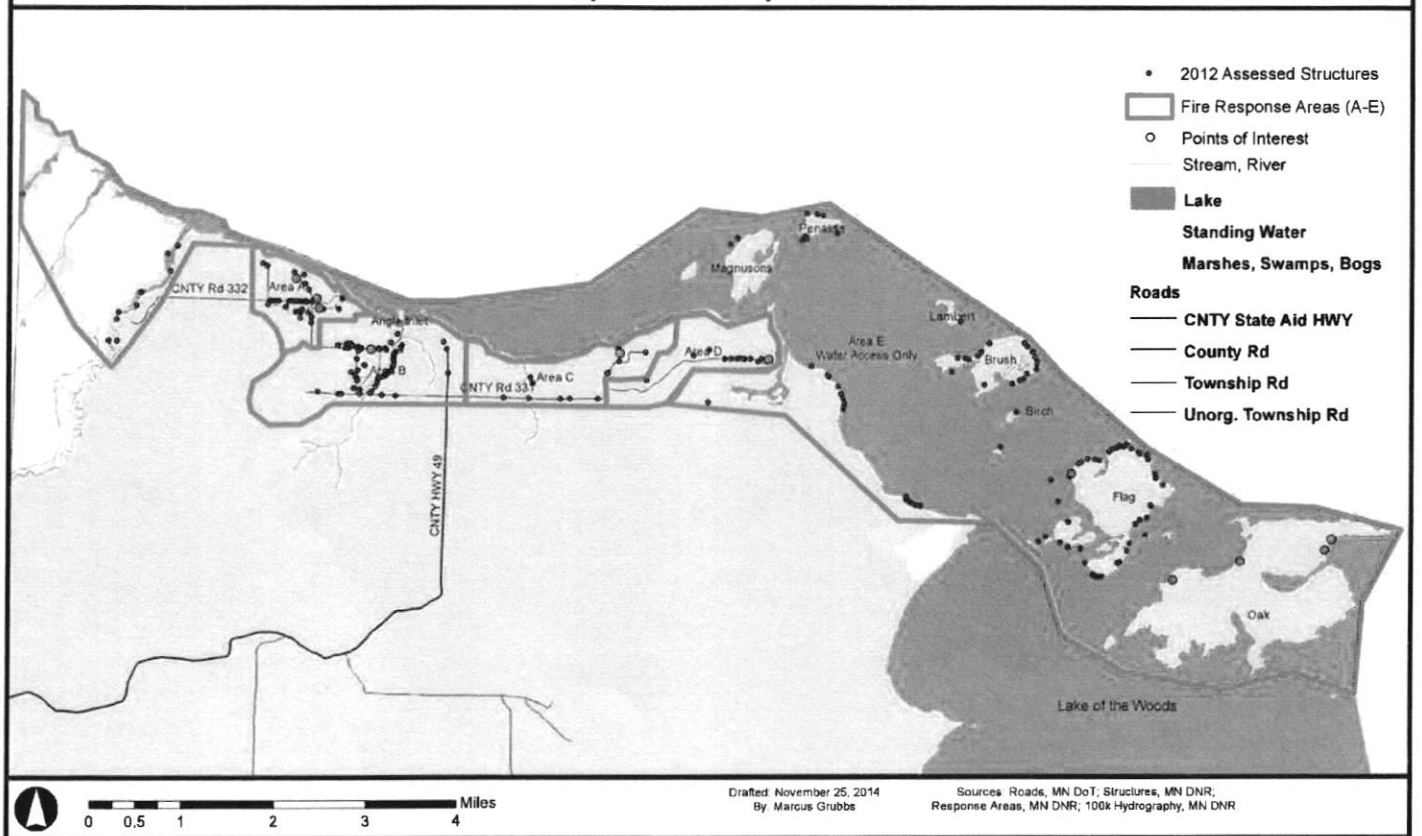
- CNTY State Aid HWY
- County Rd
- Township Rd
- Unorg. Township Rd

Scale: 0 0.5 1 2 3 4 Miles

Sources: Roads, MN DoT; Structures, MN DNR; 100k Hydrography, MN DNR; NLCD Land Cover, MN DNR



Map 4. Fire Response Areas



Map 5. Overall Fire risk and Vulnerability

Overall Fire Risk and Vulnerability

- High
- Moderate

2012 Assessed Structures

Fire Response Areas (A-E)

Points of Interest

Stream, River

Lake

Standing Water

Marshes, Swamps, Bogs

Roads

- CNTY State Aid HWY
- County Rd
- Township Rd
- Unorg. Township Rd

CNTY Rd 332

Area A

Angle Inlet

Area B

CNTY Rd 331

Area C

Area D

Area E

Water Access Only

Brush

Birch

Flag

Oak

Lake of the Woods

Magnusons

Penasco

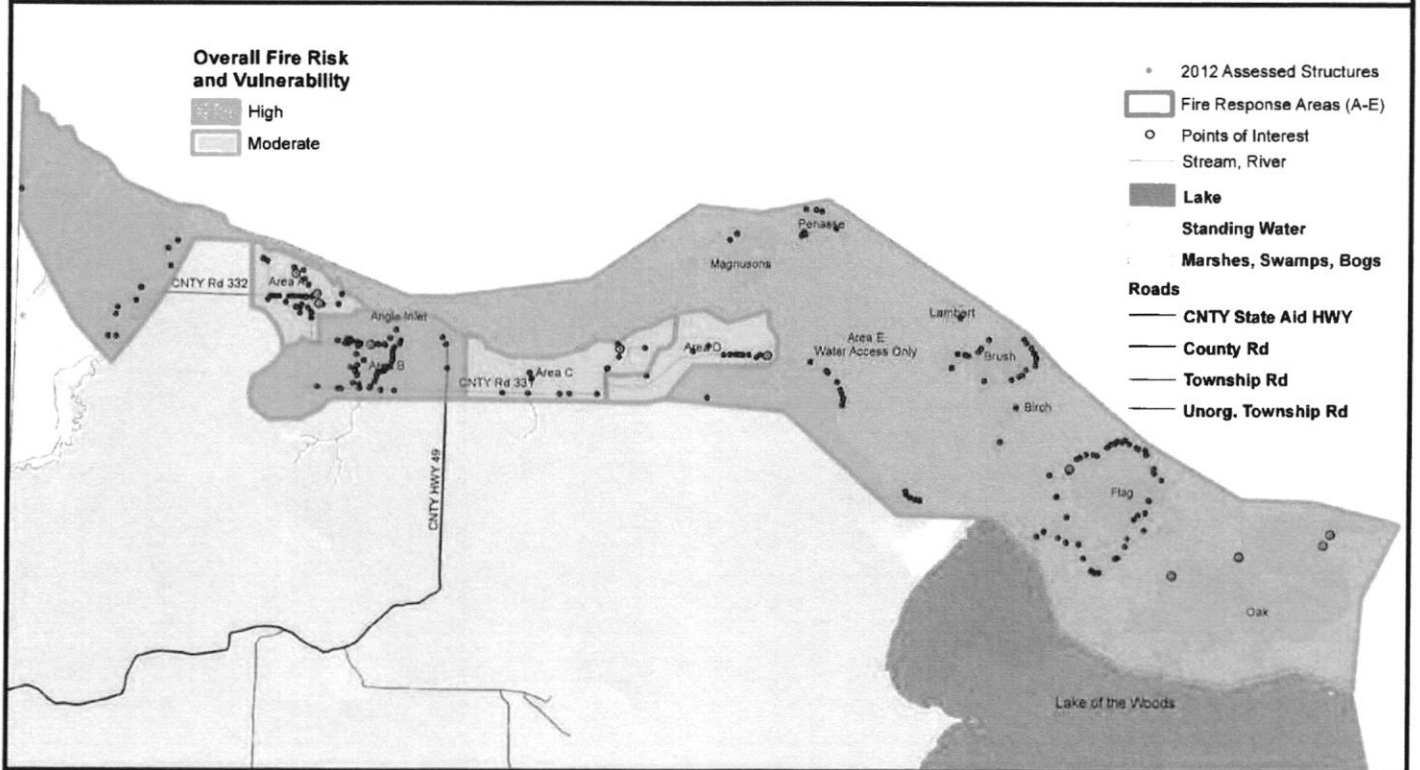
Lambert

CNTY HWY 49

0 0.5 1 2 3 4 Miles

Drafted November 25, 2014
By: Marcus Grubbs

Sources: Roads, MN DoT; Structures, MN DNR,
Response Area, MN DNR, 100k Hydrography, MN DNR



Appendix 2: Land Owner Survey

Introduction

The planning team was interested in finding out perceptions of owners of property on the Northwest Angle related to the risks associated with wildfires as well as activities that could help mitigate those risks. A survey questionnaire was designed to solicit responses that could help gauge property owners' knowledge of concepts related to best practices for reducing wildfire risk, and interest in learning more about activities that could help protect property from the potential threat. The survey mailing included a risk assessment tool designed to help participating property owners better understand how their property may fare in the event of a wildfire event. In addition, a DNR pamphlet titled "Creating a Firewise Property" was included in the mailing. That pamphlet provided great information on methods to make owners properties Firewise and provided a link to access additional information.

Methods

A simple survey questionnaire was mailed to approximately 400 owners of property on the Northwest Angle. Responses were returned by 16 households, a response rate of 4%, significantly less than expected. A follow up survey questionnaire would have helped increase the level of response but was deemed cost prohibitive given the meager project budget.

Results

Roughly half of the respondents were only somewhat or not at all familiar with the majority of wildfire protection terms and concepts, the exception being a higher level of familiarity with fire resistant building materials. Most (87.5%) respondents expressed interest in learning more about the factors that make their properties vulnerable to wildfires. It is likely that the respondents may be overrepresented by households who had some level of concern about the possible negative consequences associated with wildfires. Given the extremely high level of concern expressed it is also likely that a high percentage of property owners at the Northwest Angle would be interested in additional educational materials.

Conclusion

Many households at the Northwest Angle are at risk of wildfire. It is clear from the results of the survey that many households are not aware of some best practices that could dramatically reduce the risk of life and property. It is also clear that many households would be receptive to learning more about things they could do to reduce their vulnerability.

When additional resources become available additional information should be provided that would help Angle residents reduce their risk and protect their property. Detailed strategies are outlined in Appendix 4, and possible funding sources are provided in Appendix 5.

Initials

2015 Updated Project List

Federal agencies and private landowners of the vegetation surrounding the identified communities, structure or areas of concern were invited to submit projects that provide protection and reduce risk. The following table displays a list of projects submitted and the community recommendations. (The community may also consider and add projects of its own development.)

Updated Strategies

Community, structure or area at risk	Agency/ Landowner	Funding Needs	Time Table	Responsible Party/Agency

The following entities mutually agree with the contents of this Community Wildfire Protection Plan update:

_____, County Board Chair

Brian McKeever, Northwest Angle Fire Dept.

Forrest Boe, MN DNR Forestry Director

2016 Revisions and Updates

Please initial in space provided indicating each step was completed.

Committee Review:

Notification of update process _____

Review fire events in the last 12 months _____

Review risk assessment _____

Update of available mitigation strategies _____

Review existing strategies in the plan for action _____

Identify new strategies for the plan for action _____

Presentation to Board of Commissioners_____

Public Review and Comment Period_____

Appropriate public notice made _____

Adoption of Updated Plan _____

Documentation of Changes

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and
Date

Change

Initials

2016 Updated Project List

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2017 Revisions and Updates

Please initial in space provided indicating each step was completed.

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Review fire events in the last 12 months _____

Review risk assessment _____

Update of available mitigation strategies ____

Review existing strategies in the plan for action _____

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Presentation to Board of Commissioners_____

Public Review and Comment Period_____

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2017 Updated Project List

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2018 Revisions and Updates

Please initial in space provided indicating each step was completed.

Committee Review:

Notification of update process _____

Review fire events in the last 12 months _____

Review risk assessment _____

Update of available mitigation strategies ____

Review existing strategies in the plan for action _____

Identify new strategies for the plan for action _____

Presentation to Board of Commissioners_____

Public Review and Comment Period_____

Appropriate public notice made _____

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Initials

2018 Updated Project List

Federal agencies and private landowners of the vegetation surrounding the identified communities, structure or areas of concern were invited to submit projects that provide protection and reduce risk. The following table displays a list of projects submitted and the community recommendations. (The community may also consider and add projects of its own development.)

Updated Strategies

Community, structure or area at risk	Agency/ Landowner	Funding Needs	Time Table	Responsible Party/Agency

The following entities mutually agree with the contents of this Community Wildfire Protection Plan update:

_____, County Board Chair

Brian McKeever, Northwest Angle Fire Dept.

Forrest Boe, MN DNR Forestry Director

2019 Revisions and Updates

Please initial in space provided indicating each step was completed.

Committee Review:

Notification of update process _____

Review fire events in the last 12 months _____

Review risk assessment _____

Update of available mitigation strategies ____

Review existing strategies in the plan for action _____

Identify new strategies for the plan for action _____

Presentation to Board of Commissioners_____

Public Review and Comment Period_____

Appropriate public notice made _____

Adoption of Updated Plan _____

Documentation of Changes

Page
and
Date

Change

Initials

2019 Updated Project List

Federal agencies and private landowners of the vegetation surrounding the identified communities, structure or areas of concern were invited to submit projects that provide protection and reduce risk. The following table displays a list of projects submitted and the community recommendations. (The community may also consider and add projects of its own development.)

Updated Strategies

Community, structure or area at risk	Agency/ Landowner	Funding Needs	Time Table	Responsible Party/Agency

The following entities mutually agree with the contents of this Community Wildfire Protection Plan update:

_____, County Board Chair

Brian McKeever, Northwest Angle Fire Dept.

Forrest Boe, MN DNR Forestry Director

2020 Revisions and Updates

Please initial in space provided indicating each step was completed.

Committee Review:

Notification of update process _____

Review fire events in the last 12 months _____

Review risk assessment_____

Update of available mitigation strategies ____

Review existing strategies in the plan for action _____

Identify new strategies for the plan for action _____

Presentation to Board of Commissioners_____

Public Review and Comment Period_____

Appropriate public notice made _____

Adoption of Updated Plan _____

Documentation of Changes

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and
Date

Change

Initials

2020 Updated Project List

Federal agencies and private landowners of the vegetation surrounding the identified communities, structure or areas of concern were invited to submit projects that provide protection and reduce risk. The following table displays a list of projects submitted and the community recommendations. (The community may also consider and add projects of its own development.)

Updated Strategies					
Community, structure or area at risk	Agency/ Landowner	Funding Needs	Time Table	Responsible Party/Agency	

The following entities mutually agree with the contents of this Community Wildfire Protection Plan update:

_____, County Board Chair

Brian McKeever, Northwest Angle Fire Dept.

Forrest Boe, MN DNR Forestry Director

Appendix 4: Mitigation Strategies

Education and Awareness

Participate in the “Firewise Communities/USA” recognition program sponsored by the National Wildlife Coordinate Group.

- Sponsor Firewise workshops for local officials, developers, civic groups, and neighborhood/homeowners’ associations.
- Consult Firewise guidance and encourage or require best practices in the community.

Educate and reach out to targeted citizens, businesses, developers, landscapers, and insurers among others to increase awareness of wildfire risk and strategies for protection of homes and infrastructure.

- Reach out to targeted property owners to educate about the risk specific to their property or area.
- Offer GIS hazard mapping for residents, developers, and design professionals related to fire risk.
- Organize a local fire department tour to show local elected officials and planners the most vulnerable areas of the community’s wildland-urban interface and increase their understanding of risks.
- Work with insurance companies, utility providers, and others to include wildfire safety information in materials provided to area residents.
- Develop partnerships with neighboring groups, homeowners’ associations, and others to conduct outreach activities.
- Use local fire departments to conduct education programs in schools.
- Inform the public about proper evacuation procedures.
- Form a citizen plan implementation steering committee to monitor progress of local mitigation actions. Include a mix of representatives from neighborhoods, local businesses, and local government.
- Host a booth at a popular public event to provide information about risk and reducing vulnerability.
- Work with local media to release Public Service Announcements about risk areas or elevated times of risk.
- Distribute to property owners the “Will your home survive a wildfire worksheet.”

Planning and Policies

Incorporate wildfire mitigation into comprehensive planning.

- Recognize the existence of wildfire hazards and identify areas of risk based on a vulnerability assessment.
- Describe policies and recommendations for addressing wildfire risk and discouraging expansion in the wildland-urban interface.
- Include considerations of wildfire hazards in land use, public safety, and other elements of the comprehensive plan.

Complete further and more detailed wildfire risk and loss vulnerability assessments.

- Complete level II assessments of individual properties in high risk areas.
- Complete further mapping, assessment, and vulnerability analysis.
- Create a wildfire scenario to estimate potential loss of life and injuries, the types of potential damage, and existing vulnerabilities within a community to develop further wildfire mitigation priorities.

Reduce vulnerability and reduce future loss by thorough land use planning.

- Use zoning and/or an overlay district to designate high-risk areas and specify the conditions for the use and development of specific areas.
- Address density and quantity of development, as well emergency access, landscaping and water supply.
- Promote conservation of open space or wildland-urban boundary zones to separate developed areas from high-hazard areas.
- Set guidelines for annexation and service extensions in high-risk areas.

Develop regulations for safer construction and incorporate mitigation considerations into the permitting process.

- Develop specific design guidelines and development review procedures for new construction, replacement, relocation, and substantial improvement in wildfire hazard areas.
- Address fire mitigation through access, signage, fire hydrants, water availability, vegetation management, and special building construction standards.
- Involve fire protection agencies in determining guidelines and standards and in development and set plan review procedures.
- Establish wildfire mitigation planning requirements for large scale development or planned unit developments.

Encourage fire-resistant construction or require it through local regulations.

- Encourage the use of non-combustible materials (i.e. stone, brick, and stucco) for new construction in wildfire hazard areas.
- Use fire resistant roofing and building materials in remodels, upgrades, and new construction.
- Enclose the foundation of homes and other buildings in wildfire-prone areas, rather than leaving them open and potentially exposing undersides to blown embers or other materials.
- Prohibit wooden shingles/wood shake roofs on any new development in areas prone to wildfires.
- Encourage the use of functional shutters on windows.

Reduce Ignitability of Structures and Infrastructure

Retrofit at-risk structures with ignition-resistant materials.

- Install roof coverings, sheathing, flashing, skylights, roof and attic vents, eaves, and gutters that conform to ignition-resistant construction standards.
- Install wall components that conform to ignition-resistant construction standards.
- Protect propane tanks or other external fuel sources.
- Purchase and install external, structure-specific water hydration systems (sprinklers); dedicated power sources; and dedicated cisterns if no water sources is available.

Implement a defensible space program to reduce risk to structures and infrastructure.

- Educate property owners about defensible space.
- Create buffers around residential and non-residential structures.
- Replace flammable vegetation with less flammable species.
- Create defensible zones around power lines, oil and gas lines, and other infrastructure systems.

Implement maintenance procedures to reduce wildfire risk.

- Perform arson prevention cleanup activities in areas of abandoned or collapsed structures, accumulated trash or debris, and with a history of storing flammable materials where spills or dumping may have occurred.
- Prevent or alleviate wildfire by proper maintenance and separation of power lines as well as efficient response to fallen power lines.
- Routinely inspect the functionality of fire hydrants.
- Require and maintain safe access of fire apparatus to wildland-urban interface neighborhoods and properties.

Fuels Reduction

Reduce hazardous vegetative fuels on public lands, near essential infrastructure, or on private lands by working with landowners.

- Perform maintenance including fuel management techniques such as pruning and clearing dead vegetation, selective logging, cutting high grass, planting fire resistant vegetation and creating fuel/fire breaks.
- Use prescribed burning to reduce fuel loads that threaten public safety and property.
- Identify and clear fuel loads created by downed trees.
- Create fire breaks to protect urban areas adjacent to large tracts of fuels and create fire breaks in urban-wildland interface areas with fire risk.
- Sponsor local "chipper days" to reduce fuel loads in the wildland-urban interface.
- Link wildfire safety with environmental protection strategies.
- Develop a vegetation management plan to correspond with large-scale thinning projects.

Increase Firefighting Capacity

Install dry hydrants in or near high risk areas where surface water is accessible; or install storage tanks where dry hydrants are not feasible.

Complete and refresh training.

Purchase additional firefighting equipment.

Recruit and retain firefighting personnel.

Appendix 5: Funding Opportunities

Federal Emergency Management Agency – FEMA provides hazard mitigation grants that may be applicable to strategies in this plan. These are available through the MN Department of Public Safety, Division of Homeland Security and Emergency Management, through the State Hazard Mitigation Officer (SHMO).

Federal Economic Development Administration – The EDA provides grant opportunities for hazard mitigation efforts that will promote economic activity or reduce the impact of hazards on economically important infrastructure.

Minnesota DNR Firewise – The MN DNR Firewise program provides grant assistance through the MN DNR regional Firewise program administrators.

Aid to Firefighter Grants – Annually a grant is released to aid to fire departments or groups of departments to assist with equipment and training needs.

SAFER Grants – FEMA provides Staffing for adequate fire and emergency response grants directly to fire departments to help them increase or maintain the number of trained firefighters available in their communities.