

St. Louis County
Minnesota

Community Wildfire Protection Plan (CWPP)



August 12
2008

St. Louis County Community Wildfire Protection Plan

Michael Dorman 08-19-08
Chair Date
St. Louis County Board of Commissioners

Dan Kopylov 10/20/08
State Forester Date
Minnesota Department of Natural Resources

RICE LAKE - La Mills - CHIEF 8/27/08
Fire Department Date:

Hermantown Don [Signature] Chief 9-3-08
Fire Department Date

Proctor [Signature] P. [Signature] 9-3-08
Fire Department Date:

GRAND LAKE Daniel Dremeling chief 9/3/08
Fire Department Date:

Gnesen Ted Raymond III 9/3/08
Fire Department Date:

NORTH STAR Gy Munk 9-3-08
Fire Department Date:

Lake wood K.T.S.R. 9-3-08
Fire Department Date:

CONOSIA Laird Erikson 9-4-08
Fire Department LAIRD ERIKSON Date:

Solway Wayne Sultan 9-4-08
Fire Department Date:

Pearlman John 9-10-08
Fire Department Date:

Norman Alan Marshall Chief 9-10-08
Fire Department Date:

Floodwood Vol. Fire Dept John G. chief 9-11-08
Fire Department Date:

Arrowhead Vol. Fire Dept. Harold W. chief 9-11-08
Fire Department Date:

Clifton Vol. Fire Dept. Robert chief 9-15-08
Fire Department Date:

FREDENBERG FIRE DEPT. John chief 9/15/08
Fire Department Date:

Albion Fire Dept Mike chief 9-16-08
Fire Department Date:

East Brewster Fire Dept Dan chief 9-17-08
Fire Department Date:

Alameda Fire Dept. [Signature] 12-8-08
Fire Department Date:

Aurora Fire Dept Kent Ohio 1-06-09
Fire Department Date:

Colvin VFD August 7th 1-15-09
Fire Department Date:

Fayal F.D. Steve [Signature] 5-20-09
Fire Department Date:

Euclyth F.D. [Signature] 5-23-09
Fire Department Date:

McDevitt Vol. FD [Signature] 5-23-09
Fire Department Date:

GILBERT FD. [Signature] 6-8-09
Fire Department Date:

FRENCH VFD [Signature] 7-29-09
Fire Department Date:

Bearville Twp Vol. FD [Signature] 10/23/09
Fire Department Date:

GRS Vol. Fire Dept Barry W. Paliski 11-6-09
Fire Department Date:

Hibbing Doug Poynt 4-24-09
Fire Department Date:

Silica Jim Miller 5-14-09
Fire Department Date:

Onishton Bob Brown 07-10-09
Fire Department Date:

Buhl Mark G. Long 8/27/09
Fire Department Date:

Cherry Keith Archambeau 8/27/09
Fire Department Date:

Kinney/GreatScott William Wiltsie 9-4-09
Fire Department Date:

CHIEF

INDUSTRIAL LAWRENCE KUBIS 9/17/08
Fire Department Date:

Duluth Fire Joe [Signature] Fire Chief 9/19/08
Fire Department Date:

ELY FIRE [Signature] FIRE CHIEF 9/20/08
Fire Department Date:

More Fall Lake [Signature] Fire Chief 10/20/08
Fire Department Date:

Rabbit Fire Dept. Ryan Seble Fire Chief 10/24/08
Fire Department Date:

Hoyt Lakes Fire Dept. Steve Stoths 12-3-08
Fire Department Date:

Embarrass Fire Dept. [Signature] FIRE chief 12-3-08
Fire Department Date:

Pike Sandy Britt [Signature] Chief 12/3/08
Fire Department Date:

VIRGINIA [Signature] 12-3-08
Fire Department Date:

Biwabik Township Anthony Myggan 12-3-08
Fire Department Date:

TOWER VFD

Allyn Polans

10/6/09

Fire Department

Date:

See 102, chief

10-2-09

VERMILION LAKE FIRE DEPARTMENT

Fire Department

Date:

R. K. K.

GREENWOOD VFD

10/2/09

Fire Department

Date:

EAGLES NEST VFD

Jon R. K.

10-29-09

Fire Department

Date:

COOK VFD

Arnie Johnson

10/7/09

Fire Department

Date:

BREITUNG VFD

Steve Burger

10/14/09

Fire Department

Date:

Larry DeWarrington
Fire Department

Kabetogama VFD

12-16-09
Date:

Jeff Sch
Fire Department

Crane Lake VFD

12-15-09
Date:

[Signature]
Fire Department

Orr VFD

12-16-09
Date:

[Signature]
Fire Department

Buyck VFD

12-15-09
Date:

Fire Department

Date:

NORTHLAND *[Signature]* 12/30/09
Fire Department Date:

KELSEY *[Signature]* 12/30/09
Fire Department Date:

TOIVOLA *[Signature]* 12/30/09
Fire Department Date:

COTTON *[Signature]* 12/30/09
Fire Department Date:

ELLSBURG *[Signature]* 1/4/10
Fire Department Date:

MEADOWLANDS *[Signature]* 1/4/10
Fire Department Date:

ELMER *[Signature]* 1/4/10
Fire Department Date:

CULVER *[Signature]* 1/4/10
FIRE DEPARTMENT DATE:

Kelly Mc Clibb Fire Chief

Central Lakes Vol. Fire Dept 5-20-09

Fire Department

Date:

Howard P. ...
MCKWLEY VOL FD

5 20 09

Fire Department

Date:

James DeShavon Fire Chief
Clinton UFD

Fire Department

Date:

M. White Fire Chief

Mackinac Fire Dept

Fire Department

Date:

E. ...

10/13/2009

Palo Verde Dept

Fire Department

Date:

Ch. L.

10-15-09

Bivins City, F.D.

Fire Department

Date:

Tom ...

MTN. EADN Fire Dept.

10/20/09

Fire Department

Date:

Mary ...

Evergreen Fire

11-9-09

Fire Department

Date:

Fire Department

Date:

Fire Department

Date:

Brimson Area Paul Fox, Chief 10-24-08
Fire Department Date:

Fire Department Date:

Fire Department

Date:

Fire Department

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Fire Department

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County Board Resolution:



*Resolution
of the
Board of County Commissioners
St. Louis County, Minnesota*

*Adopted on: August 12, 2008 Resolution No. 443
Offered by Commissioner: Raukar*

WHEREAS, the St. Louis County Community Wildfire Protection Committee has developed a plan that has been presented for public comment and is recommended for adoption; and

WHEREAS, execution by involved participants is required for the adoption of the Plan; and

WHEREAS, the St. Louis County Board believes adoption of the Community Wildfire Protection Plan is in the best interest of the County.

NOW, THEREFORE, BE IT RESOLVED, that the St. Louis County Board authorizes the St. Louis County Sheriff to execute the St. Louis County Community Wildfire Protection Plan.

Commissioner Raukar moved the adoption of the Resolution and it was declared adopted upon the following vote:
Yeas - Commissioners Fink, O'Neil, Kron, Sweeney, Nelson, Raukar and Chair Forsman - 7
Nays - None

STATE OF MINNESOTA
Office of County Auditor, ss.
County of St. Louis

I, DONALD DICKLICH, Auditor of the County of St. Louis, do hereby certify that I have compared the foregoing with the original resolution filed in my office on the 12th day of August, A.D. 2008, and that this is a true and correct copy.

WITNESS MY HAND AND SEAL OF OFFICE at Duluth, Minnesota, this 12th day of August, A.D., 2008

DONALD DICKLICH, COUNTY AUDITOR

By

Deputy Auditor/Clerk of County Board

**Fire Departments that have signed the
St. Louis County CWPP***

Alborn Volunteer Fire Department
Arrowhead Volunteer Fire Department
Aurora Volunteer Fire Department
Babbitt Volunteer Fire Department
Bearville Twp Volunteer Fire Dept
Biwabik Volunteer Fire Department
Biwabik Township Vol. Fire Dept
Breitung Volunteer Fire Department
Brimson Volunteer Fire Department
Buhl Volunteer Fire Department
Buyck Volunteer Fire Department
Canosia Volunteer Fire Department
Central Lakes Volunteer Fire Dept
Cherry Volunteer Fire Department
Chisholm Fire Department
Clifton Volunteer Firer Department
Clinton Volunteer Fire Department
Colvin Volunteer Fire Department
Cook Volunteer Fire Department
Cotton Volunteer Fire Department
Crane Lake Volunteer Fire Department
Culver Volunteer Fire Department
Duluth Fire Department
Eagle's Nest Volunteer Fire Department
East Brevator Volunteer Fire Dept
Ellsburg Volunteer Fire Department
Elmer Volunteer Fire Department
Ely Fire Department
Embarrass Volunteer Fire Department
Eveleth Fire Department
Evergreen Volunteer Fire Department
Fayal Volunteer Fire Department
Floodwood Volunteer Fire Department
Fredenberg Volunteer Fire Department
French Volunteer Fire Department
Gilbert Volunteer Fire Department
Gnesen Volunteer Fire Department
Grand Lake Volunteer Fire Department
Greaney-Rauch-Silverdale Vol Fire Dept
Greenwood Volunteer Fire Department
Hermantown Volunteer Fire Department
Hibbing Fire Department
Hoyt Lakes Volunteer Fire Department

Industrial Volunteer Fire Department
Kabetogama Volunteer Fire Department
Kelsey Volunteer Fire Department
Kinney-Great Scott Volunteer Fire Dept
Lakeland Volunteer Fire Department
Lakewood Volunteer Fire Department
Makinen Volunteer Fire Department
McDavitt Volunteer Fire Department
McKinley Volunteer Fire Department
Meadowlands Volunteer Fire Dept
Morse/Fall Lake Volunteer Fire Dept
Mt. Iron Volunteer Fire Department
Normanna Volunteer Fire Department
North Star Volunteer Fire Department
Northland Volunteer Fire Department
Orr Volunteer Fire Department
Palo Volunteer Fire Department
Pequaywan Volunteer Fire Department
Pike-Sandy-Britt Volunteer Fire Dept
Proctor Volunteer Fire Department
Rice Lake Volunteer Fire Department
Silica Volunteer Fire Department
Solway Volunteer Fire Department
Toivola Volunteer Fire Department
Tower Volunteer Fire Department
Vermilion Lake Volunteer Fire Dept
Virginia Fire Department

* - the listing is updated as signatures are received.

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- G. Ely Area*
- H. Flats Area
- I. Hibbing Area*
- J. Orr Area
- K. Southeast Area*
- L. Southwest Area
- M. Vermillion Basin Area*
- N. Virginia Area*

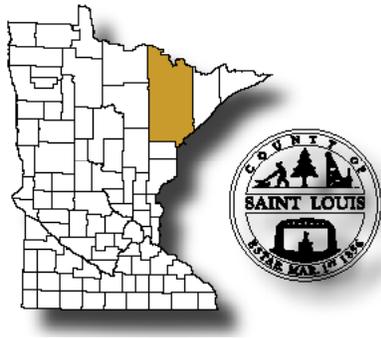
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I. Introduction

A. Purpose and Development



As fire history shows, large wildfires are not uncommon in St. Louis County. The threats to life and property, the assets lost, and the cost of fighting fires is continuously escalating. People and natural elements interact in a complex landscape as development and recreational use increase in St. Louis County. As wildfires affect more people, active public involvement becomes integral to the success of any wildfire management initiative. By being proactive, St. Louis County communities can work together to manage the wildland fire issue. It is impossible to stop all wildfires ignitions from occurring, but appropriate mitigation measures can make a difference. Wildfire prevention and structure protection are everyone’s responsibility!

The St. Louis County Community Wildfire Protection Plan (CWPP) is a community based plan and was developed collaboratively amongst individuals, local communities, businesses, and land management agencies working together to achieve a common goal. This guide is not a legal document, although recommendations contained here carefully conform to both the spirit and the letter of the Healthy Forest Restoration Act of 2003 (HFRA). The goal of the Healthy Forest Restoration Act is to reduce wildland fire risk to firefighters, communities, and important landscapes while achieving the overall goal of improved forest health on a landscape scale. Implementation of all fuels reduction and hazard mitigation projects developed through this plan will follow County, State, and Federal land management plans, policies and procedures.



**CWPP Planning Group meeting
Cotton, MN**

The St. Louis County CWPP has two objectives:

- First, the plan identifies and prioritizes wildland-urban interface (WUI) areas within St. Louis County (including State, County, Federal and other lands) for hazardous fuels reduction treatments and recommends methods for achieving hazardous fuels reductions. WUI areas are portions of the landscape as identified by the St. Louis County CWPP where wildland fuels (trees, brush and other vegetative materials) threaten to ignite combustible homes and structures.
- Second, the plan outlines measures for reducing fire danger to structures throughout St. Louis County at-risk communities. The objectives for the aforementioned vegetative and structural treatments are broadly addressed within each wildland-urban interface community beginning on page 30. Each WUI area will be addressed in depth as the implementation teams works with WUI communities, its residents and partners in plan implementation.

Completion of a CWPP helps communities tap into national funding resources such as the National Fire Plan, which annually provides millions of dollars to help states and communities with community fire planning, hazardous fuel reduction, and wildfire prevention across the nation. It also earns communities priority for funding of hazardous fuels reduction projects carried out under the auspices

of the HFRA. A County or community at-risk must prepare a Community Wildfire Protection Plan if it is to take full advantage of these new opportunities within the Healthy Forest Restoration Act.

The specified requirements for a Community Wildfire Protection Plan as listed in the Healthy Forest Restoration Act include the following objectives:

1. **It must be developed collaboratively:** Local and State government representatives must collaboratively develop the plan, and must consult with federal agencies and other interested parties.
2. **It must set priorities to reduce fuels:** The plan must identify and prioritize areas for treatments that will reduce hazardous fuels. It must also recommend treatment types and methods that will protect one or more at risk communities and essential infrastructure.
3. **It must recommend treatment measures to reduce structural ignitability:** The plan must recommend measures that homeowners and communities can take to reduce the ignitability of structures throughout the area addressed by the plan.

This plan is based on local needs of 14 Wildland Urban Interface (WUI) areas. These 14 areas were collaboratively defined by the St. Louis County CWPP committee. Criteria used to define each WUI area included soil type, fuel type (especially higher volatility fuel types such as conifers), population density, fire occurrence, access and egress, infrastructure, fire department response areas and response times.

This county-wide plan addresses issues such as fire response, community preparedness, and structure and infrastructure protection along with mitigation measures for potential wildland fire fuel hazards. During the development of the St. Louis County Community Wildfire Protection Plan, communities discussed and refined priorities for protecting life, property, and critical infrastructure within their County.

B. Benefits

The St. Louis County Community Wildfire Protection Plan (CWPP) offers a variety of benefits to communities at risk from wildland fire. Within St. Louis County, 14 WUI areas have been identified. Each area has its own set of unique circumstances and need for mitigating measures. The assessments and documentation for each of the 14 wildland urban interface community areas is found starting on page 41.

One significant benefit for St. Louis County communities is establishing localized definitions and boundaries for their specific Wildland Urban Interface areas. Without a written Community Wildfire Protection Plan, the Wildland Urban Interface is limited by statute to within ½ mile of a community's boundary or within 1 ½ miles when mitigating circumstances exist, such as sustained steep slopes or geographic features aiding in creating a fire break. Another benefit is expedited National Environmental Policy Act (NEPA) procedures for federal agencies implementing fuel reduction projects identified in a CWPP.

Fuels treatments can occur along evacuation routes regardless of their distance from the community. At least 50 percent of funds when appropriated under the Healthy Forest Restoration Act must be used within WUI areas as defined by a Community Wildfire Protection Plan or by the limited definition provided by the HFRA when no CWPP exists. CWPP's provide a context for prioritizing fuel treatments projects in a cross-boundary, landscape-scale manner that was envisioned in the National Fire Plan and 10-Year Comprehensive Strategy.



**CWPP WUI Area Planning
Cotton, MN**

Another important reason for completion of a CWPP is that federal agencies must give specific consideration to fuel reduction project implementation plans identified in the St. Louis County Community Wildfire Protection Plan. If a federal agency proposes fuel treatment methods in an area addressed by this community plan, but the community identifies a different treatment method, the federal agencies must also evaluate the community's recommendation as part of the federal agencies environmental assessment process.

C. Implementation

The development of this CWPP has built closer relationships between communities, fire departments, the County, State and Federal partners. This cohesive planning effort has sparked new ideas and concepts for furthering the community wildfire protection planning process. The ideas developed in this planning process have further enhanced the capabilities for implementation of all hazard and risk planning. In the event of a hazardous situation, all entities within the county will be better prepared to work with one another to best meet the needs of local citizens.

This plan is a working document and will be enhanced collaboratively by the 14 wildland-urban interface communities which it serves. Five of the 14 wildland urban interface areas being identified as priorities for implementation. The five priority areas listed in alphabetical order are:

- Ely Area WUI
- Hibbing Area WUI
- Southeast Area WUI
- Vermilion Basin Area WUI
- Virginia Area WUI

Implementation of the St. Louis County CWPP will continue as a collaborative effort. To facilitate implementation, a **Steering Committee** will guide **Implementation Teams**. The Steering Committee will meet at least annually and will be composed of the individuals listed below or their designee:

- St. Louis County
 - County Commissioner
 - Land Commissioner
 - Sheriff's Office/ Emergency Management
- Minnesota Department of Natural Resources
 - Regional Forest Supervisor
 - Area Supervisor
- Fire Department representatives from within the County
- Superior National Forest
 - Forest Supervisor
 - Forest Fire Management Officer.

The Steering Committee will help identify implementation project areas and key personnel, secure funding, and ensure continued coordination and collaboration among partners. The Steering Committee will be responsible for yearly revisions and updates to the St. Louis County CWPP, including documentation of completed projects. Implementation Teams will strategize, plan and implement mitigating activities in identified areas.

As the plan is implemented, community involvement will be escalated to ensure needs of the local community are incorporated in the planning, development and execution of projects within any given wildland urban interface area. Implementation of all fuels reduction and hazard mitigation projects will follow State, Federal and County land management policies and procedures.

For more on implementation, see Section XII, Mitigation Action Plan.

II. Roles and Actions for Development and Implementation of the St. Louis County Community Wildfire Protection Plan (CWPP)

A. State Forester:

The Healthy Forest Restoration Act of 2003 (HFRA) gives each State Forester a unique and critical role by designating them as one of the three entities, along with local government and the local fire authority, who must agree on the final contents of the CWPP. The State Forester:

- Provides statewide leadership in encouraging local, state, federal, and non-governmental stakeholders in development of the St. Louis County CWPP and facilitate the participation of state personnel in the development process.
- Assists in bringing together diverse community partners; initiates the planning dialogue; and facilitates the implementation of priority actions across landownership boundaries through established relationships with city and county officials, local fire chiefs, federal land management agencies, private homeowners, and community groups within St. Louis County, along with state and national fire organizations.
- Brings specialized natural resource knowledge and technical expertise into the planning process.
- Provides statewide leadership in developing and maintaining a list, or map, of communities at risk within the state and work with partners to establish priorities for action.
- Allocates federal grant funds for projects on nonfederal lands giving priority to communities that have adopted a CWPP.

B. Superior National Forest Supervisor, USDA Forest Service Regional Forester, Bureau of Land Management State Director, and Regional Directors of the US Fish & Wildlife Service and National Park Service:

- Provide federal leadership in encouraging St. Louis County to develop the CWPP.
- Convey the importance of CWPPs to federal line officers and encourage their active participation in their development and implementation.
- Ensure full collaboration with local communities, state agencies, and all interested parties while planning fuel reduction projects on federal land.
- Assist the community in identifying and prioritizing areas for hazardous fuel reduction treatments on federal lands, and in determining the types and methods of treatment that would reduce the risk to the community.
- Give priority to projects that provide for the protection of communities or watersheds at risk, or that implement recommendations of the CWPP while planning fuel reduction projects on federal land.
- Bring specialized natural resource knowledge and technical expertise into the planning process, particularly in the areas of GIS and mapping, vegetation management, assessment of values and risks and funding strategies.
- Provide funding priority to projects and activities identified in the CWPP.
- Promote economic opportunities in rural communities where possible.

C. Bureau of Indian Affairs (BIA) Regional Forester:

- Encourage Tribes to develop and implement, as appropriate, CWPPs for landscapes at high-risk to wildland fire. In 1999 the Tribes and the BIA completed Fire Management Plans (similar to CWPP). These plans have identified high risk areas especially high risk Wildland Urban Interface Areas.
- Collaborate with Tribes to plan and implement WUI and/or HFRA treatments that meet Tribal goals.

- Facilitate coordination with local communities and state and other federal agencies with land adjacent to reservation and/or Tribal boundaries.
- Communicate the unique role of Tribal governments to partners involved in developing CWPPs and assist with appropriate incorporation of tribal participants and interests in the resulting documents.

D. County and City Government Officials:

The HFRA gives local government officials a unique and critical role by designating them as one of the three entities, along with state land management agencies and the local fire authority, which must agree on the final contents of a CWPP. Local government officials:

- Convene the core decision-making team that will be responsible for either developing the plan, or guiding its development.
- Engage local community leaders and stakeholders in the planning process.
- Provide local leadership, along with local fire chiefs, in assessing community fire protection needs and determining the complexity of planning necessary.
- Enlist state and federal agency assistance and support for the planning effort.
- Ensure that the CWPP is collaboratively developed. Local officials must meaningfully involve state government representatives, federal agencies that manage land in the vicinity of the community, and other interested parties.
- Communicate, in conjunction with local fire chiefs, to home and business owners the advantages of reducing the ignitability of their homes and other structures, and methods of creating defensible space around them.



E. Local Fire Chiefs:

The HFRA gives local fire chiefs a unique and critical role by designating them as one of the three entities, along with local government and the state forestry agencies, which must agree on the final contents of a CWPP.

- Take the lead in encouraging diverse local understanding of and support for the development of a CWPP, in organizing the planning process, and in ensuring meaningful participation from other community leaders and diverse stakeholders.
- Use local fire protection expertise to lead the assessment of community fire protection needs and to determine the necessary complexity of fire preparedness and response planning.
- Communicate, in conjunction with local government officials, to home and business owners the advantages of reducing the ignitability of their homes and other structures, and methods of creating defensible space around them.
- Consider using The “Leaders Guide for Developing a Community Wildfire Protection Plan”, developed by the International Association of Fire Chiefs (IAFC), to guide the process. Or the PREPARING A COMMUNITY WILDFIRE PROTECTION PLAN: A Handbook for Wildland-Urban Interface Communities *Sponsored By:* Communities Committee, Society of American Foresters, National Association of Counties, National Association of State Foresters and the Western Governors' Association. It is at <http://www.safnet.org/policyandpress/cwpp.cfm>

F. Local Citizens:



- Participate in the ongoing development of the CWPP.
- Take actions identified by the CWPP and Firewise (www.firewise.org) to reduce the chance of your home and property being lost to wildfire.
- In the event of wildfire be aware of the evacuation policies and procedures your local officials have developed.
- Support your local fire organizations in their efforts to implement the CWPP.

The Elbow Lake Association received a Firewise grant in 2006. This fuel mitigation project addressed the dead and downed fuels, and spruce budworm mortality in balsam fir and white spruce. This area is just northwest of Lake Vermilion. For more on spruce budworm mortality areas see page 17.

Above: Members of Balkan Township worked to put in E-911 signage at homes in their community.

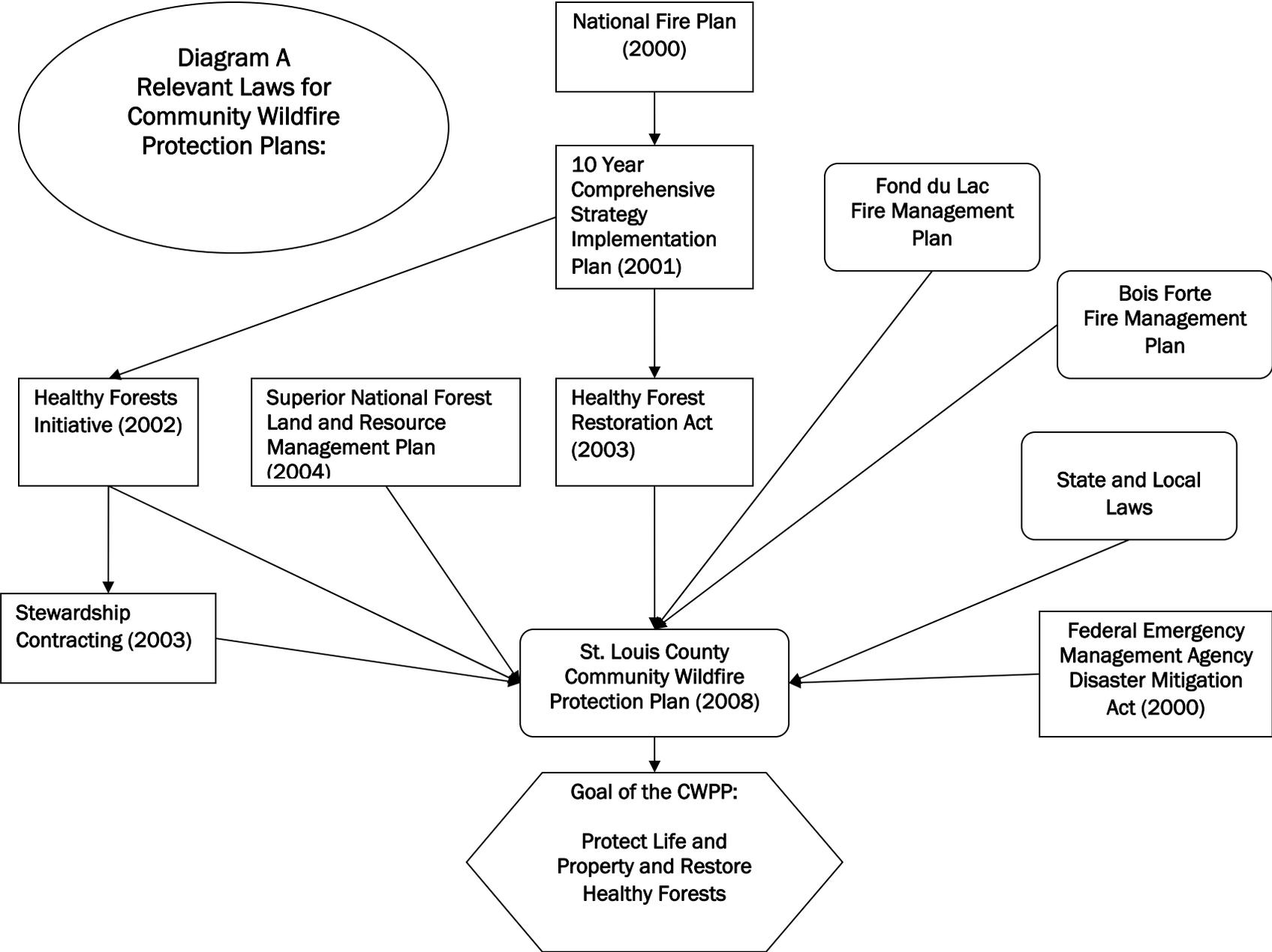
Right: Volunteers cutting and piling brush, and dead and down, vegetative material (much of it dead from spruce budworm infestation) on properties on Elbow lake. This material will be chipped to reduce fuel potential and help create defensible space zones around homes. The homeowners can utilize the chipped material for home and garden projects.



III. Fire Policies and Programs

Various local, state and federal policies and programs relate to fire protection and community fire planning. Diagram A, on page 7, describes the relationships between relevant laws and the St. Louis Community Wildlife Protection Plan.

**Diagram A
Relevant Laws for
Community Wildfire
Protection Plans:**



National Fire Plan:

The **National Fire Plan (2000)** was created in response to the catastrophic national wildfire season of 2000. The plan is multi-faceted strategy designed to manage the impacts of wildland fire to communities and ecosystems, and to reduce wildfire risk. It encompasses the Departments of Agriculture (Forest Service) and Interior (National Park Service, Fish and Wildlife Service, and the Bureau of Land Management).

10 - Year Comprehensive Strategy Implementation Plan:

The **10-Year Comprehensive Strategy Implementation Plan** was created in 2001 to implement the National Fire Plan. Several additional federal laws and policies were crafted in later years to better implement the goals of the National Fire Plan. These laws include the Healthy Forests Initiative, Stewardship Contracting and the Healthy Forest Restoration Act.

Healthy Forests Initiative:

The Healthy Forests Initiative (2002) provides streamlined administrative procedures to implement hazardous fuel reduction and other forest health projects by federal agencies and through partnerships with state and local government. It also expanded the authority of the federal government to offer stewardship contracts.

Stewardship Contracting:

Stewardship contracts allow the federal government to exchange money and/or forest products for services from contractors. Projects could include hazardous fuel reduction projects such as thinning trees and brush, and removing dead wood. These contracts emphasize the vital role of local residents, and allow private companies, communities and others to retain forest products in exchange for the services provided. Long-term contracts (up to 10 years) foster a public/private partnership to restore forest health by giving those who undertake the contract the ability to invest in equipment and infrastructure. The expanded 2003 Stewardship Contracting will help agencies achieve key land-management goals to:

- improve, maintain, and restore forest health;
- restore and maintain water quality;
- improve fish and wildlife habitat;
- re-establish native plant species and increase their resilience to insects, disease and other natural disturbances; and
- reduce hazardous fuels posing risks to communities and ecosystem values through an open, collaborative process.

Healthy Forest Restoration Act:

The Healthy Forest Restoration Act of 2003, (HFRA) provides additional programs that build on the Healthy Forests Initiative, including large-scale silviculture research, biomass utilization, and funding for watershed protection and forest conservation on private lands. The HFRA calls for the development of **Community Wildfire Protection Plans** which includes provisions for:

- Hazardous fuel reduction projects;
- Biomass utilization projects (the use of small diameter wood and slash for energy and other products);
- Watershed forestry assistance;
- Insect infestations and related diseases;
- Healthy forests reserve program

- Forest monitoring and risk assessment

Communities that complete Community Wildfire Protection Plans will receive priority consideration for funding for hazardous fuel reduction projects in identified wildland-urban interface areas. More information on these laws may be found at: <http://www.forestsandrangelands.gov/>

Superior National Forest Land and Resource Management Plan and the Superior National Forest Fire Management Plan:

The fire policy and program for the Superior National Forest is updated annually within the Forest's Fire Management Plan which is tiered to policies and guidelines set forth in the revised (2004) Superior National Forest Land and Resource Management Plan. The Fire Management Plan also carries forth policies as defined in Forest Service Handbook and Manual. For the Superior National Forest Land and Resource Management Plan go to: http://www.fs.fed.us/r9/forests/superior/projects/forest_plan/2004_forest_plan.php

Tribal Fire Management Plans:

Bois Forte and Fond du Lac Tribal Governments have fire management plans. For more information see the Bois Forte website at <http://www.boisforte.com> and the Fond du Lac website at <http://www.fdlrez.com>

State and Local Laws:

The State of Minnesota's Department of Natural Resources is governed by State Statutes that provide fire protection direction; followed by Minnesota Department of Natural Resources internal policies. See <http://www.dnr.state.mn.us/forestry/fire/index.html> for MN DNR fire information.

IV. Planning Process

A. Partners:

St. Louis County community wildfire protection planning began in April of 2006. A core group composed of St. Louis County government officials, and managers from the Minnesota Department of Natural Resources (DNR) and the Superior National Forest met to initiate the development of a Community Wildfire Protection Plan. With the high level of interest, this group began identifying partners that would be closely involved in the planning process.



CWPP – County, State, Fire Department and Federal members planning

Planning partners began to meet regularly, with additional members becoming involved. Members included

individual fire departments, Fire Coalitions, County Emergency Management, County Sheriffs Office, County Lands Department, DNR Firewise, DNR Fire Program Foresters, Superior National Forest staff including the Forest Supervisor, District Rangers, District Fire Management Officers and other fire staff, Minnesota Interagency Fire Center staff, Tribal members, the State Fire Marshals Office and interested public members.

B. Collaboration:

They initiated an interagency inventory and assessment of fuel hazards, community related infrastructure protection, and mitigation needs. This assessment process was conducted by agency fire staff and involved in-depth interviews with 71 fire departments. Local information, including fire department needs, fuel hazards, wildfire occurrence, infrastructure was gathered.

Specialists from the Minnesota Interagency Fire Center, the County, the DNR and the Forest Service aided in the information gathering process by providing technical support and information. The background information that was collected aided in identifying 14 different planning areas, called Wildland Urban Interface Areas (WUI's).

In addition to the regular working group meetings, there were many other Agency meetings where CWPP was a focal point. These meetings were held by the County Lands Department, the Sheriff's Office, including their County Emergency Management personnel, County Commissioners and the Superior National Forest.

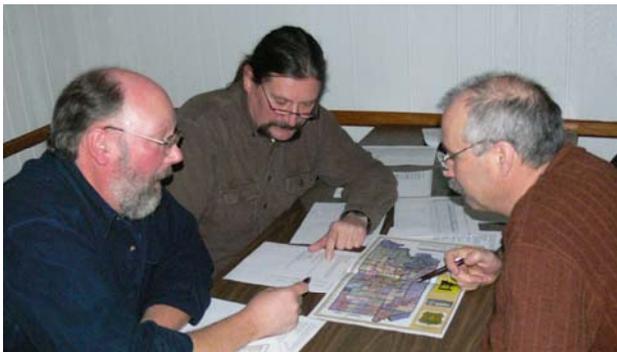
Meeting agenda, minutes, detailed planning and technical information related to fire and fire prevention was distributed through e-mail to a wide network of concerned public. Wikipedia was another electronic vehicle used to disseminate information. Information was also distributed at the County fair and other public events. Area Fire Department Coalitions and individual departments were utilized to keep fire departments updated with the planning process and to gather additional information. The draft plan was put on the St. Louis County web site with an opportunity for public comment. Meetings were held throughout the County to provide and gather pertinent information.

The draft plan was presented for input, prioritization and review. Additional community meetings will be held to build upon and prioritize projects. This plan is a work in progress, with continuing input from the public as individual projects are proposed.

Private landowners and community members joined in the collaborative community efforts to address wildfire risk in the interface. Community members were encouraged to be active players in the effort, by reducing hazardous fuels on their properties and taking the needed steps to complement the work currently being done on lands within St. Louis County.

C. Community Outreach:

The multi faceted nature of problems addressed by a Community Wildfire Protection Plan (CWPP) necessitates communication and collaboration across private and public lands, administrative boundaries, and geographic regions.



St Louis County Land Management and MN- DNR Forestry addressing WUI areas concerns

Community meetings and Fire Department Coalition meetings were used to inform and update local communities, address local community needs and priorities relating to community fire protection, safety, and healthy forest restoration. The successful implementation of this plan includes stakeholder groups with broad representation. This includes State, Federal, and local agencies, the public, and various public interest groups

collaborating to establish priorities, cooperate on activities, and to increase the public awareness of the risk to St. Louis County communities and their environments. The St. Louis County Community Wildfire Protection Plan will continue to be a collaborative approach as the coordination group moves forward with on-the - ground mitigation planning.

The following steps were used to develop the St. Louis County CWPP.

1. Convene Decision Makers

In April of 2006, a core group was formed including representatives from St. Louis County, fire departments within the County, and the Minnesota Department of Natural, to begin development of a Community Wildfire Protection Plan (CWPP).

2. Involve Federal Agencies

The core group included Federal partners, including the United States Forest Service, Tribal Governments, and the National Park Service.

3. Engage Interested Parties

St. Louis County CWPP committee meetings were regularly scheduled over a period of almost two years. Meeting schedules, agenda and pertinent information was regularly sent out through a broad reaching e-mail list. Committee meetings were held throughout the County in Fayal, Cotton, Duluth, Tower, Virginia, and Ely. Information was disseminated at fire coalition meetings, and community events. The draft CWPP was placed on the County web site for additional public input and comment.

4. Establish a Wildland Urban Interface (WUI) Base Map

The core group worked together to establish a WUI base map which defines St. Louis County's 14 Wildland Urban Interface Areas. The map displays areas at risk, forested areas containing critical infrastructure, and areas at risk for large-scale fire disturbance.

5. Develop a Wildfire Risk Assessment

The St. Louis County group worked to develop a wildfire risk assessment that considers: fuel hazards and risks of wildfire occurrence to homes, businesses, and essential infrastructure at risk; community values at risk; local wildfire and structural protection capabilities; and community vulnerability.

The group rated each risk factor and incorporated the results into this CWPP as appropriate.



6. Establish Community Priorities and Recommendations

The St. Louis County group used the wildland urban interface base map and wildfire risk assessment to facilitate collaborative discussions. Additional public comment will be sought through interaction with the County web-site and other community meetings. The Implementation Teams will lead additional community discussions to identify specific local priorities for fuel treatment, reduction of structural ignitability, and other issues of interest as they implement the plan on the local level.

7. Develop an Action Plan and Assessment Strategy

The planning group developed an implementation strategy to accompany the CWPP and a monitoring plan that will ensure its long-term success. The Steering Committee will provide oversight and direction to the Implementation Teams, who are responsible for plan implementation.

8. Finalize Community Wildfire Protection Plan

Community partners presented a draft CWPP to the County Board in April, 2008 for review. After the County Board approved the draft plan, the Plan was posted on the County's web site for a public comment period.

The County Board approved the Plan. Fire Departments then signed the Plan and it was sent to the State Forester. The Plan was returned to the County Board for implementation. The CWPP can be accessed on the St. Louis County website home page at www.stlouiscounty.org via links in the "Find It A - Z" on the left side or the "Your Safety" section at the top.

V. St. Louis County Community Profile:

Information for this profile was collected from the 2005 St Louis County Hazard Mitigation Plan and www.co.st-louis.mn.us, Planning Department and Land Department.

Physical Characteristics

Geographically, St. Louis County reaches from Duluth at the western tip of Lake Superior to the Canadian border, 125 miles north. St. Louis County covers 6,860 square miles, including water surfaces. It is known for its natural beauty, including the Superior National Forest which contains the Boundary Waters Canoe Area Wilderness, the Voyageur National Park, four state parks and 1,040 lakes. The topography of the county is as varied as the scope of the land, from Canadian Shield lakes in the north to glacial drift areas and vast wetlands in the southwest. Over 80% of the county is forested.



Climate

St. Louis County is classified as a continental climate regime characterized by wide variations in temperature that can range from 100 F. degrees in the summer to 50 F. degrees below in the winter. The average yearly temperature is 38 F. degrees. Annual precipitation in St. Louis County ranges from 30 inches in the south to 28 inches in the north. The seasonal snowfall also varies based on location in the county from 64 inches in the north to 78 inches in the south. The average date of the last frost in the spring is May 21 with the first fall frost occurring September 27.

Water Resource /Topography

St. Louis County water resources provide recreational and aesthetic value and enhanced economic opportunities. Water resources include both surface and ground water from aquifers, watersheds, lakes, rivers, wetlands, and riparian habitats. Topographic relief varies in St. Louis County depending on the different watersheds. The Lake Superior watershed contains steep slopes.

Lakes: St. Louis County lakes cover 635 square miles of land surface.

Rivers: Numerous short streams lead directly to the shore of Lake Superior. Many of these streams support cold-water fisheries and are sensitive to pollution from runoff. The St. Louis River watershed is largest in the County, covering 3,650 square miles.

Wetlands: St. Louis County is estimated to have 31 percent of its total area (1,109,903 acres) in wetlands. The Upham Glacial plain of southwest and south central St. Louis County has wetland concentrations where two thirds of the lands are wetlands. The Lake Superior Watershed and the lower St. Louis Watershed in the Duluth area have the lowest concentration of wetlands in the County. This is due to the urbanization of this area.

Economic

The major industries in St. Louis County are mining, wood and paper products, shipping and transportation, health care, and tourism. The service industry, government and commercial sectors and the trade industry represent the majority of the employment. Tourism and the medical industry are growing industries for the County. Construction is experiencing significant growth. This can be attributed to new home construction in the rural townships surrounding Duluth and on high amenity lake areas.

Land Use and Ownership

The majority of the county population lives in the City of Duluth and the adjacent cities and townships. The next greatest population concentration is located within the Iron Range communities including the communities of Hibbing, Chisholm, Mountain Iron, Virginia, Eveleth and Hoyt Lake. St. Louis County further has a large number of lakes with significant development on them. Finally, there are large areas within St. Louis County that have very low-density development and have a primary function for forestry, wildlife habitat and recreation.

Public and Private Property Estimates St. Louis County	
Description	Acreage
Public Lands	
County Tax Forfeited	907,150
Federal Acres	831,052
State Lands	541,094
State Parks	8,834
Permit to Mine	245,327
Indian Reservation	23,243
Private Lands	
	1,486,300

Roads, Highways and Railroads

St. Louis County has approximately 6000 miles of roadway. These include local city streets, interstate highways,

township roads, county roads, county state-aid highways, forest and Indian Reservation roads. Approximately 510 railroad track miles are maintained under various ownerships.

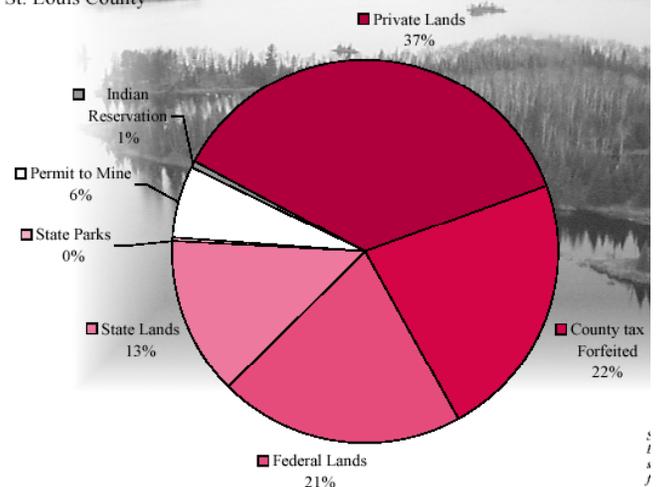
Population

St. Louis County is the home of 200,500 people. It contains 70 organized townships in the County and 80 unorganized townships. The five largest cities within St. Louis County are Duluth (86,918), Hibbing (17,071), Virginia (9,157), Hermantown (7,448), and Chisholm (4,960). A total of 26 cities are located within the County.

Population growth trends determine the needs and demands of a variety of services such as transportation, law enforcement, fire and emergency medical response. An understanding of population trends and location of population concentrations are important for making projections regarding area's level to hazards and potential human needs. While the population overall though has decreased over the last 30 years by over 9 percent, St. Louis County has shown a trend of slow growth since the 1990s. The growth over the last decade has largely been driven by development on lakes and in the townships surrounding Duluth. Seasonal residents and tourists make up a significant portion of the population spending time in St. Louis County. A little over 9 percent, 8,896 residences, of St. Louis County residences are for seasonal use. Further, St. Louis County has a thriving hospitality industry, attracting tourists to the area both in Duluth and on the lakes and public lands in the County.

Public and Private Property Ownership

St. Louis County



Tribal Lands

The Bois Forte Band and the Fond du Lac Band of Lake Superior Chippewa have lived in northern Minnesota for centuries. Bois Forte currently has around 500 Band members and two of the three sectors of the Bois Forte reservation, Vermilion and Nett Lake, exist primarily within St. Louis County. Fifty percent of the Nett Lake sector is wetland and it is said to be the largest producer of wild rice in the United States. The Nett Lake sector is home to the majority of the Bois Forte Band members and the Bands primary government offices.

The Fond du Lac Reservation with over 3,700 Band members (according to the 2000 Census) is composed of 3 Districts, 2 in Carlton County and the Brookston District, in St. Louis County. The

Fond du Lac Reservation is a great example of how communities, individuals and agencies benefit from working together on wildfire prevention and protection. Through the efforts of Tribal members, the Fond du Lac Forestry Office, and the Tribal Council, the Fond du Lac Reservation has become a nationally recognized Firewise Community. Along with many fuels reduction projects, a housing project on the Reservation has adopted Firewise construction and landscape principles with defensible space constructed as sites are cleared for building. The Fond du Lac Forestry crew is also thinning the surrounding vegetation to increase safety. This clearing and thinning results in saleable by-products the tribe can use to recuperate costs for machine rentals to do the work.

Bois Forte and Fond du Lac Reservations are two of six Reservations inhabited by members of the Minnesota Chippewa Tribe as detailed in the 1854 Treaty between the Chippewa and the United States. The Chippewa Nation is the second largest ethnic group of Indians in the United States. Archaeologists maintain that ancestors of the present day Chippewa have resided in the Great Lakes area since at least 800 A.D

VI. Background and History of Fire and Fire Risks in St. Louis County

(From the Fire Management Plan of the SNF, 2005 and MNICS Fire Program analysis documentation)

A. History of Fire Occurrence and Community Impacts

A pattern of repeated fires emerged in the border lake country as soon as flammable postglacial vegetation developed. This pattern continued for thousands of years, according to evidence from charcoal particles found layered in lake sediments. Measurements obtained from one lake in the Boundary Waters Canoe Area Wilderness established an average interval of sixty to seventy years between major fires, with a range of twenty to one hundred years.

The late Miron (Bud) L. Heinselman, field ecologist for the U. S. Forest Service North Central Experiment Station, in The Boundary Waters Wilderness Ecosystem documented major fire occurrence between 1727 and 1911. Most fires probably occurred during severe droughts that tend to recur at 20 to 30 year intervals.

Wildfire is ranked as one of the greatest threats for St. Louis County according to the County Hazard Mitigation Plan of April 2005 (www.arrowheadplanning.org). The immediate danger from wildfires is the destruction of timber, property, wildlife, and injury or loss of life to persons who live in the affected area or who are using recreational facilities in the area. Long-term effects from wildfires are numerous. Forest fires can leave large amounts of scorched and barren land, which may not return to its pre-fire condition for many years. Major fires can completely destroy ground cover, which can, in turn cause erosion. As a result of population growth in rural forested areas and the blowdown in the Northeastern part of the County, the potential for losses of life and property due to wildfires are greater now than in the past. Information on current wildfire conditions and burning restrictions can be found at <http://www.dnr.state.mn.us/forestry/fire/>

Recent fire history indicates the potential for large wildland fire still exists in St. Louis County. St. Louis County has experienced several major fires over the past 20 years. Large fires such as the Gannon Creek/Nett Lake Fire in August of 1991; Mother's Day Fire near Tower, May, 1992; Sheep Ranch Fire in May of 1998 near Orr; Elbow Lake Fire near Orr, in May of 2000; Zim Complex in May of 2003; and the Cherry Fire of May, 2007.

According to the County Hazard Mitigation Plan of 2005, between January of 1993 and December of 2002, St. Louis County had 1,829 wild fires, burning 6,188 acres in total according to data from the Minnesota Department of Natural Resources.

In recognition of fire as a natural change agent, the Superior National Forest has a Wildland Fire Use Policy. In accordance with national wilderness policy, the Forest will permit certain lightning caused fires to burn in a manner which duplicates as nearly as possible, natural conditions. This fire use policy allows lightning caused fires to burn under preplanned, specified conditions and objectives.

Naturally ignited (lightning) fires will be suppressed when wilderness boundaries are threatened or conditions warrant such actions. As always, public safety is paramount.

Another factor contributing to St. Louis County wildfire potential is areas of blowdown. A major windstorm which swept across northern Minnesota in July of 1999 impacted St. Louis County, including a large amount of acreage within the Boundary Waters Canoe Area Wilderness (BWCAW). In responding to this storm and its aftermath the following response plans were developed to address these four areas of focus:

Fuel reduction activities:

- BWCAW Environmental Impact Statement 2001

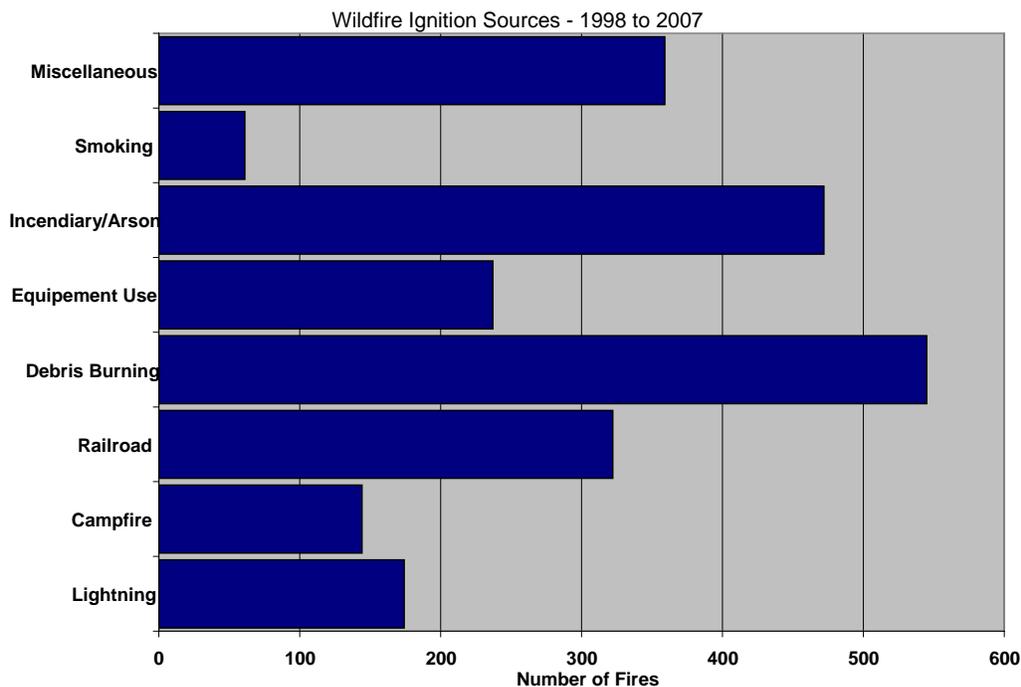
Fire prevention activities:

- MN Interagency Prevention Plan of 2005

Fire preparedness:

- Superior National Forest Fire Management Plan of 2005
- Northeastern Minnesota Wildfire Integrated Response Plan of 2004

Within St. Louis County, the four main categories of fire starts are debris burning, arson, miscellaneous fires and railroad fires. From 1998 to 2007 debris burning accounted for 23.5% of the total wildfires, arson accounted for 14.6 %, undetermined and miscellaneous causes also accounted for 14.6%, and railroad fires accounted for 13.9%. See the fire occurrence charts starting on page 14 for more information. Lightning is prevalent in the summer months causing numerous fires every summer. Escaped campfires are a problem, especially in the Boundary Waters Canoe Area Wilderness, one of the most heavily used wilderness areas in the nation.



B. General Fire Behavior

(From the Superior National Forest Fire Management Plan)

The wildfire season in St. Louis County is a two-part season, occurring in the spring and fall seasons. The spring fires generally occur in light, flashy fuels, such as grass, that lack moisture. These fires typically do not burn deep, as they are not drought-based, but rather burn on the surface, above wet or frozen ground. Because the light fuels can dry out quickly, the fire danger varies greatly from day-to-day, in response to daily weather patterns. Wildfires that occur during the late summer/fall fire season are drought-based and wind-driven. Most of St. Louis's County large wildland fires occur during this time.

Slower spreading, small surface fires with occasional torching trees occur especially when winds are blowing less than 15 miles per hour. Short duration "mini-droughts" can quickly dry shallow ridge top soils increasing the potential for extreme fire behavior. During a normal fire season most fires remain fairly small and are caught during initial attack.

Crown fires can develop on rocky ridges if tree tops are in close proximity of each other and wind speeds are adequate to carry the fire. Single day fire runs of 1 to 7 miles are documented. Large runs like this occurred on the Mothers Day Fire near Tower, MN in 1992. The presence of numerous lakes can make effective firebreaks under low to moderate conditions. During extreme fire conditions spotting distances up to 1 mile makes all but the largest lakes ineffective at stopping fire spread.

On July 4th of 1999, portions of northern Minnesota including St. Louis County were affected by a rare "derecho" (a widespread or straight-line windstorm that is associated with a band of rapidly moving showers or thunderstorms) event that left significant blowdown damage to the BWCAW and adjacent lands. The worst storm damage occurred across the BWCAW where a swath 4 to 12 miles wide and approximately 30 miles long; lying in a WSW to ENE direction was flattened by extremely high winds.



This event dramatically changed fuel profiles and fire behavior potential. Continuing hazardous fuels work has strengthened and will continue to strengthen wilderness boundaries and forest perimeters helping to reduce the likelihood of fires escaping the wilderness. Projects are still being planned to reduce heavy fuel loadings, further reducing the fire hazards as they relate to the blowdown.

Over the past 5 years, fuel reduction treatments have been completed on more than 30,000 acres of Superior National Forest land affected by blowdown. Approximately 70 percent of (non-wilderness) fuel treatment was accomplished through mechanical means with approximately 30 percent by prescribed fire. While immense clean-up efforts have been under taken, pockets of fuel needing treatment remain in certain areas.

Fires in blowdown can burn at higher, prolonged intensities, with larger overall spread rates as compared to fires occurring prior to the blowdown event. Blowdown fires are not expected to reach rapid spread rates achieved by previous standing timber fires, which had crowning and spotting associated with winds exceeding 10 mph. In addition to the normal threat of wind-driven fire, the threat of plume-dominated fire has increased due to available fuel loading from blowdown fuels. Spotting distances for a plume-dominated (fire behavior that is determined by its own convection column) fire can exceed one to three miles.

Railroad fires often occur during the spring and fall fire seasons, and occasionally during summer droughts. These fires move quickly in the cured grass and brush fuel models and can spread into forested lands. Railroad patrols are often scheduled during these times to reduce fire risk. Railroad right of ways may also be burned to reduce fire starts.

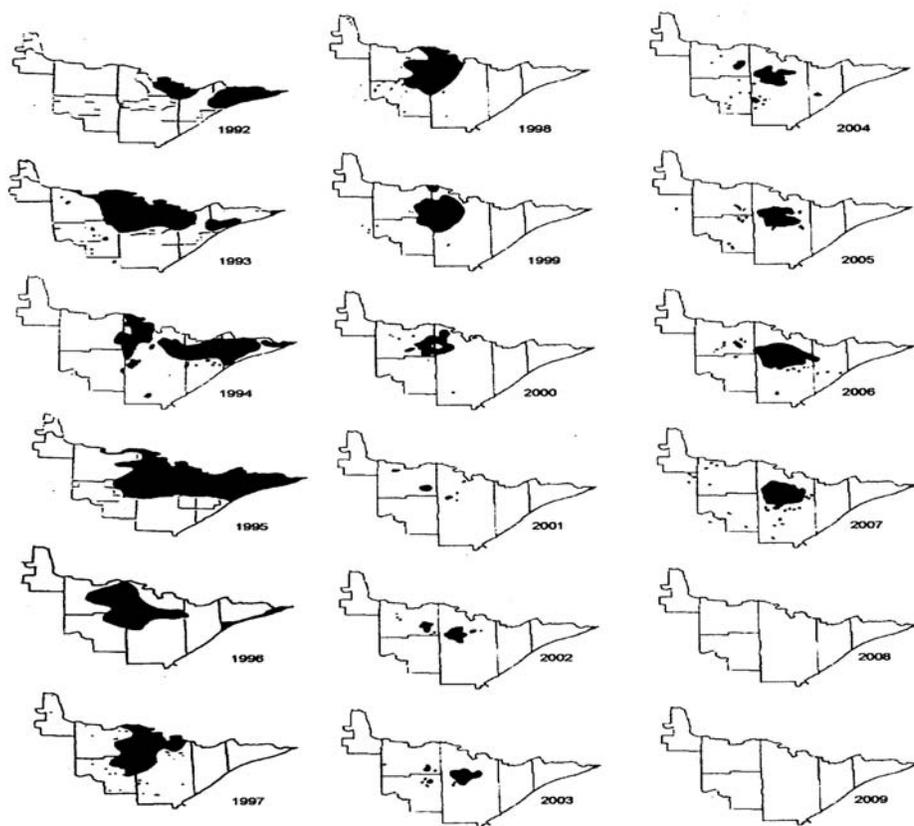
Peat fires can also occur in the southern portion of the County, where there are several peat production plants. Peat fires can initially move very quickly across dry surfaces, and if the drought index is high, they can be persistent, smolder and burn deeply for long durations.

Spruce budworm has been a constant pest in St. Louis County, in varying degrees, for the past several decades. The spruce budworm outbreak continued in 2007 and was present on slightly over 100,000 acres of forest, down from over 280,000 in 2006. Resultant mortality from this insect outbreak will increase the buildup of standing dead and down fuel.

Reduction of canopy cover will allow an increased buildup of fine fuels in formerly shaded areas. Lighter canopy cover allows greater exposure to wind and exposes surface fuels to increase solar insolation. The combination of additional fuel loads and greater wind exposure increases potential fire spread and intensity in these areas. This is especially true when there is advanced regeneration of balsam fir in the understory.

Spruce Budworm Mortality Areas in the Arrowhead Region from 1992 through 2007.

(DNR information)



C. History of Wildland Fire Occurrence for St. Louis County from 1998-2007

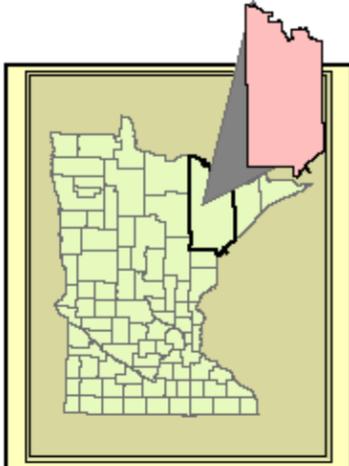
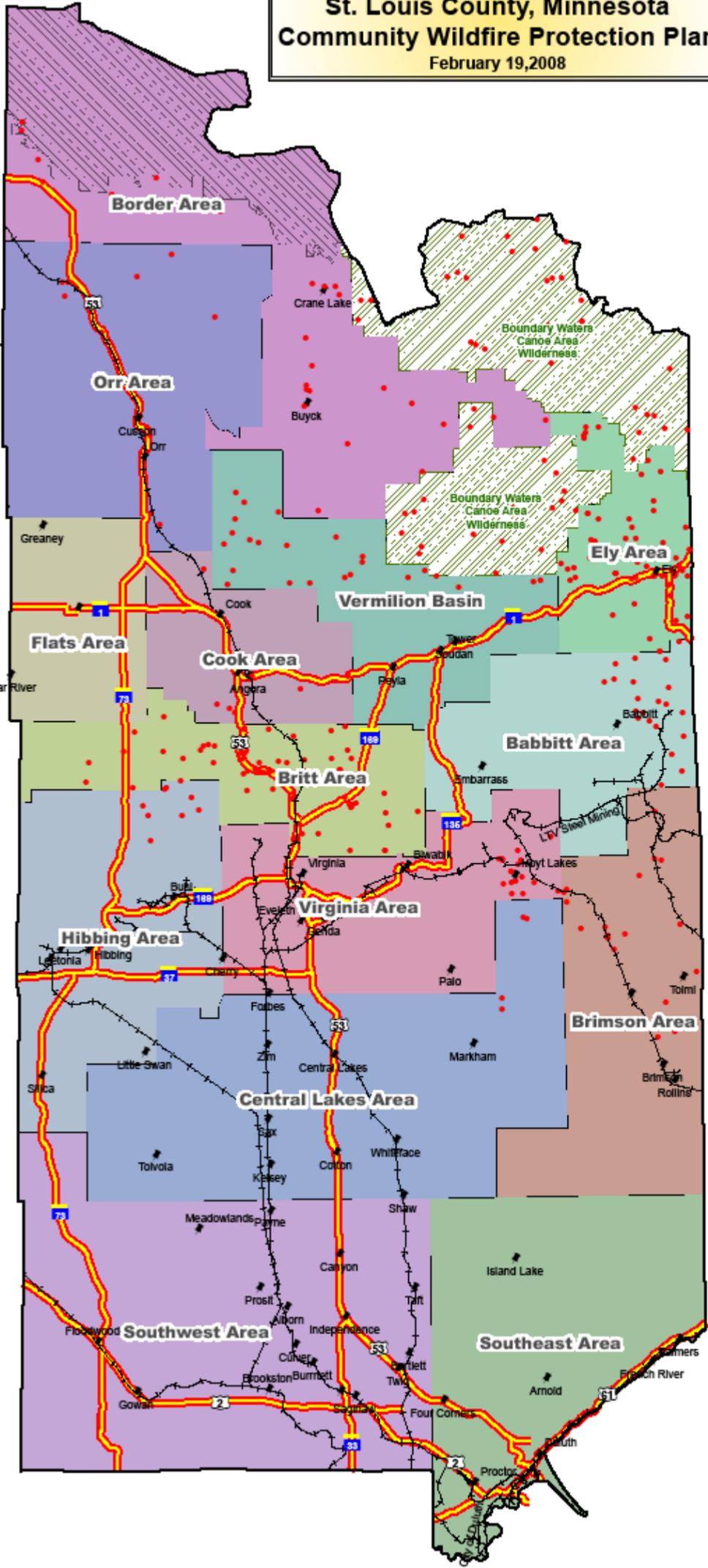
(All State and Federal agencies from Fire Program Analysis data)

All Fires				
<i>Cause</i>	<i>Count</i>	<i>Percent</i>	<i>Total</i>	<i>2314</i>
Lightning	174	7.5%		
Equipment Use	237	10.2%		
Smoking	61	2.6%		
Campfire	144	6.2%	Human	2140 92.4%
Debris Burning	545	23.5%		
Railroad	322	13.9%	Lightning	174 7.5%
Arson	472	14.6%		
Children	19	0.5%		
Miscellaneous	340	14.6%		

Federal Lands				
<i>Cause</i>	<i>Count</i>	<i>Percent</i>	<i>Total</i>	<i>333</i>
Lightning	78	23.4%		
Equipment Use	17	5.1%		
Smoking	8	2.4%		
Campfire	45	13.5%	Human	255 76.5%
Debris Burning	54	16.2%		
Railroad	31	9.3%	Lightning	78 23.4%
Arson	20	6%		
Children	19	5.7%		
Miscellaneous	61	18.3%		

State Lands and Other Non-Federal Lands				
<i>Cause</i>	<i>Count</i>	<i>Percent</i>	<i>Total</i>	<i>1981</i>
Lightning	96	4.8%		
Equipment Use	220	11.1%		
Smoking	53	2.6%		
Campfire	99	4.9%	Human	1885 95.1%
Debris Burning	491	24.7%		
Railroad	291	14.6%	Lightning	96 4.8%
Arson	452	22.8%		
Children	NA			
Miscellaneous	279	14%		

Fire Occurrence 1998 to 2007
St. Louis County, Minnesota
Community Wildfire Protection Plan
 February 19, 2008



Legend

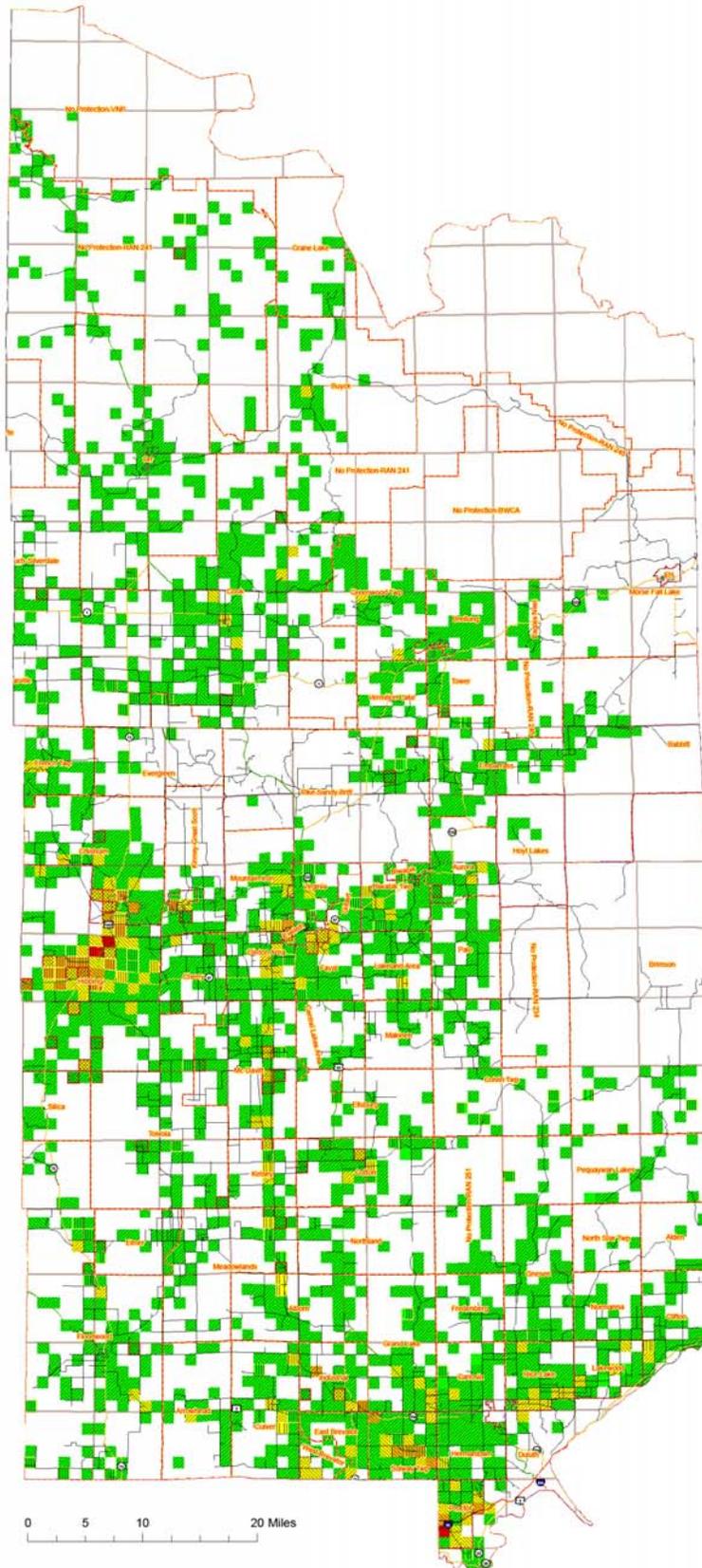
- Fire Location
- WUI Areas
- +— Railroads
- State/US Highways
- ★ Cities/Towns
- Voyageurs National Park
- BWCAW

0 4 8 16
Miles



The USDA Forest Service uses the most current and complete data available. GIS data and product accuracy may vary. Using GIS products for purposes other than those for which they were intended may yield inaccurate or misleading results. The USDA Forest Service reserves the right to correct, update, modify or replace GIS products without notification. Map created by Linda Merriman US Forest Service Ely, MN.

E. Wildfire Occurrence Interval in St. Louis County.



'85-'07 Fire Analysis

- Wildfire Occurrence Interval
(MNDNR Fires 1985-2007)**
- Major Roads - MDA Cartographic Type**
- Interstates
 - Federal Trunk Highways
 - State Trunk Highways
 - MN DOT County Roads
 - Municipal Boundaries
 - Fire Dept. Response Area
 - County Boundaries
 - PLS Townships - SECTIC-24k
- Fire Summary by PLSS
Size**
- Less than 6 ac.
 - 6 to 25 ac.
 - 25 to 64 ac.
 - 65+ acres.
- Fire Summary by PLSS
Return Interval**
- 4-5 year interval
 - 2 year interval
 - Annual
 - Multiple per year

F. Fire Behavior Prediction Systems and Fuel Modeling

A fire behavior prediction system is a systematic method for predicting wildland fire behavior potential. It relates fire characteristics to wind, fuel moisture, and topographic conditions for various fuel (vegetation) types. A fuel type or model is a description of the type of fuel present in a forest and is used as one of several parameters that helps predict what a fire is likely to do. Wildland fire fighting agencies such as the MN Department of Natural Resources and the U.S. Forest Service use several fire behavior prediction systems to aid in predicting fire danger and behavior. The major fire behavior prediction systems in use in northern Minnesota include the Canadian Forest Fire Behavior Prediction System, the National Fire Danger Rating System and Behave Plus. These are described below. The American Fuel Models came from the general technical report, [Aids to Determining Fuel Models for Estimating Fire Behavior, \(1982\)](#). The Canadian information came from the [Field Guide to the Canadian Forest Fire Behavior Prediction \(FBP\) System \(1997\)](#).

1. The Canadian Forest Fire Behavior Prediction System (FBPS):

This system is a subsystem of the Canadian Forest Fire Danger Rating System. The FBPS is a systematic method for predicting wildland fire behavior potential. It relates fire characteristics to wind, fuel moisture, and topographic conditions for various fuel (vegetation) types. FBPS is widely known and understood among the wildland fire community in Minnesota. FBPS is more representative of the types of fuel that are present in northern Minnesota compared to other fire behavior prediction systems.

Fire Weather Index (FWI) is a subsystem associated with the Canadian Forest Fire Danger Rating System. It operates similarly to the National Fire Danger Rating System (NFDRS) and is used to predict fire danger for the day or next day based on current and past conditions such as type of fuel, fuel moisture, relative humidity (RH), temperature, wind speed, wind direction and amount of precipitation or days since last precipitation.

In order to estimate the rate of spread and intensity, as well as predicting the next day's fire danger level, land managers use inputs such as fuel types, the previous day's fuel moisture codes [Fine Fuel Moisture Code (FFMC), Duff Moisture Code (DMC), and Drought Code (DC)] along with the solar noon inputs for the next day's forecast (temperature, RH, 10 meter wind and 24 hour precipitation).

Fuel Types within the Canadian Forest Fire Behavior System

Matted Grass (O1a): This fuel type describes matted cured grass (early spring or after snowmelt) condition with a fuel load of 1.3 tons/acre. This fuel type is characterized by continuous grass cover, with no more than occasional trees or shrub clumps that do not appreciably affect fire behavior. The proportion of cured or dead material in grasslands has a pronounced effect on fire spread and must be estimated with care.

Standing grass (O1b): This fuel type represents standing grass common in late summer to early fall with a fuel load of 1.3 tons/acre. O1b can also be used in early spring after a winter with less than normal snowfall, resulting in little grass compaction. As in the matted grass fuel type, the proportion of cured or dead material in grasslands has a pronounced effect on fire spread and must be estimated with care.

The Fire Behavior Prediction System allows for adjustments to be made to both fraction cured and fuel load for fuel types O1a and O1b.

Mixed Wood (M1) and (M2): Mixed boreal (black or white spruce, balsam mixed with hardwoods) stand types are included in this fuel model. The FBP system can be manipulated based on the actual percentage of conifer vs. deciduous component of the stand as increased conifer component affects fire intensity. There is continuous leaf litter in the deciduous portions of the stand and conifer needle litter in the conifer portions of the stand.

The presence of balsam and spruce provide ladder fuels in these stand types. There are low to moderate amounts of dead and down fuel in the understory. Fires generally burn with low intensity and low spread rates except in early spring and late fall when the trees do not have leaves. During these time periods, fire can burn intensely with moderate to fast spread rates. M1 describes the spring and fall version of the model and the M2 describes the green up version of the model.

Mixed Wood (M3) and (M4): This describes dead balsam fir (leafless) and mixed wood stands. The stands can be manipulated based on actual percentages of deciduous and conifer component. There is continuous leaf litter in deciduous portions of the stand and needle litter and hardwood leaves in the mixed portions. There is typically a large fuel loading of dead balsam in the understory that is sometimes covered with lichen on its branches. Fires generally burn with moderate to high intensity in this fuel type; with moderate to high rates of spread. Crown fires can easily occur in these stands under dry, windy conditions. M3 represents the leafless version of the fuel model while M4 represents the green version.

Conifer (C3): This model describes mature jack pine stands. These stands have some understory balsam and spruce which can act as a ladder for fire to carry into the canopy. These stands typically have light and scattered dead and down fuels. Surface fires are typical in these stands and crown fires can quickly develop with dry, windy weather conditions.

Conifer (C4): Immature Jack Pine is a fuel type that is characterized by pure stand of dense jack pine or lodgepole pine (10 000–30 000 stems/hectare [ha]) in which natural thinning mortality results in a large quantity of standing dead stems and dead downed woody fuel. Vertical and horizontal fuel continuity is characteristic of this fuel type. Denser crowns and high ladder fuel content along with volatile oils of young pine allow this type to crown easily. Surface fuel loadings are greater than in fuel type C3, and organic layers are shallower and less compact. Ground cover is mainly needle litter suspended within a low shrub layer.

Conifer (C5): This model describes mature red and white pine stands. There is continuous needle cast on the forest floor & moderate to heavy fuel loadings in the understory. Fires typically spread on the surface only with occasional torching of individual and patches of trees where understory fuels have built up.

Conifer (C6): This fuel type describes mature conifer plantations with closed crown canopy and very little understory vegetation. There is typically a continuous layer of needle litter. The FBP system allows variance of crown base height. There are very light fuel loadings in terms of dead and down fuels. Fires are generally surface fires that burn with low intensity and slow spread rates.

Deciduous (D1): This fuel models describes (leafless) mature aspen and birch. They generally have continuous leaf litter and very little dead and down fuels in the understory. Fires generally burn in the understory leaf litter with little intensity, but can burn more intensely with moderate spread rates under wind events when no leaves are present on the trees.

2. The National Fire Danger Rating System (NFDRS):

This system is a set of computer programs and algorithms that allow land management agencies to estimate the current day or following days fire danger for a large geographic area. NFDRS characterizes fire danger by evaluating the approximate upper limit of fire behavior in a fire danger rating area during a 24-hour period. Calculations of fire behavior are based on fuels, topography and weather. NFDRS outputs give relative ratings of the

potential growth and behavior of any wildfire. Fire danger ratings are guides for initiating pre-suppression activities and selecting the appropriate level of initial response to a reported wildfire in lieu of detailed, site and time-specific information. The system links an organization's readiness level (or pre-planned fire suppression actions) to the fire problems of the day.

3. Behave Plus:

Behave Plus is a fuel modeling system used to predict fire behavior in the U.S. It is used to predict fire behavior for a specific site under specific conditions. There are 13 fuel models in the original Behave system. Recently the Behave Plus system has been updated to include 40 additional models. The new 40 allow for more specific inputs and therefore more accurate outputs. Of the original 13 fuel models in the Behave System, 12 of the 13 fuel models occur within St. Louis County and are described below.

FUEL TYPES within the American Behave Fuel Modeling System

Grass Group:

Fuel Model 1: Short Grass

Fire governed by the fine herbaceous fuels that have cured or are nearly cured. There are very little, if any, shrubs or timber. Best fits grasslands that are not grazed. Also consider savanna types, stubble, grass with scattered shrubs, grass-tundra or low tussock with grasses, lichen, and mosses.

Fuel Model 2: Timber with Grass & Understory

Fire spread is primarily through the fine herbaceous fuels, either curing or dead. These are surface fires where the herbaceous material, in addition to litter and dead-down stemwood from the open shrub or timber overstory, contributes to the fire intensity. Open shrub lands and pine stands or scrub oak stands that cover one-third to two-thirds of the area may generally fit this model; such stands may include clumps of fuels that generate higher intensities and that may produce firebrands.

Fuel Model 3: Tall Grass

Fires in this fuel are the most intense of the grass group and display high rates of spread under the influence of wind. Wind may drive fire into the upper heights of the grass and across standing water. Stands are tall, averaging about 3 feet (1 m), but considerable variation may occur. Approximately one-third of more of the stand is considered dead or cured and maintains the fire. Wild or cultivated grains that have not been harvested can be considered similar to tall prairie and marshland grasses.

Shrub Group:

Fuel Model 4: Mature Shrubs/Immature Jack Pine

Fires intensity and fast-spreading fires involve the foliage and live and dead fine woody material in the crowns of a nearly continuous secondary overstory. Stands of mature shrubs, 6 or more feet tall, such as California mixed chaparral, the high pocosin along the east coast, the pine barrens of New Jersey, or the closed jack pine stands of the north-central States are typical candidates. Besides flammable foliage, dead woody material in the stands significantly contributes to the fire intensity. Height of stands qualifying for this model depends on local conditions. A deep litter layer may also hamper suppression efforts.

Fuel Model 5: Immature Shrubs

Fire is generally carried in the surface fuels that are made up of litter cast by the shrubs and the grasses or forbs in the understory. The fires are generally not very intense because surface fuel loads are light, the shrubs are young with little dead material, and the foliage contains little volatile material. Usually shrubs are short and almost totally cover the area.

Young, green stands with no dead wood would qualify; laurel, vine maple, alder, or even chaparral, manzanita, or chamise. Young green stands may be up to 6 feet (2 m) high but have poor burning properties because of live vegetation.

Fuel Model 6: Dormant Brush/Hardwood Slash

Fires carry through the shrub layer where the foliage is more flammable than fuel model 5, but this requires moderate winds, greater than 8 mi/h (13 km/h) at midflame height. Fire will drop to the ground at low wind speeds or at openings in the stand. The shrubs are older, but not as tall as shrub types of model 4, nor do they contain as much fuel as model 4. A broad range of shrub conditions is covered by this model. Fuel situations to be considered include intermediate stands of chamise, chaparral, oak brush, low pocosin, Alaskan spruce taiga, and shrub tundra. Even hardwood slash that has cured can be considered. Pinyon-juniper shrublands may be represented but may over predict rate of spread except at high winds, like 20 mi/h (32 km/h) at the 20-foot level.

Timber Group:

Fuel Model 8: Closed Timber Litter

This model describes closed canopy stands of short-needle conifer and hardwoods that have leafed out. This includes some younger pine plantations, maple, and birch stand types. Typical fires in these stands are slow-burning ground fires with low flame lengths, although the fire may encounter an occasional "jackpot" or heavy fuel concentration that can flare up. Only under severe weather conditions involving high temperatures, low humidity, and high winds do the fuels pose fire hazards.

Fuel Model 9: Hardwood Litter

This model describes both long-needle conifer and hardwood stands that have not leafed out. This includes older red and white pine stands and aspen stands. Long needles from mostly red and white pines and hardwood leaves have recently fallen to the ground to form a loose layer of leaf litter. Typical fires in these stands are low intensity /severity fires that burn with low flame lengths (2-6'). However with fire exclusion, they now burn more intensely. Crowning, spotting, and torching of individual trees can occur if there are many trees close together and if tree crown layers are low to the ground.



Depicts a Fuel Model 10 fire condition

Fuel Model 10: Timber with Litter & Understory

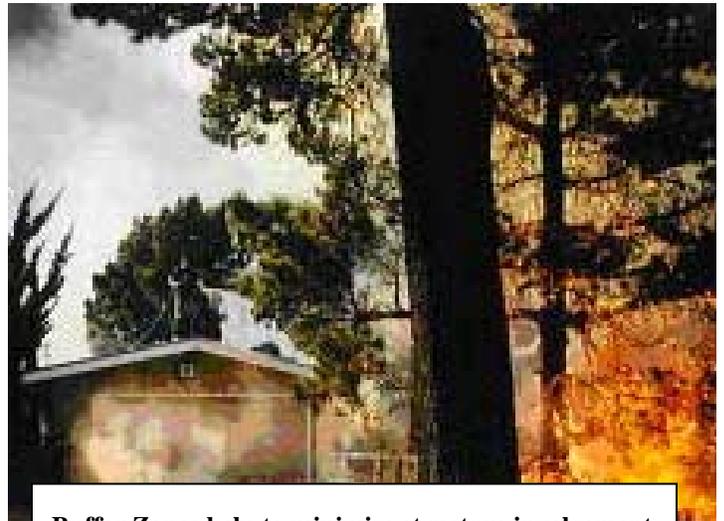
This model describes mature and multi-aged, short needle conifer stands including jack pine and stands with a heavy balsam fir component. They are beginning to accumulate large-diameter, dead and down woody fuels as a result of trees dying from overcrowding and insect and disease disturbance. Therefore there is a large amount of dead and down fuel that has accumulated in the understory. Typical fires burn in the surface and ground fuels with high intensity; increasing the potential for fire to spread into the crown easily. Crowning out, spotting, and torching of individual trees are more frequent in this fuel type, leading to potential fire control difficulties

Fuel Models 11, 12, 13 and Blowdown:

These are slash fuel models with light, moderate, and heavy fuels. Blowdown: This fuel type describes the blowdown areas. There are three classifications of blowdown fuels. Light damage areas have less than 33% damage to the overstory (5-20 tons/acre fuel loadings). Moderate damage areas have 33-67% of the overstory damaged (20-50 tons/acre). Heavy damage areas have 67 or more of the canopy showing damage (50-300 tons/acre). Prior to the blowdown, these areas had fuel loadings between 1-15 tons per acre. Fuel Model 10 represents the fire behavior that may be seen from light blowdown areas. A custom fuel model has been developed to represent the fire behavior associated with areas where there is moderate to heavy blowdown. Fuel model 13 can also be used to predict fire behavior in moderate and heavy blowdown, but tends to under predict fire intensities and spread rates for blowdown fuels. Fires burn these fuel models with moderate rates of spread and high intensities under moderate to dry weather conditions. If standing trees are also present, crowning, spotting and torching of individual trees can be expected.

G. Buffer Zones:

Buffer zones are areas around a community (not just a single structure) that would be required to protect structures within the community from a wildfire event. Buffers can be developed based on spread rates of fires and response times of suppression resources. Estimated spread rates were developed through a fire behavior model (BEHAVE) that predicts fire behavior (spread rates, intensity, flame lengths) based on weather and fuel conditions. Response times are based on the amount of time that is predicted for the suppression resource to be able to arrive at a fire in the given area. The faster the spread rates, the larger the buffer needed. The longer the response times, the larger the buffer needed. Vegetation treatments that are concentrated within the buffer zones of a community will help prevent fires from spreading rapidly and intensely near community areas.



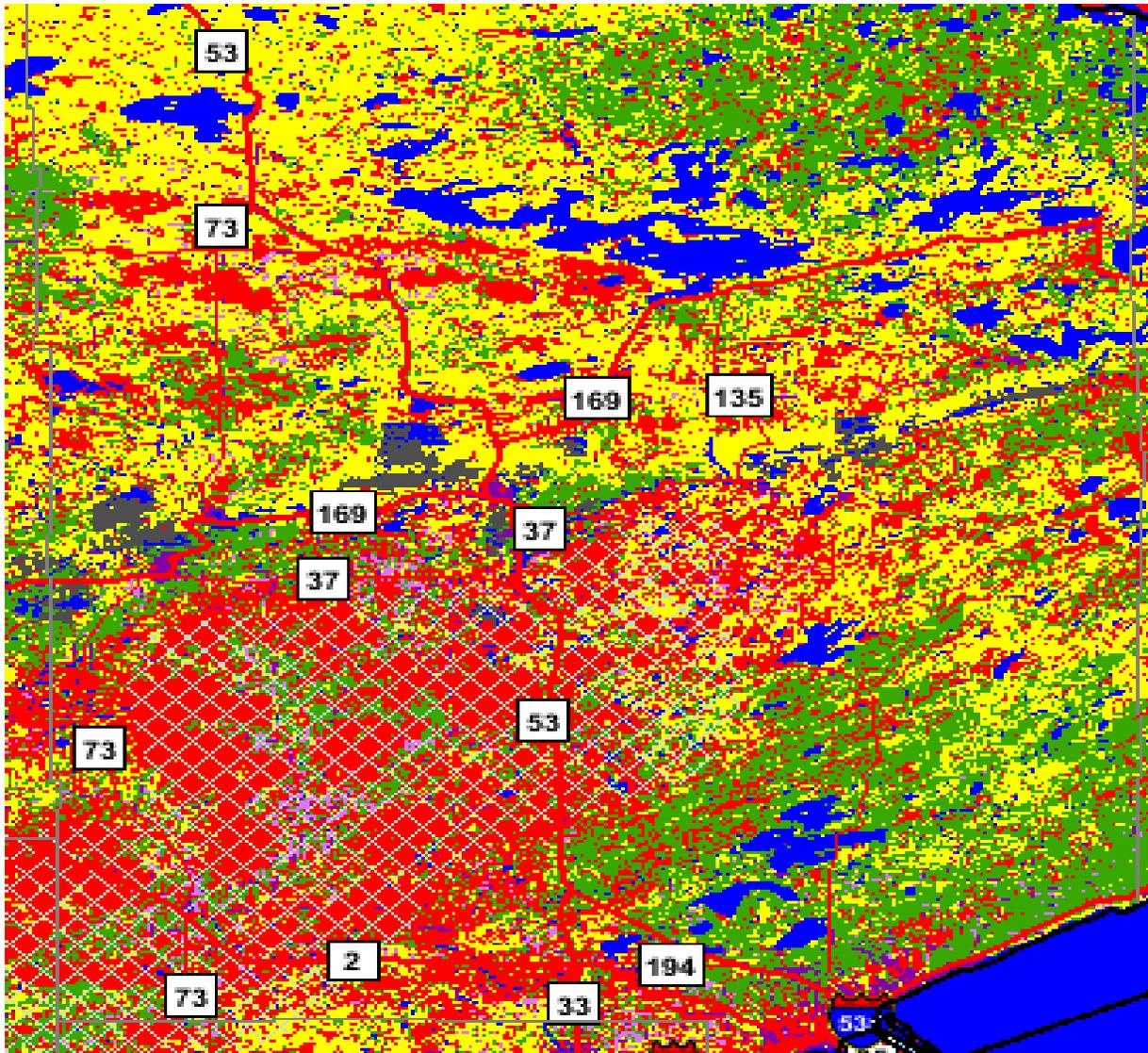
Buffer Zones help to minimize structure involvement

H. Fire Regimes and Fire Regime Condition Class

Fire Regimes and Fire Regime Condition Class are utilized by U.S. Forest Service National Forest land managers in assisting in determining fuels management priorities. Data is available on the web at www.landfire.gov.

Fire Regime is the composite result of fire frequency, fire severity, and other disturbances. It describes the type of fire that naturally occurred on the landscape.

Fire Regime Condition Class is a tool developed to evaluate current conditions against natural landscape characteristics with respect to vegetation-fuel composition and structure, fire frequency, fire severity, and other disturbances.



Fire Regime	Fire Frequency ⁱ	Fire Severity ⁱⁱ
I	0-35 years	Low severity
II	0-35 years	Stand-replacement severity
III	35-200 years	Mixed severity
IV	35-200 years	Stand-replacement severity
V	200+ years	Stand-replacement severity

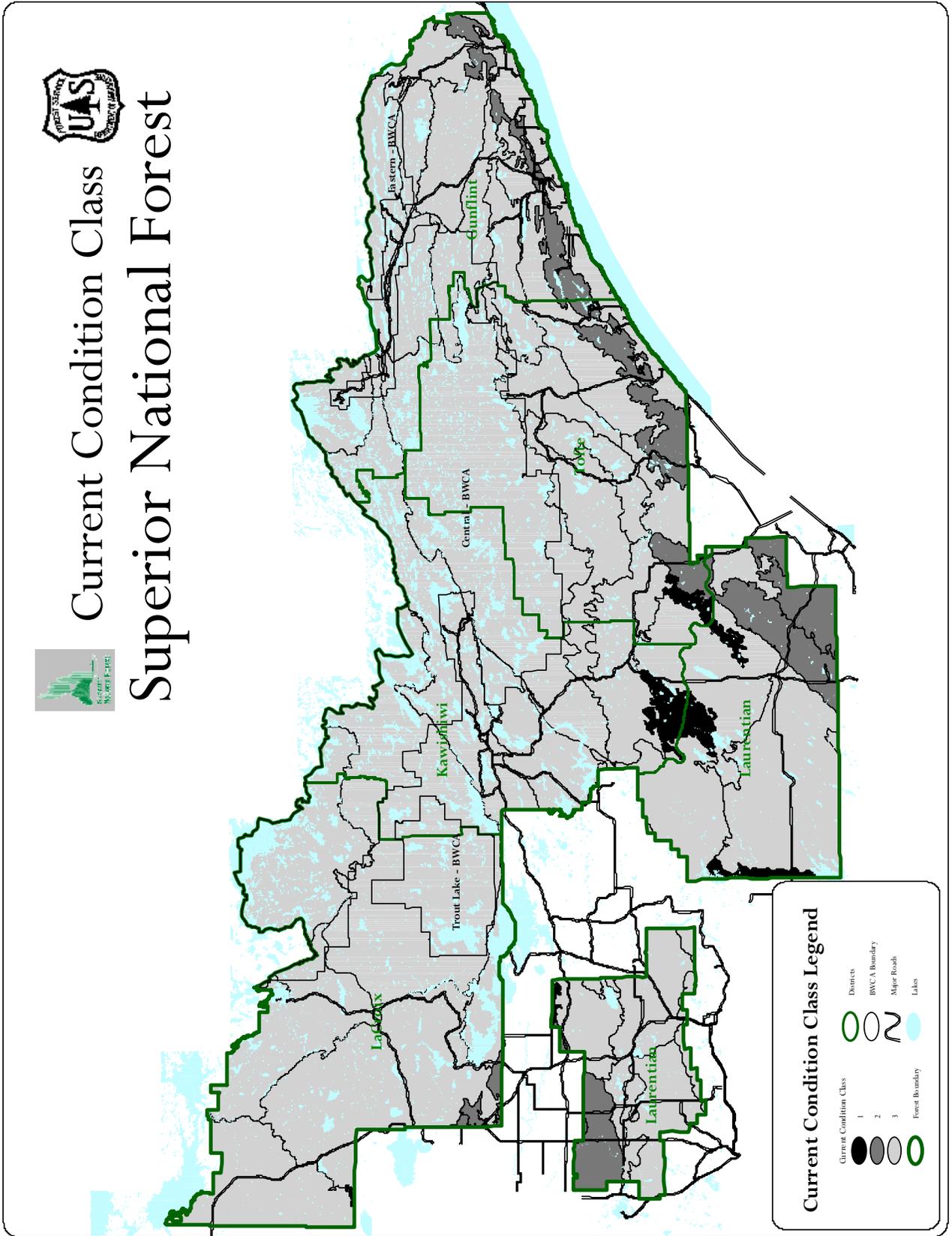
ⁱ Fire frequency is the average number of years between fires.

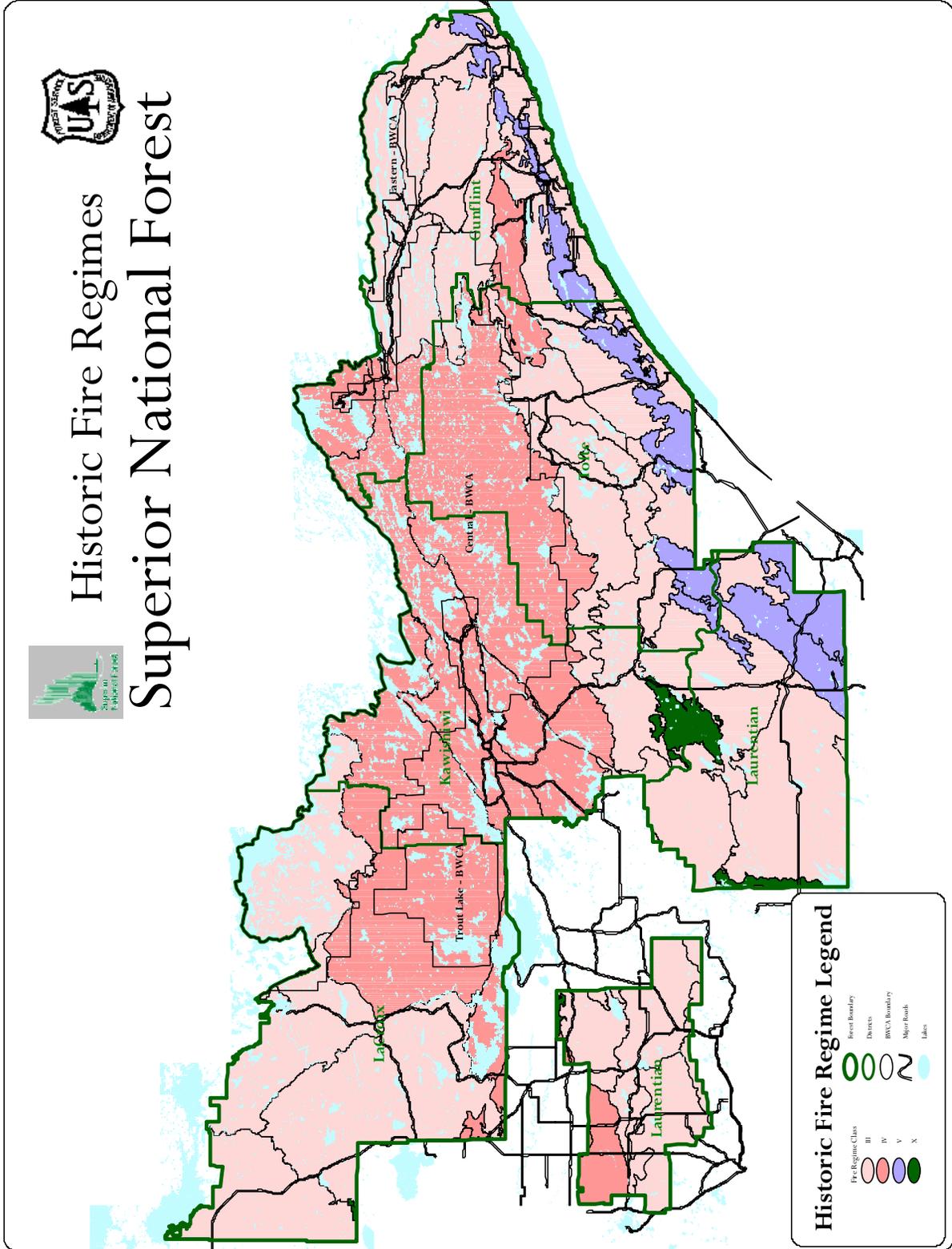
ⁱⁱ Fire severity is the effect of fire on the dominant overstory vegetation.

	Fire Regime (I through V)	Example Management Options
Condition Class 1	Fire regimes are within natural range, and risk of losing key ecosystem components is low. Vegetation attributes (species composition and structure) are intact and functioning within historical range.	Where appropriate, areas can be maintained within the natural regime by treatments such as fire use.
Condition Class 2	Fire regimes have been moderately altered from their natural range. The risk of losing key ecosystem components is moderate. Fire frequencies have departed from natural frequencies by one or more return intervals. Vegetation attributes have been moderately altered.	Where appropriate, areas may need moderate levels of restoration treatments, such as fire use and hand or mechanical treatments, to be restored to the natural regime.
Condition Class 3	Fire regimes have been significantly altered from their natural range. The risk of losing key ecosystem components is high. Fire frequencies have departed from natural frequencies by several return intervals. Vegetation attributes have been significantly altered.	Where appropriate, areas may need high levels of restoration treatments, such as hand or mechanical treatments, before fire can be used to restore the natural regime.

The map on the next page shows that most of the Superior National Forest within St. Louis County is mostly Condition Class 3, which means the Forest is at greater risk of more frequent and higher severity of fire. An implementation goal of the Community Wildfire Protection Plan is to move the forest into a Condition Class 2 or 1, through mitigation measures such as harvesting trees, or prescribed burns. 2008 Fire Regime and Condition Class map information for St Louis County can be found at <http://www.landfire.gov>

I. Current Condition Class Map






 Historic Fire Regimes
 Superior National Forest

VII. Community Wildfire Risk Assessment:

The St. Louis County Wildland Risk Assessment displays the potential losses to life, property and natural resources. The risk assessment takes into consideration a combination of factors as defined below, all of which contribute to fire hazards and risk in the urban interface. There are four separate tables. The first is a 'Hazard and Risk' assessment, the second a 'Values' assessment, the third a 'Protection Capabilities' assessment and the last table is the 'Summary'.

The risk assessments look at each analysis factor within each Wildland Urban Interface (WUI) area and rank them on a numerical scale. The numerical weights given to each factor formulates a rating for community vulnerability within an area. The ratings given in each WUI are totaled for each of the risk assessments. Areas with a higher sum of points have higher fire hazards associated with them; meaning the probability of having a fire that will spread quickly and intensely with potential to cause significant damage is higher. These ratings are all relative to the WUI's within St. Louis County; a WUI with a lower rating in St. Louis County may still have a higher wildfire risk when compared to other areas of the State.

Hazard: Conditions that contribute to wildfire such as fuels, slope, aspect, elevation and weather.

Risk: The potential and frequency of wildfire ignitions based on past occurrences.

- **Fire Hazard and Risk components:** Historic fire occurrence; crown fire potential; wildland fire rates of spread associated with the primary fuel models of the area; wildland fire flame lengths associated with the primary fuel model of the area; presence of hazardous fuels (i.e. blowdown, insect and disease); large fire history.

Values: The people, property and resources that could suffer losses in a wildfire event.

- **Values at Risk Components:** Economic values; Structure density; Building hazards; Community infrastructure such as (communication towers, municipal water sources); Population of community impacted; Land ownership; Spiritual, Cultural, Historical resources; Ecosystem values.



Eveleth Fire Department – Training / Fuel Reduction Burn

Protection Capability: Ability to mitigate loss, fire preparedness, response and suppression of wildland and structural fire.

- **Protection Components:** Interagency partnerships; Number of protection resources; Access; Response time of protection resources; Presence of a prevention program; Ability for initial attack resources to successfully suppress fires.

A. Wildfire Risk Assessment - Hazard and Risk

Fire Frequency Factors			Vegetation Types	Hazard Fuels
Fires per year within project area based on data from 1986-2006			CON = Conifer	CON=Conifer
			MHW=Mixed hardwood	MHW=Mixed hardwood
# fires	Low/Mod/High	Points	BF=Balsam Fir	HW= Hardwood
0-15	L	1	HW=Hardwood	BD=Blowdown
15 -49	M	3	Grass	BF=Balsam Fir
50 +	H	5		BK = Bug Kill

HAZARD FACTORS	
Crown Fire Hazard Potential	
L/M/H	Points
H	5
M	1
L	0

Rate of Spread, by fuel model.			Fuel Model	Rate of Spread (ROS)
ROS	Low/Mod/High	Points	FM1	high
fast	H	5	FM3	high
moderate	M	3	FM 8	moderate
slow	L	1	FM 9	low
			FM 10	low
			Blowdown	low
			Fuel Model	Intensity
			FM1	high
			FM3	high
			FM 8	moderate
			FM 9	low
			FM 10	high
			Blowdown	High
			For fuel model definitions see page 23	

Flame Length	
FL	Low/Mod/High
12+	H
5-11	M
0-4	L

Hazard Fuels
1 point for each fuel problem, Bug kill (BK) Crowning (C), Blowdown (BD) , Railroad (RR) , or Other (arson, people, pine, grass) for a total of 5 pts

Large Fire History; 20 years occurrence within the unit.		
Fire Type	Low/Mod/High	Points
Type 1	High	5
Type 2	Moderate	3
Type 3	Low	1

Type 1 Fires= Complex and large organization (Ham Lake Fire)
 Type 2 Fires= Multiple operational periods (Cherry Fire)
 Type 3 Fires= Extended Attack less than 100 acres. Resources vary from several single resources to Task Force/Strike Teams. Incident is expected to be contained/controlled in the first operational period.

Wildfire Risk Assessment Hazard & Risk Table

COMMUNITY NAME	Fire Frequency L/M/H	Fire Frequency Points	Vegetation Type	Crown Fire Potential L/M/H	Points	Fuel Model	Hazard Rate of Spread L/M/H	Hazard ROS Points	Hazard Flame Length L/M/H	Hazard Flame Length Points	Hazard Fuels	Hazard Fuels Points	Hazard Large Fire History	Fire History Points	Summary Hazard Rating L/M/H	Total Hazard Points
Babbitt Area	L	1	CON, MHW	M	1	3, 9, 10	M	3	L	1	BK, Grass	2	T3	1	M	9
Border Area	L	1	CON, MHW, BF	M	1	3, 8, 9, 10	M	3	M	3	BK	1	T2	3	H	12
Brimson Area	L	1	MHW, BF	L	0	8	M	3	L	1	RR, BF	2	T3	1	M	8
Britt Area	M	3	CON, MHW, BF	H	5	8	M	3	M	3	RR, Pine	4	T3	1	H	19
Central Lakes Area	L	1	CON, MHW	M	1	3,8	H	5	M	3	Grass RXR	2	T2	3	H	15
Cook Area	L	1	CON, MHW, BF	M	1	6, 10, 13	M	3	M	3	RR, BK	2	T3	1	H	11
Ely Area	M	3	CON, MHW, BF	M	1	8, 9, 10, 13	M	3	M	3	BK, BD	3	T2	3	H	16
Flats Area	L	1	CON, MHW, Grass	L	0	6, 8, 9	M	3	L	1	BF	1	T4	0	L	6
Hibbing Area	H	5	CON, MHW,	M	1	3, 8, 10	M	3	M	3	BF, Arson	5	T2	3	H	20
Orr Area	L	1	CON, MHW, BF	M	1	3, 8, 9, 10	M	3	M	3	BK, Grass, RR	3	T2	3	H	14
Southeast Area	H	5	CON, MHW, BF	M	1	3, 8, 10	M	3	M	3	RR, CON, Grass	3	T3	1	H	16
Southwest Area	H	5	CON, MHW, BF	M	1	3, 8, 10	M	3	M	3	RR, Grass	2	T3	1	H	15
Vermilion Basin Area	M	3	CON, MHF, BF	M	1	10, 13	M	3	H	7	BK, BD, Crowning	3	T2	3	H	20
Virginia Area	M	3	CON, MHW	M	1	3, 8, 10	M	3	M	3	Pine, People	4	T3	1	H	15

B. Wildfire Risk Assessment - Values

Economics: Relating to the development, production, distribution and management of commodities, values or necessities.

Structure Density: The amount or quantity of structures within a given area or square mile.

Building Hazard: The probability of a building igniting due to location, access, structural building materials, or vegetative surroundings.

Community Infrastructure: The basic facilities needed for a functioning community i.e. roads, power lines, water supply etc.

Land Ownership : The complexity of land and ownerships due to multiple jurisdictions.

Spiritual, Historical and Cultural Resources: Protected resources.

Ecosystem Values: Ecological values of an area, based on importance of watersheds, soils, plant and animal habitat, species, or vegetation.

Values Assessment

Building Hazard		
Number of Homes	Low/Mod/High	Points
<50% safe	H	5
50-75% safe	M	2
75%+ safe	L	1

Economics, Impacts to Local Economy, Number of Business		
Number of Business	Low/Mod/High	Points
250+	H	2
50-249	M	1
0-49	L	0

Structures Per Square Mile		
Number	Low/Mod/High	Points
21+	H	3
11-20	M	2
1-10	L	1

Community Impacted by Number of People Affected.

Number of People	Low/Mod/High	Points
15,000+	H	3
5,000-14,999	M	2
<5,000	L	1

Community Infrastructure, Utilities, Towers, and Other Services.

#	Low/Mod/High	Points
100+	H	3
50-99	M	2
< 50	L	1

Land Ownership - Private Ownership %	Low/Mod/High	Points
20% - 60%	H	2
All other %	M	0
All other %	L	0

Spiritual/Cultural/Historical resource impacts by Type of damage and duration of impact

	Low/Mod/High	
long duration, significant permanent damage	H	1
moderate duration, some permanent damage	M	0
short term impact, no permanent damage	L	0

Ecosystem Values: 1 point for each value; Threatened and Endangered Species (TES), Old Growth (OG), and Watersheds (W) up to 3 points total (All)

Community Names	Economics L/M/H	Economic Points	Structure Density L/M/H	Structure Density Points	Bldg Hazard L/M/H	Bldg Hazard Points	Community Infrastructure L/M/H	Infrastructure Points	Community Impact L/M/H	Community Impact Points	Land Ownership L/M/H	Land Ownership Points	Spiritual Cultural, Historical Resources L/M/H	Spiritual, Cultural Historical Pts	Ecosystem Values	Ecosystem Values Points	Values Protected Rating L/M/H	Total Values Points
Babbitt Area	M	1	M	2	H	5	L	1	L	1	H	2	M	0	W, TES	2	M	14
Border Area	M	1	L	1	H	5	L	1	L	1	L	0	M	0	OG, W	2	M	11
Brimson Area	L	0	L	1	M	2	L	1	L	1	M	0	M	0	TES	1	L	6
Britt Area	M	1	M	2	M	2	L	1	L	1	H	2	M	0	TES	1	M	10
Central Lakes Area	L	0	L	1	M	2	L	1	L	1	H	2	M	0	M	2	L	9
Cook Area	M	1	M	2	H	5	L	1	L	1	H	2	M	0	All	3	M	15
Ely Area	H	2	H	3	M	2	M	2	M	2	H	2	M	0	All	3	M	16
Flats Area	L	0	L	1	H	5	L	1	L	1	M	0	L	0	—	0	L	8
Hibbing Area	H	2	H	3	H	5	H	3	H	3	H	2	M	0	M	2	M	20
Orr Area	M	1	M	2	H	5	L	1	L	1	L	0	M	0	OG, W	2	M	12
Southeast Area	H	2	H	3	M	2	H	3	H	3	H	2	M	0	All	3	M	18
Southwest Area	M	1	L	1	M	2	M	2	M	2	H	2	M	0	All	3	M	13
Vermilion Basin Area	M	1	M	2	M	2	L	1	L	1	H	2	H	1	All	3	M	13
Virginia Area	H	2	H	3	H	5	H	3	H	3	H	2	M	0	M	2	M	20

Wildfire Risk Assessment – Values Table

C. Wildfire Risk Assessment - Protection Capabilities

Interagency Partnerships – Working relationships with local community, local government and land management agencies.

Numbers or Protection Resources – Number of equipment (resources) available for fire suppression needs.

Access – Ability of emergency service vehicles to gain access to an area and ease of evacuation due to road class or condition.

Response Time – The time it takes an emergency vehicle to get from its station to the emergency.

Prevention Program – A program designed to reduce wildfire ignitions through education, engineering and enforcement.

Initial Attack Success - The probability of success that initial resources dispatched will suppress the fire during the first 8 hours or operational period.

Protection Capability Factors:

Interagency Partnerships		
Number	Low/Mod/High	Points
11+	L	1
4 to 10	M	2
3	H	3

Number of Resources		
Amount	Low/High	Points
Many	L	1
Few	H	3

Access for Suppression Resources		
Rating	Low/Mod/High	Points
Good	L	1
Fair	M	3
Poor	H	5

Response Time of Suppression Resources		
Speed	Low/Mod/High	Points
>45 min	H	5
15 - 44 min	M	3
< 15 min	L	1

Prevention Program in Place	
Low/High	Points
L	0
H	1

Initial Attack (IA) Success in the Project Area		
	Low/Mod/High	Points
Often escape IA	H	5
Sometimes escape IA	M	3
Rarely escape IA	L	1

Protection Capabilities Summary Rating	
Low/Mod/High	Points
L	0-10
M	11-20
H	21+

Wildfire Risk Assessment - Protection Capabilities Table

Community Names	Interagency Partnerships L/M/H	Interagency Partnerships Points	Numbers of Protection Resources L/H	Numbers of Protection Resources Points	Access L/M/H	Access Points	Response Times L/M/H	Response Times Points	Prevention Program L/M/H	Prevention Program Points	IA Success L/M/H	IA Success Points	Protection Capabilities Summary L/M/H	Protection Capabilities Total Points
Babbitt Area	M	2	L	1	M	3	M	3	H	1	L	1	M	11
Border Area	M	2	H	3	H	5	H	5	H	1	L	1	M	17
Brimson Area	M	2	L	1	M	3	H	5	L	0	L	1	M	12
Britt Area	L	1	L	1	M	3	M	3	L	0	L	1	L	9
Central Lakes Area	M	2	L	1	H	5	M	3	L	0	L	1	M	12
Cook Area	H	3	L	1	M	3	L	1	L	0	L	1	L	9
Ely Area	H	3	L	1	M	3	M	3	H	1	L	1	M	12
Flats Area	M	2	H	3	H	5	M	3	L	0	L	1	M	14
Hibbing Area	L	1	L	1	L	1	M	3	H	1	L	1	L	8
Orr Area	M	2	H	3	M	3	M	3	H	1	L	1	M	13
Southeast Area	L	1	L	1	M	3	M	3	H	1	L	1	L	10
Southwest Area	M	2	L	1	L	1	M	3	L	0	L	1	L	8
Vermilion Basin Area	M	2	L	1	M	3	M	3	H	1	L	1	M	11
Virginia Area	L	1	L	1	L	1	M	3	H	1	L	1	L	8

D. Wildfire Risk Assessment - Community Vulnerability Summary

This chart compiles the point values for the wildfire risk assessment that includes hazards and risk; community values; and protection capabilities. Total Points Summary Values: Low = 0–34; Moderate = 35-42; High = 43 +

Summary Ratings

Fire Hazard Risk Summary Rating	
Low/Mod/High	Points
Low (L)	0 to 5
Moderate (M)	6 to 10
High (H)	11+

Values Summary Rating	
Low/Mod/High	Points
Low (L)	0 to 10
Moderate (M)	11 to 20
High (H)	21 +

Protection Capabilities Summary Rating	
Low/Mod/High	Points
Low (L)	0 to 10
Moderate (M)	11 to 20
High (H)	21+

Overall Summary Rating	
Low/Mod/High	Points
Low (L)	0 to 34
Moderate (M)	35 to 42
High (H)	43 +

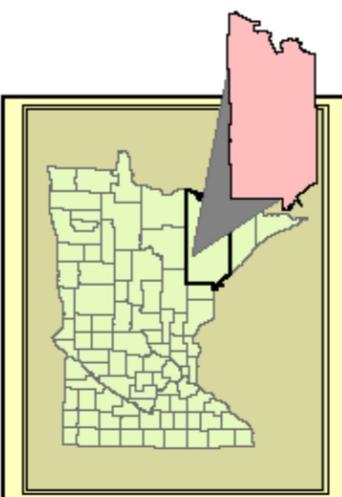
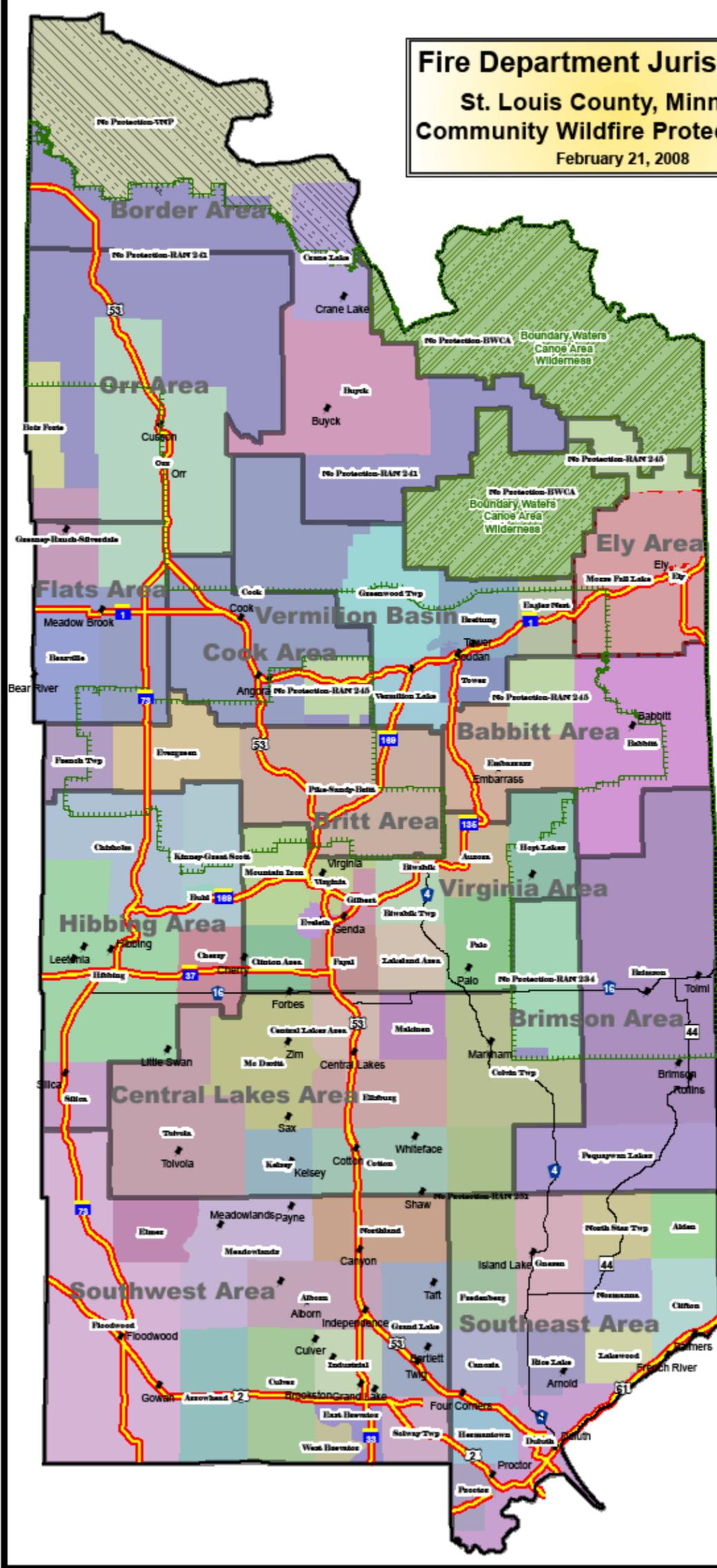
Wildfire Risk Assessment - Community Vulnerability Summary Table:

Community Name	Hazard & Risk Rating L/M/H	Total Hazard & Risk Points	Values Rating L/M/H	Values Points	Protection Capabilities Rating L/M/H	Protection Capabilities Points	Summary Rating L/M/H	Total Points
Babbitt Area	M	9	M	14	M	11	L	34
Border Area	H	12	M	11	M	17	M	40
Brimson Area	M	8	L	6	M	12	L	26
Britt Area	H	19	M	10	L	9	M	38
Central Lakes Area	H	15	L	9	M	12	M	36
Cook Area	H	11	M	15	L	9	M	35
Ely Area	H	16	M	16	M	12	H	44
Flats Area	L	6	L	8	M	14	L	28
Hibbing Area	H	20	M	20	L	8	H	48
Orr Area	H	14	M	12	M	13	M	39
Southeast Area	H	16	M	18	L	10	H	44
Southwest Area	H	13	M	13	L	8	L	34
Vermilion Basin Area	H	20	M	13	M	11	H	44
Virginia Area	H	15	M	20	L	8	H	43

VIII. St. Louis County Wildland Urban Interface Communities:

Based on community discussions and assessments, 14 Wildland Urban Interface (WUI) communities within St. Louis County were identified. These WUIs allow local communities latitude in setting local priorities and activities related to fire risk reduction and buffer zones. These activities include; fire protection and preparedness, hazardous fuels reduction, restoration of healthy forests, fire prevention, and ecosystem based planning. Each wildland urban interface community will serve as a planning area boundary for implementation of the St. Louis County Wildland Fire Protection Plan. Projects can overlap between WUI communities and cross fire protection jurisdictions and other ownerships where the appropriate agreements are in place. The map on the next page shows the 14 WUI areas and boundaries within St. Louis County. Detailed descriptions of each WUI community can be found starting on page 41.

Fire Department Jurisdictions
St. Louis County, Minnesota
Community Wildfire Protection Plan
 February 21, 2008



Legend

- Fire Departments
- Superior National Forest
- State/US Highways
- Paved Roads
- Cities/Towns
- Voyageurs National Park
- BWCAW

0 4 8 16
Miles



The USDA Forest Service uses the most current and complete data available. GIS data and product accuracy may vary. Using GIS products for purposes other than those for which they were intended may yield inaccurate or misleading results. The USDA Forest Service reserves the right to correct, update, modify or replace GIS products without notification. Map created by Linda Merriman US Forest Service Ely, MN.

IX. Descriptions of Community Wildland/Urban Interface Areas:

A core group of interagency and community based personnel discussed and formulated the wildland urban interface (WUI) community descriptions for St. Louis County. The 14 WUI areas were defined after several meetings and much discussion; boundaries were designed to allow for flexibility and a wide range of options for communities and cooperating agencies as they implement mitigation measures. Each WUI area has its own community description which is described on the following pages.

Several factors were analyzed while establishing Community area boundaries and descriptions. The following is a list of individual WUI community descriptors and definitions:

Name of Community	Name of WUI Area:
Access:	Condition or class of a road as it relates to: acceptable access or egress for emergency vehicles (including ambulance, fire vehicles and other emergency equipment); and for use in community planning projects.
Topography:	Local configuration of the earth's surface, including its relief and the position of its natural and human made features.
Fuel Hazards:	A vegetation complex defined by type and kind,(ie. grass fields or timber, balsam fir) arrangement (blow down or standing), volume, condition (dead or dying or healthy) and location that presents a significant threat of ignition or contributes to suppression difficulty.
Fire Occurrence:	The number of wildland fires that start in a given area over a given period of time.
Homes:	Location and density of homes in a Wildland Urban Interface (WUI) area.
Businesses:	Numbers of businesses and economic impacts (ie campgrounds, recreational assess points, minerals, home based businesses)
Jurisdiction:	Structural and wildland fire protection responsibilities for the WUI area.
Infrastructure risk:	Utility services ie, power or natural gas lines, sewage treatment plants, communication towers, fiber optics, telephone lines, road corridors, bridges, railroads
Community values:	Important values at risk ie. recreational, historical, cultural and scenic points of interest.
Local Preparedness Capability:	Emergency protection capabilities (equipment, resources) available for community protection.
Firewise Information	Community needs: wildfire hazard assessment, mitigation and fire prevention education. Planned, ongoing and completed Firewise projects.
Mutual Aid	Yes or no
Fire Department Needs	Needs, including wildfire PPE, cross training in wildland fire fighting, communication upgrades, new members and retention of volunteers, wildland equipment, dry hydrants.
Other	Any concerns not captured in previous categories.

ST. LOUIS COUNTY Wildland Urban Interface (WUI) COMMUNITIES:

This section consists of a brief description of the 14 Wildland Urban Interface Areas (WUI) within St. Louis County including the Fire Hazard and Risk Rating; the Fire Departments in that specific WUI; and the planned vegetation treatments. Following these descriptions, listed in alphabetical order, are maps of the individual WUI areas and the more in-depth information from interviews with the DNR, Superior National Forest and the individual fire departments.

Community Vulnerability Summary Points come from the Community Wildfire Risk Assessment – Community Vulnerability Summary on page 37:

Low= 0-34 points **Moderate**= 35-42 points **High**= 43+ points

These ratings are all relative to the WUI's within St. Louis County; a WUI with a lower rating in St. Louis County may still have a higher wildfire risk when compared to other areas of the State

Babbitt Area WUI

Fire Hazard and Risk Rating (L/M/H): 34 points, which is Low.

The Babbitt Area WUI rated as a low priority for mitigation measures based on moderate fuel hazards and risk (fire occurrence, stands of balsam fir, pine stands, blowdown, etc.), moderate values (economics, structure density, building hazard, infrastructure, land ownership, protected resources, ecosystem values), and moderate protection capabilities (number of interagency partnerships, numbers of protection resources, access, response times, prevention programs, and initial attack success).

Fire Departments in the Babbitt Area WUI:

- Babbitt
- Embarrass

Vegetation treatments

This includes various timber harvests and forest management activities scheduled within the next 5 years:

- County=600 acres
- State (DNR) = 113,581 acres
- National Forest= No treatments planned in this area

Border Area WUI

Fire Hazard and Risk Rating (L/M/H): 40 points, which is Moderate.

The Border Area WUI rated as a moderate priority for mitigation measures based on high fuel hazards and risk (fire occurrence, stands of balsam fir, pine stands, blowdown, etc...), moderate values, (economics, structure density, building hazard, infrastructure, land ownership, protected resources, ecosystem values), and moderate protection capabilities (number of interagency partnerships, numbers of protection resources, access, response times, prevention programs, and initial attack success).

Fire Departments in the Border Area WUI:

- Buyck
- Crane Lake
- Kabetogema

Vegetation treatments

This includes various timber harvests and forest management activities scheduled within the next 5 years

- County= 900 acres
- State (DNR) =9734 acres
- National Forest= 20,075 acres (acreage includes proposed Border Project Analysis)

Brimson Area WUI

Fire Hazard and Risk Rating (L/M/H): 26 points, which is Low.

The Brimson Area WUI rated as a low priority for mitigation measures based on moderate fuel hazards and risk (fire occurrence, stands of balsam fir, pine stands, blowdown, etc...), low values, (economics, structure density, building hazard, infrastructure, land ownership, protected resources, ecosystem values), and moderate protection capabilities (number of interagency partnerships, numbers of protection resources, access, response times, prevention programs, and initial attack success).

Fire Departments in the Brimson WUI:

- Brimson
- Pequawayn Lake

Vegetation Treatments

This includes various timber harvests and forest management activities scheduled within the next 5 years

- County= 5,400 acres
- State (DNR) = 4,291 acres
- National Forest= 461 acres

Britt Area WUI

Fire Hazard and Risk Rating (L/M/H): 38 points, which is Moderate

The Britt Area WUI rated as a moderate priority for mitigation measures based on high fuel hazards and risk (fire occurrence, stands of balsam fir, pine stands, blowdown, etc...), moderate values, (economics, structure density, building hazard, infrastructure, land ownership, protected resources, ecosystem values), and low protection capabilities (a low rating denotes high number of interagency partnerships, high numbers of protection resources, good access, good response times, prevention programs, and high initial attack success).

Fire Departments in the Britt Area WUI:

- Evergreen
- French
- Pike-Sandy-Britt

Vegetation Treatments

This includes various timber harvests and forest management activities scheduled within the next 5 years

- County= 1,300 acres
- State (DNR) = 192,639
- National Forest= 3,257 acres

Central Lakes Area WUI

Fire Hazard and Risk Rating (L/M/H): 36 points, which is Moderate.

The Central Lakes Area WUI rated as a moderate priority for mitigation measures based on high fuel hazards and risk (fire occurrence, stands of balsam fir, pine stands, blowdown, etc...), low values, (economics, structure density, building hazard, infrastructure, land ownership, protected resources, ecosystem values), and moderate protection capabilities (number of interagency partnerships, numbers of protection resources, access, response times, prevention programs, and initial attack success).

Fire Departments in the Central Lakes WUI:

- Central Lakes
- Colvin
- Cotton
- Ellsburg
- Kelsey
- Makinen
- McDavitt
- Toivola

Vegetation treatments

This includes various timber harvests and forest management activities scheduled within the next 5 years:

- County= 5,600 acres
- State (DNR) = 373,431 acres
- National Forest= No treatments planned in this area

Cook Area WUI

Fire Hazard and Risk Rating (L/M/H): 35 points, which is Moderate

The Cook Area WUI rated as a moderate priority for mitigation measures based on high fuel hazards and risk (fire occurrence, stands of balsam fir, pine stands, blowdown, etc...), moderate values, (economics, structure density, building hazard, infrastructure, land ownership, protected resources, ecosystem values), and low protection capabilities (a low rating denotes high number of interagency partnerships, high numbers of protection resources, good access, good response times, prevention programs, and high initial attack success).

Fire Departments in the Cook WUI:

- Cook

Vegetation treatments

This includes various timber harvests and forest management activities scheduled within the next 5 years.

- County= 1,500 acres
- State (DNR) = 125,787 acres
- National Forest= 1,471 acres

Ely Area WUI

Fire Hazard and Risk Rating (L/M/H): 44 points, which is High.

The Ely Area WUI rated as a high priority for mitigation measures based on high fuel hazards and risk (fire occurrence, stands of balsam fir, pine stands, blowdown, etc...), moderate values, (economics, structure density, building hazard, infrastructure, land ownership, protected resources, ecosystem values), and moderate protection capabilities (number of interagency partnerships, numbers of protection resources, access, response times, prevention programs, and initial attack success).

Fire Departments in the Ely Area WUI:

- Ely
- Morse-Fall Lake

Vegetation treatments

This includes various timber harvests and forest management activities scheduled within the next 5 years

- County= 1,300 acres
- State (DNR) = 3,228 acres
- National Forest=3,842 acres

Flats Area WUI

Fire Hazard and Risk Rating (L/M/H): 28 points, which is Low.

The Flats Area WUI rated as a low priority for mitigation measures based on low fuel hazards and risk (fire occurrence, stands of balsam fir, pine stands, blowdown, etc...), low values, (economics, structure density, building hazard, infrastructure, land ownership, protected resources, ecosystem values), and moderate protection capabilities (number of interagency partnerships, numbers of protection resources, access, response times, prevention programs, and initial attack success).

Fire Departments in the Flats Area WUI;

- Bearville
- Cook
- Greaney-Rauch-Silverdale
- Orr

Vegetation treatments

This includes various timber harvests and forest management activities scheduled within the next 5 years.

- County= 1,100 acres
- State (DNR) = 3,228 acres
- National Forest= 151 acres

Hibbing Area WUI

Fire Hazard and Risk Rating (L/M/H): 48 points, which is High.

The Hibbing Area WUI rated as a high priority for mitigation measures based on high fuel hazards and risk (fire occurrence, stands of balsam fir, pine stands, blowdown, etc...), moderate values, (economics, structure density, building hazard, infrastructure, land ownership, protected resources, ecosystem values), and low protection capabilities (a low

rating denotes high number of interagency partnerships and protection resources, good access and response times, prevention programs, and high initial attack success).

Fire Departments in the Hibbing Area WUI:

- Buhl
- Cherry
- Chisholm
- Hibbing
- Kinney-Great Scott
- Silaca

Vegetation treatments

This includes various timber harvests and forest management activities scheduled within the next 5 years.

- County= 700 acres
- State (DNR) = 281,412 acres
- National Forest= 965 acres

Orr Area WUI

Fire Hazard and Risk Rating (L/M/H): 39 points, which is Moderate.

The Orr Area WUI rated as a moderate priority for mitigation measures based on high fuel hazards and risk (fire occurrence, stands of balsam fir, pine stands, blowdown, etc...), moderate values, (economics, structure density, building hazard, infrastructure, land ownership, protected resources, ecosystem values), and moderate protection capabilities (number of interagency partnerships, numbers of protection resources, access, response times, prevention programs, and initial attack success).

Fire Departments in the Orr Area WUI:

- Bois Forte
- Greaney-Rauch-Silverdale
- Orr

Vegetation treatments

This includes various timber harvests and forest management activities scheduled within the next 5 years.

County= 2,900 acres

State (DNR) = 47,829 acres

National Forest= 6,018 acres (acreage includes proposed Border Project Analysis)

Southeast Area WUI

Fire Hazard and Risk Rating (L/M/H): 44 points, which is High.

The Southeast Area WUI rated as a high priority for mitigation measures based on high fuel hazards and risk (fire occurrence, stands of balsam fir, pine stands, blowdown, etc...), moderate values, (economics, structure density, building hazard, infrastructure, land ownership, protected resources, ecosystem values), and low protection capabilities (a low rating denotes high number of interagency partnerships, high numbers of protection resources, good access, good response times, prevention programs, and high initial attack success).

Fire Departments in the Southeast Area WUI:

- Canosia
- Clifton/Alden
- Duluth
- Fredenburg
- Gnesen
- Hermantown
- Lakewood
- Normanna
- North Star
- Proctor
- Rice Lake

Vegetation treatments

This includes various timber harvests and forest management activities scheduled within the next 5 years.

- County= 7,000 acres
- State (DNR) =3,511 acres
- National Forest= No treatments planned in this area

Southwest Area WUI

Fire Hazard and Risk Rating (L/M/H): 34 points, which is Low.

The Southwest Area WUI rated as a low priority for mitigation measures based on high fuel hazards and risk (fire occurrence, stands of balsam fir, pine stands, blowdown, etc...), moderate values, (economics, structure density, building hazard, infrastructure, land ownership, protected resources, ecosystem values), and low protection capabilities (a low rating denotes high number of interagency partnerships and protection resources, good access, good response times, prevention programs, and high initial attack success).

Fire Departments in the Southwest Area WUI:

- Alborn
- Arrowhead
- Brevator (East and West)
- Culver
- Elmer
- Floodwood
- Grand Lake
- Independence
- Meadowlands
- Northland
- Solway

Vegetation treatments

This includes various timber harvests and forest management activities scheduled within the next 5 years.

- County= 8,000 acres
- State (DNR) = 377,430 acres
- National Forest= No treatments planned in this area

Vermilion Basin Area WUI

Fire Hazard and Risk Rating (L/M/H): 44 points, which is High.

The Vermilion Basin Area WUI rated as a high priority for mitigation measures based on high fuel hazards and risk (fire occurrence, stands of balsam fir, pine stands, blowdown, etc...), moderate values, (economics, structure density, building hazard, infrastructure, land ownership, protected resources, ecosystem values), and moderate protection capabilities (number of interagency partnerships, numbers of protection resources, access, response times, prevention programs, and initial attack success).

Fire Departments in the Vermilion Basin:

- Breitung
- Cook
- Eagles Nest
- Greenwood
- Tower
- Vermilion Lake

Vegetation treatments

Includes timber harvests and forest management activities scheduled in the next 5 years

- County= 1,500 acres
- State (DNR) = 55,107 acres
- National Forest= 1,016 acres

Virginia Area WUI

Fire Hazard and Risk Rating (L/M/H): 43 points, which is High.

The Virginia Area WUI rated as a high priority for mitigation measures based on high fuel hazards and risk (fire occurrence, stands of balsam fir, pine stands, blowdown, etc...), moderate values, (economics, structure density, building hazard, infrastructure, land ownership, protected resources, ecosystem values), and low protection capabilities (a low rating denotes high number of interagency partnerships, high numbers of protection resources, good access & response times, prevention programs, and initial attack success).

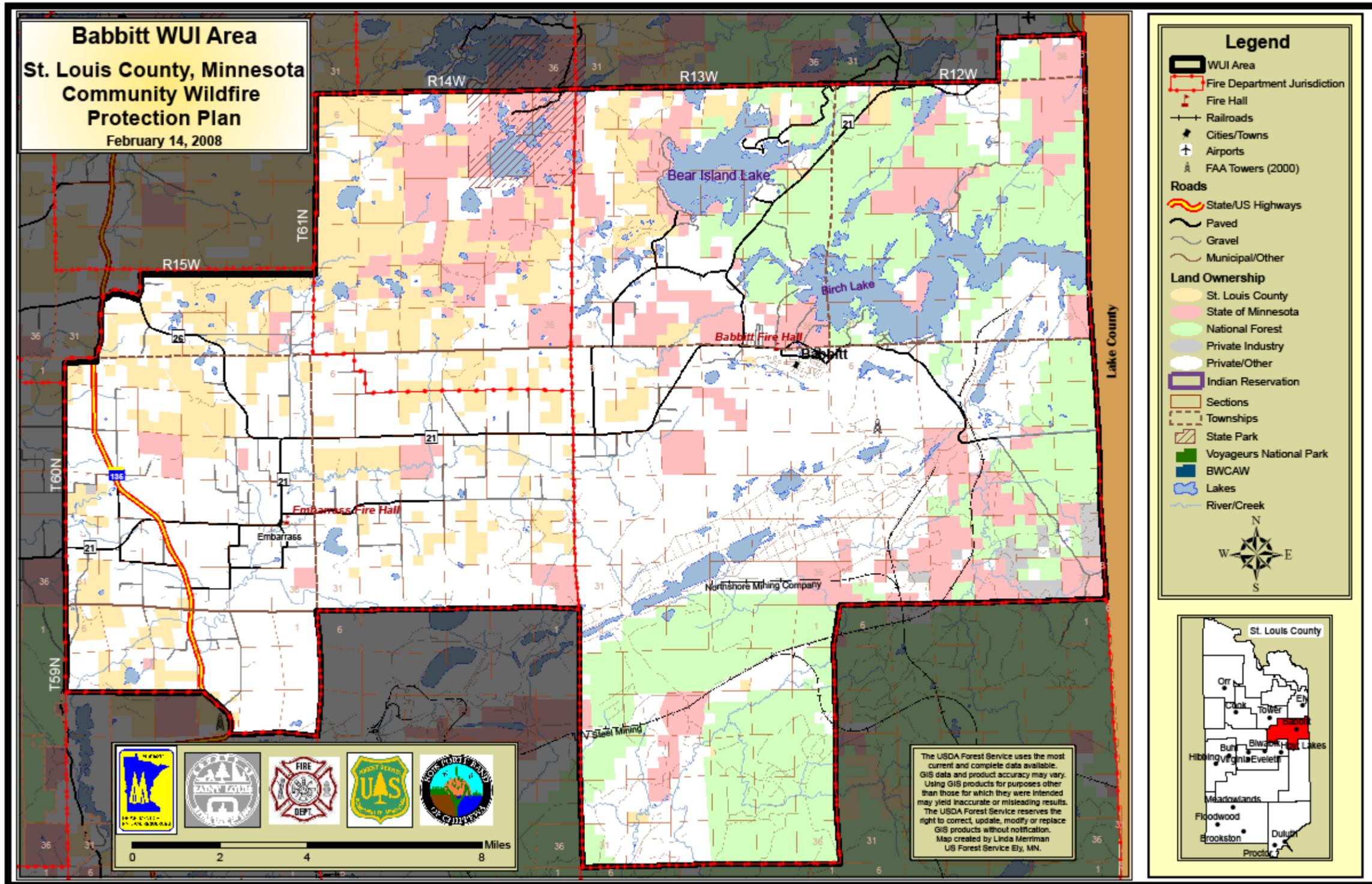
Fire Departments in the Virginia Area WUI:

- Aurora
- Biwabik
- Biwabik Township
- Clinton
- Eveleth
- Fayal
- Gilbert
- Hoyt Lakes
- Lakeland
- Mountain Iron
- Palo
- Virginia

Vegetation treatments

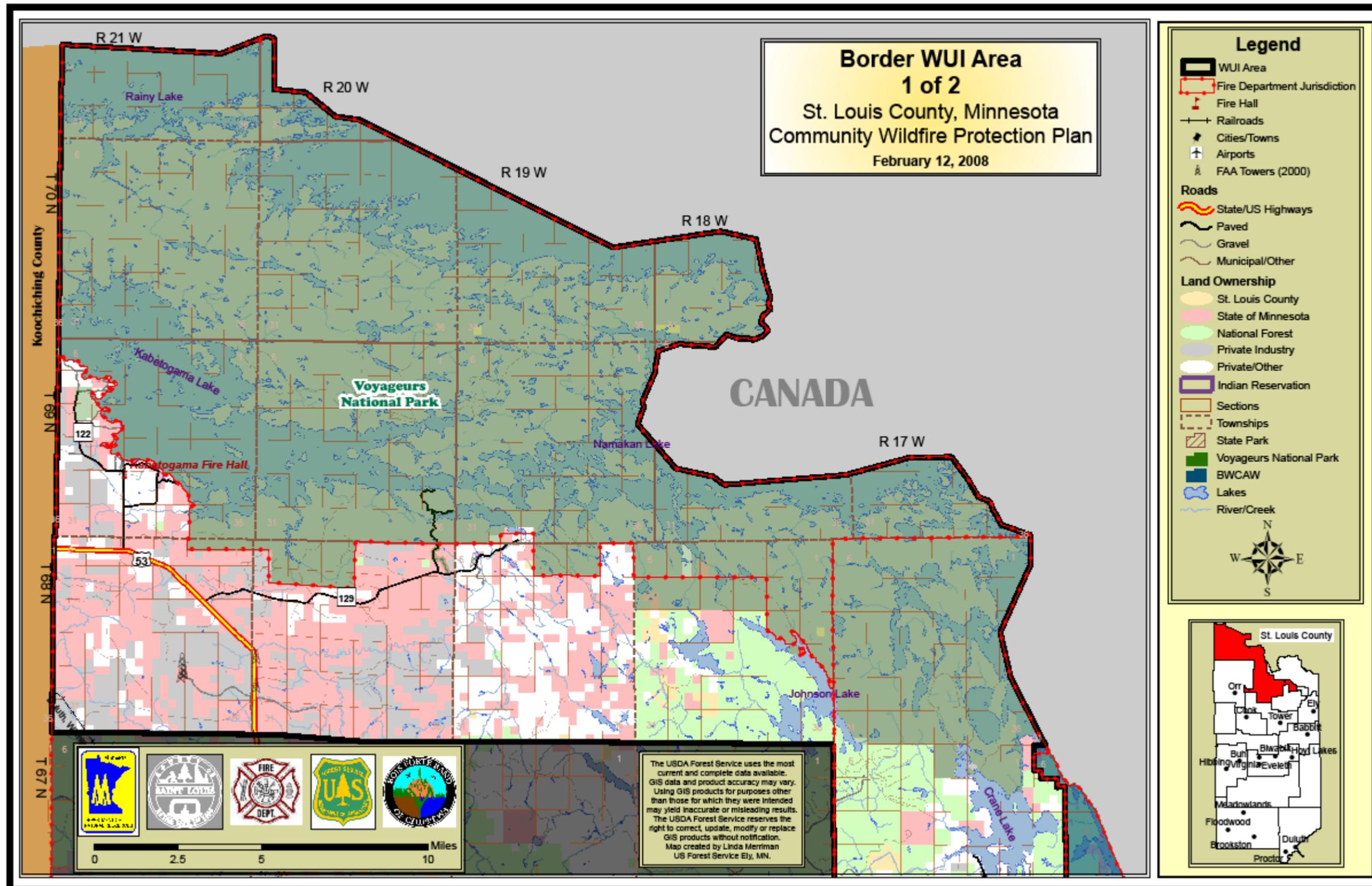
Includes timber harvests and forest management activities scheduled in the next 5 years.

- County= 400 acres
- State (DNR) =213,753 acres
- National Forest= No treatments planned in this area



Name: Babbitt Fire Department		WUI Area: Babbitt Area
Access:	Highway 21, Tomahawk Trail (112) FR 113, Hwy 1 and 2, Hwy 70, 904 Road, 120	
Topography:	Gently rolling topography with many lakes, streams and wetlands. Several ridges run through protection area, steep terrain around minelands.	
Fuel Hazards:	Scattered blowdown, grassy fields and lowland grasses and swamps, pine plantations, balsam fir component. The primary cover type is conifer, with a heavy balsam fir understory component. There are scattered areas of jack pine stands and mixed stands of hardwoods, as well as pine plantations and some open grassy fields and marshes with lowland grasses. There are also many areas that have logging debris and slash.	
Fire Occurrence:	Moderate number of wildland fires. Majority of fires started by landowners and campers.	
Homes:	Hundreds of permanent homes, small farms throughout, hundreds of seasonal and hunting cabins throughout. High density of lake homes, Birch Lake summer home group, community of Benville,	
Businesses:	Northshore Mining, Black Iron rubber plant, mineral exploration and potential for additional mining; logging and associated equipment; businesses associated with small communities, outlying businesses include auto repair, tire services, resorts, gun shop, Cold Springs Granite.	
Jurisdiction:	Babbitt Fire Department, USFS out of Ely, Tower DNR. Babbitt covers the area over to Highway One, Babbitt area, west on Hwy 21, to 6301, Hwy 21 north to 120, east on 120 to Birch Lake road, Hwy 1 north to Spruce Road, Bear Island River Road and general area of Bear Island Lake,(Arthur Lake, etc...) 904 Road, 112 Road to Hwy 2 (north), August Lake FR388) Chub Lake Resort, Happy Wanderer, Kelly Trail.	
Infrastructure risk:	Power/phone lines, large LP tanks at Black Rubber, communication towers on hill by NS mine, road corridors, Clinic in Babbitt, dry hydrants on Hwy 120/21. Landfill, Northshore Mining, gravel pits	
Community values:	High use recreation area throughout protection area, including numerous campgrounds and public water accesses, tourism and scenic values to local residents and visitors, summer home groups. Cold Springs Granite Northshore Mining, Rubber plant, trail system, public beach,	
Local Preparedness Capability:	1982 Pierce pumper: 750 gal @1250gpm, 1977 Ford pumper:750 gal @1250gpm, Brush rigs: 1988 and 1984 Ford 250 gal @250gpm, Water tenders: 1500 gal and 1300 gal; floto pump, MK 111 pump, Chevy carry-all rescue truck, 3-4 racks 1.5" hose; all personnel have portable radios; 2 drop tanks, 2000 and 1000gals. Lund Alaskan boat w/90 hp, USFS has 2 T6 Engines out of Ely and aerial support during high fire danger.	
Firewise Information	Need support from governmental units (city, local fire depts., townships, state and federal) to help complete Level 1 fire assessments.	
Mutual Aid	Agreements are in place and current with the Forest Service, DNR and adjoining fire departments.	
Fire Department Needs	Repair dry hydrants or install new ones (Tomahawk, Training dollars, hose, 1.5, 1", 2.5", hardware, high pressure high volume portable pump, fire shelters, chainsaws and associated safety equipment,	
Other	New development throughout jurisdiction. Corporate lands (Potlatch, U.S. Steel) being converted to private. Minnesota Power (Bobs Bay) behind old Dunka Mine is being developed (condos, etc...) Community of Benville,	

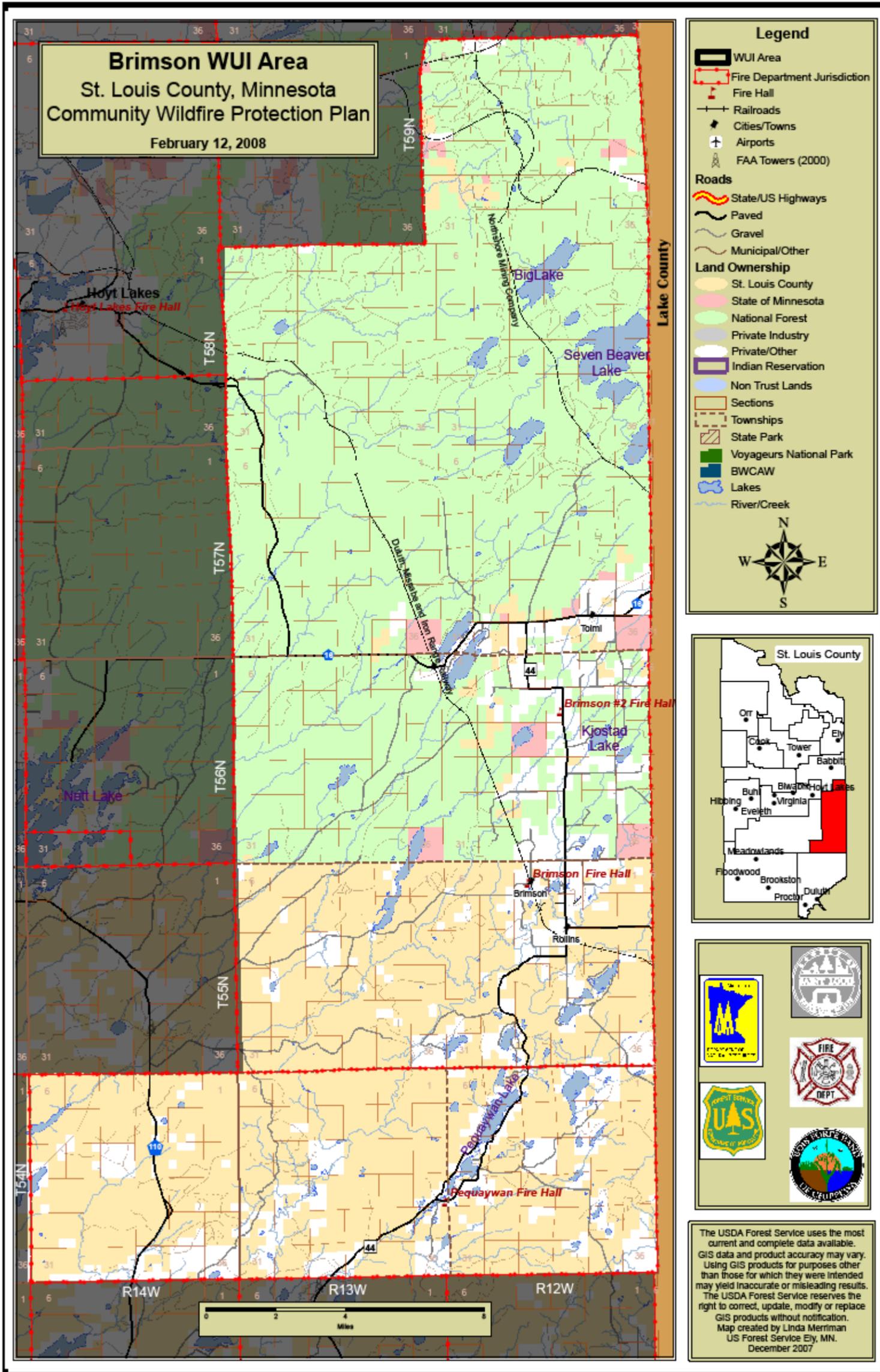
Name: Embarrass Regional Fire Department		WUI Name: Babbitt Area
Access:	Major roads include Hwy 135N, County Hwy 21 & County Road 26. Secondary roads include County Road 615, Waisanen Road, & Giants Ridge Road. Laurentian Spur Snowmobile Trail is a major corridor bisecting coverage area, allowing year round pick-up truck access, with smaller adjoining trails suitable for ATV & tracked vehicle travel. Land management agency forest roads including Pulkinen Road, South Bearhead Road, Kugler Ridge Road & other timber access forest roads. Forest roads and private roads often gated. Limited access due to seasonal condition, road quality & size. Travel essentially one way on forest roads.	
Topography:	Generally lowland, with Embarrass Mountain in the southern coverage area being hilly and rocky. Embarrass & Pike rivers and associated drainages found throughout the region. Limited number of remote lakes, all with private, unreliable access. Extensive heavy forested areas are generally remote.	
Fuel Hazards:	Lowland spruce, upland pine plantations, limited tamarack & cedar, extensive aspen and lowland brush, lowland grasses throughout, especially in two rice paddy areas. Upland forest, lowland forest, pine plantations, upland grass, lowland brush, rice paddies, peat, logging slash. Urban Interface homes & cabins, propane tanks.	
Fire Occurrence:	Moderate number of wildland fires, with intermittent catastrophic wildfire events. Fires are especially unpredictable due to high prevalence of flashy fuels.	
Homes:	Approximately six hundred homes, with an additional one hundred & fifty recreational cabins.	
Businesses:	Limited number of rural town businesses: Four Corners Convenience Store & Café, B & S Research, G & R Greenhouse, Embarrass Credit Union, Cold Country Liquor, Cold Spot Appliance, Mike's Repair, Roger's Diagnostic, CC Winger Construction, Holmes Excavating, former LTV mining site, Scherer's Bombardier & Hydro-Testing.	
Jurisdiction:	Embarrass Region Volunteer Fire Department, Tower DNR Forestry, And USFS Laurentian District. Mutual Aid Agreements with Pike Sandy Britt VFD, Babbitt VFD, Vermilion Lake VFD, Tower VFD, Aurora VFD, Breitung VFD, Eagles Nest VFD, Greenwood VFD, Morse Fall Lake VFD, Hoyt Lakes VFD, Palo VFD.	
Infrastructure risk:	Major power transmission line, 911 tower, cell towers, radar & repeater towers. Hazmat transportation route ferrying blasting agents, fuels & gases.	
Community values:	Embarrass Fairgrounds, Embarrass Heritage Park, US Post Office, County Garage, Township Government Office & Community Building, Embarrass Region Volunteer Fire Department. Several historic homesteads listed on the Federal Registry.	
Local Preparedness Capability:	2X 1000gpm pumper trucks, type 1 engines, 1X 1200 gal. Water Tender, type 3 tender. 1X 300 gal. Type 6 brush truck, 1X 60 gal. 6x6 ATV, Portable pump, 500gpm & numerous high volume drop tanks, Mark III portable pump, & three lesser pumps, Portable foam Unit, Jaws-of-Life	
Firewise Information	Completed GPS mapping project of dry hydrants & static tanks. Need Firewise grant to upgrade 911 signage. Need funding to complete fire assessments for Embarrass Region VFD Coverage Area.	
Mutual Aid		
Fire Department Needs	Communication performance improvements with repeater towers. Communications equipment - specifically mobile and handheld radios with field programmability. Engine upgrades. Firefighter recruitment & retention enhancement. Fire hall storage facility. Personnel Protective Equipment for wildland fire and structure fire. Training resources.	
Other	Completed GPS mapping project of dry hydrants & static tanks. Need Firewise grant to upgrade 911 signage. Need funding to complete fire assessments for Embarrass Region VFD Coverage Area.	



Name: Buyck Fire Department		WUI Name: Border Area
Access:	Good roads, Cty 23 is primary access from Orr, is paved and in good shape. County #24 is gravel to Buyck from Cook and is paved from Buyck to Crane Lake. Echo Trail from Ely is gravel but is in good shape. Secondary roads are all gravel but well maintained by either St. Louis County or Portage Township. There are many private seasonal recreational class roads, for example; Wolf Knoll rd on Kjostad Lake, that are either gated or limit access to larger fire units.	
Topography:	Gently rolling topography with many lakes, streams and wetlands. Soil is generally sand or gravel with some areas of rock outcroppings. Random pockets of clay can make access difficult during wet periods.	
Fuel Hazards:	Primary hazard in this protection area is budworm killed balsam. This particular fuel type now has balsam regeneration coming up through it. Other fuel types consist of jack pine and Norway pine plantations, which are especially prevalent in the Olive lake/Elbow Lake area. This area has a history of large wildfires.	
Fire Occurrence:	Fire occurrence is moderate with starts generally caused by wind blown trees across power lines and lightning strikes. Man caused fires are comparatively low due to the small population however the population does increase during the summer and fall.	
Homes:	Highway #23 seems to be the corridor where most of the homes are located. Homes are concentrated on Myrtle Lake, Kjostad Lake, Echo Lake, and Vermilion River. Hunting/seasonal recreational cabins are scattered throughout the area with a concentration of cabins on #24 south of Buyck.	
Businesses:	One resort on Myrtle Lake and two on Echo Lake. Four Restaurants/taverns on Highway 23 corridor. One Golf Course, one Gift shop/post office, one canoe outfitter and 7 logger/heavy equipment type of businesses.	
Jurisdiction:	Buyck Volunteer Fire Department, DNR-Forestry and U.S. Forest Service.	
Infrastructure risk:	Main feed power and telephone lines that provide services to Buyck and Crane Lake. USFS repeater on sand cut hill. One St. Louis County Transfer Station with a St. Louis County Emergency Services repeater located at this site.	
Community values:	High use Tourism/recreational area with numerous seasonal cabins, public accesses, canoe routes and scenic values. Timber base on public and private lands are extremely important due to the fact that much of the population's income is derived from logging. There are many historical sites in the community and surrounding areas with the Vermilion River Tavern being the centerpiece.	
Local Preparedness Capability:	Buyck Volunteer Fire Department has for primary response units: 1988 GMC 2500 gal. Pumper w/ 1250 gpm, 1969 Dodge with a 750 gallon tank/500 gpm. A CET 25 hp portable pump w/ approximately 500 gpm. Two Waterous floating pumps.	
Firewise Information	Need support from governmental units (Townships, County, State, Federal) to help complete the Level 1 assessment.	
Mutual Aid	Mutual Aid agreements are in place with Orr and Crane Lake. Agreements are also in place with DNR-Forestry, Orr.	
Fire Department Needs		
Other	New Developments south of Buyck, land leases and sales by Potlatch and Forest Capital and on-going recreational developments will increase demands on fire protection capabilities in the future. An agreement should be in place for the north shore of Elbow Lake and Bann Lake. It currently is under Cook VFD protection but access is from the north which greatly increases Cook's response time.	

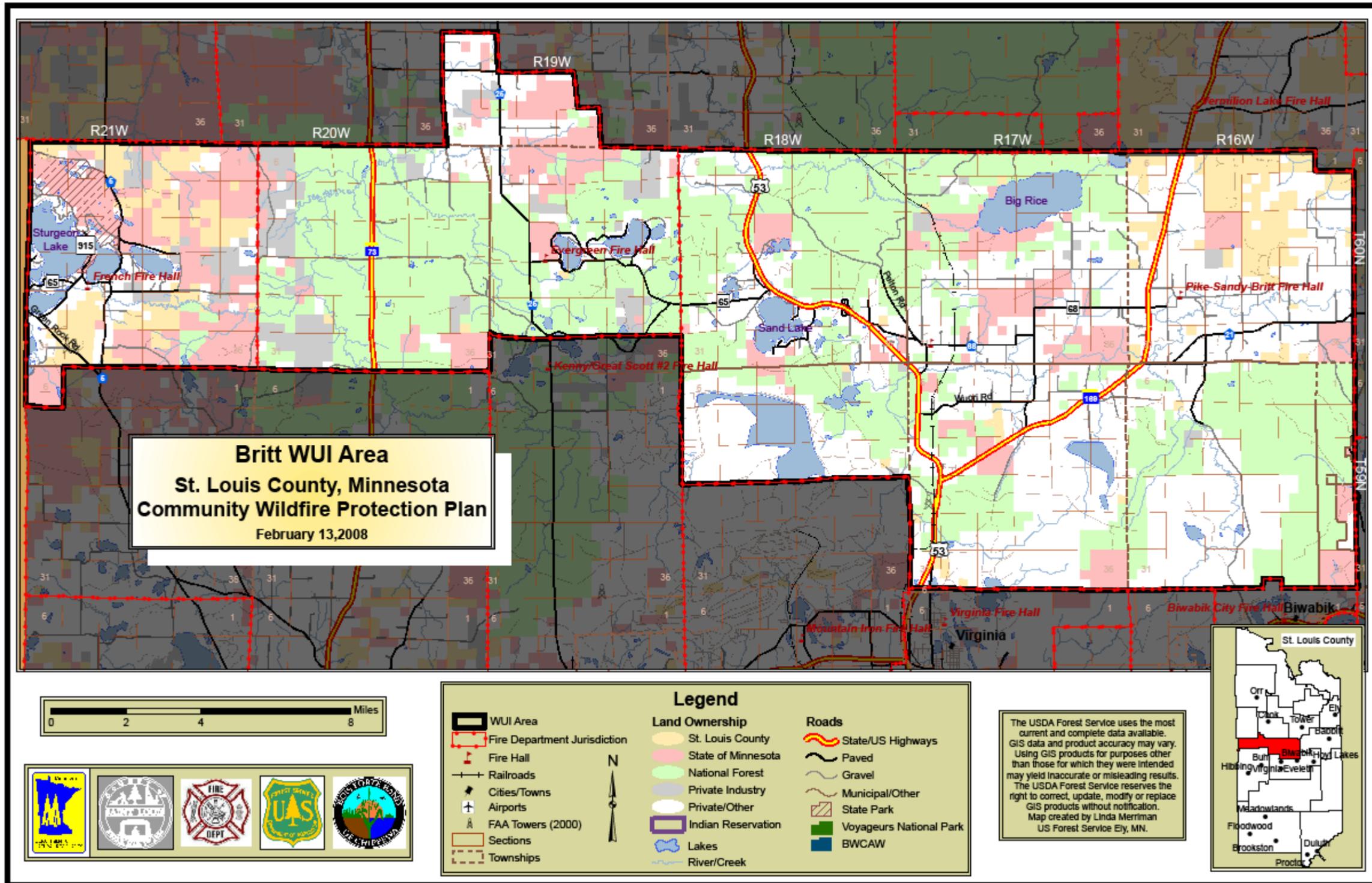
Name: Crane Lake Fire Department		WUI Name: Border Area
Access:	Primary access route would be County #23 starting at Orr, this road turns into County #24 at Buyck and terminates at Crane Lake. Both of these roads are paved. Secondary access/egress routes are the Echo Trail and USFS 491/203 to County #180(Elephant Lake Road). There are only two other mid to lower class of road in this protection area. It is worthy to note that all roads in the Crane Lake VFD protection area are dead end. All private drives and access roads are reasonably good access for large emergency vehicles. There are approximately 6 named private roads with multiple houses/cabins on them. Approximately one hundred fifty cabins are water access on Crane Lake, Sandpoint and Little Vermilion River. A few cabins are on the Canadian side of the border. Winter access to these cabins is very limited due to equipment limitations.	
Topography:	Topography is rolling to steep. Soil types consist of sandy gravel, clay and organic soil (wetland areas). Higher elevations are generally granite outcrops with fairly steep slopes. Lakes and rivers make up an interconnected waterway which is a large part of this landscape.	
Fuel Hazards:	Lower elevation are primarily an aspen/balsam cover type. Higher elevations have a mixture of white pine, Norway pine, jack pine and balsam fir. Thin soils on the higher elevations tend to dry out fast and a typical fire season can last all of the snow free months. Spruce budworm has been active in this area several years ago and the cycle will continue.	
Fire Occurrence:	Fire occurrence is moderate to low. Fires are started primarily by lightning, trees across power lines during wind events and man caused, both through debris burning and campfires.	
Homes:	The majority of the homes and seasonal cabins are clustered on Crane Lake. There are scattered year-round homes that are not on lakeshore as well as seasonal cabins (hunting shacks) in the western reaches of the township. There are approximately 150 cabins and homes that are water access only.	
Businesses:	There are eight resorts on Crane Lake, one of which is water access. One resort on the Canadian side should be included along with the 8 on Crane Lake. Service types of businesses includes one marina, one sea plane base, one bait shop/canoe outfitter, two building contractors and one houseboat rental.	
Jurisdiction:	Crane Lake VFD., DNR-Forestry, USFS and Voyaguers Nat'l Park.	
Infrastructure risk:	One cell phone tower, Sewer Plant, one main power line feed, telephone distribution lines are above ground.	
Community values:	Fire hall, one church, businesses listed above along with the natural scenic values, public accesses, hiking, snowmobiling and ski trails, tourism and historical sites such as Nelson's resort.	
Local Preparedness Capability:	1973 Ford type 1 engine w/ 1000 gallon and 1000 gpm pump, 1973 Ford type 1 engine w/ 750 gallon tank and 600 gpm pump. 1997 GMC brush/rescue w/ 300 gallon tank and 500 gpm pump. 1993 22 ft boat with 225 hp motor w/ 300 gpm pump. 195 gpm portable pump, waterous floating pump, four portable foam units and two 1000 gallon drop tanks.	
Firewise Information	Completed GPS and site assessments with all information turned in but the information may have been lost. A level 1 update should take place to recapture this information with assistance from governmental units (county, state & federal).	
Mutual Aid	Mutual aid agreements are in place with the Buyck VFD and Orr VFD. An effort should be taken to find documentation of these agreements. Agreements are in place with governmental wildland fire organizations.	
Fire Department Needs		
Other	Water access properties are difficult to provide adequate fire protection with equipment on hand. International borders present a problem along with public expectations on fire/emergency services protection from the Crane Lake Department. Small pool of volunteers to serve on the fire department	

Name: Kabetogama Fire Department		WUI Name: Border Area
Access:	Primary access is Highway # 53 which lies on the west side of the protection area. Artery roads such as the Ash River Trail, Cty #122 and #123 are all paved and access communities to the east and on the lake. Secondary roads are primarily well maintained gravel and provide good access for large fire apparatus. Private drives and Resort roads branch off these secondary access routes, this level of road limits some access of larger vehicles. Overall access would be rated good.	
Topography:	Rolling to level with primarily clay soils with numerous rock outcroppings. Some rock outcroppings can be steep.	
Fuel Hazards:	Timber types are primarily aspen but as you get closer to the lake the timber changes more to conifers such as white pine and balsam. Jack pine, white pine and balsam can be found on rock outcrops.	
Fire Occurrence:	Wildfires occurrences would be considered low. Primary causes are lightning, high winds causing trees to fall on powerlines and a few man-caused.	
Homes:	Private homes and cabins are clustered in approximately 6 areas with 2 major clusters being Ash River and the Gappa loop. Hunting shacks seem to be located in the unorganized townships accessed by the Sheep Ranch, Camp 90, Kohler Pit and Arbutus roads.	
Businesses:	The resort industry is a big business on Lake Kabetogama with 22 resorts remaining and 6 resorts on the Ash River Trail. Six service type of businesses are near Kab including restaurants, gift shops, a marina and bar. Ash River Trail has a convenience store and a bait distributor. One sawmill/logging operation is located near highway #53.	
Jurisdiction:	Lake Kabetogama Volunteer Fire Department, DNR-Forestry and Voyageurs National Park.	
Infrastructure risk:	Electrical substation is located near the Gateway store. All powerlines are above ground. A neutrino research site is being considered on the Ash River Trail. A CN railroad line runs parallel with Hwy #53.	
Community values:	High use recreational area which hosts a National Park, two State Forest Campgrounds, historical sites and buildings. Hiking trails, ski trails and snowmobile trails bisect the area.	
Local Preparedness Capability:	Lake Kabetogama Fire Department: two pumpers, 55 aerial ladder truck, two tankers, one brush truck and one medical rig. Five portable pumps, including one floating pump. Two snowmobiles with rescue tobaggons and one six wheel Polaris ATV which pulls a tobaggon w/ wheels. The ATV is used as support for wildfire access	
Firewise Information	Initiated two informational "handout" sessions for the community. New 911 signs and all GPS work has been done with some grants. Some help will be needed from government agencies to finish level one assessments.	
Mutual Aid	Mutual aid agreements are in place with Orr fire dept and Littlefork fire department.	
Fire Department Needs		
Other	Need a fire/medical substation at Ash River. Hazardous materials being hauled daily on the CN tracks. Needs for pre-planning access for all new developments.	



Name: Brimson Fire Department		WUI Name: Brimson Area
Access:	North/South access through Brimson Protection Area is HWY 44 which interests Forest HWY 11 at the north end. East/West access is HWY 55 intersecting with HWY 44 to the west and HWY 2 to the east. Gravel roads provide additional access and egress. Fifty percent of the gravel roads can be accessed by a Type 1 engine and 50% can be accessed by Type 6 engines.	
Topography:	Flat, accessible terrain except for scattered spruce bogs and wetlands.	
Fuel Hazards:	Heavy balsam fir understory in timber areas to the north; Sandplain with jackpine fuel model in the central area; Scattered farmsteads throughout the central and southern portions of the area with a grass fuel model which is a concern in the spring prior to green up.	
Fire Occurrence:	5-10 wildland fires per year. Most fires are human caused; debris burning, railroad, powerline, etc.	
Homes:	Permanent residential and seasonal homesteads are scattered throughout the southern part of the protection area. The northern part of the protection area is remote with no residents located on the Superior National Forest (Seven Beavers Lake area). Permanent and seasonal homes are located around Cadotte and Bassett Lakes.	
Businesses:	Businesses are limited to 2 country stores and several home based businesses.	
Jurisdiction:	T58N, R12W T57N, R12W T56N, R12W T55N, R12W	
Infrastructure risk:	North Shore Mining railroad DMIR mining railroad Brimson Fire Station Brimson Post Office St. Louis County garage	
Community values:	Rural townhalls, community centers and cemeteries Campgrounds and picnic areas are scattered throughout (Cadotte Lake, Bassett Lake, Salo Lake, Indian Lake)	
Local Preparedness Capability:	1-Type 2 engine 1-Type 6 engine 2-water tenders(1500 & 2000 gallon)	
Firewise Information	Ongoing Level 1 Firewise assessments	
Mutual Aid	Mutual Aid agreements are in place and current with the DNR, USFS, Lakehead coalition and adjacent fire departments.	
Fire Department Needs		
Other		

Name: Pequawayan Fire Department		WUI Name: Brimson Area
Access:	The main roads in the double township; #44, 256, 266, and many named roads.	
Topography:	Rolling landscape with steep slopes on Little Pequaywan, Smith, Big Pequaywan lakes. The lakes are part of the Little Cloquet River System. Other small lakes; Beaver, Ruth, King, Moose, Boyer, Valley, Warren, Mud, Quick, Loam, Buzz.	
Fuel Hazards:	Old growth red and white pines along the river and lakes, mixed aspen, birch, spruce, balsam, alder brush, w/ some open fields.	
Fire Occurrence:	Low frequency – 1 wildfire call per year.	
Homes:	144 homes, population, approx 300 people.	
Businesses:	Pequaywan Inn/ resort, w/gas and diesel, 12 home based businesses.	
Jurisdiction:	Pequaywan Volunteer Fire Department; Township 54 - Range 12,13.	
Infrastructure risk:	Communication tower, overhead, underground power,	
Community values:	Community center, multi bay fire station, w/two buildings.	
Local Preparedness Capability:	Fire dept resources include: 1250GPM/500gal; 700GPM/1000gal; tanker - 2500gal w/ port pump grass unit - 265/300GPM; rescue van	
Firewise Information	Have a request in to the Firewise Program; community site to burn brush. Also considering a fire sign Firewise project and would like assessment help.	
Mutual Aid	Current: Lakehead Mutual Aid Association, MN DNR.	
Fire Department Needs	New/Update grassfire rig Training; wildland/structure firefighting Equipment; hose/portable pumps/ updated and new dry hydrants. Second fire station and dry hyd. Needed. Dept would help with a feasibility study.	
Other		

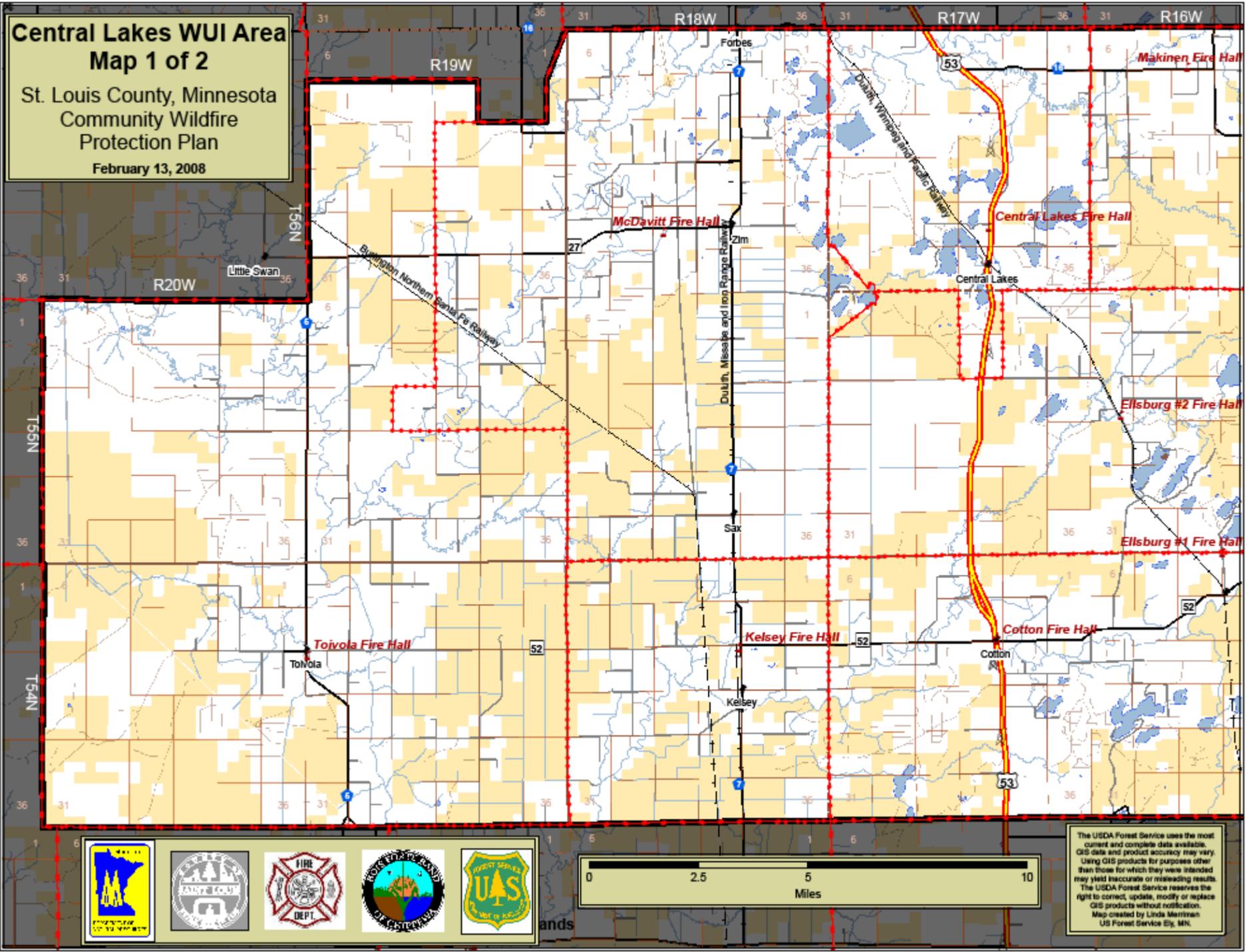


Name: Evergreen Fire Department		WUI Name: Britt Area
Access:	North/South roads through Evergreen fire protection access is HWY 25 intersecting with HWY 169 to the south. East/West access is HWY 65 intersecting with HWY 53 to the east and HWY 73 to the west. Additional paved and gravel roads provide good access and egress for both Type 1 engines and public evacuation.	
Topography:	Flat, accessible terrain except for scattered spruce bogs and wetlands.	
Fuel Hazards:	Heavy balsam fir understory in timber areas Significant amount of pine plantations throughout the Evergreen protection area	
Fire Occurrence:	10-15 wildland fires per year. Most fires are human caused; debris burning, powerline, etc.	
Homes:	Permanent residential homes are located throughout the protection area. Lake homes/cabins are located on Lake Fourteen, Leander, Clear and Dark Lake.	
Businesses:	Businesses are limited to a few country stores/restaurants and home based businesses.	
Jurisdiction:	T60N, R19W East ½ of T60N, R20W Southern 1/3 of T61N, R19W	
Infrastructure risk:	Evergreen Fire Station	
Community values:	Lake Leander recreational/picnic area Wolf ridge golf course Dark River Hiking/Ski trails	
Local Preparedness Capability:	2-Type 1 engine 1-water tender(2000 gallon) 1-Type 6 engine *several dry hydrants within the protection area	
Firewise Information:	Ongoing Level 1 Firewise assessments	
Mutual Aid:	Mutual Aid agreements are in place and current with the DNR, USFS, Algoman coalition and adjacent fire departments.	
Other:		

Name: French Township Fire Department		WUI Name: Britt Area
Access:	Principle access to the French Township/Side Lake area is via St. Louis County Hwy 5 from north or south, with secondary access from the east via State Hwy 73, County 65, and the East Road. The Link Lake Trail provides a western route to State Hwy 65 in Itasca County.	
Topography:	The area is hilly, with pine ridges abutting lakeshore, interspersed with bog and alder/tamarack swamp.	
Fuel Hazards:	Mixed Conifer with potential for severe to extreme fire behavior. There are patches of bug-killed balsam fir, and areas of dense black spruce. There are few grassy areas. Logging slash is common. There is some peat land.	
Fire Occurrence:	Since 1979, French VFD has been paged to 63 wildfires, with an average of two per year.	
Homes:	There are 700+ addresses in French Township, a mix of seasonal and year-round residents, with structures ranging from hunting shacks to "McMansions".	
Businesses:	There are three restaurants, one resort, two gas station/convenience stores, a Post Office, and the HQ of McCarthy Beach State Park.	
Jurisdiction:	The Town of French VFD covers 44 square miles, which includes all of French Township, six square miles of South Bearville Township (Itasca County), one square mile of Unorganized 59-22 (Itasca County), and one square mile of Unorganized 59-21 (St. Louis County). In addition to contracts with both counties, the TFVFD also has contracts with the MNDNR and the USFS.	
Infrastructure risk:	There is a Lake Country Power substation on the East Road, local power distribution grid, individual propane tanks at most addresses.	
Community values:	Besides the residences, businesses, and timber resources, there is the Side Lake Community Center and recreation area, McCarthy Beach State Park, and various public boat landings.	
Local Preparedness Capability:	TFVFD has one Type-1 Engine, one Type-2 Engine, one rescue rig, EMS-BLS response, and cold water/ice rescue capability; plus a major incident pre-plan in place. The Side Lake Field Station for the MNDNR has one Type-6 Engine, one Type-7 Engine, and one J-5 ATV.	
Firewise Information	French VFD has taken advantage of two Firewise Grants via the State of Minnesota. In 2003 they sent an informational packet to all addresses in the jurisdiction, and conducted a voluntary inspection/assessment program for 92 properties. In 2004, funding was provided for a community burning pad for organic debris generated by homeowners doing Firewise mitigations. Total Firewise funds spent were \$9,000. Since then, St. Louis County has taken over the burn pad operation and located it at their canister site on Greenrock Rd.	
Mutual Aid	French is a charter member of the Algoman Fire Coalition, and thus has mutual aid agreements with Bearville, Chisholm, Evergreen, Cook, GRS, and Kinney-Great Scott.	
Fire Department Needs	Can always use new (and younger) recruits.	
Other		

Name: Pike Sandy Britt Fire Department		WUI Name: Britt Area
Access:	North/South access through the PSB protection area is HWY 53 East/West access is HWY 169 which intersects HWY 53 to the west East/West access is Road 68 intersecting with HWY 53 to the west and HWY 169 to the east. Gravel roads provide additional access and egress. The majority of these paved and gravel roads provide good access for both Type-1 engines and public evacuation.	
Topography:	Flat, accessible terrain except for scattered spruce bogs and wetlands.	
Fuel Hazards:	Heavy balsam fir understory in timber areas Significant amount of pine plantations located throughout the central portion of the protection area. Scattered farmsteads with grass fuel models located in the eastern portion of the protection area which is a concern in the spring prior to greenup.	
Fire Occurrence:	10-20 wildland fires per year. Most fires are human caused; debris burning, railroad, powerline, etc.	
Homes:	Scattered permanent homes and farmsteads located throughout the protection area. Permanent and seasonal homes are located around Sand and Little Sand Lake. There is a concentration of permanent residents in Donnywood Acres, Timberlane Acres and Britt	
Businesses:	Businesses consist of rural home based business, country stores/restaurants, and a couple of gas stations.	
Jurisdiction:	T60N, R18W T59N, R16W T60N, R16W T60N, R17W north ½ of T59N, R18W T59N, R17W	
Infrastructure risk:	Canadian National Railroad High voltage transmission line that runs through the southeast portion of the protection area. 2 -Pike Sandy Britt fire stations St. Louis County garage	
Community values:	Several townhalls, community centers, and cemeteries Laurentian Divide recreational area, Big Aspen recreational area	
Local Preparedness Capability:	1-Type 1 engine 2-water tenders(2000 gallon) 1-Type 2 engine several dry hydrants and static tanks 2-Type 6 engines	
Firewise Information	737 Level Two Assessments completed. Ongoing Level 1 Firewise assessments	
Mutual Aid	Mutual Aid agreements are in place and current with the DNR, USFS, Laurentian North coalition and adjacent fire departments	
Fire Department Needs		
Other		

Central Lakes WUI Area
Map 1 of 2
 St. Louis County, Minnesota
 Community Wildfire
 Protection Plan
 February 13, 2008



Legend

- WUI Area
- Fire Department Jurisdiction
- Fire Hall
- Railroads
- Cities/Towns
- Airports
- FAA Towers (2000)

Roads

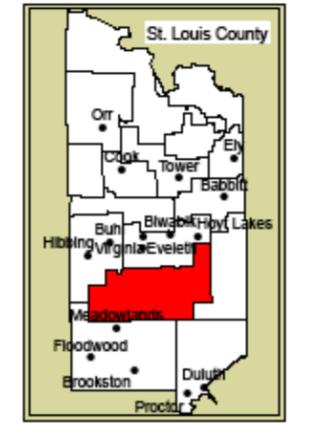
- State/US Highways
- Paved
- Gravel
- Municipal/Other

Land Ownership

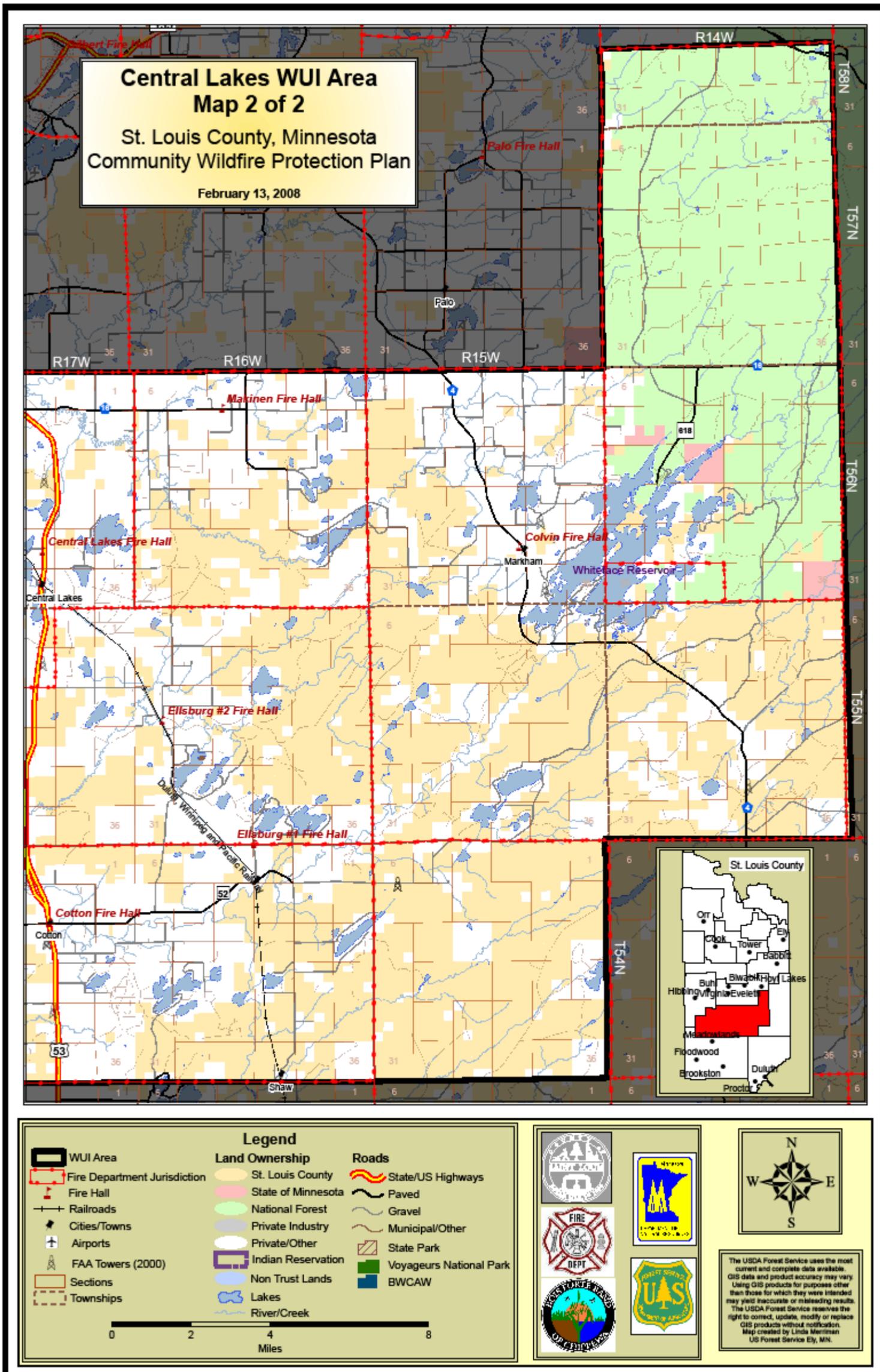
- St. Louis County
- State of Minnesota
- National Forest
- Private Industry
- Private/Other
- Indian Reservation
- Non Trust Lands

- Sections
- Townships
- State Park
- Voyageurs National Park
- BWCAW
- Lakes
- River/Creek

North arrow and compass rose.



The USDA Forest Service uses the most current and complete data available. GIS data and product accuracy may vary. Using GIS products for purposes other than those for which they were intended may yield inaccurate or misleading results. The USDA Forest Service reserves the right to correct, update, modify or replace GIS products without notification. Map created by Linda Merriman, US Forest Service Ely, MN.



Central Lakes WUI Area
Map 2 of 2
 St. Louis County, Minnesota
 Community Wildfire Protection Plan
 February 13, 2008

Legend		
WUI Area	St. Louis County	State/US Highways
Fire Department Jurisdiction	State of Minnesota	Paved
Railroads	National Forest	Gravel
Cities/Towns	Private Industry	Municipal/Other
Airports	Private/Other	State Park
FAA Towers (2000)	Indian Reservation	Voyageurs National Park
Sections	Non Trust Lands	BWCAW
Townships	Lakes	River/Creek

0 2 4 8
Miles



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Name: Central Lakes Fire Department		WUI Name: Central Lakes Area
Access:	Paved primary roads are Hwy #53, Hwy #16 and #957 Network of secondary gravel roads Seasonal forestry logging roads e.g. Anchor Lk ATV trails, Gated roads, Railroad grades Numerous lakes and streams pose access challenges Public water accesses at Murphy Lake, Elliott Lake and Rivers Residential and seasonal homes with narrow access pose challenges for emergency vehicles Water access at Fig Lake on the NW side Limited access on the CN Railroad areas	
Topography:	Forested landscape that is fairly level to gently rolling Numerous lakes and streams Very remote areas with difficult access	
Fuel Hazards:	Grasslands, Upland conifers and Pine plantations Bog-peatlands, Old peat plant, Lowland conifers, Logging debris/slash Aspen stands with Balsam, Homes and cabins scattered throughout the area	
Fire Occurrence:	Average of three wild land fires each year	
Homes:	Approximately 350 year round residents within this protection area, with approximately 750 residents during the summer There are numerous homes scattered along the county roads Numerous lakeshore cabins	
Businesses:	Porky's Day Care Swanson's Greenhouse Body Shop Bars Restaurants Fire Hall	
Jurisdiction:	56-17 except Stone Lake Road	
Infrastructure risk:	Local distribution lines Railroad corridor #53 corridor Wayside rest Tailings basin	
Community values:	Area Public Water accesses, Cellular towers, Anchor Lake Road	
Local Preparedness Capability:	~1986 Ford F-8000 with a 500 galloon tank and pump capacity of 1000 gpm with a 1000 gallon drop tank ~1986 Int'l Water tender with a 1600 gallon tank and a 1600 gallon drop tank ~1977 Dodge 1 ton Brush rig with a 220 gallon tank and pump capacity of 140 gpm ~1974 Int's Type 2 engine with a 750 gallon tank and pump capacity of 750 gpm and a 1600 gallon drop tank ~1981 Chevrolet Rescue Unit	
Firewise Information	No firewise program in place	
Mutual Aid	Mutual aid agreements are in place and current with Makinen, McDavitt, Fayal, Cotton and Ellsburg Member of the East Range Coalition	
Fire Department Needs	Recruitment and retention PPE for wildland fire fighting Update SCBA and bunker gear Training for all staff Communication upgrades Replacement of pumper vehicles	
Other	Two water sources with pump at each fire hall. 10 to 12 members	

Name: Colvin Fire Department		WUI Name: Central Lakes Area
Access:	Paved County roads are #4 and #16 Network of secondary gravel roads – County, Township and minimum maintenance Logging roads and trails Gated roads Numerous lakes and streams pose access challenges Public water accesses at Whiteface and Comstock lakes Residential and seasonal homes with narrow access pose challenges for emergency service vehicles. Long travel time for the Linwood Lake Area	
Topography:	Forested landscape that is fairly level to gently rolling Numerous lakes and streams (Whiteface, Comstock, Markham, Little Markham, Linwood) Remote areas with difficult access	
Fuel Hazards:	Grasslands, Upland conifers, Pine plantations, stands of Norway Pine, White Pine, Bog – Peat lands Lowland conifers Logging debris and slash, Aspen stands with Balsam Fir Homes and cabins scattered throughout the areas – a high WUI	
Fire Occurrence:	Average of three wildland fires each year	
Homes:	There are approximately 300 to 1200 residents This area has high property values. Scattered homes along County roads Scattered new construction. New developments on lakes	
Businesses:	JT store Hakala Construction JMJ Trucking Gas Station	
Jurisdiction:	55-15 56-15 Will also do protection for 55-14 and 56-14 Contract agreements with Palo, Lakeland and Makinen East Range Coalition	
Infrastructure risk:	Local distribution lines Recreational trails, non-designated ATV trails Federal campground	
Community values:	Snowmobile trail Cellular tower Public water accesses Large public land base with outdoor recreation amenities	
Local Preparedness Capability:	-1984 GMC type 1 engine with a 1000 gal tank and 1000 gpm -1995 Ford type 2 tender with a 2000 gal tank and 500 gpm -1969 Ford Type 3 tender with a 1000 gal tank and 350 gpm -1 ¼ ton 6x6 Gamma Goat with a 250 gal tank and 150 gpm 2003 Ford type 6 grass rig with a 300 gallon tank and a 20 HP Darley pump	
Firewise Information	Smokey sign in front of Fire Hall	
Mutual Aid	East Range Coalition member Mutual aid agreements in effect with Palo, Lakeland and Makinen	
Fire Department Needs	Recruitment and retention, SCBA upgrade, Replacement of pumper vehicles, Training for staff, Communication upgrades	
Other	In 55-15 section 1 / 2 on the Whiteface River a dry hydrant is located ¼ mile off of hwy #4 55-15 section 28 Comstock Lake	

Name: Cotton Fire Department		WUI Name: Central Lakes Area
Access:	The main road in the East/West double Township is Hwy 53. Others are, 52, 15, 59, 973, 221, 563, 967, 981, 973, 531, 547, 223, 224. Secondary roads are gravel.	
Topography:	Rolling landscape with some high ground, scattered lakes, creeks and potholes. Whiteface River, Paleface River. Open fields along 53 and 52.	
Fuel Hazards:	Mostly aspen, birch, maple, some balsam, small pine stands, Cedar in lowland areas.	
Fire Occurrence:	Low frequency – average 2 wildfire calls, w/3 mutual aid wildland calls/year.	
Homes:	Homes, approx. 975 year round and seasonal. Population approx. 475.	
Businesses:	Car sales lot and towing business, 2 gas stations, dental clinic, flea market, RV sales lot, post office and town hall .	
Jurisdiction:	Cotton Volunteer Fire Department; Mutual Aid w/Lakehead Fire Assn. Departments, MN DNR.	
Infrastructure risk:	2 telephone substations, school - K-12. CN, RR tracks, power lines, #53, major hwy, 2 multi-bay fire stations, community center, post office, county building, DNR station, 2 churches.	
Community values:	Multi-bay fire station, 2 churches, DNR Station, post office, school	
Local Preparedness Capability:	Fire dept resources include: 1250GPM/wgal1000gal w/ foam 750GPM, 1000gal Tanker, 2500 gal w/GPM 100 2000, tanker. W/ GPM 100 grass fire rig, 200 gal w/pump Rescue 1 st responder vehicle 1 dry hydrant	
Firewise Information	No Firewise program. Some fire prevention with all grades in the school.	
Mutual Aid	Current: Lakehead Mutual Aid Association, MN DNR,	
Fire Department Needs	Need: Dry hydrant Portable radios and pagers needed (12portables, 15 pagers) Rescue rig (amb. type vehicle).	
Other		

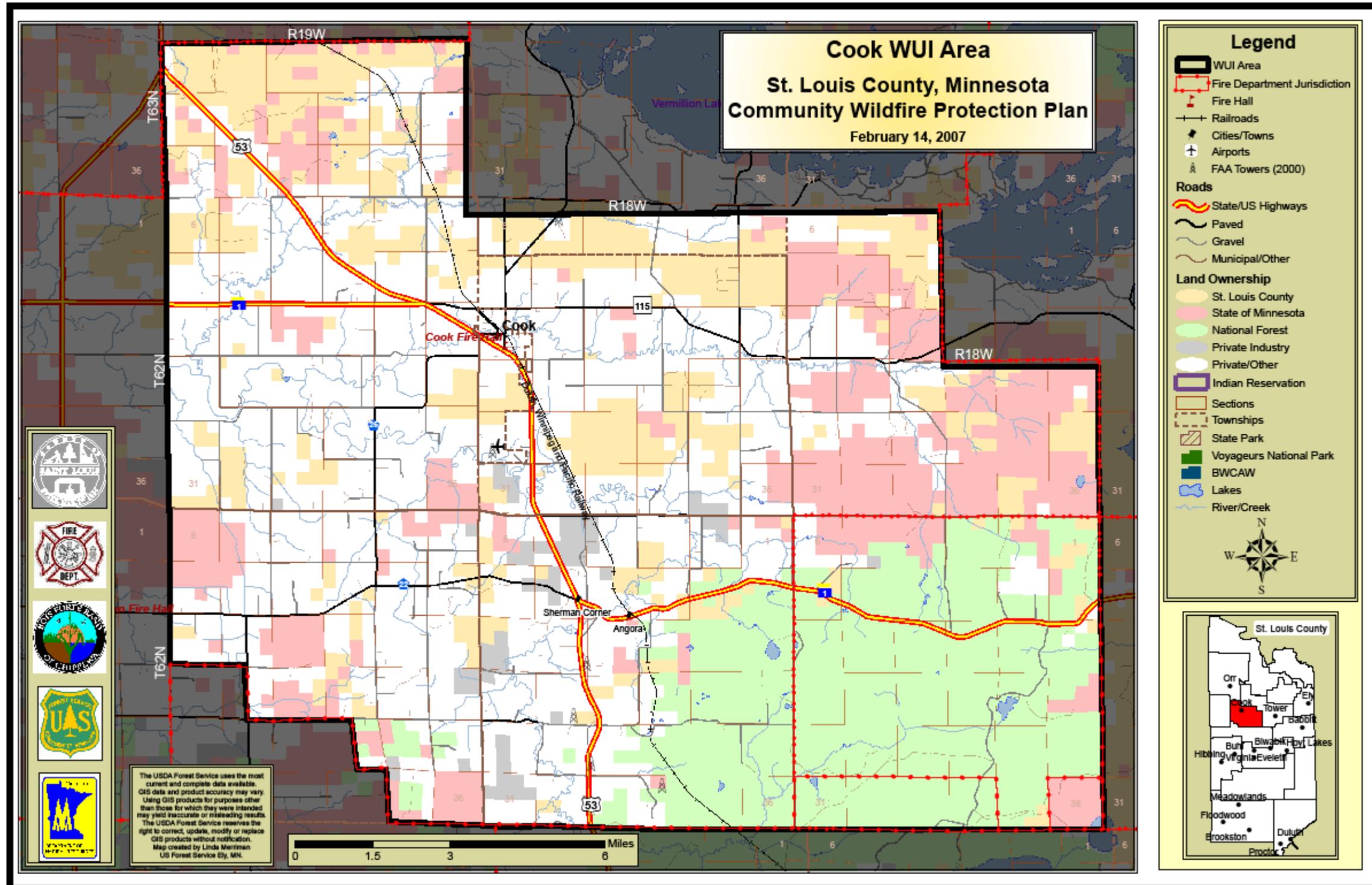
Name: Ellsburg Fire Department		WUI Name: Central Lakes Area
Access:	The main road in the East/West double Township is Hwy 53. Other roads are, 52, 59, Dinham Rd, W Melrude Rd, Cemetery Rd, Lee Rd, Melrude Rd. Stone Rd., Mink Rd, Waterhen Rd, Washusk Rd, Pearson Rd.	
Topography:	Rolling landscape with some high ground, scattered creeks, Lakes; East and West Stone, Young, Dinham, Central, Dollar, Seasted, Paleface, Berg, Morcom, Bass, Wilson, Cameron, Schubert, Round, w/Paleface River and Whiteface Rivers.	
Fuel Hazards:	Mostly birch, aspen, maple, some balsam, small pine stands on West Bass, Lake Cameron, Wilson & Bass Lake areas, lowland brush, grasses on the West side of the double Township.	
Fire Occurrence:	Low frequency – 2 wildfire calls in Township, w/2 mutual aid wildland calls per year.	
Homes:	Home, approx. 350 yr round and seasonal. Population approx. 750	
Businesses:	Body shop, 2 taverns.	
Jurisdiction:	Ellsburg Volunteer Fire Department; Mutual Aid w/Lakehead Fire Assn. Departments and East Range Coalition, Mn DNR.	
Infrastructure risk:	CN, RR tracks, power lines, #53 major hwy, 2 multi-bay fire station and town hall, 3-public boat landings-Dinham, Morcum, Wilson. State snowmobile trail.	
Community values:	State boat-launch on river, designated canoe route, State snowmobile trail and 2 other trails. New multi-bay fire station/community center.	
Local Preparedness Capability:	Fire dept resources include: 1250GPM/1000gal pumper 1000 GPM/700gal pumper 2000 gal tanker/400GPM 1200 gal tanker w/350GPM 1000gal tanker/50GPM 2 grass rigs – 1 ton -350GPM/250gal 1 ton –400GPM/200gal	
Firewise Information	Give out Firewise information at July 4 th celebrations. 208 Level Two Assessments Completed. These were completed. We also did address signs.	
Mutual Aid	Current: Lakehead Mutual Aid Association, MN DNR. East Range Coal	
Fire Department Needs	Need: new members 2 nd pumper dry hydrant underground storage tank pump install finances and equipment to complete a tanker update tanker and grass fire equipment plumbing for overhead water filling	
Other	ellsvfd@arrowheadtel.net	

Name: Kelsey Fire Department		WUI Name: Central Lakes Area
Access:	The main roads; #7, 29,52, 208, 215, 745, 755, 527, 980, 986, 157. Dead ends have school bus turn-arounds.	
Topography:	Flat landscape, peat bog on west side w/ ditching to drain, pasture and open fields, Whiteface River.	
Fuel Hazards:	Mostly birch, aspen, maple, some balsam, small pine wind breaks, lowland brush, grasses.	
Fire Occurrence:	Low frequency -2-3 wildfire, w/1-2 mutual aid wildland calls per year.	
Homes:	100 homes, population, 250 approx.	
Businesses:	5 farms, 3 home businesses.	
Jurisdiction:	Kelsey Volunteer Fire Department, Township 54, Range 18	
Infrastructure risk:	CN and BN RR tracks, Enbridge oil pipeline, power line,	
Community values:	Community center/senior center, multi-bay fire station, canoe route on Whiteface w/access at VFW Park, Boy Scout Camp,	
Local Preparedness Capability:	Fire dept resources include: 1000GPM/750gal; tanker 3000, w/o pump; grass unit /gamma goat; 500GPM trailer mounted pump; 2 dry hyds.; 2 designated EMS/LZs	
Firewise Information	Firewise Program grant for fire signs and L2 assessments done 3-4 years ago.	
Mutual Aid	Current: MN DNR, signed agreement w/ Toivola, bordering townships is verbal mutual aid. Not part of Lakehead Assn.	
Fire Department Needs	Portable radios, wildfire PPE, a GPS hand held unit.	
Other		

Name: Makinen Fire Department		WUI Name: Central Lakes Area
Access:	Primary arteries are Hwy #16, #93 and #108, with a network of gravel secondary roads (County roads). Seasonal forestry logging roads, Snowmobile trails ATV trails, Gated roads, Numerous lakes and streams pose access challenges. Public water accesses. Residential and seasonal homes with narrow access posing challenges for emergency service vehicles.	
Topography:	Forested landscape that is fairly level to gently rolling. There is steep terrain in sections 4 and 5 south side of Mud Hen Creek. Numerous lakes and streams (Water Hen Creek, Mud Hen Creek). Very remote areas with difficult access.	
Fuel Hazards:	Grasslands, Upland conifers, balsam / spruce, very little pine; Bog peatlands, Lowland conifers; Logging debris / slash, Aspen stands with balsam; Areas of blowdown timber, small pockets; Homes and cabins scattered throughout the area – a high WUI	
Fire Occurrence:	Average of 2 or 3 wildland fires each year.	
Homes:	Approximately 400 winter residences within this protection area. Seasonal residences with cabins. The Makinen area has approximately 300 seasonal residents. Lake communities, rural farmsteads (dairy, beef), hunting camps, seasonal lake homes.	
Businesses:	Makinen Store	
Jurisdiction:	Makinen Township; Contract agreements with East Range Coalition Mutual Aid agreements with DNR, USFS	
Infrastructure risk:	Above ground bulk storage at the Makinen Market. Local distribution lines, Transportation system. Recreational trails, Canister site in section 15.	
Community values:	Fire Hall, Community Center	
Local Preparedness Capability:	1 portable pump, Extrication air bags; 1985 Dodge one ton 4x4 with 100 gallon water tank and pump; Off road Track vehicle (Maktrac) with 500 gallon water pump; 1982 International 5170 with PTO and 1800 gal. Tank and pump; 2006 Int. pumper with 1000 tank and a 1250 gpm pump with foam capability; 1986 1 ton 4x4 brush rig with 215 gallon water tank with pump and foam; 1988 Int. 51900 water tender with a 5000 gallon tank 1992 GMC tractor; 1985 Vulcan 20 ton flat bed	
Firewise Information	There are no wildland fire outreach programs in place at this time.	
Mutual Aid	Mutual aid agreements are in place and current	
Fire Department Needs	12 fire shelters, practice shelters; 12 incident response pocket guides 3 headsets for Offroad #1; make the Maktrac foam capable; slipon unit for brush truck; hand tools (4 pulaskis, 4 combi tools); Floto pump; 1" hose; 24' lowboy trailer for Maktrac; 2 mobile radios and 6 portable radios need upgrades; NIMS training	
Other	1 Full Township – Response time 10 to 35 minutes * South and center of the Township have very poor access, mostly old winter roads; Air access or tracked vehicle only. * Section 14 Lake Forest Management Road (also called Leisure Lake Road) in Section 23 and the Peninsula Road in section 14 are narrow dead end roads	

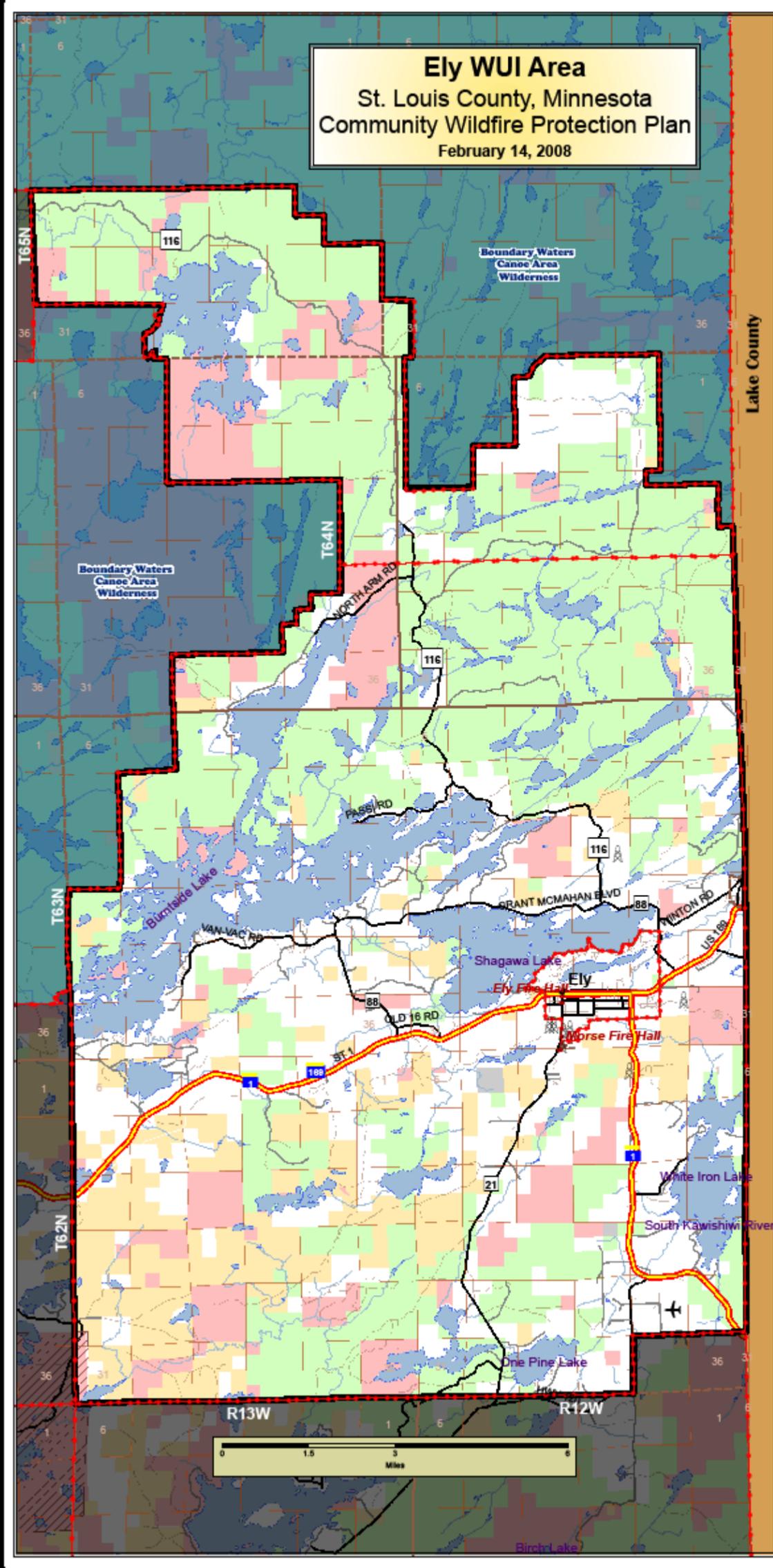
Name: McDavitt Fire Department		WUI Name: Central Lakes Area	
Access:	Main blacktopped Highways in the township are Hwy #25 and Hwy #7 (North and South). Hwy #27 and Norway Ridge Rd. (East and West). There is a network of county gravel roads and seasonal logging roads.		
Topography:	Mostly level topography with mine dumps East and South of United Taconite. Stone Lake, Twin Lakes, and several small lakes, St Louis River and a couple of small streams. Rolling terrain near streams and the St. Louis River.		
Fuel Hazards:	Many acres of swamps, peat bogs, and large conifer stands. Many homes have been built in heavily wooded areas. Large trees surround many of the homes. Large areas of lowland grass, brush. Aspen stands mixed with balsam fir, balsam fir understory.		
Fire Occurrence:	Frequent grass fires due to railroad right-of-ways. Careless homeowners contribute to the overall fire problem. Average of 5 - 10 wildland fires yearly.		
Homes:	There are between 260 and 300 homes scattered within 80 square miles. Approximately 90% of the homes are permanent residences. Population year around is about 680 residences. There have been new homes built within the last seven or eight years.		
Businesses:	<ul style="list-style-type: none"> • Forbes Corner Grocery Store - closed at this time. • United Taconite - chemicals, rubber belts and other materials. • Byrns Green House • University of Minnesota research (moss growing) • Zim Sod. (Co.#7) 		
Jurisdiction:	80 square miles of McDavitt Township, T 56 R 18 Portion of adjacent townships, west and south		
Infrastructure risk:	Two railroads, major natural gas lines, municipal recreational area, power lines, ditches full of water all summer long, LP gas tanks, dry hydrants (2), loggers with associated equipment during the winter months.		
Community values:	Business, new homes, recreational sites. Tax base for the jurisdiction - unknown.		
Local Preparedness Capability:	1969 Ford F600 pumper with an 800 gallon tank and 350 gpm pump. 1981 pumper - Ford F900 with a 1000 gallon tank and class A foam capability, 750 gpm pump. 1988 F800 tanker with a 1500 gallon tank and 100 gpm pump. 1979 brush rig with a 175 gallon tank and 60 gpm pump. 2005 Pierce Ds Contender Pumper with 1000 gallon tank and 1250 gpm pump and a Hale Logix foam system. Two drop tanks (1500 gallon and a 1000 gallon). Rescue rig, a boat and motor, water rescue equipment and rescue gear (cold water).		
Firewise Information	McDavitt Township has completed the Firewise assessment. Level 2 has been completed.		
Mutual Aid	Mutual aid agreements with six other Fire Departments. Mutual aid with ten other departments through the East Range Coalition - these are in place and current.		
Fire Department Needs	H2O source - Zim Road (Private) Firewise map - 2 nd level. Need approximately six new firefighters..		
Other	There has been several new places built or mobile homes have been moved in.		

Name: Toivola Fire Department		WUI Name: Central Lakes Area
Access:	<p>Main artery is County Highway #52 (Arkola Rd.). The paved county roads are #27, and Elmer Rd. Network of secondary gravel township roads. Seasonal forestry logging roads. Gated roads Railroad grades that are now recreational trails, Alborn Grade, Bunker Grade. (non-designated) Ditch Banks, St. Louis River, and the Swan River pose access challenges. Public water access on St. Louis River – 8-54-19. Residential and Seasonal homes with narrow access posing challenges for emergency service vehicles.</p>	
Topography:	<p>Forested landscape that is fairly level to gently rolling. Steep terrain near St. Louis River. Very remote areas with difficult access. Large swamp areas with difficult access.</p>	
Fuel Hazards:	<p>Grasslands; Upland conifers with scattered pine plantations; Bog-Peatlands Lowland conifers; Logging debris/slash; Aspen stands with Balsam fir understory; Lowland Hardwoods along the St. Louis River; Homes and cabins scattered throughout the area.</p>	
Fire Occurrence:	<p>Average five wildland fires each year.</p>	
Homes:	<p>Approximately 400 residents within this protection area. There are clusters of homes within the communities. Rural farmlands and hunting camps. This area has moderate property values.</p>	
Businesses:	<p>Primary businesses are logging and agriculture. Erickson Farm in 14-54-20. Lanti Farm in 12-54-20 Peat Plant Construction company in 20-54-19</p>	
Jurisdiction:	<p>Automatic Mutual Aid with Elmer FD and Meadowland FD. Contract agreements with townships and unorganized townships. Protection areas: 54-20, 55-20, 54-19 part of 55-19 except sections 1-4 and sections 9-16, Part of 56-19 including sections 19, 20, 29, 30, 31, and 32</p>	
Infrastructure risk:	<p>Electrical distribution lines with several large lines (see map). State Campgrounds on the River</p>	
Community values:	<p>Area churches, fire Hall, Community Center, Public Water Accesses, and large public land base</p>	
Local Preparedness Capability:	<p>2005 Pierce Type 1 Engine with a 1000 gallon tank and a pump capacity of 1250 gpm; This unit has foam capability- Located at Lavell Hall. 1981 Ford Type 2 Engine with a 1000 gallon tank and a pump capacity of 1000 gpm. This unit is located at the Toivola Hall. 1982 Intn'l Type 3 Tender with a 1500 gallon tank. (Toivola Hall) 1973 Ford Type 2 Tender with a 3000 gallon tank. (Lavell Hall) 1986 Type 6 Chev. 1 Ton Brush Truck with a 200 gallon tank. (Lavell Hall) ~ 1970 J-5 ATV Bombadier with trailer and has a 120 gallon tank.</p>	
Firewise Information	<p>Fire Safety Week; Open House; Township Outreach</p>	
Mutual Aid	<p>Mutual aid agreements are in place and current with McDavitt FD, Cotton FD, Cherry FD, Kelsey FD, and Silica FD.</p>	
Fire Department Needs	<p>Recruitment and retention; PPE for wildland fire fighting; Dry hydrants / water storage; Floto pump; First Response Vehicle; Contract service agreements for maintenance and repairs; Training for staff</p>	
Other	<p>10M water storage tank at the Lavell Hall and 5M gallon storage tank at the Toivola Hall. Intermittent Cell Phone coverage Intermittent 911 coverage in certain areas Dual Page – North and South 911?</p>	



Name: Cook Fire Department		WUI Area: Cook Area
Access:	Major roads include State Hwy 53, State Hwy 1, State Hwy 73, County Road 22, County Road 24, County Road 115, and County Road 25. Secondary roads include several black top surfaces; however Cook VFD protection relies upon a vast infrastructure of narrow gravel roads with seasonal limitations. Snowmobile trails include Arrowhead, Voyageur & Wolf Track trails. Several public access roads serve boaters on Lake Vermilion. Cook VFD has boat access fire protection areas on Lake Vermilion and Elbow Lake. Private drives have limited access & egress, which can be gated. The CN Railroad corridor bisects some roadless areas.	
Topography:	Topography is generally a mix of lowland and upland. Areas around Lake Vermilion are characteristically rocky & often steep terrain. Lake Vermilion, Little Fork River, Rice River, Vermilion River, Elbow River and Sturgeon River are major waterways in the Cook VFD protection area.	
Fuel Hazards:	Fuels include lowland spruce, upland pine plantations, limited tamarack & cedar, extensive aspen and lowland brush. Lowland grasses are found throughout the area. Dead and dying fir, of all age classes, the result of spruce budworm impacts and drought, poses an especially troublesome fire hazard in Beatty townships around western Lake Vermilion. Blowdown from the 1999 Storm contributes to heavy fuel loading North of Lake Vermilion.	
Fire Occurrence:	Cook VFD responds to a moderate number of wildland fire pages from Midway 911, in mutual aid support of Tower DNR and USFS LaCroix Ranger District.	
Homes:	The City of Cook includes 250 residence structures. Accounting for year round and seasonal residences, excluding recreational resorts and resort cabins in the outlying areas of Cook VFD fire protection, there is an estimated 1000 homes.	
Businesses:	Ainsworth LLC, Hill Wood Products, Homestead Mills, three gas stations, Lakes Gas propane pumping station, Edwards Oil Company bulk fuel farm, two hardware stores, Zups Foods, City Bottle Shop, twelve restaurants, two golf courses, Gustafson Ford, Waschki Family Chevrolet, Comet Movie Theatre, Franks Pharmacy, five financial institutions, Spaces Off Main Furniture and Appliances, Disability Specialists, River Street Auto, Northcountry Floral, two insurance agencies, and five hair stylists, day care centers, Russ Hyppa CPA, Cook Area License Bureau, Cook Chiropractic.	
Jurisdiction:	The Cook VFD jurisdiction ranges over ten townships, and is composed of Beatty North, the Southern half of Field North, Beatty, Unorganized Greenwood Northwest, Owens, Field South, Linden Grove, Angora, Alango, & Sturgeon.	
Infrastructure risk:	Lake Country Power and several sub-stations, Quest Communications, Cellular One Cell Towers, MNDOT Repeater Towers, Cook Municipal Water System and Sewage Treatment Facility, gas & oil facilities, CN Rail, Cook & Linden Grove County Garage, Cook MNDOT Garage, St. Louis County Rescue Squad Facility, Four Township Halls, Scenic Rivers Health System and Cook Area Hospital, Cook Nursing Home, Cook School – ISD 2142, two St. Louis County Transfer Stations, Cook Airport (KCQM), several county wood plank bridges, several State Forest camp grounds and recreational trails.	
Community values:	Area churches, parks and recreation facilities, Cook Library, Cook Airport (KCQM), Cook VFD Fire Hall & Ambulance Service, township halls, golf courses, US Post Office, local businesses & industries, Senior Citizen Community Center, Cook VFW, day care centers.	
Local Preparedness Capability:	2000 gal. Type 3 Tender (X2); 1250gpm Engine (X2); 100 ft Aerial Truck; Type 6 Brush Truck; 3000gpm pumper; Type 3 ambulance (X2); 6 Wheel Drive ATV w/ Rescue Sled	
Firewise Information	Need Firewise grant to upgrade 911 Signage.	
Mutual Aid	Member of the Algoman Fire Association. Cook VFD has mutual aid agreements with Greenwood VFD, Pike Sandy Britt VFD, Evergreen VFD, Bearville VFD, Orr VFD and Buyck VFD.	
Fire Dept Needs		
Other	Cook VFD has a large protection area that includes ten townships and several sizeable lakes including West Lake Vermilion. Response time can be lengthy to outlying areas. Cook VFD and Ambulance Service are in need of funding for a boat to serve lake access only properties on Lake Vermilion and Elbow Lake. The department is in need of Personnel Protective Equipment for wildland firefighting. Additional handheld radios would improve the safety of personnel on wildland fire response.	

Ely WUI Area
St. Louis County, Minnesota
Community Wildfire Protection Plan
 February 14, 2008



Legend

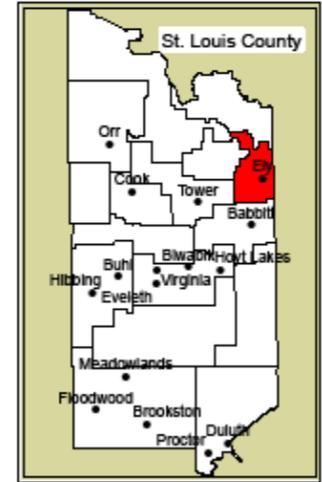
- WUI Area
- Fire Department Jurisdiction
- Fire Hall
- Railroads
- Cities/Towns
- Airports
- FAA Towers (2000)

Roads

- State/US Highways
- Paved
- Gravel
- Municipal/Other

Land Ownership

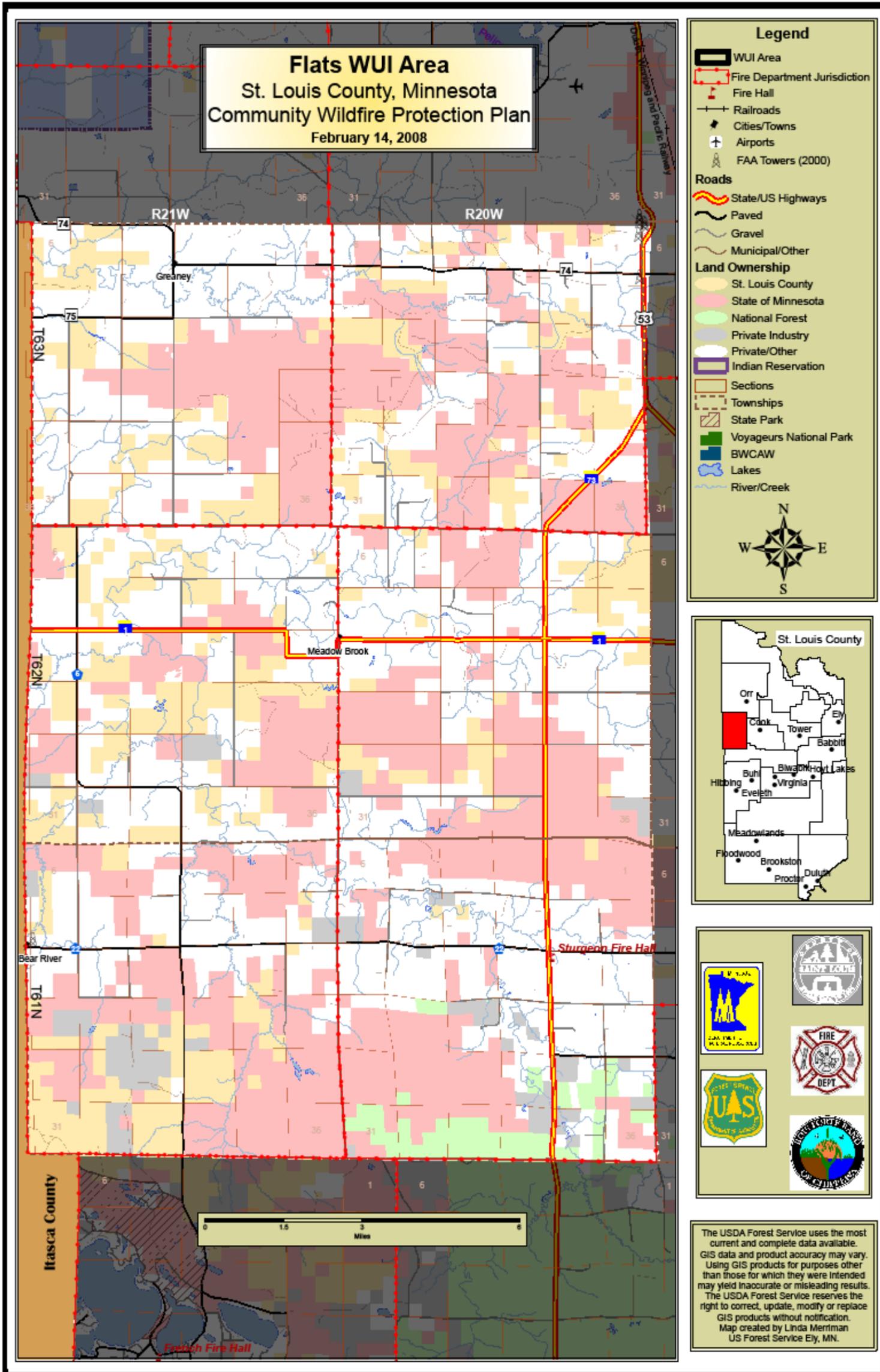
- St. Louis County
- State of Minnesota
- National Forest
- Private Industry
- Private/Other
- Indian Reservation
- Sections
- Townships
- State Park
- Voyageurs National Park
- BWCAW
- Lakes
- River/Creek



The USDA Forest Service uses the most current and complete data available. GIS data and product accuracy may vary. Using GIS products for purposes other than those for which they were intended may yield inaccurate or misleading results. The USDA Forest Service reserves the right to correct, update, modify or replace GIS products without notification. Map created by Linda Merriman US Forest Service Ely, MN. December 2007

Name: Ely Fire Department		WUI Name: Ely Area
Access:	Highway 169, Highway 1 (from County Road 655), Highway 21 Fernberg Corridor (to Lake County Line), Echo Trail, Cloquet Line	
Topography:	Gently rolling topography with many lakes, streams and wetlands.	
Fuel Hazards:	Blowdown in the Crab Lake area of the BWCAW. Heavy balsam fir understory, pine plantations throughout in the Crab Lake area and Hwy 88 areas. Scattered areas of jack pine stands, some open grassy fields and marshes. The primary cover type is conifer, with mixed stands of hardwoods scattered throughout, and an understory of balsam fir/spruce (significant amount of dead). The area is aspen, birch and areas of continuous conifer cover with a number of even-aged pine plantations. There are pine plantations throughout the jurisdiction. Logging debris/slash	
Fire Occurrence:	High fire occurrence, most in wilderness, high potential for large fires. Fire occurrence has decreased outside wilderness w/ spring restrictions.	
Homes:	Hundreds of permanent homes throughout jurisdiction. Hundreds of seasonal cabins (many are high \$ and high density; Burntside, White Iron) located on or adjacent to lakes. City of Winton, White Iron Villas, Shagawa, Big Lake area (2 resorts).	
Businesses:	Normal businesses associated with a busy community- grocery stores, hardware stores, etc... Many resorts scattered throughout. High level of tourism associated with many campgrounds, fishing, boating, picnic areas and Wilderness access points. There are also scattered businesses, such as log home builders, manufacturing, etc...) outfitters, loggers with associated equipment, small engine repair shops, International Wolf Center, Bear Center.	
Jurisdiction:	Ely Fire Department, Morse Fire Department, USFS	
Infrastructure risk:	Power/phone lines, airport, bulk LP gas and diesel storage company on Hwy 169; Highway One and Highway 169 road corridors, Communication towers in Ely, radio station, hospital and clinic in Ely, dry hydrants on hwy 21, and on north side of Shagawa (Hwy 88), landfill.	
Community values:	High use recreation area throughout protection area, including numerous campgrounds and public water accesses, tourism and scenic values to local residents and visitors.	
Local Preparedness Capability:	City of Ely FD: Ely FD will ensure protection for city proper over going to outer areas of jurisdiction. Engines; 47 American LaFrance 125 gal@750gpm. 92 American LaFrance 550 gal@1250gpm. 79 American LaFrance 750 @1500gpm. Brush rigs: 95 Hummer 250 gal @200gpm, 85 Ford 1000 gal @200gpm, 76 Ford 2500 gal @500gpm, 82 International 5000 gal @300gpm. Pumps: 2- 300gpm Hale Portable pumps, 2-1000+gpm trailered portable pumps, 1 fiberglass rescue boat, 1 Zodiac, 1 thermal imager, 1 Class A foam unit. Type 4 91 Chevy 850 gal @250gpm, t6 92 Ford 250 gal@150gpm,	
Firewise Information	Firewise Level One Assessments were completed in March 2008.	
Mutual Aid		
Fire Department Needs	Repair dry hydrants or install new ones. Training dollars, radios, foam unit for T6, pump for 5000gal tanker,(current one is not reliable), hose, 1.5, 1", 2.5", hardware, high pressure high volume portable pump, chainsaws and safety equipment,	
Other	New development throughout jurisdiction. Corporate lands (Potlatch, U.S. Steel) being converted to private.	

Name: Morse/Fall Lake Fire Department		WUI Name: Ely Area
Access:	Highway 169, Highway 1 (from County Road 655), Highway 21 Fernberg Corridor, Echo Trail, Cloquet Line	
Topography:	Gently rolling topography with many lakes, streams and wetlands.	
Fuel Hazards:	Blowdown in the Crab Lake area of the BWCAW. Heavy balsam fir understory, pine plantations throughout in the Crab Lake area and Hwy 88 areas.	
Fire Occurrence:	High fire occurrence, most in wilderness, high potential for large fires. Fire occurrence has decreased outside wilderness w/ spring restrictions.	
Homes:	Hundreds of permanent homes throughout jurisdiction. Hundreds of seasonal cabins (many are high \$ and high density; Burntside, White Iron) located on or adjacent to lakes. City of Winton, White Iron Villas, Shagawa, Big Lake area (2 resorts).	
Businesses:	Normal businesses associated with a busy community- grocery stores, hardware stores, etc... Many resorts scattered throughout. High level of tourism associated with many campgrounds, fishing, boating, picnic areas and Wilderness access points. There are also scattered businesses, such as log home builders, manufacturing, etc...) outfitters, loggers with associated equipment, small engine repair shops, International Wolf Center, Bear Center.	
Jurisdiction:	Jurisdiction is shared by the Morse/Fall Lake Fire Department, the Ely Fire Department and the USFS.	
Infrastructure risk:	Power/phone lines, airport, bulk LP gas and diesel storage company on Hwy 169; Highway One and Highway 169 road corridors, Communication towers in Ely, radio station, hospital and clinic in Ely, dry hydrants on hwy 21, and on north side of Shagawa (Hwy 88), Landfill.	
Community values:	High use recreation area throughout protection area, including numerous campgrounds and public water accesses, tourism and scenic values to local residents and visitors.	
Local Preparedness Capability:	2004 Type 1 engine International 1000 gal @1500gpm, GMC water tender 1200 gal @400gpm, 1978 water tender 2300 gal. tank, 2 Type 6 brush engines w/ 200 gal	
Firewise Information	Firewise Level One Assessments completed in March 2008.	
Mutual Aid		
Fire Department Needs	Repair dry hydrants or install new ones, hose, 1.5, 1", 2.5", hardware, high pressure high volume portable pump, chainsaws and safety equipment, wildland PPE, recruitment and retainment of volunteers	
Other		



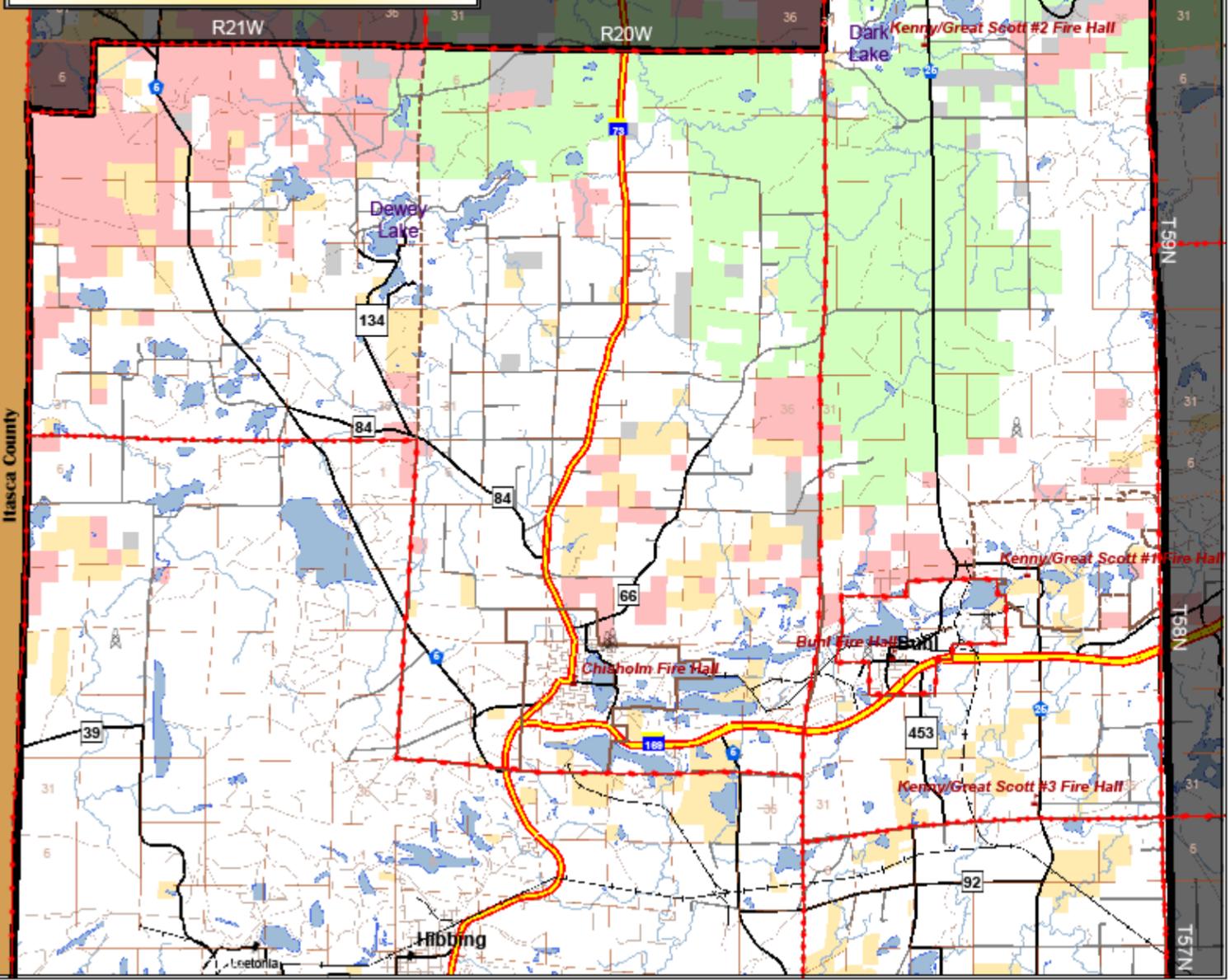
Name: Bearville Fire Department		WUI Name: Flats Area
Access:	Highway 1, Highway 65, Highway 22 providing all weather access. County gravel roads in good condition excluding spring break up. Snake Trail Forest Road, Buttonbox Road And Holstrum Forest Road are Class D	
Topography:	Generally level with areas of rolling terrain (Snake Trail). Portions of the Bearville protection area have steep terrain. This landscape is predominately forested with small farmsteads with lakes and streams scattered throughout.	
Fuel Hazards:	Upland conifers (jack pine, balsam, white pine and Norway) are found throughout this area which has potential for extreme fire behavior. Areas of upland and lowland grasses creating seasonal hazards. Thinning, brushing, prescribed burns, slash reduction for all ownerships (state, county & private) for improved access, fuel reduction. Lumber companies waste products (sawdust, chips), -Logging slash/debris, Forest (conifer and hardwood) with crown fire potential in contiguous conifer cover, with tall swamp grass within rural areas, peatlands.	
Fire Occurrence:	A low wildland fire occurrence with high potential, this area usually has 3-10 fires per year.	
Homes:	Dispersed single family dwellings in a rural setting, with old farmsteads many of which contain several structures/outbuildings. Seasonal recreational properties are intermixed throughout the protection area (hunting cabins, lake cabins).	
Businesses:	Bearville lacks traditional business. A bar and restaurant service the area. A sawmill and planer mill complex in Carpenter township. One sawmill is located in Togo.	
Jurisdiction:	Bearville Fire Dept. services two townships in St. Louis County and Townships 62-23W, 62-22W, 61-22W and the following sections within 60-22W.: Sections: 2-11, Sections 14-23 and Sections 26-35 within Itasca County. -Mutual Aid with Algoman Fire Coalition in St. Louis County, Kooch & Itasca -Mutual Aid with Itasca County Chief Association (Nashwauk, Balsam, Bigfork). -Mutual Aid with DNR (Side Lake/Cook).	
Infrastructure risk:	-Major powerline 500 KV from Winnipeg to Elk River -Local power distribution lines -Telephone company substation in Bearville protection area	
Community values:	Two townhalls, Fire Station, Church, Permanent and seasonal residents (hunters and recreational users).	
Local Preparedness Capability:	Bearville Fire Hall situated on County Road 22, and is centrally located within the protection area. Equipment:-750 gpm pumper with 1000 gallon tank; 2000 gallon tanker/truck; 3500 gallon tanker/truck; Brush rig with four wheel drive & 200 gallon tank; Trailer mounted 500 gpm fire pump.	
Firewise Information	Township annually sponsors a fire extinguisher inspection day for citizens. This Rural Fire Department would be interested in helping with outreach efforts educating citizens, seasonal residents on potential fire problems, vegetation treatments, access problems etc.	
Mutual Aid	Mutual Aid with: Algoman Coalition, Itasca County Fire Chief Association, DNR	
Fire Department Needs	A second pumper truck would increase service potential. Dry hydrants would be valuable and should be explored. Extrication and rescue equipment for this remote area. Recruitment and retention of personnel.	
Other	Bearville RFD is a 210 square mile protection area. Bearville also provides assistance to DNR-Forestry outside of the protection area. This is an isolated area located 27 miles from Cook, 30 miles from Nashwauk and over 30 miles from Bigfork. Because of this remoteness, this RFD is prepared to act independently until mutual aid arrives.	

Name: Cook Fire Department		WUI Area: Flats Area
Access:	Major roads include State Hwy 53, State Hwy 1, State Hwy 73, County Road 22, County Road 24, County Road 115, and County Road 25. Secondary roads include several black top surfaces; however Cook VFD protection relies upon a vast infrastructure of narrow gravel roads with seasonal limitations. Notable snowmobile trails include Arrowhead, Voyageur & Wolf Track trails. Several public access roads serve boaters on Lake Vermilion. Cook VFD has boat access fire protection areas on Lake Vermilion, and Elbow Lake. Private drives have limited access & egress, which can be gated. The CN Railroad corridor bisects some roadless areas.	
Topography:	Topography is generally a mix of lowland and upland. Areas around Lake Vermilion are characteristically rocky & often steep terrain. Lake Vermilion, Little Fork River, Rice River, Vermilion River, Elbow River and Sturgeon River are major waterways in the Cook VFD protection area.	
Fuel Hazards:	Fuels include lowland spruce, upland pine plantations, limited tamarack & cedar, extensive aspen and lowland brush. Lowland grasses are found throughout the area. Dead and dying fir, of all age classes, the result of spruce budworm impacts and drought, poses an especially troublesome fire hazard in Beatty townships around western Lake Vermilion. Blowdown from the 1999 Storm contributes to heavy fuel loading North of Lake Vermilion.	
Fire Occurrence:	Cook VFD responds to a moderate number of wildland fire pages from Midway 911, in mutual aid support of Tower DNR and USFS LaCroix Ranger District.	
Homes:	The City of Cook includes 250 residence structures. Including year round and seasonal residences, excluding recreational resorts and resort cabins in the outlying areas of Cook VFD fire protection, there is an estimated 1000 homes.	
Businesses:	Ainsworth LLC, Hill Wood Products, Homestead Mills, three gas stations, Lakes Gas propane pumping station, Edwards Oil Company bulk fuel farm, two hardware stores, Zups Foods, City Bottle Shop, twelve restaurants, two golf courses, Gustafson Ford, Waschki Family Chevrolet, Comet Movie Theatre, Franks Pharmacy, five financial institutions, Spaces Off Main Furniture and Appliances, Disability Specialists, River Street Auto, Northcountry Floral, two insurance agencies, and five hair stylists, day care centers, Russ Hyppa CPA, Cook Area License Bureau, Cook Chiropractic.	
Jurisdiction:	The Cook VFD jurisdiction ranges over ten townships, and is composed of Beatty North, the southern half of Field North, Beatty, Unorganized Greenwood Northwest, Owens, Field South, Linden Grove, Angora, Alango, & Sturgeon.	
Infrastructure risk:	Lake Country Power and several sub-stations, Quest Communications, Cellular One Cell Towers, MNDOT Repeater Towers, Cook Municipal Water System and Sewage Treatment Facility, gas & oil facilities as listed under Businesses, CN Rail, Cook & Linden Grove County Garage, Cook MNDOT Garage, St. Louis County Rescue Squad Facility, Four Township Halls, Scenic Rivers Health System and Cook Area Hospital, Cook Nursing Home, Cook School, ISD 2142, two St. Louis County Transfer Stations, Cook Airport (KCQM), several county wood plank bridges, several State Forest camp grounds and trails.	
Community values:	Area churches, parks and recreation facilities, Cook Library, Cook Airport (KCQM), Cook VFD Fire Hall & Ambulance Service, township halls, golf courses, US Post Office, local businesses & industries, Senior Citizen Community Center, Cook VFW, day care centers.	
Local Preparedness Capability:	2000 gal. Type 3 Tender (X2); 1250gpm Engine (X2);100 ft Aerial Truck Type 6 Brush Truck; 3000gpm pumper; Type 3 ambulance (X2) 6 Wheel Drive ATV w/ Rescue Sled	
Firewise Information	Need Firewise grant to upgrade 911 Signage.	
Mutual Aid	Member of the Algoman Fire Association. Cook VFD has mutual aid agreements with Greenwood VFD, Pike Sandy Britt VFD, Evergreen VFD, Bearville VFD, Orr VFD and Buyck VFD.	
Fire Dept Needs		
Other	Cook VFD has a large protection area that includes ten townships and several sizeable lakes including West Lake Vermilion. Response time can be lengthy to outlying areas. Cook VFD and Ambulance Service are in need of funding for a boat to serve lake access only properties on Lake Vermilion and Elbow Lake. The department is in need of Personnel Protective Equipment for wildland firefighting. Additional handheld radios would improve the safety of personnel on wildland fire response. The Cook Community and rural outlying areas are at great risk to wildfire. A large protection area with developed lakes and access limitations frustrates response time. Increased fuel loading due to Spruce Budworm impacted fir and remnant blowdown make Cook VFD Jurisdiction especially prone to extreme fire behavior	

Name: Greaney-Rauch-Silverdale Fire Department		WUI Name: Flats Area
Access:	Main paved access arteries would be Hwy 74, 65 and 75. Higher maintenance secondary gravel in St. Louis County are Cty #528 (Greany Rd), #114 (W. Olson Rd), #535 (Halverson Rd), Sethers Rd, and Ableman rd. All other roads in this protection area are second class road.	
Topography:	Relatively flat except for the lands in the Littlefork River Valley. Soil types are primarily clay or organic (peat). There are scattered rock outcrops primarily in the north and western part of the area.	
Fuel Hazards:	The one major fuel hazard in this protection area is dead balsam from an invasion dating back to 1998. Balsam regeneration is now a large component of this hazard and can be equally volatile. Large grass fields on abandoned or fallow farmsteads are also a hazard in the spring before greenup. Aspen and lowland black spruce make up the majority of the remaining fuel types.	
Fire Occurrence:	An annual average number of wildfires would be four fires primarily in the spring before greenup. Fires are generally man-caused but a few powerline fires occur when the wind conditions are right.	
Homes:	There are 82 year-round homes in the GRS protection area and they are generally spread evenly throughout the protection area. There are no population centers other than Vi's corner. There are approximately 120 seasonal cabins with no identified season of use.	
Businesses:	Two small mom & pop type of convenience stores and one game farm.	
Jurisdiction:	GRS Fire Department, DNR-Orr, DNR-Sidelake and DNR-Tower.	
Infrastructure risk:	Overhead power lines, wooden deck on Hwy 65 bridge, canister site.	
Community values:	Three historical churches, the old Legion building, traditional style barns on the Ollikkila far, Udovich farm, Luckachick farm, Rents farm, Rude farm, Harrigan farm, Persich farm, Zgaynor farm and the Buer Farm. High use hunting based recreational area includes Samuelson Park.	
Local Preparedness Capability:	Volunteer fire department and first responders. Equipment includes 2001 Chev Type 6 engine (brushtruck), 1971 Chev tanker w/ 1200 gallons. One 4000 gallon and one 10,000 gallon underground tanks. Approximately 12 active members in the volunteer fire dept.	
Firewise Information	Need support from local government units at all levels for planning and implementation of a community wide fireplan.	
Mutual Aid	Mutual aid agreements are in place for Bearville, Orr and Cook fire departments. GRS is also a member of ALGOMAN fire coalition.	
Fire Department Needs		
Other	No 911 signage in the Koochiching county portion of the protection area. Response times and fire occurrence are not out of the ordinary but one problem is the low response rate during the week when people are working.	

Name: Orr Fire Department		WUI Name: Flats Area
Access:	Highway #53 is the main north/south paved artery, there are four secondary arteries serving the protection area. These are County 74 to Greaney, the Nett Lake Road, Orr/Buyck road and County #180 (Elephant Lake Road). These roads are all paved with the exception of Cty #180. There are numerous roads accessing all corners of the area, (well maintained county and township roads; private drives that access developments and/or private cabins). Many of these private drives access seasonal cabins and are gated and/or are inaccessible to large fire apparatus due to their narrow winding nature.	
Topography:	Topography is generally rolling in nature. Soil types range from clay soils in the SW portion of the area (south of the Gheen/Nett Lake ridge) to sandy loam/gravel north of the ridge. Rock outcrops are scattered throughout..	
Fuel Hazards:	Cover types are generally aspen/hardwood mix with balsam as an understory. Higher elevations tend to lean more towards a conifer type such as red pine, white pine and jack pine. Spruce budworm has been very active in this area and will continue for a period of time. A heavy balsam cover will return to provide additional ladder fuels and hazards.	
Fire Occurrence:	Overall fire occurrence is low in this area. Most fire starts are human caused (debris or campfires), lightning and trees across power lines from wind events.	
Homes:	Other than the community of Orr, most homes and cabins are located on several of the lakes in the area. Pelican Lake has the highest concentration of homes and cabins including six islands that have cabins, followed by Elephant/Blackduck lakes (Blackduck has a few water access cabins) and then Ash Lake. Rural concentrations of homes are located in the Gheen/willow river area with the rest of the rural area having a good scattering of homes and seasonal hunting cabins.	
Businesses:	Numerous resorts are located on Pelican Lake, one on Elephant and one on Ash Lake. Two propane bulk/distribution businesses along with a supper club are located in Glendale; Nargurski's Oil at Cusson, one sawmill, one log home manufacturer, several logging and trucking oriented businesses; Gheen has a bait shop, wood products mill, small engine dealer and body shop.	
Jurisdiction:	Orr Volunteer Fire Department, DNR-Forestry	
Infrastructure risk:	CN railroad, Main power feed comes in on Cty #74 and then north to Orr along #53. to the Lambert road and Blackduck/elephant lake. Two Propane bulk storage facilities, one diesel storage unit, several communication towers on the Gheen hill, Elephant Lake hill and north of Cusson.	
Community values:	High use recreation area with heavy seasonal use. The surrounding natural landscape is rich with logging history and recreational opportunities. Many remote campsites, public accesses, ski/hiking trails and snowmobiling trails. Buildings with historical values are located throughout the area.	
Local Preparedness Capability:	Local volunteer emergency services have a difficult time recruiting and retaining members. 1984 Chev pumper with 700 gallon tank with 1000 gpm pump, 1989 International water tender w/ 3400 gallon tank and portable pump, 1975 GMC brush truck w/ 300 gallon tank and portable pump, 1995 Ford Rescue Rig, 1979 Waterous portable floating pump. Dry Hydrants are located behind Pelican Bay store, Willow River on the Chisholm Road and Willow River on the Range Line Road.	
Firewise Information	No involvement so far with the Firewise program except for this plan. Assistance will be needed from governmental agencies as the process goes on.	
Mutual Aid	Mutual Aid agreements are in place with Cook, Crane Lake, Buyck, Greaney/Silverdale/Rauch, Nett Lake and Kabetogama.	
Fire Dept Needs		
Other	CN Railroad hauling hazardous materials in relation to the high speed and derailment issues. Pre-planning with St. Louis County Planning should be taking place for new proposed developments. Water access emergency services present year round problems.	

Hibbing WUI Area
Map 1 of 2
 St. Louis County, Minnesota
 Community Wildfire Protection Plan
 February 15, 2008



Legend

- WUI Area
- Fire Department Jurisdiction
- Fire Hall
- Railroads
- Cities/Towns
- Airports
- FAA Towers (2000)

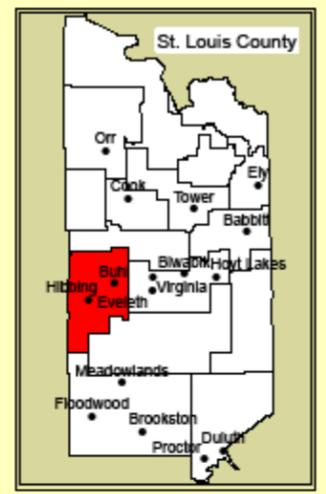
Roads

- State/US Highways
- Paved
- Gravel
- Municipal/Other

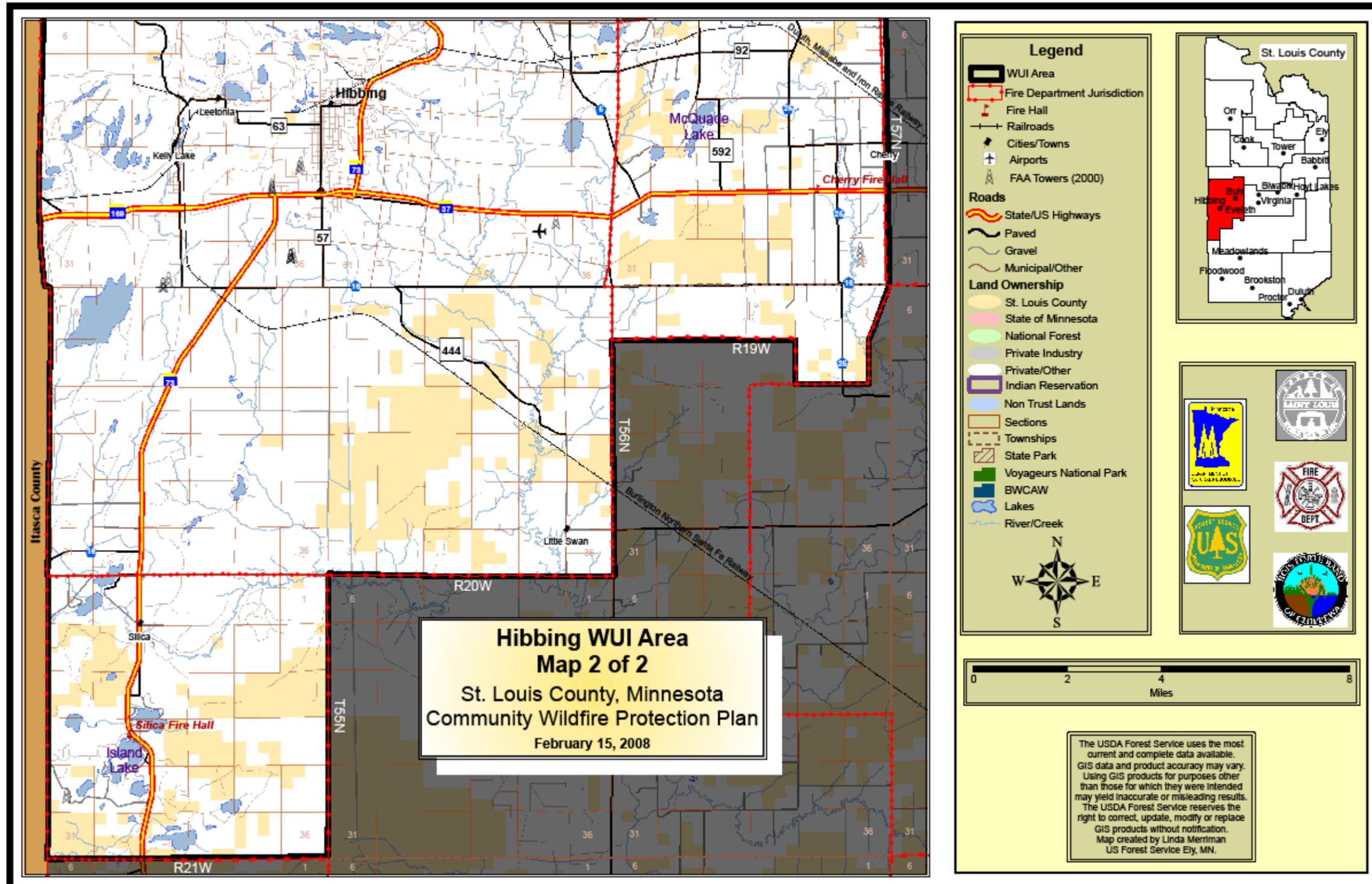
Land Ownership

- St. Louis County
- State of Minnesota
- National Forest
- Private Industry
- Private/Other
- Indian Reservation
- Non Trust Lands
- Sections
- Townships
- State Park
- Voyageurs National Park
- BWCAW
- Lakes
- River/Creek

North arrow and scale bar (0 to 8 miles).



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Name: Buhl Fire Department		Location: Hibbing Area
Access:	Main arteries are Hwy #169, County Road #125, County Road #453 – Morse Rd., Co #64 (Pennsylvania Ave.), and the Mesabi Bike Trail, City Streets, USX haul road north of town, Numerous old, abandoned RxR grades, Numerous ATV trails. Numerous old logging roads off of the USX haul road	
Topography:	The terrain varies from lowland grass areas to steep mine dumps. Most of the rural area is either forested or has grass growing on it.	
Fuel Hazards:	Mixed conifer cover (Balsam, Spruce and Pine) on the mine dumps. Aspen / Birch mixed with Balsam Fir. Lowland and upland grass areas. Logging slash. Industrial Park's diesel fuel and lubricants	
Fire Occurrence:	Two wildland fires per year. The fire department does one or two controlled burns in grass fuels annually.	
Homes:	Approximately 1000 residents within the protection area. Most homes are situated within the city limits but there are a couple of homes outside the city limits in a rural setting that could pose an urban interface problem. The Whiteside Industrial Park is within the Fire Department protection area.	
Businesses:	Northland Tractor (Whiteside location), P&H Mine Pro, Park Paving, Rigging and Wear. Occupational Development Center (ODC), Mesabi Academy 1 st National Bank of Buhl (2 locations), 2 Bar / Restaurants, Durbahn Construction. Buhl Water, Hall's Motor Sports, Frito-lay Distribution Center, Mini Storage. Gas Station / Convenience Store	
Jurisdiction:	City of Buhl and surrounding area. Approximately 4 to 5 square miles of protection area.	
Infrastructure risk:	Natural gas substation; 911 Tower; Minnesota Public Radio Tower; Local electrical distribution lines; Mesabi Bike Trail; Campground / Beach; Wastewater treatment plant	
Community values:	3 Group Homes, 2 churches; Cornerstone Villa Nursing Home, Senior Center Curling Club, Skate Park; City Hall, 2 City Garages; 2 Fire Halls, Cemetery Public water accesses; 2 Industrial Parks	
Local Preparedness Capability:	<ul style="list-style-type: none"> - 1977 Dodge Type 7 Brush Truck with 110 gallon tank and pump capacity of 250 gpm - 1996 Harvester Type 1 Engine / Pumper with a 1000 gallon tank and pump capacity of 1250 gpm - 1976 Ford Type 2 Engine with a 500 gal tank and pump capacity of 750 gpm - 2 Dry Hydrants - Well house North West of town – can access water source - System of city live hydrants - 200,000 gallon underground cistern - 100,000 gallon above ground water tank 	
Firewise Information:	Annual Open House; Joint fire training with Chisholm and Kinney Great Scott Fire Departments at Mesabi Academy.	
Mutual Aid:	Mutual aid agreements with Kinney, Great Scott Agreement with Chisholm FD. Possible agreement with Mt. Iron in near future. Agreement with DNR.	
Fire Department Needs:	PPE for wild land fire fighting Replacement of brush truck Hand held radios – narrow band capable Training for new personnel and staff Recruitment and retention	
Other:	The department is currently staffed with 21 people. Shift work makes it difficult to get everyone together for training. The department has good response time. The City of Buhl also runs Buhl Ambulance Service.	

Name: Cherry Fire Department		WUI Name: Hibbing Area
Access:	Primary arteries are: Hwy 37, 92, 25, 5, 16; Paved Roads include major State and County roads, McSweeney and White Rd. There is a network of secondary gravel roads; Seasonal forestry logging roads; Gated roads, private homes and property; Railroad grades; Numerous lakes and streams pose access challenges; Public water accesses; Residential and Seasonal homes with narrow access pose challenges for emergency service vehicles.	
Topography:	Forested landscape that is fairly level to gently rolling to very rolling in the North ½. Numerous lakes and streams; Very remote areas with difficult access especially in the SW ¼.	
Fuel Hazards:	Grass lands; Upland conifers and pine plantations; Mature Jackpine; Bog-peatlands; Lowland conifers; Logging debris/slash; Aspen with Balsam stands Homes and cabins scattered throughout the areas – a high WUI; Airport (mutual aid with Hibbing); Blasting company (Viking); Railroad; Lavell canister site in section 11.	
Fire Occurrence:	Average of 3 – 5 wildland fires each year	
Homes:	Approximately 2500 residents within this protection area There are clusters of homes within the communities; lake communities, rural farmsteads and hunting camps. This area has high property values. McQuade & Mesabi Park Camp.	
Businesses:	Trucking business (White Road); Cherry Greenhouse; Retail businesses, cottage based businesses, two gas stations, Bars	
Jurisdiction:	57-19 plus the N ½ of Lavell Contract agreements with neighbor townships and unorganized townships Mutual aid agreements with DNR, USFS	
Infrastructure risk:	Large substation in 1-56-19; Small substation located South side of Allavus Rd 115 lines; 330 lines; Local distribution lines; National gas lines	
Community values:	Schools, Business, Recreational facilities, Fire Hall, Community Center, Local Town hall, cellular towers, Public Water Accesses	
Local Preparedness Capability:	Pierce/Contender 2003 Type 1 Pumper with a 1,000 gallon tank and a 2,100 gallon drop tank, and Class A foam; Ford 1991 Type 2 Pumper with 1,000 gallon tank; Ford 1976 Type 2 Pumper with a 1,000 gallon tank and a drop tank; Gamma Goat 1970 M561 6X6 with a 200 gallon tank with foam; Brush Truck 1986 Dodge 1 Ton with a 200 gallon tank ; Brush Truck 1977 Dodge 1 Ton with a 200 gallon tank	
Firewise Information	Fire Prevention and Fire Safety Week at Cherry School Fire safety for children – fire awareness and response Other outreach includes open house, smoke detectors and tot finders Level II assessments	
Mutual Aid	Mutual aid agreements are in the process of becoming formalized – Kinney Great Scott; Mutual aid with Fayal, Hibbing, McDavitt, Toivola, Clinton	
Fire Department Needs	Recruitment and retention; PPE for wildland fire fighting; SCBA; Bunker gear for new firefighters; 2,000 gallon water tender; Contract service agreements for maintenance and repairs Training for staff; Communication upgrades	
Other	This is a very large protection area covering one and one third townships. The RFD has a very good response time.	

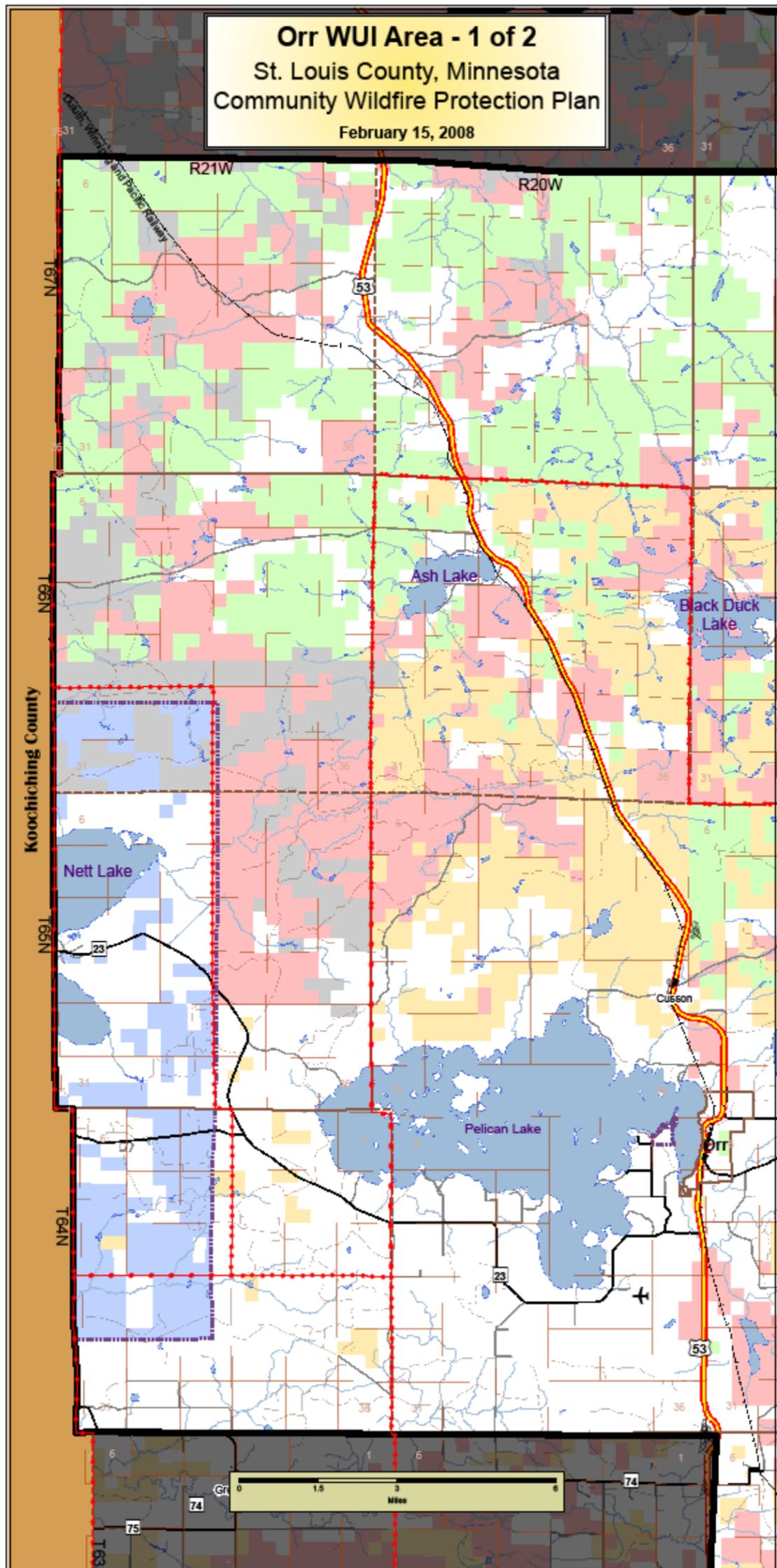
Name: Chisholm Fire Department		WUI Name: Hibbing Area
Access:	Primary arteries: #169, #73, #66 (McNiven Rd.), #84 and #5. Secondary roads are primarily gravel. These secondary roads are soft in the spring. Egress to some private residences is difficult. This is especially true for the West side of Dewey Lake.	
Topography:	Generally level to gently rolling. Areas near the divide, mining areas and lake areas have rolling to steep topography. There are numerous mine pits and off road areas South and East of town in 58-20.	
Fuel Hazards:	Homesites and pine fuel types in the Hwy #84 area. Homesites in the Long Lake / Dewey Lake area. Grassland areas in Balsam Township and around the Chisholm city limits.	
Fire Occurrence:	Numerous fire calls: 18 – 20 wildland fires per year. 138 total calls in 2006. Several multiple fire occurrences.	
Homes:	The West and Northwest part of the city is the most hazardous urban interface in the community. The Southwest portion of 59-20 (Balkan) and the North part of 58-20 is highly developed with many homes and hobby farms.	
Businesses:	Many service businesses in the community including gas stations, restaurants, bars and a motel. Most are within the city limits	
Jurisdiction:	T – 58 R - 20 T – 59 R – 20 (parts) T – 59 R – 21 (most)	
Infrastructure risk:	Large powerlines Southwest of town; other distribution lines Mesabi Trail corridor	
Community values:	Ironworld, City Offices, St. Louis county Fairgrounds, Library, Schools, Bank, Churches, Water / Sewer facilities Businesses, Camp Austin (Long Lake in Section 17-59-20)	
Local Preparedness Capability:	2006 International pumper, with an 1100 gallon tank and a 1500 gpm pump; 1997 International pumper, with an 1000 gallon tank and a 1500 gpm pump; 1984 Mack tender, with a 3000 gallon tank and a portable pump 1967 International tender, with a 1000 gallon tank 2000 Ford Brush rig, with a 200 gallon tank	
Firewise Information	No Firewise projects at the present time.	
Mutual Aid	Hibbing, Buhl and Algoman Coalition	
Fire Department Needs	Static water tanks (3) Training for new firefighters Dry hydrant problems (silt)	
Other	Continue to work with the Algoman Fire Dept. Coalition	

Name: Hibbing Fire Department		WUI Name: Hibbing Area
Access:	Primary arteries Hwy 169, Hwy 73, Hwy 37; Network of city and county paved roads; Network of city and county gravel roads; Logging roads & other woods roads with varying degrees of accessibility; Numerous mining roads & trails – some poor access, gated, bermed; Some residential & seasonal homes with narrow access or other access problems; Old railroad grades with poor access 186 square miles of protection area with many stop lights and signs to maneuver through; Some remote areas with difficult access.	
Topography:	Mostly level ground except for Maple Hill, mine dumps, and pits. Several lakes and large tailings ponds; Southeast part of city consists of a large bog with upland areas; City contains both urban and some relatively remote areas; Heavy clay soils in many areas limits travel in wet conditions. Some old abandoned underground mines between Hibbing & Chisholm are collapsing and creating some hazardous areas.	
Fuel Hazards:	Hazards associated with businesses, salvage yards, junkyards, old sawmills Laurentian Energy Authority wood yard; Upland and lowland tall grass fuels Upland conifers, pine, spruce, balsam fir; Bogs, peatland & lowland conifers Logging slash & cutover areas; Some scattered pockets of dead & blowdown timber; Large wildland urban interface area	
Fire Occurrence:	Average 15 – 25 wildfires annually. 36 fires in 2006	
Homes:	Approximate population – 17,100; Approximately 7,000 residences & cabins Many high value structures in the W.U.I.	
Businesses:	Most businesses are in the urban area of the city; Approximately 30-40 businesses are in the W.U.I. part of the city; Two golf courses; Northeastern MN's Regional airport is located at Hibbing; Numerous businesses supporting heavy industry, some of which handle hazardous materials; Viking explosives supplies explosives to mining industry; Bulk oil storage facilities; Northern Castings; Hibbing Taconite	
Jurisdiction:	City of Hibbing (includes 5+ townships) 186 square miles Mutual aid agreements with Keewatin, Virginia, Toivola, Clinton, Silica, Cherry, French, & MN DNR; Many mutual aid contracts for medical ALS.	
Infrastructure risk:	Natural gas transfer station; Viking Explosives; Oil company bulk storage; Wastewater & water treatment plants, lift stations; Propane companies; Carey Lake Recreation Area; Maple Hill tower site, WMFG & WKKQ tower sites; Numerous large powerlines	
Community values:	Area churches, schools, clinics, nursing homes, businesses, homes, recreational facilities, library, airport; Level 3 hospital; Regional airport; 2 AM/FM radio stations	
Local Preparedness Capability:	Hibbing has both a full-time and paid on-call fire dept.; 2 type 7 brush trucks 3 type 1 fire engines; 1 type 2 water tender; 1 rescue vehicle, 1 ladder truck Water rescue equipment, extrication equipment, high angle rescue equipment, hazmat response equipment, ATV & rescue sled; Heavy equipment available through Hibbing Public Works Dept.	
Firewise Information	Fire prevention & fire safety week at Hibbing schools Annual Fire Prevention/Open House at the fire hall Annual smoke detector & battery give away Fire investigation through department Fire Marshall DNR Forestry conducts wildland fire safety programs in schools	
Mutual Aid	Mutual aid agreements are in place and current. Agreement with Chisholm needs to be established in writing.	
Fire Department Needs	Dry hydrant/water access sites need to be developed Underground water storage needed as back up to hydrants Pumper/tender replacement Wildland fire truck/Type 6 engine needed Communication upgrade Wildland fire training	
Other		

Name: Kinney-Great Scott Fire Department		Location: Hibbing Area	
Access:	Primary East / West artery is Hwy #169. The primary North / south artery is Hwy #25. Numerous county and township roads. Most of these are gravel and are well maintained. There are numerous logging roads, ATV trails and old railroad grades that intersect the protection area. Gated roads Residential and seasonal homes with one way, narrow access pose challenges for emergency vehicles.		
Topography:	KGS has a wide variety of topography that varies from flat lowlands to steep mine dumps. Remote areas with difficult access are present.		
Fuel Hazards:	Grasslands – including upland and lowland. Upland and lowland conifers includes some areas with heavy Pine concentrations and Pine plantations. Areas of logging slash; Areas of blowdown timber. Aspen / Birch stands mixed with Balsam Fir and other conifers. Homes and seasonal cabins are interspersed throughout the coverage area creating a high wildland urban interface problem.		
Fire Occurrence:	Average of four (4) wildland fires annually.		
Homes:	Approximately 800 residents There are homes scattered throughout the townships with a heavier concentration on the south end. Numerous homes and cabins on Dark and Clear Lakes have one way, dead end access.		
Businesses:	Zieglers Cat Sales and Repair (facility includes 100,000 gallon water tank). Tree Be Gone; Arrowhead Battery; Baker Fire Equipment; Holmes Meats; Liquid Larry's; 2 Auto Body shops; 2 Group Homes on Dark Lake; Numerous in home businesses.		
Jurisdiction:	The City of Kinney and Town of Great Scott is a large protection area which covers approximately 2 and 1/3 townships. Much of the land is forested and is a mix of Public and Private ownership.		
Infrastructure risk:	High voltage electrical transmission lines; Cell phone tower; Water treatment plant; Mesabi Bike Trail; City of Kinney; Group homes		
Community values:	Bar / Restaurant; Township / City Hall 3 Fire Halls; Seasonal and year round homes Large forested land base		
Local Preparedness Capability:	One Type 7 Engine; One Type 6 Engine; Three Type 2 Engines -One 2000 gallon Water Tender; -Two Trash Pumps with 2 ½ inch intake and discharge; One Rescue Truck with a four bottle cascade system.		
Firewise Information:	Annual Open House; Joint training with Buhl; Member of Algomin Coalition		
Mutual Aid:	Kinney Great Scott is currently a member of the Algomin Coalition. Mutual aid agreements are in place with Buhl, Cherry, DNR and USFS. In the process of acquiring agreements with Mt. Iron and Chisholm		
Fire Department Needs:	Recruitment and retention; Training for new members; New Brush Truck Hose, fittings and nozzles; Floating strainers; Hand held radios that are narrow band capable		
Other:	The City of Kinney has a 50,000 gallon water tank. A 100,000 gallon tank is located at the water treatment plant. Fair to intermittent cell phone coverage. KGS has a large protection area consisting of 2 1/3 townships. KGS has 3 fire halls located strategically throughout its protection area. Approximately 15 minutes response time to farthest points on perimeter. KGS also offers emergency medical services in the form of first responders and EMT's.		

Name: Silica Fire Department		WUI Name: Hibbing Area
Access:	Primary Artery: Hwy 73 – runs north to south through west side of township. Other important arteries: South Townline Road, Stuart Road, Beauty Mt. Road, Hwy 16; Also many small dead-end roads into area lakes. Alborn Grade: snowmobile/ATV trail Beauty Mt. Road can be impassable in winter and spring. Bridge out on old Hwy 73. Dead-end roads and many narrow driveways to seasonal homes.	
Topography:	Slightly rolling hardwood and pine ground on west side of township. Large lowland swamp areas in the east side. 13 lakes in the township boundaries.	
Fuel Hazards:	Upland grass, old fields and pastures. Upland conifers, pine, spruce and balsam fir. Lowland conifers, black spruce, tamarack, white cedar. Lowland grass and brush. Logging slash and cutover areas. Aspen/Balsam Fir mixed timber. Northern hardwood timber	
Fire Occurrence:	Average 1 – 3 wildland fires annually.	
Homes:	Approximately 400 residents within this protection area. Approximately 200 full-time residences. Approximately 100 seasonal cabins or hunting shacks. Many residences and cabins are located adjacent to lakes.	
Businesses:	1 full-time business located along Hwy 73. 10 – 15 businesses operating out of residences.	
Jurisdiction:	Unorganized Township T55N, R21W 1 township – 6 square miles. Mutual aid agreements with surrounding fire depts.. and DNR.	
Infrastructure risk:	2 large wood pole powerlines running east/west across township. Triple R construction – diesel fuel Island Lake – private airplane – aviation fluid Beauty Mt. Tower site Alborn Trail	
Community values:	Community Center/fire hall; Residences, cabins, and hunting shacks; Beauty Mt. tower; Bil-mars; Public water accesses; Large public land base used for recreation.	
Local Preparedness Capability:	1,000 gallon pumper ; 3,000 gallon water tender ; Type 6 wildland brush truck 600 gallon off-road track vehicle with transport ;Rescue boat and cold water rescue suit ; Emergency electrical generator	
Firewise Information	Annual fire prevention and safety open house. Smoke detector distribution	
Mutual Aid	Mutual aid agreements with the following: Hibbing, Floodwood, Goodland, MN DNR	
Fire Department Needs	Radio communications repeater tower Pump needed on water tender Upgrade needed on brush truck pump Firefighter recruitment and retention	
Other		

Orr WUI Area - 1 of 2
St. Louis County, Minnesota
Community Wildfire Protection Plan
 February 15, 2008



Legend

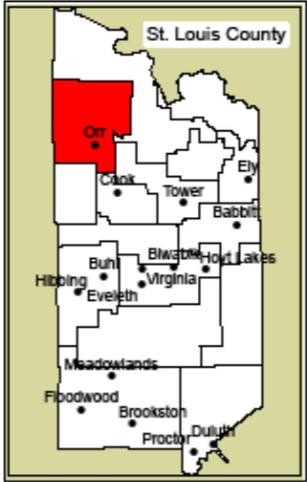
- WUI Area
- Fire Department Jurisdiction
- Fire Hall
- Railroads
- Cities/Towns
- Airports
- FAA Towers (2000)

Roads

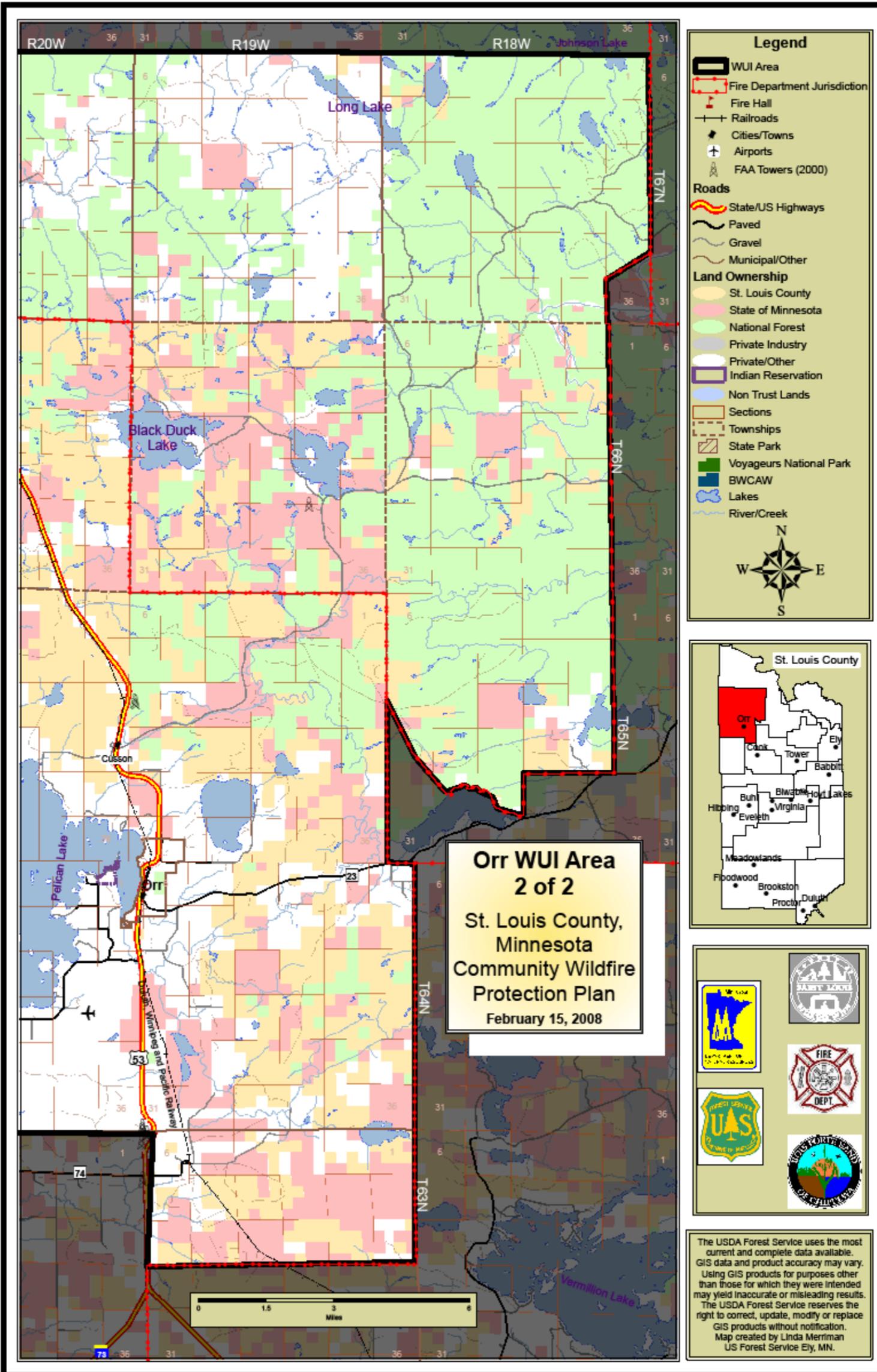
- State/US Highways
- Paved
- Gravel
- Municipal/Other

Land Ownership

- St. Louis County
- State of Minnesota
- National Forest
- Private Industry
- Private/Other
- Indian Reservation
- Non Trust Lands
- Sections
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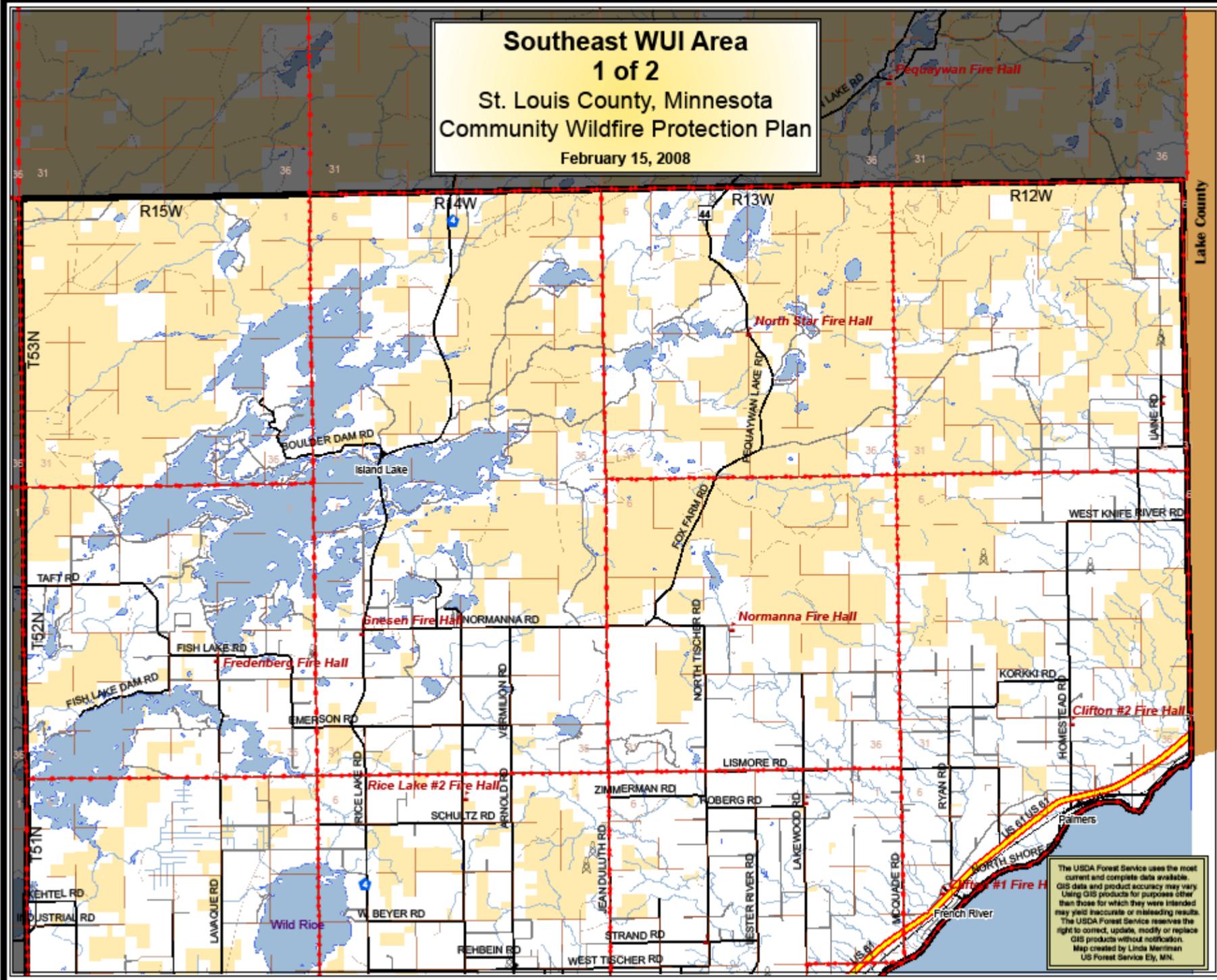


Name: Bois Forte Fire Department		WUI Name: Orr Area
Access:	Highway #23 (Nett Lake Road) is primary access from the east. Highway #65 is primary access from the south and west. Both are paved and in good shape. The Palmquist road is a main paved artery tying #65 and #23 together. Most residences are located on these three primary roads, with exception of the village. Any other road that accesses residences would be considered driveways. Some of these will limit access to large fire apparatus. Deer Creek may be an area of new development in the future in the Deer Lake area of Itasca County.	
Topography:	Generally rolling gravelly/sand near the terminal moraine on the south side of Nett Lake. Large expanses of deep peat lands bisect the protection area east to west. Rolling to steep silty clay soils exist on the north side.	
Fuel Hazards:	Large red and jack pine plantations exist in central and west part of the protection area. The Palmquist community lies within this pine community. Spruce budworm has been active in this area for a number of years and since this is a cyclical problem, it will be reoccurring. Live and dead biomass is heavy per acre because of the growth potential of the soils.	
Fire Occurrence:	Fire occurrence is historically low. Primary causes would include lightning, power line fires and human caused negligence.	
Homes:	Homes tend to be in two centralized locations; Nett Lake Village and the Palmquist Addition. A fewer number of homes are scattered along #65.	
Businesses:	One convenience store, Public works buildings, Goggleye logging, Barefoot Logging, Tribal Government buildings, school. Many people commute to other towns or Fortune Bay for employment. Most people working on Nett Lake proper either work for tribal government, guide, harvest wild rice or log.	
Jurisdiction:	Bois Forte Volunteer Fire Department, Bois Forte Forestry	
Infrastructure risk:	Main feed powerline on Cty #23, overhead phone lines on #65, Two large 1000+ gallon propane tanks at the school, Bulk diesel fuel at the Public works, Nine Tribal Government buildings, school, one assisted living home and a church. One 300' communications tower located at the Police station. Dire need to upgrade the current water supply/hydrant system which protects the infrastructure within the village.	
Community values:	The natural resources of the Reservation provide cultural, medicinal, recreational and spiritual values to the residents.	
Local Preparedness Capability:	1985 Dodge type 6 w/ 300 gallon tank, 1974 International Loadstar 1600 pumper w/ 500 gallons, 1976 Ford Custom Cab Pumper w/ 750 gallons. One waterous floating pump. The Reservation administers a burning permit program.	
Firewise Information	Bois Forte Forestry has started an initial home by home assessment but may need additional resources over time from within the auspices of this plan.	
Mutual Aid	Mutual aid agreement is in place with Orr Fire Department and EMS; they should be looked at for updating. Agreements are in place with Bois Forte Forestry, BIA and Minn. DNR for wild land mutual aid.	
Fire Department Needs		
Other	Wildland paging system is non-existent but needs to be established. Not enough radio communications system in place to serve the emergency management on the Bois Forte Reservation. Cell phone coverage is poor at best. Fire Department equipment should be upgraded and formal training is needed.	

Name: Greaney-Rauch-Silverdale Fire Department		WUI Name: Orr Area
Access:	Main paved access arteries would be Hwy 74, 65 and 75. Higher maintenance secondary gravel in St. Louis County are Cty #528 (Greany Rd), #114 (W. Olson Rd), #535 (Halverson Rd), Sethers Rd, and Ableman rd. All other roads in this protection area are second class road.	
Topography:	Relatively flat except for the lands in the Littlefork River Valley. Soil types are primarily clay or organic (peat). There are scattered rock outcrops primarily in the north and western part of the area.	
Fuel Hazards:	The one major fuel hazard in this protection area is dead balsam from an invasion dating back to 1998. Balsam regeneration is now a large component of this hazard and can be equally volatile. Large grass fields on abandoned or fallow farmsteads are also a hazard in the spring before greenup. Aspen and lowland black spruce make up the majority of the remaining fuel types.	
Fire Occurrence:	An annual average number of wildfires would be four fires primarily in the spring before greenup. Fires are generally man-caused but a few powerline fires occur when the wind conditions are right.	
Homes:	There are 82 year-round homes in the GRS protection area and they are generally spread evenly throughout the protection area. There are no population centers other than Vi's corner. There are approximately 120 seasonal cabins with no identified season of use.	
Businesses:	Two small mom & pop type of convenience stores and one game farm.	
Jurisdiction:	GRS Fire Department, DNR-Orr, DNR-Sidelake and DNR-Tower.	
Infrastructure risk:	Overhead power lines, wooden deck on Hwy 65 bridge, canister site.	
Community values:	Three historical churches, the old Legion building, traditional style barns on the Ollikkila far, Udovich farm, Luckachick farm, Rents farm, Rude farm, Harrigan farm, Persich farm, Zgaynor farm and the Buer Farm. High use hunting based recreational area includes Samuelson Park.	
Local Preparedness Capability:	Volunteer fire department and first responders. Equipment includes 2001 Chev Type 6 engine (brushtruck), 1971 Chev tanker w/ 1200 gallons. One 4000 gallon and one 10,000 gallon underground tanks. Approximately 12 active members in the volunteer fire dept.	
Firewise Information	Need support from local government units at all levels for planning and implementation of a community wide fireplan.	
Mutual Aid	Mutual aid agreements are in place for Bearville, Orr and Cook fire departments. GRS is also a member of ALGOMAN fire coalition.	
Fire Department Needs		
Other	No 911 signage in the Koochiching county portion of the protection area. Response times and fire occurrence are not out of the ordinary but one problem is the low response rate during the week when people are working.	

Name: Orr Fire Department		WUI Name: Orr Area
Access:	Highway #53 is the main north/south paved artery, there are four secondary arteries serving the protection area. These are Cty 74 to Greaney ;Nett Lake Road; Orr/Buyck road and County #180 (Elephant Lake Road). These roads are all paved with the exception of Cty #180. There are numerous roads accessing all corners of the area, ranging from well maintained county and township roads to private drives that access developments and/or private cabins. Many of these private drives access seasonal cabins and are gated and/or are inaccessible to large fire apparatus due to their narrow winding nature.	
Topography:	Topography is generally rolling in nature. Soil types range from clay soils in the southwestern portion of the area (south of the Gheen to Nett Lake ridge) to sandy loam/gravel north of the ridge. Rock outcrops are scattered throughout	
Fuel Hazards:	Cover types are generally aspen/hardwood mix with balsam as an understory. Higher elevations tend to lean more towards a conifer type such as red pine, white pine and jack pine. Spruce budworm has been very active in this area and will continue for a period of time. A heavy balsam cover will return to provide additional ladder fuels and hazards.	
Fire Occurrence:	Overall fire occurrence is low. Most fire starts are man caused (debris or campfires), lightning and trees across power lines from wind events.	
Homes:	Outside the community of Orr, most homes and cabins are located on lakes. Pelican Lake has the highest concentration of homes and cabins including six islands with cabins, followed by Elephant/Blackduck lakes (Blackduck has some water access cabins) and Ash Lake. Rural concentrations of homes are located in the Gheen/Willow River area with the rest of the rural area having a scattering of homes and seasonal hunting cabins.	
Businesses:	Numerous resorts are located on Pelican Lake, one on Elephant and one on Ash Lake. Two propane bulk/distribution businesses along with a supper club are located in Glendale, Nargurski's Oil at Cusson, one sawmill, one log home manufacturer, several logging and trucking oriented businesses, Gheen has a bait shop, wood products mill, small engine dealer and body shop.	
Jurisdiction:	Orr Volunteer Fire Department, DNR-Forestry	
Infrastructure risk:	CN railroad, Main power feed comes in on Cty #74 and then north to Orr along #53, to the Lambert road and Blackduck/Elephant lake. Two Propane bulk storage facilities, one diesel storage unit, several communication towers on the Gheen hill, Elephant Lake hill and north of Cusson.	
Community values:	High use recreation area with heavy seasonal use. The surrounding natural landscape is rich with logging history and recreational opportunities. Many remote campsites, public accesses, ski/hiking trails and snowmobiling trails. Buildings with historical values are located throughout the area.	
Local Preparedness Capability:	Local volunteer emergency services have a difficult time recruiting and retaining members. 1984 Chev pumper with 700 gallon tank with 1000 gpm pump, 1989 International water tender w/ 3400 gallon tank and portable pump, 1975 GMC brush truck w/ 300 gallon tank and portable pump, 1995 Ford Rescue Rig, 1979 Waterous portable floating pump. Dry Hydrants are located behind Pelican Bay store, Willow River on the Chisholm Road and Willow River on the Range Line Road.	
Firewise Information	No involvement so far with the Firewise program except for this plan. Assistance will be needed from gov't agencies as the process goes on.	
Mutual Aid	Mutual Aid agreements are in place with Cook, Crane Lake, Buyck, Greaney/Silverdale/Rauch, Nett Lake and Kabetogama	
Fire Dept Needs		
Other	CN Railroad hauling hazardous materials in relation to the high speed and derailment issues. Pre-planning with St. Louis County Planning should be taking place for new proposed developments. Water access emergency services present year round problems.	

**Southeast WUI Area
1 of 2
St. Louis County, Minnesota
Community Wildfire Protection Plan
February 15, 2008**



Legend

- WUI Area
- Fire Department Jurisdiction
- Fire Hall
- Railroads
- Cities/Towns
- Airports
- FAA Towers (2000)
- Sections
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Land Ownership

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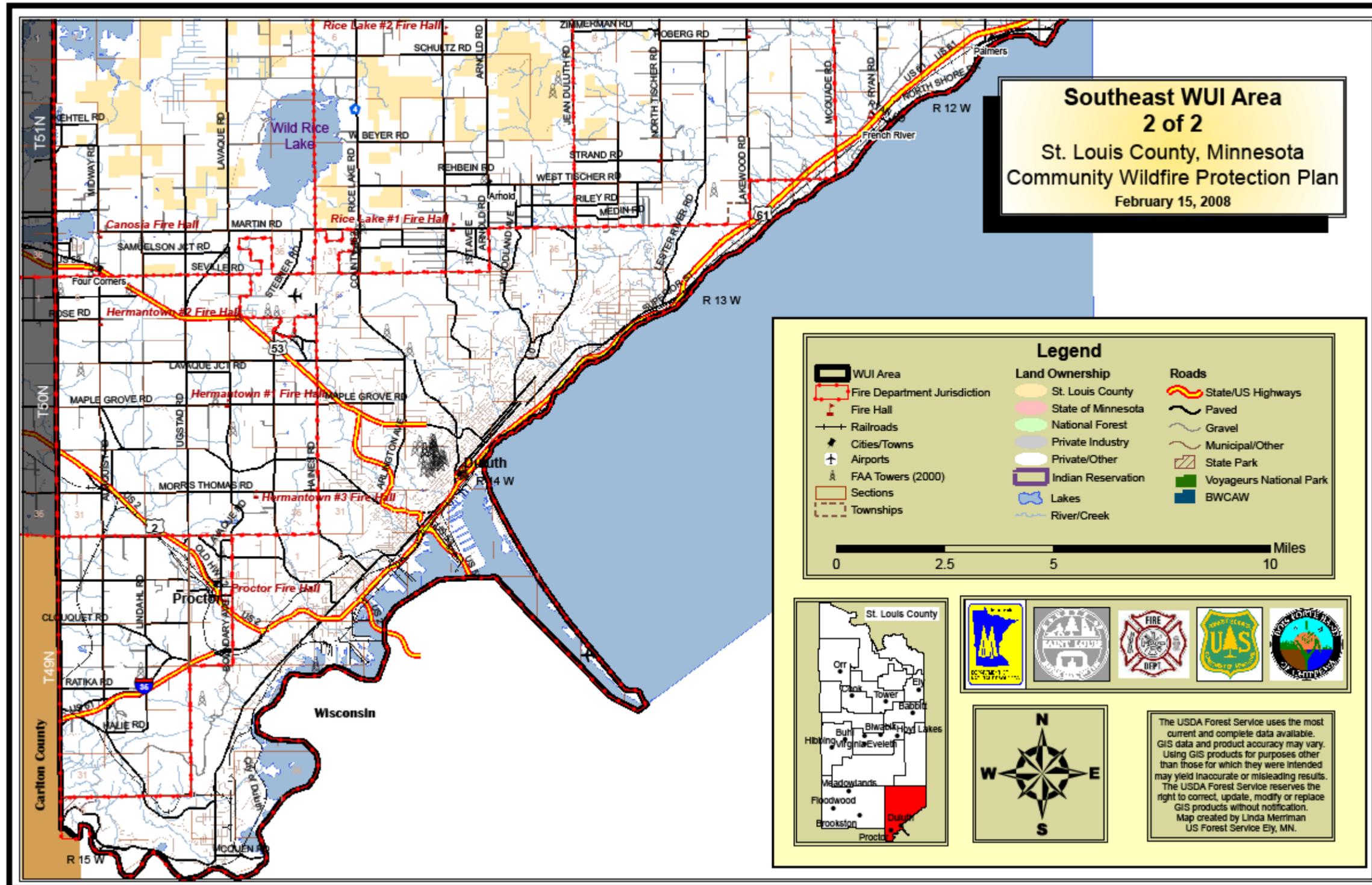
Miles
0 1.25 2.5 5

North arrow and scale bar.

Inset map of St. Louis County showing the location of the Southeast WUI Area in the southeast corner.

Logos for participating agencies: St. Louis County, Fire Department, Minnesota Department of Natural Resources, US Forest Service, and Minnesota Department of Transportation.

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Name: Canosia Fire Department		WUI Name: Southeast Area
Access:	Major Roads, Hwy 53, #9 Martin, #48 Lavque, #13.Midway, 284, 234, 35, 849, Ugstad. Good access on many black top roads through out the City/Township, many dead end roads.	
Topography:	Rolling landscape, high ground w/scattered creek, lakes, potholes, Wild Rice and Fish Lake Reservoirs, Pike and Caribou Lakes, Beaver River, peat bog on South end of Fish Lake. Canosia Wildlife Mgt Area.	
Fuel Hazards:	Aspen, birch, balsam, maple, small pine stands, ash in low ground areas. Lowland brush and grass.	
Fire Occurrence:	Low frequency, 5-10 w/mutual aid wildfire calls.	
Homes:	720 year round homes, w/some seasonal cabins, population approx. 2146 people.	
Businesses:	County 5 th Dist complex w/ administrative and maint. Offices, Hwy #53 and Midway business area, gas station, grocery store, liquor store, Pike Lake School, gravel pits on North end.	
Jurisdiction:	Canosia Volunteer Fire Department, Mutual Aid w/Lakehead Fire Assn. and Mn DNR.	
Infrastructure risk:	Gas pipe line, power lines, telephone substation, gov't and private communication towers.	
Community values:	Elementary school, AAA recreational area- golf etc, new multi bay police/fire station/city hall complex. Canosia Wildlife Management Area, Pike/Caribou Lake boat launches.	
Local Preparedness Capability:	Fire Dept resources include: 1 ladder co, w/500gal tank, 1250GPM 3 Engs , w/ 1000 gal tanks and foam, 1250GPM 1 Eng, 1000GPM , w/1000gal tank 1 Eng, , rescue/EMS, w/cascade.	
Firewise Information	No Firewise Program. Fire Prevention week w/open house at the station and information brought into the school. Fire Dept has a Fire Marshal.	
Mutual Aid	Current: Lakehead Mutual Aid Association, MN DNR.	
Fire Department Needs	Wild land PPE, and wildland firefighting equipment, wildfire training, portable and mobile radio unit updates, have 3 dry hyds (only one works)...	
Other	www.canosiafire@canosiafire.com	

Name: Clifton Fire Department		WUI Name: Southeast Area
Access:	The main road in the double plus townships; Hwy 61, Scenic 61, #33. 40, 41, 42, 43, 54. Alden Township VFD combined w/ Clifton VFD (Duluth Township). Roads in Alden; #266, 41, 271.	
Topography:	Rolling landscape with high ground, open pasture and fields, scattered streams flowing into Lake Superior. Alden Township landscape is flat.	
Fuel Hazards:	Mostly aspen, birch, maple, some balsam, small pine stands, lowland brush, grasses.	
Fire Occurrence:	Low frequency – 3 wildfire calls in Township, 3 mutual aid wildland calls/ year.	
Homes:	720 homes, population approx. 1798 in Duluth Township, Alden Township; Approx 200 population , 70 homes	
Businesses:	4 restaurants, McQuade Harbor, 10 gift shops, vet clinic, chiropractic office, contractors, business at Bomarc.	
Jurisdiction:	Duluth Township 51-12, 52-12, Alden 53-12; Clifton Volunteer Fire Department serves Alden Township under contact.	
Infrastructure risk:	Power line w/2 substations, gas pipe line, Scenic North Shore RR, 3 communication towers.	
Community values:	3 multi-bay fire stations (1 in Alden Township), 3 community centers (1 in Alden). Elementary Charter School, State boat launch at McQuade Rd, home based businesses 20, weld/artist shop.	
Local Preparedness Capability:	Fire dept resources include: 1000gal/1250GPM 1000gal/1250GPM 1000gal/750GPM 500gal//250GPM tanker 5000gal, w/port pump tanker 2500gal, w/o pump(3000 gal tanker being spec'd) grass rig - 200gal w/ pump rescue/equip. van	
Firewise Information	No Firewise program	
Mutual Aid	Current: Lakehead Mutual Aid Association, MN DNR...	
Fire Department Needs	Dry hydrants and site preparation(sites are a problem) Radios//pagers Recruitment and retention of firefighters	
Other		

Name: Duluth Fire Dept.		WUI Name: Southeast Area
Access:	Hard surface road access throughout most areas of the City. Some parkland, undeveloped, and steep slope areas are accessible only on foot. A number of areas, both residential and undeveloped, rise hundreds of feet within a very short distance making access extremely difficult even for off road vehicles. Major roadways; Hwys 2, 35, 23, 53, 194, 61. Weather extremes can make emergency access a problem.	
Topography:	Areas of the City (43,000 acres) vary from flat to extreme grades, both on road and off road. The landscape within the City rises 800 feet from Lake Superior over a short distance. A number of rivers and streams cut through the City on a course to the St Louis River or Lake Superior.	
Fuel Hazards:	Urban interface areas – old and new developments, mixed forests, hillside grass/brush areas, and some old growth pine in parkland areas.	
Fire Occurrence:	Wildland/grass fire calls vary per year – approx. 75 / yr	
Homes:	Approx. 28,000 single family, and multiple family homes. Population, . approx 87,000	
Businesses:	Broad spectrum of business from tourism, health care, education, manufacturing, financial/banking, are located throughout the City.	
Jurisdiction:	Duluth Fire Department (67 sq mi.); Mutual Aid w/Lakehead Fire Assn. Departments, City of Superior, Wisc. Mn DNR. Contract w/Town of Superior, Wisc.	
Infrastructure risk:	International shipping port, international airport/ ANG base, Gas pipe lines and sub stations, steamplant and pipelines, power plant, power and water control dams, RRs, major high ways, interstate road and RR bridges, county and state communication infrastructure w/tower farm are some of the major risk areas.	
Community values:	Many businesses, tourist (3.2 million/yr), recreational, cultural, governmental. Regional financial, health care, educational, tourist and recreational hub.	
Local Preparedness Capability:	Fire Dept resources include: 12 Class A Eng Co.s, 3 Truck Co.s, heavy rescue sqd, smaller EMS/rescue sqd, hazardous materials response (State contract), various types of specific rescue capabilities, fire/police fire investigation team.	
Firewise Information	Duluth has an extensive, and very active fire prevention and inspection programs under the Fire Marshals Office. No Firewise Program. L1, L2 assessments (Firewise) have not been done.	
Mutual Aid	City of Superior, Lakehead Mutual Aid Association, MN DNR. Contract w/State HazMat Statewide	
Fire Department Needs	Need: wildland firefighting equipment, off road equipment, PPE, wildland fire training, updated radio system (compliant mobile and portables).	
Other	www.duluth.gov	

Name: Fredenberg Fire Department		Southeast WUI Area
Access:	Access is provided to most of the township by County Road 48 and 43. Access to the populated Bear Island Road and associated 8 avenues is a 4 mile dead-end road with mature tree cover for most of the length of the road. The north end of the township borders on an undeveloped area of the County with poor road access. Access to numerous residential properties is limited due to restricted road widths.	
Topography:	Fredenberg Township is inundated with large reservoirs (Fish Lake, Island Lake), lakes (Mirror, Cook, Hunter, Deep Water, Clear Water, Olson, Fredenberg), and rivers (Cloquet, Beaver River).	
Fuel Hazards:	Fredenberg Township has considerable conifer tree stands, large tracts of mixed forest types and virgin white pine stands surrounding many of the lake developments. Fuel hazards include blowdown balsam fir, mixed hardwood and softwood forests, pasture/grasslands, logging slash debris, balsam ladder fuels, pine needle duff, homes and cabins constructed in forest setting without fire breaks and pine plantations.	
Fire Occurrence:	Wildland fire occurrence is low which raises the potential for disastrous wildland/urban interface fires in mature forests.	
Homes:	Most homes are constructed in the areas surrounding the lakes and rivers and along the roads. Some housing developments in more remote areas of the township are being constructed.	
Businesses:	Businesses include 2 restaurants/bars, 2 resorts, large auto salvage, convenience store, 1 church, multi-faceted trucking firm, landscape, construction, 12 farms, traumatic brain injury facilities and numerous home based businesses.	
Jurisdiction:	Fire protection is provided by Fredenberg volunteer fire dept. with extensive mutual aid agreements with all other fire depts. in the southern ½ of the county.	
Infrastructure risk:	Important infrastructure to the County include 2-major earthen/concrete water control structures either of which if catastrophically fail will result in 1,000's of eliminated structures, bridges, roads, communities and high potential for life loss in all communities along the Cloquet River between Fredenberg and the City of Duluth. Roads, bridges, telephone and transmission lines and similar infrastructure common to all communities	
Community values:	Important community valued resources include all businesses, homes, recreational opportunities, forest lands, water control structures, and civic buildings.	
Local Preparedness Capability:	Includes 2 - 1,000 gpm, 1,000 gallon pumpers, 1- 3,000 gallon tanker, 1- medical rescue	
Firewise Information	No firewise activities are being done at this time. There is a need for firewise education of the public, improved access to residential structures, improved access to wildland areas north of the township and improved wildland fire mitigation measures for homes.	
Mutual Aid	MN DNR, Lakehead Mutual Aid Assn.	
Fire Department Needs	Additional water supply points are needed in the northern portion of the township and a cistern tank at the fire hall. The fire dept. does not have any vehicles capable of off-road travel and does not have any water craft. On-going concerns include retention, recruitment and training of fire department members.	
Other	Improve residential structure defensible space, fuel mitigation in blowdown areas, vegetation removal and maintenance to improve access and assessment/control of ladder fuels adjacent to pine plantations	

Name: Gnesen Fire Department		WUI Area: Southeast Area
Access:	Good blacktop road access to most of the double township. Main roads: Hwy #4, #43 and #44, Northern township border is the Three Lakes Rd which is gravel. The township has a number of long dead end roads. Most accessible for fire rigs, school busses etc. A few of the roads end in yards making turn-arounds difficult.	
Topography:	Rolling topography with some steeper slope, scattered creeks, lakes and potholes throughout the township. East end of Island Lake and Boulder Lake are in the township	
Fuel Hazards:	Mixed hard wood, conifer, aspen, pine (large white and red)...quite a bit of spruce and balsam fuel component.	
Fire Occurrence:	Low frequency –approximately 10-15 wildfire calls per year.	
Homes:	Densely populated around lake areas, with both year around and seasonal homes. Population, over 1000 , 600-700 homes - w/seasonal	
Businesses:	Approximately 35 small businesses located within the jurisdiction.	
Jurisdiction:	Gnesen Volunteer Fire Department; Mutual Aid w/Lakehead Fire Assn. Departments and Mn DNR.	
Infrastructure risk:	Power lines, Community Center w/2 preschool grades, Boulder Dam-power generation/MN Power. ATT Telephone substation on Hwy #4.	
Community values:	Community center Preschool... New multi bay fire station, Boulder Lake Environmental Center; Silver Fox Camp grounds @ Boulder Lake; United Northern Sportsman complex on Island Lake.	
Local Preparedness Capability:	Fire dept resources include: 1250 GPM w/ 1000 gal tank, 1000 GPM/750 gal tank pumpers, 350 GPM pumper w/300 gal tank.w/ foam, 2 water tenders -3200/2800 gal. Ambulance unit.	
Firewise Information	We have not participated in the Firewise program yet. We provide fire prevention programs for the preschool and give away smoke detectors to the public. No level 1 or level 2 assessments have been done.	
Mutual Aid	Current: Lakehead Mutual Aid Association, MN DNR.	
Fire Department Needs	Need: dry hydrants –have 3. One is not working and another is needed in the north area. Need wildland PPE, wildland fire hose and nozzles, bladder bags, “A” foam, additional wildland fire training, ie urban interface fire training for multiple depts. We also need dept specific fire training....to meet our needs. We could also use rescue/extrication tools and a thermal camera.	
Other		

Name: Hermantown Fire Dept.		WUI Name: Southeast Area
Access:	Major roads are #194, #2, #53, Midway #13 and Haines #91, Ugstad-#48, Arrowhead #32, Maple Grove #6, Hermantown #54. Good access on many black top roads through out the City/Township	
Topography:	Rolling landscape w/scattered creeks, Moogie Lake and potholes.	
Fuel Hazards:	Aspen, birch, balsam, maple, small pine stands, lowland brush and grasses.	
Fire Occurrence:	Low frequency, 7-10 wildfire calls w/mutual aid.	
Homes:	3000 homes w/population, approx. 8000 people.	
Businesses:	Walmart, Menards. Harley Davidson, Gordys Market, medical clinic. RV sales, gas stations, Weather -Doppler station, NRRI Research facility.	
Jurisdiction:	Hermantown VFD; Mutual Aid w/Lakehead Fire Assn. Departments and MN DNR.	
Infrastructure risk:	Gas pipe line, CN- RR tracks, power lines w/substation, and 2 water towers w/ communication.	
Community values:	Schools: Elementary, Jr and Senior High, Hockey arena, Early Age Dev School. New multi bay fire station/police station/city hall complex.	
Local Preparedness Capability:	Fire Dept resources include: 1 Ladder co. w/1250GPM and 500 gal tank 2 Eng w/1250 GPM and 1000 gal tanks, w/ foam 2 tenders, 2000/3000, 500 GPM on both 2 slip on 4x4, 300gal, w/ foam heavy rescue w/equipment, light EMS/rescue	
Firewise Information	No Firewise program. Fire Dept goes to the schools during fire prevention week. FP week at schools, HVFD maintains a fire marshal position on the Dept.	
Mutual Aid	Current: Lakehead Mutual Aid Association, MN DNR.	
Fire Department Needs	Need: Wild land PPE and misc wildland equipment, wildland training, communication equipment both mobile and portable.	
Other	www.hermantownmn.com	

Name: Lakewood VFD		WUI Area: Southeast Area
Access:	Overall road access is good. Hwy 61 – four lanes, County #'s 37, 10, 43, 12, 33, Old 61 Scenic Road – paved roads. Township roads are gravel. Dead end roads have turn-arounds. Access to some homes on Moose Mtn. by the fire dept. vehicles is not possible. Documentation is on file with these homeowners.	
Topography:	Rolling terrain with steep slopes along the Lake Superior area. 15 local ponds can be used as a water source by the fire dept. Lester River, Talmadge River, Lake Superior are also water sources. Moose Mtn is a difficult area to reach....lengthens response time... requires off road and tracked vehicles.	
Fuel Hazards:	Mixed hardwoods, conifers, aspens w/scattered homes throughout.	
Fire Occurrence:	Low frequency –approximately 10-15 wildfire calls per year and another 10 calls to assist mutual aid wildfire calls.	
Homes:	Population 2031, w/810 homes.	
Businesses:	Approximately 100 small businesses located within the jurisdiction.	
Jurisdiction:	Lakewood Volunteer Fire Department, Mutual Aid w/Lakehead Fire Assn. Departments and MN DNR.	
Infrastructure risk:	Enbridge pipeline, major power line, major highway (US 61 to the Canadian border), safe harbor at McQuade Rd. CN Railroad line, Lakewood Elementary School- 350 students.	
Community values:	Important community values include homes, businesses, community buildings, forested lands. Lake Superior w/associated business and scenic/tourist values.	
Local Preparedness Capability:	Fire dept resources include: 1250 GPM, 1000 GPM pumpers, w/1000 gal tanks; 710 GPM pumper w/110 gal tank; 250 GPM w/300 gal tank; 2 water tenders -3000/2000 gal. 2 medical/rescue vehicles; one support pickup w/ extrication tool; thermal camera. New centrally located fire station set up for ICP.	
Firewise Information	Need for Firewise education and fire prevention programs for the public. No level 1 or level 2 assessments have been done.	
Mutual Aid	Current: Lakehead Mutual Aid Association, MN DNR.	
Fire Department Needs	Need: dry hydrants; better fire rig access to some ponds; additional water tanker; larger rescue vehicle for rescue gear storage; improved access to Moose Mtn area; bunker gear and wildland PPE; training and training materials for structure/wildland; Communication equipment (pager upgrades and mobile radios).	
Other		

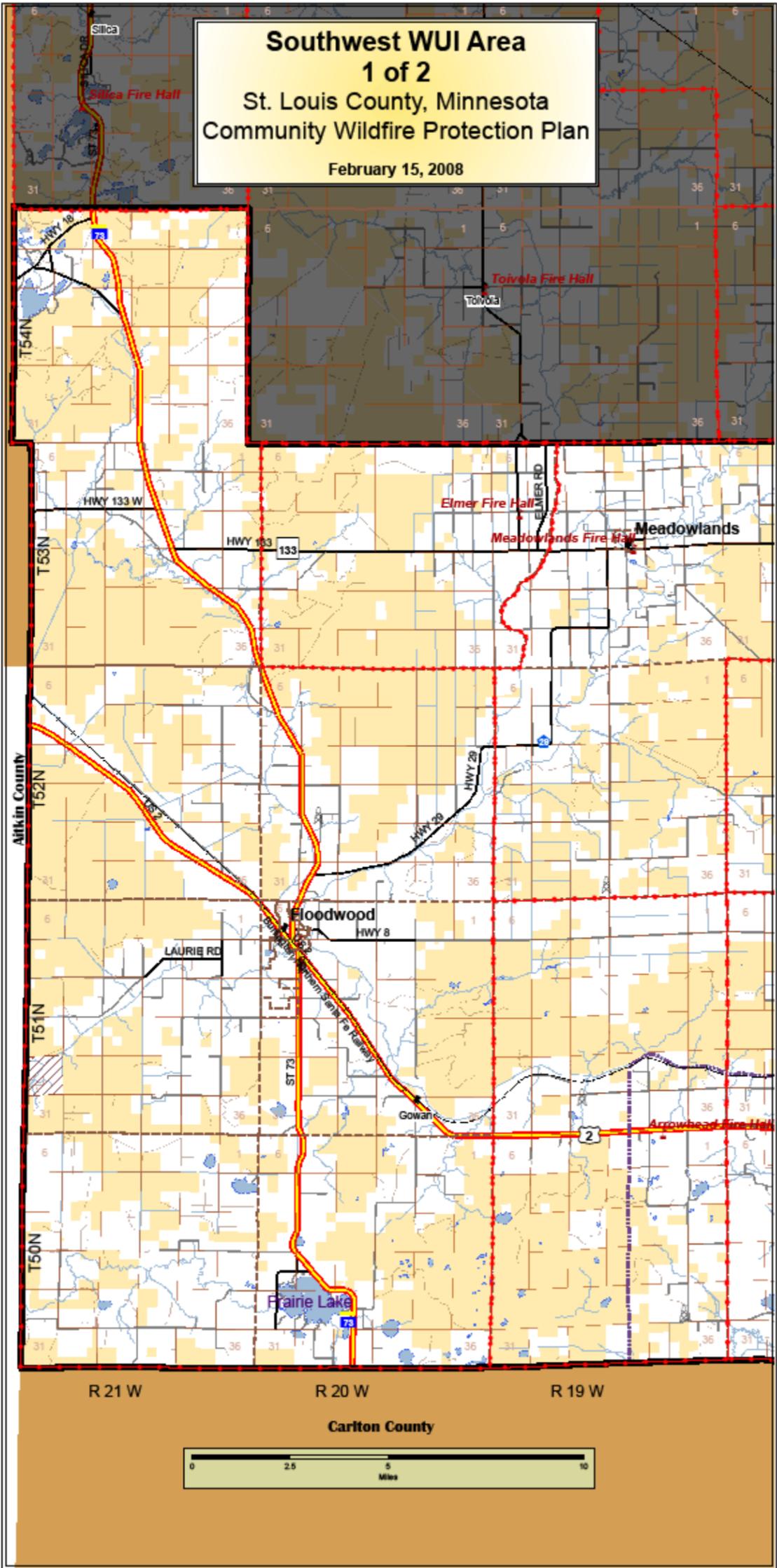
Name: Normanna Fire Department		WUI Name: Southeast Area
Access:	<p>Good North/South access (Jean Duluth, N. Tischer, Lakewood and McQuade Roads). Limited east/west access (E Pioneer and Lismore Roads). Twenty nine miles of roads, 12 miles of which are paved ; rest are maintained gravel. All known bridges capable of supporting fire apparatus.</p> <p>One 800+ acre subdivision with 4 miles of roads, 52 lots and one ingress/egress. Major snowmobile corridor (DNR State Snowmobile Trail running from SW to NE) 6-8 miles of gated logging roads in Northern half of Twp managed by County.</p> <p>CHALLENGES: 1. Northern half of Twp due to no public roads 2. DNR recreation trail 3. Long narrow private driveways 4. Many small to medium creeks/rivers/tributaries</p>	
Topography:	Rolling topography, heavily wooded, with large areas of wetlands. Small ponds and streams, some of which are draftable seasonably. Heavy conifer cover in southern half including a tree plantation. Logging debris/slash in northern half.	
Fuel Hazards:	Major gas pipeline runs through township. Many residential propane and other fuel tanks. Wildlands, in season, add to fuel danger.	
Fire Occurrence:	Low. About 2 wildland fires per year. About 3-4 structure fires per year.	
Homes:	Approximately 270 single family dwellings ranging from newer construction homes to old mobile homes and shacks with current market values of \$80,000 to \$1,300,000. Limited hunting shacks in north half. Typically homes are on 9 acres or more of largely wooded land.	
Businesses:	Limited business or commercial usage but there are several small home businesses, one sawmill, one horse stable and riding club, and one seasonal greenhouse.	
Jurisdiction:	MN DNR on wildland fires, Normanna VFD on all other incidents including Lakehead Mutual Aid agreement with all surrounding Townships.	
Infrastructure risk:	Major gas pipeline runs through township. Individual propane and other fuel tanks. Horse stable has large one-story buildings. Large amounts of stored hay and feed. Urban Interface - many residential dwellings exist in the woods with limited clearing and fire breaks. Heavy conifers in southern half.	
Community values:		
Local Preparedness Capability:	Normanna VFD: One 2007 Crimson 1500 GPM engine with 1000 gal tank, one 1970 FWD Seagrave 1250 GPM engine with 750 gal tank, one 1972 International tender with 2100 gal tank, one 1985 GMC brush/utility truck with 500 GPM pump and 250 gal tank, one 2007 Polaris 6-wheel ATV with small pump and tank, two portable pumps of 300 GPM capacity. Wildland 8-person mop-up kit.	
Firewise Information		
Mutual Aid	Mutual aid resources through Lakehead Association from all fire and rescue departments in southern half of county.	
Fire Department Needs	Member recruitment and retention. New water tanker, approx 2000 gal. Alternative water sources, such as cisterns approximately 10,000 gal each, located in various places around township.	
Other		

Name: North Star Fire Department		WUI Name: Southeast Area
Access:	The main road is #44. Others are #266, #272, #998, Spring, Alden Lake, Cannonball Lake and Little Alden Lake Roads...all but 3 are dead ends. Alden and Cannonball are narrow w/o alternate escape routes. They are 24 miles from the station due to the Cloquet River.	
Topography:	Rolling terrain with steep slopes along Spring and Alden Lake Rds. Two dry hyds are in place and water can be drafted from Alden, Little Alden, Spring, Briar and Barr's Lakes.	
Fuel Hazards:	Pine, spruce and balsam fir are thick around the lakes where most homes are located. Aspen, birch, mixed hardwood w/some open fields.	
Fire Occurrence:	Very low occurrence. 1 or 2 in the last 15 years.	
Homes:	100 homes w/ approx 250 people	
Businesses:	5 home businesses	
Jurisdiction:	North Star Fire Dept, Mutual aid w/ Lakehead and MN DNR	
Infrastructure risk:	Power distribution lines	
Community values:	Fire station, community center, snowmobile trail and a canoe route.	
Local Preparedness Capability:	Fire dept resources, 1250 GPM/1000gal tank, 300GPM/320 gal tank	
Firewise Information	Firewise Grant for updated address signs, Level 2 assessments completed and information provided to State.	
Mutual Aid	Mutual aid agreements in place and current	
Fire Dept Needs	Training and materials for structure/wildland, communication equipment.	
Other		

Name: Proctor Fire Dept.		WUI Name: Southeast Area
Access:	Good hard surface road access throughout most of the City, major roadways, Hwys 2, 35, Midway #13	
Topography:	The City (21 sq mi) is rolling landscape, w/ open fields and some very steep terrain in the Becks Rd/Skyline areas. Keene Creek and Midway Creek flow through the City. CN RR yard/tracks split the City.	
Fuel Hazards:	Urban interface areas w/ mixed hard woods, aspen, birch, some scattered pine tracts near Spirit Mtn/Skyline area.	
Fire Occurrence:	Wildland fire calls vary per year, approx. 15-20 year. Most of the fires are RR caused. (Proctor and Midway)	
Homes:	Approx. 750 single family multiple family homes. Population of approx. 2852 in Proctor. Midway pop. Of 2000, w/ 500 homes.	
Businesses:	CN Rail Road and Yards, Murphy Oil on Midway Rd, a number of motels, service stations, restaurants, a broad spectrum of business in the City business district.	
Jurisdiction:	City of Proctor Fire Department (21 sq mi.), also covers Midway Township, Mutual Aid w/Lakehead Fire Assn., Mn DNR.	
Infrastructure risk:	Murphy Oil Bulk Plant complex, Enbridge pipeline, Great Lakes Gas pipeline transfer station, Como LP Gas, cell phone and other communication towers, Canadian National RR.	
Community values:	Railroad, gas and oil pipelines/pumping stations, multi-bay fire station. New City Hall Complex, Jr. and Senior High Schools, private school.	
Local Preparedness Capability:	Fire Dept resources include: 3 1250 GPM/ w/foam/ 1000gal 1 3300 gal tanker/ vac and pump 1 grass rig, 300gal./w/foam 1 rescue van, personnel transporter	
Firewise Information	Annual fire prevention program in the schools w/ some classes in the fire station. Have had smoke detector give away program. No Firewise Program.	
Mutual Aid	Lakehead Mutual Aid Association, MN DNR	
Fire Department Needs	Need: Some wildland PPE, IC training, more radios (compliant mobile and portables). Additional dry hydrant, hydraulic rescue tools, cascade system for the rescue van, additional dry hydrant	
Other	www.ci.proctor.mn.us	

Name: Rice Lake Fire Dept.		WUI Name: Southeast Area	
Access:	Major roads are #4 Rice Lake Rd., #9 Martin Rd, #s34, 35, 36, 37, 69. Good hard surface access in response area.		
Topography:	Rolling w/high ground, scattered creeks, Wild Rice Resv., Antoinette Lake, Amity and Lester Rivers		
Fuel Hazards:	Aspen, birch, balsam, maple, small pine stands, lowland brush and grasses.		
Fire Occurrence:	Low frequency, 8-10 in jurisdiction wildland fire calls w/5 mutual aid wild land fire calls per year.		
Homes:	1400 homes - population, approx. 4130 people.		
Businesses:	Construction and logging companies, 2 gas stations, 5 cemeteries, Voyager Bus and MN Coaches, 4 gravel pits, 5 churches.		
Jurisdiction:	Rice Lake Volunteer Fire Department; Mutual Aid w/Lakehead Fire Assn. Departments and Mn DNR.		
Infrastructure risk:	Enbridge oil pipeline, 2 communication towers, water tower, power lines.		
Community values:	Rice Lake boat launch, 2 multi bay fire stations, elementary school, Town Hall, St Louis County maintenance facility, University facility, recreational complex w/ radio control air field.		
Local Preparedness Capability:	Fire dept resources include: 1 Eng, 1250GPM, w/ 1000gal tank 1 Eng, 1000GPM, w/1000 gal tank 2 water tenders, both 2000 gal capacity, 1 has 300 gal pump 2 grass fire rigs 1 medium rescue w/extrication equipment and generator		
Firewise Information	No Firewise program. Fire Prevention week, education in the schools and at the fire station, give away smoke detectors to the public.		
Mutual Aid	Current: Lakehead Mutual Aid Association, MN DNR.		
Fire Department Needs	Additional wild land PPE and equipment, w/ wildland training, update portable radios and add pagers.		
Other			

**Southwest WUI Area
1 of 2
St. Louis County, Minnesota
Community Wildfire Protection Plan
February 15, 2008**



Legend

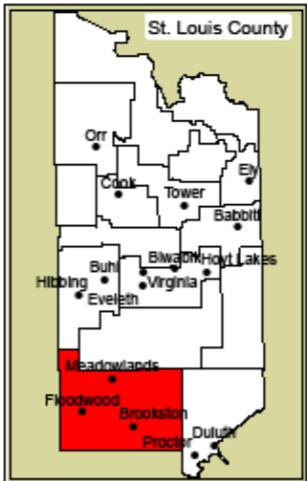
- WUI Area
- Fire Department Jurisdiction
- Fire Hall
- Railroads
- Cities/Towns
- Airports
- FAA Towers (2000)

Roads

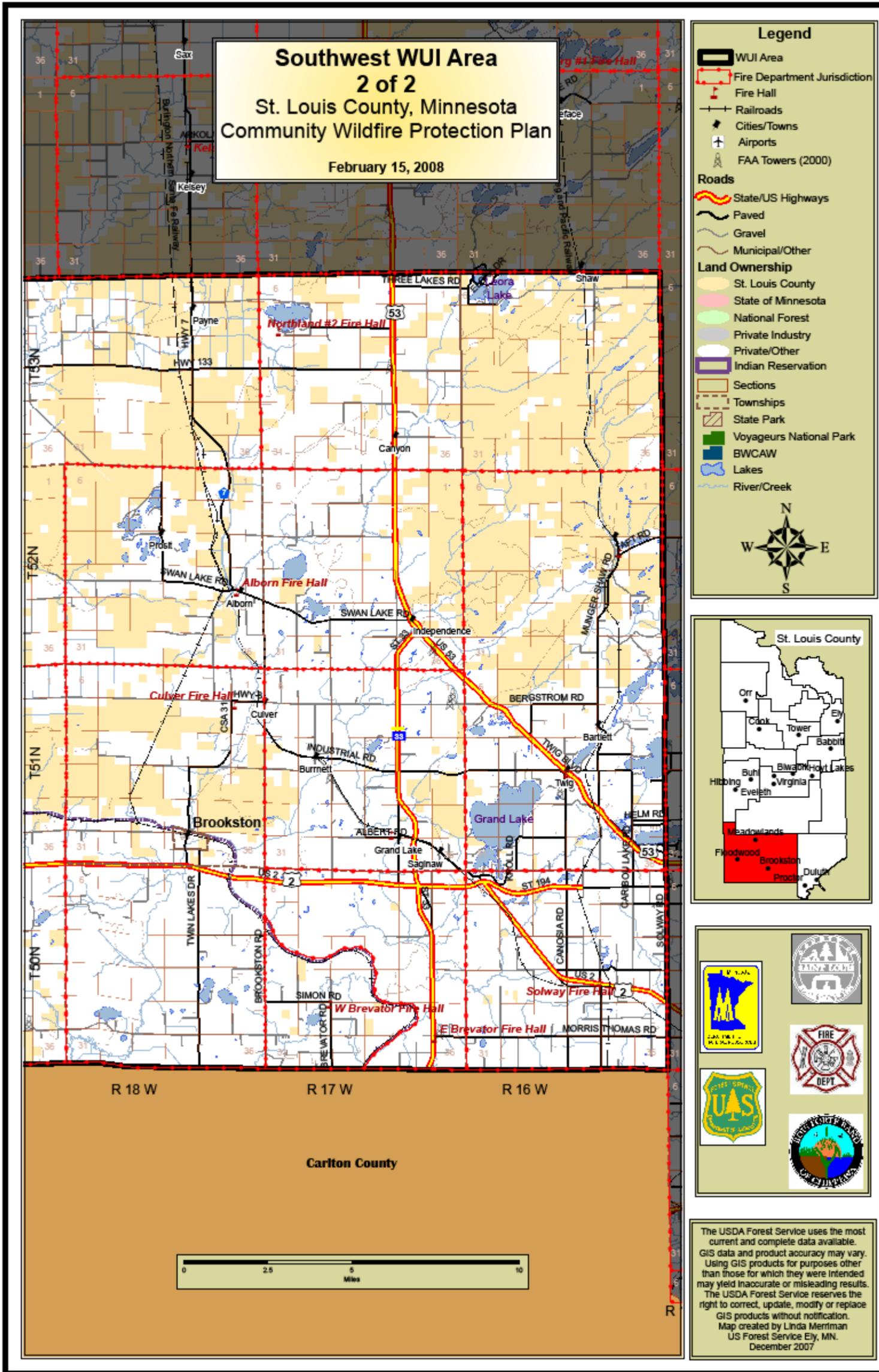
- State/US Highways
- Paved
- Gravel
- Municipal/Other

Land Ownership

- St. Louis County
- State of Minnesota
- National Forest
- Private Industry
- Private/Other
- Indian Reservation
- Sections
- Townships
- State Park
- Voyageurs National Park
- BWCAW
- Lakes
- River/Creek



The USDA Forest Service uses the most current and complete data available. GIS data and product accuracy may vary. Using GIS products for purposes other than those for which they were intended may yield inaccurate or misleading results. The USDA Forest Service reserves the right to correct, update, modify or replace GIS products without notification. Map created by Linda Merriman US Forest Service Ely, MN.



Name: Alborn/Independence Fire Department		WUI Area: Southwest Area
Access:	Majority of the roads are gravel and in good shape. There are four roads that are asphalt: State Hwy 53 (6 miles), State Hwy 33 (3 miles), County 47 (Swan Lake Road, 10 miles), and County #7 (7 miles). There are many dead end roads, both County and Township.	
Topography:	A mixture of lowland and useable land, with some rolling hills mixed in.	
Fuel Hazards:	The area has had many areas clear-cut; with logging roads available for transport of light 4 wheel drive trucks. Some areas still have a high fuel load. The lowland areas are a mixture of brush and high grasses. There are areas with Black Spruce and floating bogs.	
Fire Occurrence:	Low in the majority of the forested areas. The area along the CN&BSF railroad tracks has a higher occurrence.	
Homes:	Alborn Twmsp has 153 year round homes with 107 seasonal. These include hunting and lake cabins (2000 census). New Independence Township has 130 year round homes, with 30 seasonal, including hunting and lake homes (2000 census). There are 2 lake associations: Aerie Lake and Maple Lake.	
Businesses:	There are 2 Liquor establishments, a Gas/Convenience Store, a Waste Management site (Demolition Material), 8 Gravel pits (2 are incorporated), a Self Storage Building, a 6 unit, two story Rental Unit (renovated county school), an Elk Ranch, Horse and Cattle Farms, a few Logging business and other personal small business.	
Jurisdiction:	Alborn Fire Department (Volunteer) and MN Dept.of Natural Resources	
Infrastructure risk:	A Solid Waste Facility, Canadian National RR (CN), Burlington Santa Fe Railroad (BSF), 2 High Voltage Power lines, a Communication Tower, 2 Telephone Switching Stations, a Natural Gas Pipeline with attache Farm Taps.	
Community values:	Rest Area at ST Hwy #53 / ST Hwy #33, there are 20 miles of groomed State Snowmobile trail and Club House, a combination Town /Fire Hall an the Township Park and Baseball Fields, 10 miles of designated State ATV trail.	
Local Preparedness Capability:	The Alborn Fire Hall is located on the eastern edge of the township. This basically puts it in the middle of its service area (2.5 townships); Equipment - 2 Class 1A Engines- 1000 gal. Water tank with 1000 GPM pump and portable foam unit 750 gal. water tank with a 750 GPM pump 1800 gallon Water Tender with a portable 250 GPM pump Truck has an on board portable 2000 gallon drop tank 4 wheel drive Grass Rig(Wild Land Engine)- 250 gal. water tank with a 235 GPM pump Truck is equipped with 6 portable wild land fire fighting packs, chainsaw and assorted hand tools Truck has a 9000 lb. electric winch 4 wheel drive Quick Response Truck. This is our Medical Response unit Equipped with a 300 gal. water tank with a 250 GPM pump, a portable foam pack, a chainsaw and assorted hand tools. Truck has a 9000 lb. electric winch, folding 21ft. Ladder, and 2 SCBA's Snowmobile and Rescue Sled stored on a road ready trailer Cold Water Rescue sled with 2 Cold Water Rescue suits and 1000 feet of floating Water Rescue rope, 4 Rescue style PFD 3 - Rescue Harness with 300 feet of Rescue rope All trucks have Radios 1 - Dry Hydrant 16 Fire Fighters with 8 of them being First Responder qualified 1 Medical First Responder All Fire Fighters and 1st Responder have pagers and Portable Radios 1 - Stationary Cascade System - 2214 PSI The fire department covers 2.5 townships or 79 square miles	
Firewise Information	No assessments done	
Mutual Aid		
Fire Department Needs	2 more dry hydrants would help. 3 of our trucks are over 20 years old except for our Quick Response and Water Tender. They need to be up-graded. Our Fire Hall needs to be made more energy efficient and larger for newer trucks, equipment storage, and a training/meeting room. Computer and fax machine for Fire Hall and training software. Need to up-grade pagers Driveways are always issue for large trucks.	
Other	The fire department covers 2.5 townships or 79 square miles	

Name: Arrowhead Fire Department		WUI Area: Southwest Area
Access:	The main road in the double township is Hwy #2 -w/4682 vehicles /day, 600 are trucks. Secondary roads are gravel and require constant grading/gravel. #8 and #5 on the north end of the Township cross a large peat bog area. The St Louis River cuts the double Township adding an additional 20-25 miles to fire runs in the North area.	
Topography:	Rolling landscape with some high ground (communication towers are located there), scattered creeks, lakes and potholes throughout the double township. Large peat bog in the North end. Considerable amount of pasture and open fields along Hwy #2.	
Fuel Hazards:	Mostly birch, aspen, maple, some balsam, small pine stands, lowland brush, grasses.	
Fire Occurrence:	Low frequency –3-5 wildfire calls in Township, w/10- 15 mutual aid wildland calls per year.	
Homes:	Have both year around and seasonal homes -120 homes yr round - 30 non-residents. Population, approx 300 people.	
Businesses:	Major peat producing plant on Hwy # 8. Great Lakes Gas pipeline pumping station, 4 RSI type rehab houses.	
Jurisdiction:	Arrowhead Volunteer Fire Department; Mutual Aid w/Lakehead Fire Assn. Departments and Mn DNR.	
Infrastructure risk:	Enbridge oil pipe lines, Great Lakes gas pipe lines and pumping station. Major Hwy - # 2, Bur Northern RR- 2 sets of tracks, Lakes Power Substatin, 5 communication towers.	
Community values:	State boat launch on St Louis river, designated canoe route, State snowmobile trail and 2 other trails. New multi bay fire station/community center.	
Local Preparedness Capability:	Fire dept resources include: 750 GPM w/ 850 gal tank, 2 – 4x4, w/ slip on tanks and pumps, foam capable. 1 water tender -2500 gal. , Gamma Goat, Rescue van w/cascade system and generator unit.	
Firewise Information	Give away smoke detectors to the public at the annual Township picnic. We are planning to replace the fire number signs – looking into grant assistance. Part of the jurisdiction is within the FDL Reservation which is a Firewise Community. Level 2 Assessments have been done within Fond du Lac Reservation.	
Mutual Aid	Current: Lakehead Mutual Aid Association, MN DNR.	
Fire Department Needs	Need: 2 dry hydrants . Need newer pumper-currently working on a grant. Need wildland PPE and additional wildland fire training. Not all the rigs have radios. Need to update portables and add pagers.	
Other		

Name: Brevator Fire Department		WUI Area: Southwest Area
Access:	The main roads in the split Township are Hwy #2 and Hwy #33. Secondary roads are #56, #874, 873, #6, #878, #696, #995, #553, #868, #851, #80, #863, some dead end roads and some logging roads. The St Louis River cuts the Township into East and West Brevator. A fire station is located in each area and the stations are dispatched separately.	
Topography:	Rolling landscape with some high ground, steep rocky banks to river, scattered creeks and potholes. St Louis River, Simian and Andy Lakes.	
Fuel Hazards:	Mostly aspen, birch, maple, w/some balsam, large pine stands in both East and West Brevator, lowland brush and grasses.	
Fire Occurrence:	Low frequency – 20 to 30 per year including the mutual aid calls in both East and West areas.	
Homes:	500 homes with more expected, population, approx. 1245 people.	
Businesses:	2 gas stations, auto/trailer sales, bulk fuel oil station, insulation business, Mn State truck scales at #33 and # 2, contractors.	
Jurisdiction:	Brevator Township Volunteer Fire Department, Mutual Aid w/Lakehead Fire Assn. and Mn DNR, Esko in Carlton County. The Township is partly within FDL/Firewise Community.	
Infrastructure risk:	gas pipe lines, major Hwy - # 2, CN RR- MN Power high line, 3 communication towers.	
Community values:	St Louis River, a designated canoe route, MN State multi-use trail, 2 multi bay fire stations, community center ,	
Local Preparedness Capability:	<p>Fire dept resources include:</p> <p>East Brevator</p> <ul style="list-style-type: none"> 1 - 1000GPM/750gal 1 - 2000/250GPM 1 - grass rig w/50GPM/200gal <p>West Brevator</p> <ul style="list-style-type: none"> 1 - 1000GPM/1000gal 2 - tankers 5000/2300, both w/pumps 2 - grass rigs 	
Firewise Information	Have not participated in the Firewise Program. No level 1 or level 2 assessments have been done other than level 2 assessments have been done in Fond du Lac Reservation west of St. Louis River. Donate to Alborn for their FP week. Part of the Township is within The FDL Reservation Firewise Community.	
Mutual Aid	Current: Lakehead Mutual Aid Association, MN DNR. Esko in Carlton County.	
Fire Department Needs	Need: 1 dry hydrant, wildland PPE, wildland tools/equip. and additional wildland fire training. Need to update portable radios.	
Other		

Name: Culver Fire Department		WUI Area: Southwest Area
Access:	Main blacktop roads; Hwy 2, 3, 80 in the double Township, w/ City of Brookston (pop 125), Stonybrook Township to the South is within the Fond Du Lac Reservation (a Firewise Community). Other roads are gravel; 8,727,857, 856, 861, 862, 866.	
Topography:	Rolling topography, with scattered creeks, lakes, pot holes throughout the Townships. St Louis and Cloquet Rivers, have access to both sides of river.	
Fuel Hazards:	Aspen, birch, maple, small acreage of pine stands, balsam, lowland brush and grass.	
Fire Occurrence:	Low frequency – approximately 4-5 in both Townships. Mutual aid adds another 5 per year.	
Homes:	Approx. 450homes in both Townships. w/1100 approx. population.	
Businesses:	CN and BN RRs, approx 6 board and lodge, bar/gas station.	
Jurisdiction:	Culver Volunteer Fire Department; Mutual Aid w/Lakehead Fire Assn. Departments and Mn DNR.	
Infrastructure risk:	Post office, County maint. garage, RR tracks, power lines, Brookston Telephone substation building.	
Community values:	State boat launch on the St Louis River, State snowmobile trail, multi bay fire station and community center.	
Local Preparedness Capability:	Fire Dept Resources: 1000GPM/ w/400gal; 750GPM w/ 800gal 500GPM w/3000gal tanker; 5000gal//650GPM tanker 2-grass fire rigs...200gal/w/pumps; 1000gal//w/50GPM Rescue van	
Firewise Information	No Firewise program. We do provide fire prevention information to the board/lodge homes. All of Stoney Brook Township and Culver, south of St. Louis River is within the Fond Du Lac Reservation Firewise Community. Fond du Lac has completed level 2 assessments in Stoney Brook and a portion of Culver Township.	
Mutual Aid	DNR and Lakehead Mutual Aid Assn.	
Fire Department Needs	Need: 2 more dry hydrants, we have one on # 8... Need wildland PPE, training and equipment, a new pumper, tanker, and slide in units w/ pumps for grass fire rigs.	
Other	--	

Name: Elmer Fire Department		WUI Area: Southwest Area
Access:	The main roads in the Township; #133, 5, 199, 193, 196, 740, 741, 198, 194, 195, 189.	
Topography:	Rolling landscape along the St Louis River, mostly flat w/Joula Cr. Running through the Township. Open fields along 5 and 133, some peat lands.	
Fuel Hazards:	Mostly aspen, birch, maple, some balsam, small pine stands, Lowland brush, peat lands.	
Fire Occurrence:	Low frequency – average 2 wildfire calls, w/2 mutual aid wildfire calls per year.	
Homes:	Homes; approx. 70 year round and 6 seasonal. Population approx. 175.	
Businesses:	Large furniture store, church.	
Jurisdiction:	Elmer Volunteer Fire Department; T-53, R 19 & 20.	
Infrastructure risk:	Power line, church...	
Community values:	Multi-bay fire station, 1 church, community center.	
Local Preparedness Capability:	Fire dept resources include: 750GPM, w/1000gal Tanker, 2200 gal, w/500 GPM	
Firewise Information	No Firewise program.	
Mutual Aid	Current: Toivola, Meadowlands, Floodwood and MN DNR,	
Fire Department Needs	Need: Underground water tank by station and a tank at # 133. Need engine/pumper) w/diesel.	
Other		

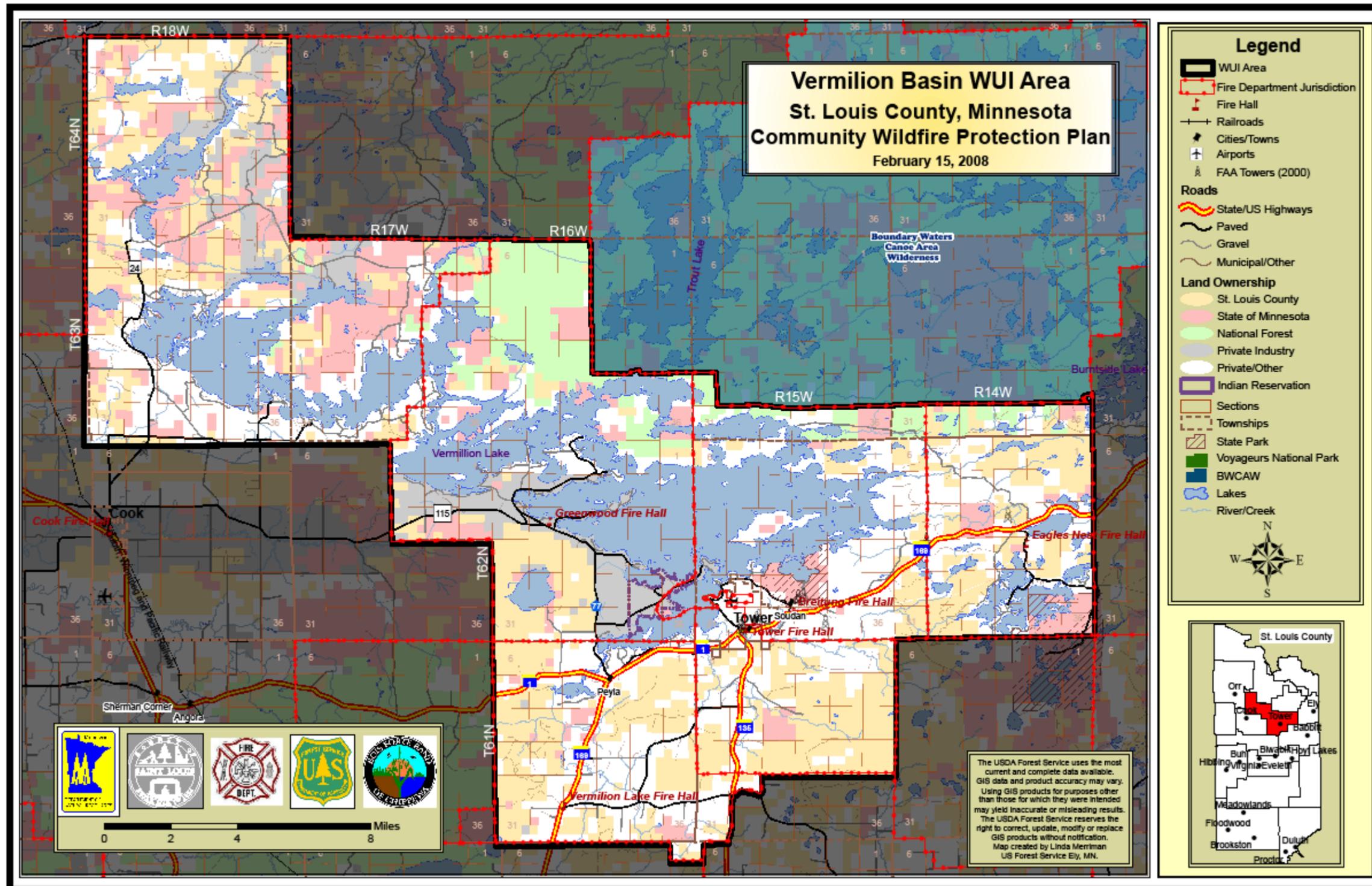
Name: Floodwood Fire Department		WUI Area: Southwest Area
Access:	8 Townships, 288 sq miles. Main roads - #2, #73, 8, 29, 133, 184, 18, 86, 51, 140, w/some dead ends w/ turnarounds	
Topography:	Rolling landscape, scattered creeks, lakes and potholes, large peat bogs in the north, pasture and open field on #2 and #73.	
Fuel Hazards:	Mostly birch, aspen, maple, w/some balsam and small pine stands, lowland brush, grasses.	
Fire Occurrence:	Low frequency, 4-5 wildfire calls in the 8 Townships. 3-4 mutual aid wildland calls.	
Homes:	2500 total population w/500 in Floodwood. Approx. 1000 homes and a number of seasonal cabins.	
Businesses:	.City of Floodwood businesses. A paper mat manufacturing plant, feed mill, grocery stores, restaurants, bars, dentist office, bank, UDAC recycle station, gas stations.	
Jurisdiction:	Floodwood Volunteer Fire Department; Mutual Aid w/Lakehead Fire Assn. Departments and Mn DNR.	
Infrastructure risk:	Enbridge oil pipelines, Great Lakes gas pipe lines and pumping station. Major Hwy - # 2, Bn and CN RR, power lines, 5 communication towers. gas company(propane).	
Community values:	Post Office, boat launch on Floodwood River, multi bay fire station, city hall/police station/community center complex	
Local Preparedness Capability:	Fire dept resources include: 1000GPM w/ 1000 gal tank, 2500/1000GPM, tanker 750GPM//500gal 2200gal tanker, no pump 300 gal tank/ slip on/ grass fire unit rescue van w/extrication tools, new SCBAs, new bunker gear.	
Firewise Information	Firewise - no program at this time, however, would like to do signs in the near future and start level 2 assessments. Recently secured a Fire Prevention grant, w/smoke detector and information give away program. We have open house during Fire Prevention Week. We also received a training package grant w/computers.	
Mutual Aid	Current: Lakehead Mutual Aid Association, MN DNR, Arrowhead Regional FF's Assn.	
Fire Department Needs	Need: 1 dry hydrant in the Prairie Lake area and /or a buried water supply tank. Additional PPE for wildland fires and wildland fire training.	
Other		

Name: Grand Lake Fire Department		WUI Area: Southwest Area
Access:	Access is provided by State Hwy 53 (4-lane) and County Highways 15, 98, 7 and several shorter County Highways. Access to forested regions is provided by Radio Rd and numerous 4-wheeler trails and former railroad grades. There are large forested tracts that are not accessible. Access to numerous homes and cabins is restricted due to narrow driveways.	
Topography:	Grand Lake Townships have rolling topography intersected by the Cloquet River and several smaller streams as well as Bergen Lake, Bowman Lake, Fish Lake Reservoir, Grand Lakes, Pike Lake, Caribou Lake, 2 Mud Lakes and Long Lake.	
Fuel Hazards:	Grand Lake Townships have considerable forest stands consisting of aspen, mixed hardwoods and conifers in undeveloped areas and surrounding extensive lake and rural residential properties. The north undeveloped areas are under continual logging activities with extensive slash piles and new brush type growth. Fuels include blowdown, balsam fir, mixed hardwood and softwood forests, pasture/grasslands, logging slash debris, balsam ladder fuels, pine needle duff, homes and cabins constructed in forest setting without fire breaks and pine plantations.	
Fire Occurrence:	Wildland fire frequency is moderate due to increasing population in the rural environment and the railroad (Canadian National) which transects both townships from north to south. The potential for disastrous wildland fires is high both due to the railroad and 4-wheeler activity in inaccessible areas. In the last 10 years there have been several forest fires requiring aerial support.	
Homes:	This is a rapidly growing area with several housing developments. Traditionally residential homes have been constructed surrounding the lakes and along the roads. New driveways are being extended into forested areas to support additional multi-home developments.	
Businesses:	Numerous new businesses are being constructed and expanded along the Hwy 53 corridor as well as along roads adjacent to Hwy 53. Businesses include a wood truss manufacturer, an LP rail and truck loading/off loading facility, correctional facility, truck manufacturer, restaurants, gas stations, school and numerous home businesses.	
Jurisdiction:	Fire protection is provided by Grand Lake Volunteer Fire Department.	
Infrastructure risk:	Important infrastructure includes; 100+ bed multi-county correctional facility; major State Highway linking the U.S. and Canada; large LP gas facility; electrical transmission and telephone lines and similar common infrastructure.	
Community values:	Important community values include homes, businesses, recreational opportunities, forested lands and community buildings.	
Local Preparedness Capability:	Fire department resources include 3- 1,250 gpm/1,000 gallon engines, 1,800 gallon tanker, rescue/brush truck, medical response truck and 4-wheeler. Instruction has been given to fire department on ICS and NIMS.	
Firewise Information	Firewise grants have been requested twice to improve water supplies, address numbers and firewise assessments. There is a need for Firewise education to the public, improved access to residential properties and to the forested region on the north end of the township and improved fire mitigation measures for homes.	
Mutual Aid	Fire protection is provided by Grand Lake Volunteer Fire Department. Mutual aid agreements with all adjoining fire departments and DNR are in place and current.	
Fire Department Needs	Additional good water supply points are needed through-out the township and an additional tanker truck for hauling water for suppression. Retention and recruitment of fire department members is also a definite need. Both fire stations need to be expanded to accommodate current equipment. Portable radios are also needed for all fire fighters as well as additional structural and wildland protective gear. Medical response kits are needed for all medical responders. Heavy rescue vehicle is needed due to # of responses to Hwy 53 accidents and increased amount of required equipment.	
Other		

Name: Meadowlands Fire Department		WUI Area: Southwest Area
Access:	Provide fire coverage for a bit less than a double township and most of Ness Township. The main roads are 7, 133, 29, 740, 193,m 211, 47, 5, 226, 204, 200, 201, 166 165, with some scattered dead ends, however, most areas are accessible..	
Topography:	Rolling landscape w/scattered streams, open pasture and fields in the double Township. Rivers are Whiteface, Little Whiteface, and St Louis River on West boundary.	
Fuel Hazards:	Mostly birch, aspen, maple, some balsam, small pine stands, lowland brush, grasses.	
Fire Occurrence:	Low frequency – 2-3 wildfire calls in the Township, w/2-3 mutual aid wildland calls per year.	
Homes:	Approx. 275 homes, population approx. 600 people.	
Businesses:	Furniture call-center, gas station, restaurant, grocery store, post office.	
Jurisdiction:	Meadowlands Volunteer Fire Department; Mutual Aid w/Lakehead Fire Assn. Departments, Mn DNR, Toivola VFD and Elmer VFD.	
Infrastructure risk:	Pipeline-gas, CN & BN RR tracks, scenic canoe routes.	
Community values:	Post Office, community center, multi-bay fire station.	
Local Preparedness Capability:	Fire dept resources include: 1000GPM / w1000gal tank 1500gal tanker, w/o pump grass rig, 350 gal w/pump Ambulance Port. Pump, 750GPM on a trailer 2 dry hydrants w/good access	
Firewise Information	Fire prevention programs at senior housing, includes fire drills, evacuation practice. No Firewise Program. Need to start updating fire signs.	
Mutual Aid	Current: Lakehead Mutual Aid Association, MN DNR. Toivola & Elmer VFDs (They are not Lakehead Assn.)	
Fire Department Needs	Needs: Fire sign updates Need more firefighters.....firefighter retention is an issue.	
Other		

Name: Northland Fire Department		WUI Area: Southwest Area
Access:	The main road in the Township is Hwy 53. Others are, 15, 49, 133, 233, 737, 740, 970, dead ends have school bus turn arounds. R 16 is Three lakes Unorganized township.	
Topography:	Rolling landscape along rivers, mostly a flat township. Streams are; Hellwig, Us-Kab-Wan-Ka. Lakes; Winkle, Elora, Dodo, Rose, Nichols, open fields along #53 .	
Fuel Hazards:	Mostly aspen, birch, maple, some balsam, small pine stands, Lowland brush and grasses.	
Fire Occurrence:	Low frequency – average 1-2 wildfire calls, w/2-3 mutual aid wildfire calls per year.	
Homes:	Homes; approx. 165 year round and 182 cabins seasonal. Population approx. 400	
Businesses:	Church, storage units bldg, bar rest/gas station bldg /closed, 3 Lakes Inn /closed, County sand storage/equipment bldg., sauna mfg.	
Jurisdiction:	Northland Volunteer Fire Department; T – 53, R – 17 & 16 Mutual Aid w/Lakehead Fire Assn. Departments, Mn DNR.	
Infrastructure risk:	Power lines, Cty bldg, public buildings, cabins.	
Community values:	multi-bay fire station, 1 church, County sand bldg. community center, forest products contractor...	
Local Preparedness Capability:	Fire dept resources include: 1250GPM, w/1500gal, w/ foam tanker, 3000 gal w/o pump tanker 1600gal, w/350 GPM 2 grass fire rigs, w/250 gal tanks and pumps	
Firewise Information	No Firewise program. Fire Prevention; give away smoke detectors, hand out information to Cotton Grade School children.	
Mutual Aid	Current: Lakehead Mutual Aid Association, MN DNR,	
Fire Department Needs	Need: it. Underground water tanks—water supply needed. Portable pump. Turn out gear; structure and wildland PPE.	
Other		

Name: Solway Fire Department		WUI Area: Southwest Area
Access:	The main road in the township is Hwy 2. Others are, 194, 98, 6, 56, 694, 859, 696, quite a few dead end roads throughout the Township.	
Topography:	Rolling landscape with some high ground, scattered creeks, small lakes and potholes throughout the township.	
Fuel Hazards:	Mostly birch, aspen, maple, some balsam and small pine stands.	
Fire Occurrence:	15-20 wildfire calls in Township mostly RR related. 10 mutual aid wildland calls per year.	
Homes:	1833 homes, approx. 691 people.	
Businesses:	7 commercial, lawn care business, 2 gas /convenience/bar/grill, contractor w/ equipment storage, Post Office , body shop, small businesses out of the homes.	
Jurisdiction:	Solway Volunteer Fire Department; Mutual Aid w/Lakehead Fire Assn. Departments and Mn DNR, Agreement w/Thompson Township (Esko) in Carlton County.	
Infrastructure risk:	Power lines, gravel pits, high press gas line, CN, RR tracks. 2 communication towers, 3 churches.	
Community values:	New multi-bay fire station/community center/ town hall/ recreational complex.	
Local Preparedness Capability:	Fire dept resources include: 1 - 1250GPM w/10000gal 1 - 1000GPM/2700gal pumper/tanker 1 -1750gal/50GPM tanker w/ CAFS 1 - 1000GPM/2500gals pumper/tanker 2 - grass fire units, 50 GPM/100 gal Rescue, 1 st responder unit	
Firewise Information	L2 assessments are being done. Approx 40 completed. Need Firewise Program assistance. Fire Prevention includes; open house, BP clinics, CPR instruction.	
Mutual Aid	Current: Lakehead Mutual Aid Association, MN DNR. Thompson Township (ESKO, Carlton County).	
Fire Department Needs	Need: 4 dry hydrants, all out of commission at this time & need to be fixed this spring. (We share a dry hyd in a private gravel pit.) We would like to install an under ground tank for water supply. New pumper /tanker to replace older one.	
Other	Solwayvfd@hotmail.com	



Name: Breitung Fire Department		WUI Name: Vermilion Basin
Access:	Major roads include State Highway 169 and County Road 697. Secondary roads are principally all weather Township roads. Murray Spur Forest Road is well maintained but narrow. The Arrowhead Snowmobile trail bisects the Southeast corner of the Township. Boat access only properties offer a unique challenge to the department. The department houses their fireboat at the Stuntz Bay Boat Access.	
Topography:	Topography is generally a mix of lowland and upland. Areas around Lake Vermilion are characteristically rocky & often steep terrain.	
Fuel Hazards:	Fuels in the Breitung VFD protection area are an even mix of lowland conifers, lowland brush, upland hardwoods and upland conifers.	
Fire Occurrence:	Breitung VFD responds to an average of four wildland fires per year.	
Homes:	According to a 2006 census there are 623 year round residents and 283 households in Breitung Township. According to the Breitung Township Government, there are at minimum 476 improved parcels within the township.	
Businesses:	Soudan Store, McKinley Park Campground and Soudan Underground State Park.	
Jurisdiction:	Breitung VFD has jurisdictional responsibility for Breitung Township T62R15, several cabins in Unorganized T63R15, and Unorganized Township responsibility as defined in Laurentian North Firefighters Mutual Aid Agreements.	
Infrastructure risk:	Infrastructure risk includes Minnesota Power Substation located between Tower and Soudan, Lake Country Power transfer lines, the Water Tower and Water Treatment facility and treatment ponds serving Tower and Soudan, Breitung Township Garage, Township Hall and Fire Hall, and Cellular One Cell Tower in the Southeast of Breitung Township.	
Community values:	The Breitung Township residences value the aesthetics of Lake Vermilion, and it's boat houses, The Soudan Underground Mine, McKinley Park Campground and Beach Area, Soudan recreational area and ball field, Community Churches, Soudan Store, US Post Office, Township Hall, Fire Hall & Garage.	
Local Preparedness Capability:	1976 Class A Pumper, 750 gallons, 1000 gpm pump 1998 Pumper-Tanker, 1500 gallons, 400 gpm pump 1976 Type 3 Brush Truck, 150 gallons, 100 gpm pump 1989 Lund Fire Boat, with stationary and portable pumps 1991 Chevrolet six place support rig	
Firewise Information	Breitung VFD is not currently participating in any Firewise Program.	
Mutual Aid	Breitung VFD is a member of the Laurentian North Firefighters Mutual Aid, & maintains mutual aid agreements with eight departments including Babbitt VFD, Tower VFD, Eagles Nest VFD, Embarrass VFD, Greenwood VFD, Morse Fall Lake VFD, Pike Sandy Britt VFD, Vermilion Lake VFD.	
Fire Department Needs	The Breitung VFD's greatest need is to replace it's ageing 1976 Class A Pumper. Another issue is the increased Fire Protection that will be needed for US Steel's proposed Three Bays Development on Lake Vermilion. The department's present equipment and staffing is inadequate to cover this development	
Other	The department has recently received a FEMA grant for new SCBAs and Turn Out Gear. All personnel are presently equipped with wildland PPE. The Department personnel are getting older. Retaining and recruiting new members is difficult.	

Name: Cook Fire Department		WUI Area: Vermilion Basin
Access:	Major roads include State Hwy 53, State Hwy 1, State Hwy 73, County Road 22, County Road 24, County Road 115, and County Road 25. Secondary roads include several black top surfaces, however Cook VFD protection relies upon a vast infrastructure of narrow gravel roads with seasonal limitations. Notable snowmobile trails include Arrowhead, Voyageur & Wolf Track trails. Several public access roads serve boaters on Lake Vermilion. Cook VFD has boat access fire protection areas on Lake Vermilion, and Elbow Lake. Private drives have limited access & egress, which can be gated. The CN Railroad corridor bisects some roadless areas.	
Topography:	Topography is generally a mix of lowland and upland. Areas around Lake Vermilion are characteristically rocky & often steep terrain. Lake Vermilion, Little Fork River, Rice River, Vermilion River, Elbow River and Sturgeon River are major waterways in the Cook VFD area.	
Fuel Hazards:	Fuels include lowland spruce, upland pine plantations, limited tamarack & cedar, extensive aspen and lowland brush. Lowland grasses are found throughout the area. Dead and dying fir, of all age classes, the result of spruce budworm impacts and drought, poses an especially troublesome fire hazard in Beatty townships around western Lake Vermilion. Blowdown from the 1999 Storm Event contributes to heavy fuel loading North of Lake Vermilion.	
Fire Occurrence:	Cook VFD responds to a moderate number of wildland fire pages from Midway 911, in mutual aid support of Tower DNR and USFS LaCroix Ranger District Office.	
Homes:	The City of Cook includes 250 residence structures. Accounting for year round and seasonal residences, excluding recreational resorts and resort cabins in the outlying areas of Cook VFD fire protection, there is an estimated 1000 homes.	
Businesses:	Ainsworth LLC, Hill Wood Products, Homestead Mills, 3 gas stations, Lakes Gas propane pumping station, Edwards Oil Company bulk fuel farm, two hardware stores, Zups Foods, City Bottle Shop, twelve restaurants, two golf courses, Gustafson Ford, Waschki Family Chevrolet, Comet Movie Theatre, Franks Pharmacy, five financial institutions, Spaces Off Main Furniture and Appliances, Disability Specialists, River Street Auto, Northcountry Floral, two insurance agencies, and five hair stylists, day care centers, Russ Hyppa CPA, Cook Area License Bureau, Cook Chiropractic.	
Jurisdiction:	The Cook VFD jurisdiction ranges over ten townships, and is composed of Beatty North, the Southern half of Field North, Beatty, Unorganized Greenwood Northwest, Owens, Field South, Linden Grove, Angora, Alango, & Sturgeon.	
Infrastructure risk:	Lake Country Power and several sub-stations, Quest Communications, Cellular One Cell Towers, MNDOT Repeater Towers, Cook Municipal Water System and Sewage Treatment Facility, gas & oil facilities as listed under Businesses, CN Rail, Cook & Linden Grove County Garage, Cook MNDOT Garage, St. Louis County Rescue Squad Facility, Four Township Halls, Scenic Rivers Health System and Cook Area Hospital, Cook Nursing Home, Cook School - ISD 2142, two St. Louis County Transfer Stations, Cook Airport (KCQM), several county wood plank bridges, several State Forest camp grounds and recreational trails.	
Community values:	Area churches, parks and recreation facilities, Cook Library, Cook Airport (KCQM), Cook VFD Fire Hall & Ambulance Service, township halls, golf courses, US Post Office, local businesses & industries, Senior Citizen Community Center, Cook VFW, day care centers.	
Preparedness Capability:	2000 gal. Type 3 Tender (X2); 1250gpm Engine (X2); 100 ft Aerial Truck; Type 6 Brush Truck; 3000gpm pumper; Type 3 ambulance (X2); 6 Wheel Drive ATV w/ Rescue Sled	
Firewise Info	Need Firewise grant to upgrade 911 Signage.	
Mutual Aid	Member of the Algoman Fire Association. Cook VFD has mutual aid agreements with Greenwood VFD, Pike Sandy Britt VFD, Evergreen VFD, Bearville VFD, Orr VFD and Buyck VFD.	
Fire Dept Needs	Cook VFD and Ambulance Service need funding for a boat to serve lake access only properties on Vermilion and Elbow Lake. The dept needs Personnel Protective Equipment for wildland firefighting. Additional handheld radios would improve the safety of personnel on wildland fire response	
Other	Cook VFD has a large protection area that includes ten townships and several sizeable lakes including West Lake Vermilion. Response time can be lengthy to outlying areas. . The Cook Community and rural outlying areas are at great risk to wildfire. A large protection area with developed lakes and access limitations frustrates response time. Increased fuel loading due to Spruce Budworm impacted fir and remnant blowdown make Cook VFD Jurisdiction especially prone to extreme fire behavior.	

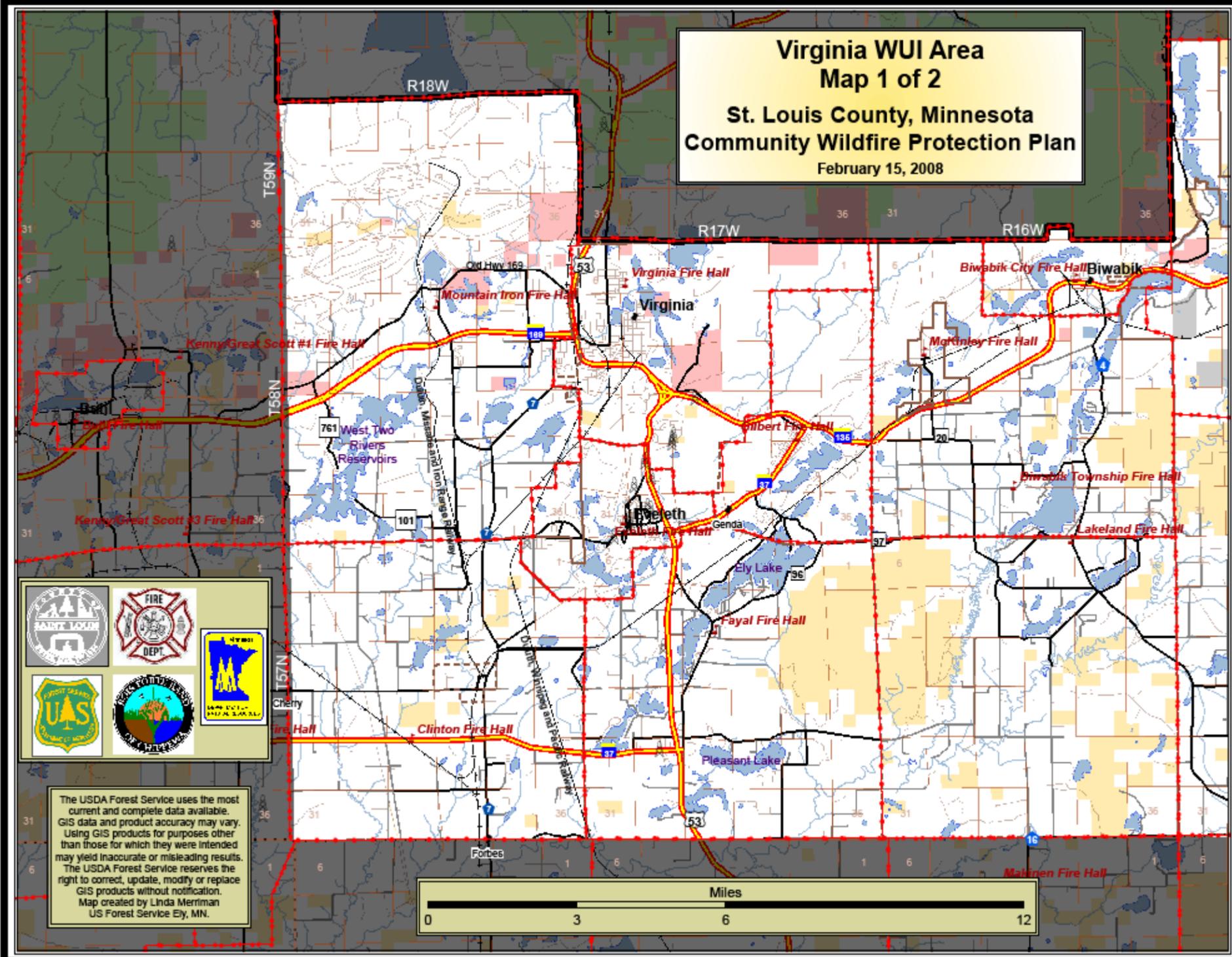
Name: Eagles Nest Fire Department		WUI Name: Vermilion Basin
Access:	Major roads include State Highway 169, and Bear Head State Park Road. Secondary roads include several County Standard gravel roads with a growing number of sub-standard roads. Winter and spring access can be difficult. The Taconite Snowmobile Trail bisects Eagles Nest VFD protection. Two island properties on Eagles Nest Lake One are inaccessible for lack of equipment.	
Topography:	Topography is generally a mix of lowland and upland. Terrain in Eagles Nest Township is characteristically rocky and often steep. Several large lakes and many smaller lakes are distributed throughout the protection area.	
Fuel Hazards:	Fuels include lowland cedar, upland pine plantations, over-mature jack pine, extensive aspen, lowland brush, and limited tamarack and black ash. Dead & dying fir, of all age classes, the result of spruce budworm impacts and drought, poses an especially troubling fire hazard in Eagles Nest Township.	
Fire Occurrence:	Eagles Nest VFD responds to, on average, two wildland fires per year.	
Homes:	There are 402 improved parcels within Eagles Nest VFD protection.	
Businesses:	SRE, and Phil's Cars.	
Jurisdiction:	Eagles Nest VFD has jurisdictional responsibility for Eagles Nest Township, as well as Bear Head State Park.	
Infrastructure risk:	Minnesota Power transfer lines, Lake Country Power, Frontier Phone Service, and a Verizon Cell Phone Tower.	
Community values:	The Eagles Nest Township residences value the aesthetics of the landscape, their homes, the Eagles Nest Township Hall, the Eagles Nest Fire Hall, and Bear Head State Park.	
Local Preparedness Capability:	1971/'96 American LaFrance Type 1 Engine, 1000 gal. Tank, 1250 gpm pump 1994 Ameritex Brush Pumper, 1018 gal. Tank, 900 gpm pump 1997 Dodge 1 Ton Brush Pumper, 300 gal. Tank, 1250 gpm pump 1967 GMC Type 2 Tender, 3000 gal. Tank, 500 gpm pump 1977 Dodge Type 6 Brush Truck, 300 gal. Tank, 125 gpm pump 6X Portable Wildland Pumps 2X 10,000 gal. Static tanks 2X Dry Hydrants	
Firewise Information	Eagles Nest VFD has an interest in Firewise funding for 911 signage.	
Mutual Aid	Eagles Nest VFD is a member of Laurentian North Firefighter's Mutual Aid, and maintains a Cooperative Agreement with Minnesota DNR and USFS.	
Fire Department Needs		
Other	The Eagles Nest VFD would benefit from new Personnel Protective Equipment, and updated radios and pagers. A new water tender is needed. Recruitment is an ongoing struggle - it's critical.	

Name: Greenwood Fire Department		WUI Name: Vermilion Basin
Access:	Major roads include County Road 77, County Road 115, Oak Narrows Road, and County Road 667. Numerous secondary gravel roads maintained by the county prove to be good all weather roads. No Township roads are within the protection. Some seasonal roads provide challenging access. A large number of water access only properties are on Lake Vermilion. The one major recreational trail in Greenwood's protection is the Arrowhead Snowmobile Trail. The Northern limit of Greenwood VFD jurisdiction includes twelve sections of the Boundary Waters Canoe Area around Trout Lake. Local property owners generally do not maintain access to Firewise standards.	
Topography:	Topography is principally a mix of lowland and upland in the Greenwood VFD protection area. The Lake Vermilion landscape is characteristically rocky & often moderately steep terrain.	
Fuel Hazards:	Fuels include lowland spruce, upland pine plantations, limited tamarack & cedar, extensive aspen and lowland brush. Lowland grasses are found throughout the area. Dead and dying fir, of all age classes, the result of spruce budworm impacts and drought, poses an especially troublesome fire hazard. Blowdown from the 1999 Storm Event contributes to heavy fuel loading North of Lake Vermilion.	
Fire Occurrence:	The Greenwood VFD protection area has a history of limited wildland fire occurrence. Fuel loading is high throughout.	
Homes:	The Greenwood Township Board indicates that there are 1698 improved parcels. There are significantly more improved parcels within the Greenwood VFD protection area. The number of homes has yet to be determined.	
Businesses:	Fortune Bay Resort, Casino & Wilderness Golf Course, 77 Marine & Recreation, Forest Lane Resort, Everett Bay Lodge, West Haven Lodge, Redrock Mini-Storage and Redrock Fire, Bay View Lodge, Pine Trees Resort, Birch Point Marine, Eagle Docks, 77 Mini-Golf, 77 Storage, Wayside Cafe, Vermilion Club, Holmes Excavating, Daisy Bay Resort, End of Trail Lodge, Gruben's Marina, Tranchaff's Cabins, Shamrock Marina, Moccasin Point Resort, Campground & Marina, Retreat Lodge, Timbucktu Marina, St. Louis County Solid Waste Transfer Station, Trout Lake Portage, Glenwood Lodge, Amos Mini-Storage & Glenmore Resort	
Jurisdiction:	Greenwood VFD has jurisdictional responsibility for Township 63-16, the East half of 63-17, 62-16, the NE corner of 62-17, and 63-15.	
Infrastructure risk:	Lake Country Power transmission lines, Frontier Telephone lines, and Quest Telephone lines are at risk from wildfire.	
Community values:	Greenwood Township Hall, businesses, residence structures, and the recreational use of Lake Vermilion are cited as community values.	
Local Preparedness Capability:	2002 Custom 1850 GPM, 1000 gal. Structural Engine; 1982 International 750 GPM, 750 gal. Structural Engine; 1991 International 250 GPM, 2000 gal. Tender; 1971 Ford 1000 gal. Tender; 1999 Ford 500 GPM, 300 gal. Type 2 Quick Attack Rig; 1972 Howe Ladder Truck, 1250 GPM pump; 1986 Lund Boat, 500 GPM; 2007 MetalCraft Fireboat, 1250 GPM; Numerous portable pumps; Polaris 6X6 ATV; Snowmobile X2, with rescue sleds; Airboat	
Firewise Information	Township board zoning ordinances and St. Louis County Planning appear to favor natural landscapes rather than open defensible space surrounding structures. Perhaps there is a conflict between local and FireWise recommendations.	
Mutual Aid	Greenwood VFD provides mutual aid to Laurentian North Firefighters Mutual Aid, and Cook VFD.	
Fire Department Needs		
Other	Greenwood VFD is in the process of replacing their existing aged water tender. Communication interoperability concerns merit attention. Cell phone towers and radio repeaters are limited in parts Greenwood VFD protection. The department is generally well equipped for a VFD, however wildland fire PPE needs exist.	

Name: Tower Fire Department		WUI Name: Vermilion Basin
Access:	Major roads include State Highway 169, County Road 135, and County Road 26. A small number of secondary gravel roads adjoin County Road 135. The Taconite Snowmobile Trail offers limited travel during non-frozen months. Hoodoo Point Road serves access to Lake Vermilion North of the City of Tower.	
Topography:	Topography is generally a mix of lowland and upland. Areas around Lake Vermilion are characteristically rocky & often steep terrain. East Two and West Two Rivers are major waterways in the Tower VFD protection area.	
Fuel Hazards:	Fuels surrounding the City of Tower are an even mix of lowland conifers, lowland brush, upland hardwoods and upland conifers.	
Fire Occurrence:	Wildland fire occurring within the city of Tower and Kugler Township is low, averaging about three fires per year. The May 10 th , 1992 Mothers Day Fire was a combination of two fires that nearly devastated the City of Tower.	
Homes:	There are 260 residence structures in the City of Tower. Kugler Township has 71 residence structures.	
Businesses:	Beauty Nook, Benchwarmers Grill, Bob's Standard, Bonita's Imports, Broten Construction, D'ericks Tower Liquors, Embarrass Vermilion Credit Union, Erickson Hardware, Frontier Communication, Good Ol' Days Bar & Grill, Great Northern Lending, Lake View Manor, Laundromat, Iron Ore Bar, J&P Auto, Jeanne's Cards & Gifts, Car Wash, Kitchen's & Brass, Lamma Mfg., Inc. Marjo Motel, North Country Quilts, Northern Avionics, Northwoods Land Office, Powerain, Remax Realty, State Bank of Tower, Timberjay Publishing, Tower Auto, Tower Café, Tower Electric, Tower LP Gas, Tower News, Tower-Soudan Agency, Van Air, Vermilion Food & Fuel, Vermilion Funeral Home, Golden Rule Lumber, Vermilion Land Office, Vermilion Shear Image, Zups Foods, & Brands Greenhouse in Kugler Township, Glenmore Resort & Lodge in Greenwood Township and Aronson Boat Works, Como Oil and Propane, Eloranta & Associates, and Northland Realty located in Vermilion Lake Township.	
Jurisdiction:	Tower VFD maintains jurisdictional fire response for the City of Tower and Kugler Township, T61-R15W.	
Infrastructure risk:	Quest Telephone Sub-Station, Cellular-One Cell Tower, Charter Communications Tower, Tower Airport (K12D), Tower Soudan School District 2142, St. Louis County Garage, Tower City Garage, Tower City Hall, Tower Emergency Services & Civic Center.	
Community values:	Tower City Hall, Tower Emergency Services & Civic Center, Tower American Legion, Tower Airport (K12D), Kugler Township Hall, Tower US Post Office, Local Businesses and Industries, Hoodoo Point Campground, Tower City Historical Depot, Tower Soudan School District 2142.	
Local Preparedness Capability:	2000 gal. Type-3 Ladder Truck ;750 gal. Type 1 Engine; 2200 gal. Water Tender ½ ton Support Truck; 6 Wheel ATV & Rescue Sled; Snowmobile	
Firewise Information	Need Firewise grant to upgrade 911 Signage.	
Mutual Aid	Tower VFD is a member of the Laurentian North Firefighters Mutual Aid, & maintains mutual aid agreements with eight departments including Babbitt VFD, Breitung VFD, Eagles Nest VFD, Embarrass VFD, Greenwood VFD, Morse Fall Lake VFD, Pike Sandy Britt VFD, Vermilion Lake VFD.	
Fire Department Needs		
Other	The Tower VFD is in need of funding for a type-6 engine, which they are currently lacking. The department is also in need of Personnel Protective Equipment for wildland firefighting. The Wildfire Risk to City of Tower and the adjoining Kugler Township is moderate; however, the landscape surrounding the City of Tower is historically vulnerable to catastrophic fire. Tower VFD response time is excellent due to the limited protection jurisdiction.	

Name: Vermilion Lake Fire Department		WUI Name: Vermilion Basin
Access:	All weather surfaced roads, State Hwy 1 & Hwy 169, St. Louis County 77 & 26, Wiseman Road & Pike Bay Drive. Gravel roads include those maintained by County, Township & private road associations. DNR Forestry maintains Peyla Road. An assortment of woods roads & private roads are of varying seasonal quality. Travel is essentially one way on forest roads, some with gated access. Major recreational trails (Taconite & Arrowhead) are passable by ATV & tracked vehicles only. Water access properties being developed on Pike River Flowage.	
Topography:	Uneven topography with ledge ridges and outcrops. Protection area is interlaced with lowlands, waterways and wetlands. Pike River and tributaries drain Vermilion Lake Township to Pike Bay, of Lake Vermilion. Township is forested, with scattered agricultural fields that are converting to forest.	
Fuel Hazards:	Fuels within the protection area can be generally characterized as mixed Northern forest with large areas of light fuels in the historic Mother's Day Fire Burn Area. Fir ladder fuels are prevalent due to increasing Spruce Budworm damage, which has spread from south to north in the Township. Persistent drought contributes to this damage and increasing fire risk. Historic Fire Regime: III, Current Fire Regime: III, Condition Class: 1	
Fire Occurrence:	Low fire occurrence in the protection area, with history of infrequent larger fires, (1992 Mother's Day fire of 7400 acres & the October 1976 fire of 1640 acres).	
Homes:	Mostly seasonal cabins with a mix of year round homes on the south shore of Pike Bay, Lake Vermilion. Scattered year round homes with a mix of seasonal/ hunting cabins along the roadways throughout the Township. There are approximately 130 homesteads and 110 seasonal cabins, with a population of 330. Coverage area population in Kugler & Pike Townships is 10.	
Businesses:	Businesses include Black Bear Café, The Y Store, Vermilion Land Office, Como Oil & Propane, Vermilion House Boats, MN DNR Fish Hatchery, Pike Bay Lodge, Aronson Boat Works, Harold's Arctic Cat, Pike Bay Repair, RC Automotive, Eloranta & Associates.	
Jurisdiction:	Jurisdictional responsibility for Vermilion Lake Township in entirety, Kugler Township, sections 18, 30 & 31 & Pike Township, section 1. MN DNR has responsibility for forestlands. USFS coverage abuts West boundary of protection area. Cooperative agreements are maintained with DNR Forestry Tower and USFS Laurentian District Office. Membership in Laurentian North Firefighting Association, a mutual aid coalition of nine member departments: Greenwood, Tower, Breitung, Eagles Nest, Morse, Babbitt Embarrass, Pike-Sandy-Britt, and Vermilion Lake.	
Infrastructure risk:	Lake Country Power Vermilion Substation number 15. Lake Country Power & Minnesota Power distribution lines, Frontier & Quest telephone systems, Como bulk propane facility, roadways, businesses, Pike River dam.	
Community values:	Vermilion Little Church, Town Hall & Fire Hall, two cemeteries, businesses & residences, recreational uses of the Pike River & Lake Vermilion, trails & hunting areas, and Forest Products.	
Local Preparedness Capability:	Vermilion Lake Fire Hall: 2006 Pumper Tanker - 1000gpm, 1500g tank, type 2 engine. 1975 Pumper - 1000gpm, 1000g tank, type 2 engine. 1983 Tender - 225gpm, 2000g tank, type 3 tender. 1986 Brush Truck - 50gpm, 200g tank, type 6 engine. 1977 Brush Truck - 17gpm, 200g tank, type 6 engine. 2x portable pumps @ 225gpm & 500gpm. 1x dry hydrant, 2x 10,000g static tanks	
Firewise Information	Level II Firewise Assessment was completed in 2004, in conjunction with a grant for 911-signage replacement. All primary structures were mapped and Firewise educational material was distributed to property owners. In 2006 the Vermilion Lake Fire Department acted as the fiscal agent for a Firewise Grant for dry hydrant and static tank marking.	
Mutual Aid	Mutual Aid Agreements are in place and current as of 2007.	
Fire Department Needs	Communications equipment, both pagers and radios. PPE upgrades. Additional dry hydrant water sources. Tender upgrade. Recruitment of younger department members. Additional heated storage space.	
Other	Hazardous materials transportation on highway network. Generally aging population	

Virginia WUI Area
Map 1 of 2
St. Louis County, Minnesota
Community Wildfire Protection Plan
 February 15, 2008



Legend

- WUI Area
- Fire Department Jurisdiction
- Fire Hall
- Railroads
- Cities/Towns
- Airports
- FAA Towers (2000)

Roads

- State/US Highways
- Paved
- Gravel
- Municipal/Other

Land Ownership

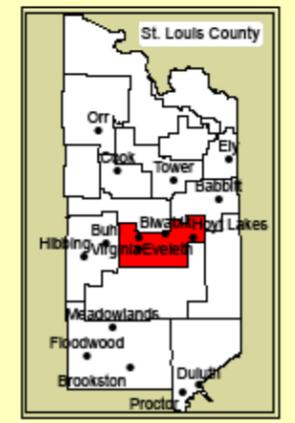
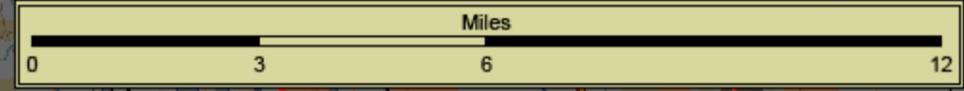
- St. Louis County
- State of Minnesota
- National Forest
- Private Industry
- Private/Other
- Indian Reservation

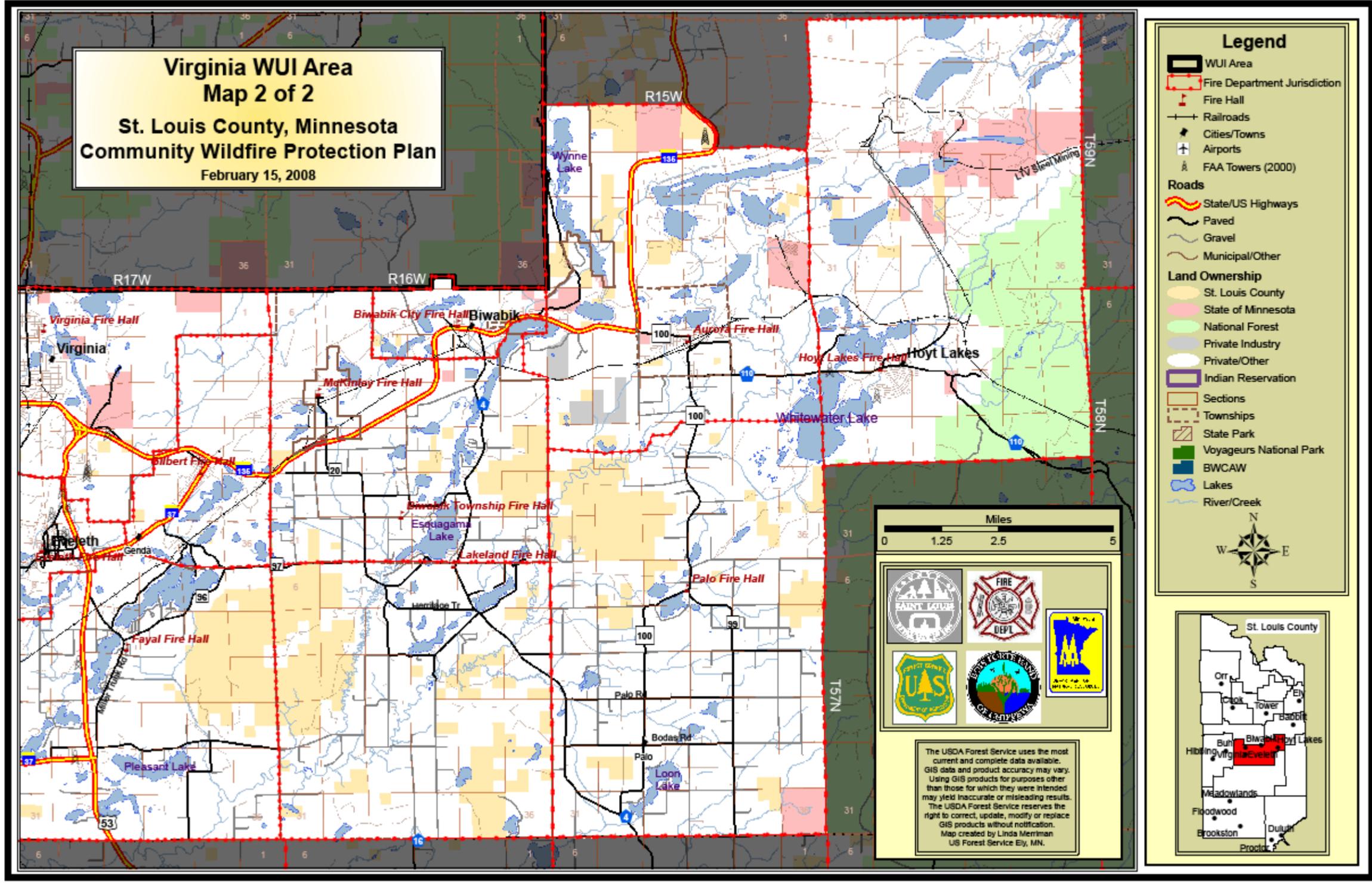
- Sections
- Townships
- State Park
- Voyageurs National Park
- BWCAW
- Lakes
- River/Creek

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The USDA Forest Service uses the most current and complete data available. GIS data and product accuracy may vary. Using GIS products for purposes other than those for which they were intended may yield inaccurate or misleading results. The USDA Forest Service reserves the right to correct, update, modify or replace GIS products without notification. Map created by Linda Merriman US Forest Service Ely, MN.





Name: Aurora Fire Department		WUI Name: Virginia Area
Access:	The Aurora Fire Dept. protection area is accessed by four main North, South, East, West Highway corridors: Aurora-south=HWY 100, Aurora-east=HWY 110, Aurora-north=HWY 53, Aurora-west=HWY 135. Paved township roads access Interface areas off these four highway corridors. Gravel roads provide additional access and egress. The majority of these paved and gravel roads provide good access for both type-1 structure engines and public evacuation.	
Topography:	Flat, accessible terrain except for scattered spruce bogs and wetlands. Open pit mines and mine dumps are also located to the north or Aurora.	
Fuel Hazards:	Heavy balsam fir understory in timber areas Jackpine fuel model is predominant along the Stepetz Road corridor.	
Fire Occurrence:	10-20 wildland fires per year. All fires are human caused; debris burning, railroad, powerline, etc.	
Homes:	Permanent residential homes are located within the city limits of Aurora and are also scattered throughout the rural portion of the protection area south of Aurora.	
Businesses:	Many service businesses in the community including gas stations, restaurants, bars and motels. Most businesses are within the city limits.	
Jurisdiction:	City of Aurora North ½ of T58N, R15W South ½ of T59N, R15W	
Infrastructure risk:	Natural gas supply line south of the city DMIR railroad through the center of the protection area running west to east High voltage transmission lines run through the protection area north part of Aurora.	
Community values:	Giants Ridge recreational area	
Local Preparedness Capability:	2-Type 1 engines 1-Type 6 engine 1-3000 gal. water tender City water supply-hydrant system/ Dry hydrants(3)	
Firewise Information	Ongoing level 1 Firewise assessments	
Mutual Aid	Mutual Aid agreements are in place and current with the DNR, USFS, east range coalition and adjacent fire departments.	
Fire Department Needs		
Other		

Name: City of Biwabik Fire Department		WUI Name: Virginia Area
Access:	Primary arteries are Hwy 135, #4, and #138 Paved roads Gravel roads - Pike River Road (Whiskey Rd.) and a network of old mining roads and ATV trails also abound within the city protection areas Snowmobile trails, ATV trails, railroad grades and logging roads provide recreational access Gated roads Numerous lakes and streams pose access challenges Public water accesses	
Topography:	Mine dumps provide steep access Mine dumps and pits such as the Canton and Biwabik pits Numerous lakes and streams such as Embarrass Lake and Embarrass River, Mud Lake, Wynne Lake and others Remote areas pose difficult access	
Fuel Hazards:	Upland and Lowland grasslands Bog-peatlands Lowland conifers Old and young aspen and balsam stands – Pines East of the city	
Fire Occurrence:	Average of three to five wildland fires each year	
Homes:	Approximately 300 homes, and still growing, in this protection area There are about 100 seasonal residents (growing) There are clusters of homes within the protection area, with lakeshore homes This area has very high property values, especially Voyagers Retreat	
Businesses:	Retail businesses, gas stations, assisted living facilities, bars, restaurants, community centers, a campground, fire hall, and ski lodge	
Jurisdiction:	City of Biwabik includes parts of sections 1, 4, 9, 10, 11, and 12 Also the S1/2 SE 34-59-16	
Infrastructure risk:	Natural Gas distribution station near cemetery, Local distribution lines, Power substation at the North edge of town (4 th street), Public utilities, Public beach on east side of city, Recreational trails, City Campground east of the city	
Community values:	Two Golf Courses, Cemetery with a building, Area churches, parks, recreational facilities, Community center, Resort, Public water accesses	
Local Preparedness Capability:	- 1990 Pierce type 1 pumper with a 1000 galloon tank and a pump capacity of 1000 gpm - 1978 Ford 4x4 ¾ ton type 7 grass rig with a 125 gallon tank and pump capacity of 250 gpm - 2005 Ford type 3 grass rig with a 280 gallon tank and pump capacity of 250 gpm - 1989 Pierce pumper with a 500 gallon tank and pump capacity of 1250 gpm	
Firewise Information	Fire safety week Open house at fire hall	
Mutual Aid	Mutual aid agreements are in place and current with DNR, USFS, East Range Coalition, Biwabik Township, Eveleth, Aurora, Lakeland, Virginia, Gilbert and McKinley	
Fire Department Needs	Recruitment and retention PPE for wild land firefighting Training for staff Communication upgrades	
Other	Biwabik City and Biwabik Township have a dual page	

Name: Biwabik Township Fire Department		WUI Name: Virginia Area	
Access:	<p>Primary arteries are Hwy 135, Hwy 4, Hwy 20 and Hwy 97.</p> <p>There are multiple paved county roads. And a network of gravel secondary (Township) roads. Seasonal forestry logging roads, (The Old Rifle Range) and mining roads.</p> <p>Snowmobile trails along Hwy 135, Mesabi Bike Trail</p> <p>There are many gated roads such as the Dyno Noble explosive plant, and mining roads. The old “rifle range” area has limited access roads. There are drivable railroad grades East of McKinley into Aurora. There are multiple public water accesses.</p> <p>Residential and Seasonal homes with narrow access pose challenges for emergency vehicles.</p>		
Topography:	<p>There is forested landscape that is fairly level to gently rolling. Numerous lakes and streams. The major flowage is the Embarrass River and associated lakes. Some remote areas with difficult access.</p>		
Fuel Hazards:	<p>Grasslands, Upland conifers, pure stands of Norway Pine, Mixed Pine and Pine plantations. Bog – peat lands, Logging debris/slash, Aspen stands mixed with Balsam, Balsam Fir understory, Homes and cabins scattered throughout the area.</p>		
Fire Occurrence:	<p>Average of 5 – 8 wildland fires each year.</p>		
Homes:	<p>Approximately 900 residents within this protection area.</p> <p>The Biwabik Township protection area has some seasonal residents (approximately 100). There are clusters of homes within the community. There are lake communities, rural farmsteads, single homes and one mobile home park.</p> <p>This areas has high property values on lakeshore properties; e.g. Eshquagama, Embarrass, and Cedar Island Lakes.</p>		
Businesses:	<p>Business include The Lakeland Store, Corner Express, Dyno Noble, auto repair shops, Day Care homes, one Assisted Living home.</p>		
Jurisdiction:	<p>T 58 - R16, Contract agreements with City of Biwabik and Town of Fayal. Mutual aid agreements with DNF, USFS, and The East Range Coalition. Simulcast page with the City of Biwabik Fire Dept.</p>		
Infrastructure risk:	<p>Distribution gas lines, Local distribution of electric power lines, Power substations at Stepetz Rd., and across the south border of the township, on Hwy 4. Recreational trails, Campground at Biwabik City Beach, 115 KV line in North ½ of Township see map.</p>		
Community values:	<p>Eshquagama Country Club, Township hall, Fire hall, Heritage Trail Church, St Louis County 4-H Camp, Camp Segal, and the Story Book Lodge Camp, Mobile home court located at Hwy 4 and Ajax Rd.</p>		
Local Preparedness Capability:	<p>1998 Ford F-700 Type I pumper with a 1000 gallon tank and a pump capacity of 1000gpm, 1986 GMC Type 2 engine with a 1500 gallon tank and pump capacity of 750gpm and a 1600 gallon drop tank. 2002 Chev Type 3 water tender with a 2100 gallon tank and a 2100 gallon drop tank, 2006 Ford 1 ton Type 6 Brudh Rig with a 300 gallon tank and a pump capacity of 75gpm, 2001 Polaris 6x6 Ranger with a 60 gallon tank and a pump capacity of 60gpm.</p>		
Firewise Information:	<p>There are no wildland outreach programs at this time.</p>		
Mutual Aid:	<p>Mutual aid agreements are current and in place.</p>		
Fire Department Needs:	<p>PPE for wild land fire fighting, Dry hydrants / water storage, Replacement of one pumper vehicle, Contract service agreements for maintenance and repairs Training for staff, New hose</p>		
Other:	<p>High hazard urban interface in the SE portion of the township.</p>		

Name: Clinton Fire Department		WUI Name: Virginia Area
Access:	Primary arteries are Hwy #7, Hwy #16, Hwy #37 and Hwy #137, Multiple paved and gravel roads (county roads), Numerous undesignated ATV and snowmobile trails, Gated roads, Three main railroad lines, Numerous lakes, ponds and streams could pose some access problems, Residential homes with narrow access pose challenges for emergency vehicles.	
Topography:	The topography is a mix of forested and agricultural land that is predominately level to gently rolling. The Northeast quadrant of the township has some steep terrain in the form of mine dumps.	
Fuel Hazards:	Clinton township has a diverse mix of wildland fuel types including: Grasslands, bogs – peatlands, lowland conifers, upland conifers, Aspen stands, and logging debris and slash areas. Balsam Fir is a component of most of the upland timber types. Homes and hunting shacks are interspersed throughout the township, thus creating areas with high wildland urban interface problems.	
Fire Occurrence:	Average of 5 to 10 wildland fires each year.	
Homes:	There are numerous homes within the entire township except within the United Taconite mining area. Some of the homes are currently not defensible. Three trailer courts lie within the township: they are Denzel's, Forbes and the Iron Bowl.	
Businesses:	The township is predominately residential with a limited amount of businesses or corporations. They include United Taconite, CN Railway's Keenan Yard, 3 junkyards, Terra Ferma, Holmes Recycling, Crossroads Gas & Convenient Store, Midtown Machine and Mechanical, small sawmills, Boondocks, and Lehman Mfg. There is also numerous home based businesses and farms present.	
Jurisdiction:	Clinton Township – Township 57 North, Range 18 West Encompassing 36 square miles.	
Infrastructure risk:	Local power distribution and feeder lines, Power substation, Natural gas lines Railroad lines, Junk yards	
Community values:	Area churches, businesses, Town Hall Complex and the Fire Hal	
Local Preparedness Capability:	1965 Bombadier J-5 tracked vehicle, 1997 Dodge which is used to pull the J-5 1990 GMC Type 2 Pumper engine, 1990 GMC Type 4 tanker, 1953 Dodge M-37 Type 7 Brush truck, 2000 Pierce Type 1 Pumper engine, 1976 Dodge Type 7 Brush Truck	
Firewise Information:	Firewise Level Two Assessments were completed on 147 homes as of October 18 th , 2007	
Mutual Aid:	Agreements are in place and current with the following departments: Cherry, McDavitt, Eveleth, Mt. Iron, Clinton is also a member of the East Range Fire Coalition.	
Fire Department Needs:	New Brush Truck, Additional money for personnel needs and equipment Wild Fire training, for new department members	
Other:	Meth lab problems are present throughout the township, and could pose a hazard for emergency responders. The junk yards also pose a health and safety threat for the fire fighting resources on scene. The Clinton RFD has a very good response time. It's wildfire firefighting ability is enhanced by having the J-5 available. Large volume of locomotive fuel stored at Keenan Yard	

Name: Eveleth Fire Department		WUI Name: Virginia Area
Access:	Primary arteries are Hwy #53, #101 and #37, also 18 th Ave W., #755 or Ramshaw Rd. N. and Station 44 Rd. There is a network of secondary gravel roads and mining roads. ATV trails and the Mesabi Bike Trail run through the area. Gated roads, and mining property roads. Railroad grades and railroad tracks are now recreational trails. Fayal Pond and mining roads pose access challenges. Residential homes with narrow access, and homes in town, pose challenges for emergency vehicle access.	
Topography:	Forested landscape is gently rolling with mining hills, and some steep mine banks. There are some very remote areas with difficult access, and some mining areas with difficult access.	
Fuel Hazards:	Grasslands, Upland conifers and Pine plantations, Bog - peatlands Lowland conifers, Aspen stands with balsam fir	
Fire Occurrence:	Average of 8 wildland fires each year.	
Homes:	There are approximately 4000 residences within the protection area. There are clusters of homes within the community - Leonidas, West Eveleth and the Station 44 area.	
Businesses:	Primary business is mining with numerous retail and light industrial businesses. In addition, there is OSI Environmental, 1 Hospital, 3 Nursing homes, 3 motels, The Hippodrome, Hockey Hall of Fame, Curling Club, Fingerhut, Nortemp, Malton Electric, Utility Systems of America, School, Mesabi College, 5 gas stations, City Offices, JM Auto, Lundgrens Auto Dealership, 1 Golf Course, 1 city Park area, Veterans Park for camping, swimming and recreational use. There are also numerous small business such as bakery, bars, restaurants, motels. There is a fire department and ambulance service.	
Jurisdiction:	City of Eveleth; Simulcast page with Fayal Township (both depts are paged at the same time for fire in either jurisdiction). East Range Coalition and the DNR.	
Infrastructure risk:	OSI, 2 natural gas substations, 10,000 gallon propane tank at Schwans and a 5,000 gallon propane tank at St. Raphaels, Qwest switching station, local distribution lines, power substations, public utilities, transportation system, recreations trails such as the Mesabi Trail, campgrounds such as Veterans Park and Pit Lake, the old shirt factory which is now a vehicle storage facility.	
Community values:	Area churches, schools, hospital, businesses, parks, recreational facilities and opportunities. Airport, Fire Hall, VFW, Elks Club, Legion, golf Course, Community centers, City Hall, Cellular towers, Nursing care units.	
Local Preparedness Capability:	2000 Ford Brush Unit with a 200 gallon tank and 100 gpm pump 2005 International Command Unit 2001 General 1250 Waterous with a 1000 gallon tank and a 1250 gpm pump 1989 Pierce Dash with a 500 gallon tank and a 1250 gpm pump	
Firewise Information	Fire prevention and fire safety week at schools. Fire safety for children and fire awareness and response. Other outreach includes open house, smoke detectors, tot finders, fire extinguisher training for the vocational school and the nursing homes. DNR programs for the preschool.	
Mutual Aid	Mutual aid agreements are in place and are current with the East Range Fire Coalition Departments and the DNR.	
Fire Department Needs	Recruitment and retention; Bunker gear; Portable pump; Replacement of pumper vehicles; Wildland and structure training for all staff; Communication upgrades - portables, pagers and base station	
Other	The Eveleth Fire Dept. has a very good response time. The farthest response time is 10 minutes to West Eveleth. The Leonidas Lookout and the West Eveleth areas have perpetual arson fires every spring and summer. Wildland problem areas include Leonidas, West Eveleth, Fayal Pit Area, Station 44, Mining areas and the Midway area.	

Name: Fayal Fire Department		WUI Name: Virginia Area
Access:	<p>Good roads – Combination of Highways, County and Township roads. Roads are mostly blacktop, but there are some gravel Township and County roads. Major Highways in the Township are Hwy #53 from South to North boundaries, and Hwy #37 from the East to the West boundaries.</p> <p>Numerous dead end roads.</p> <p>Forestry logging roads, gated roads and other roads with limited access.</p> <p>The Bike Trail that runs from Eveleth to Ely Lake, and the snowmobile trail (Hwy #53).</p> <p>Public water accesses.</p>	
Topography:	<p>Rolling topography with several mine dumps.</p> <p>There are 10 lakes in the Township, St. Louis River and several streams.</p>	
Fuel Hazards:	<p>There are many areas with large conifer stands. Many homes have been built in heavy wooded areas. Pine stands / homes.</p> <p>Bog – peat lands.</p> <p>Logging slash and debris.</p> <p>Grasslands.</p> <p>Aspen stands mixed with Balsam Fir, Balsam Fir understory</p>	
Fire Occurrence:	<p>Fire occurrence has decreased with fire restrictions. Railroad right-of-way fires continue to happen.</p> <p>Average of 5 – 10 fires each year.</p>	
Homes:	<p>There are 1,350 homes in the jurisdiction with about 80% as permanent residences. The year round population is 2,012. There has been many new expensive homes built within the last five years.</p>	
Businesses:	<p>There are several business within the jurisdiction. The types of business are two restaurants, two convenience stores with gasoline, an industrial tire plant (Tufco), a wood processing plant (Woodline), office buildings (IRRRB) and a golf course.</p>	
Jurisdiction:	<p>There are 36 square miles in Fayal Township. T 57 R 17</p>	
Infrastructure risk:	<p>Powerlines, two railroad spurs, a regional airport, water and sewer lines, one major natural gas line, a municipal park, a water treatment plant, and two youth camps. Also, all phone communication out of the Iron Range passes through the jurisdiction via fiber optic cables.</p>	
Community values:	<p>There are multiple businesses, expensive homes and recreational areas. Agriculture is also part of the jurisdiction. The tax base for the jurisdiction is \$180,000,000.</p>	
Local Preparedness Capability:	<p>Tender / Engine – 2006 custom 2,000 gallon tank with 125 gpm pump.</p> <p>Engine - 1991 Pierce with 1,000 gallon tank and 1250 gpm pump.</p> <p>Tender 1981 FMC with a 1,000 gallon tank and 1,000 gpm pump</p> <p>Brush truck – 2000 Ford F350 with a 250 gallon tank and 20 HP pump.</p> <p>Mobile cascade system, rescue boat and motor, 6-wheeler and rescue sled, cold water rescue gear and low angle rescue gear.</p>	
Firewise Information	<p>The entire jurisdiction has had on site Firewise assessments completed – level 2 completed.</p>	
Mutual Aid	<p>Simulcast page with the City of Eveleth is in place. Mutual aid agreements with nine other Fire Departments are current. Mutual aid with 10 other departments through the East Range Fire Coalition is also in place.</p>	
Fire Department Needs	<p>Firewise projects initiated by homeowners</p> <p>Mapping of Level II Assessments</p>	
Other	<p>New developments are on-going.</p> <p>Population is increasing.</p>	

Name: Gilbert Fire Department		Location: Virginia Area
Access:	Good access within the city, limited access in forested areas. Main arteries: Hwy #135 on the North side of the area Hwy #37 runs through the city from North to South Co. #97 is the main access to the SE portion of the protection area.	
Topography:	Large hill on the West side of the area. The land slopes into the city, downhill from West to East. The OHV Park to the East is rugged with many steep inclines	
Fuel Hazards:	#1 – OHV Park #2 – RxR Corridor #3 – Sparta Location #4 – Skerbec Trailer Park #5 – Rock “N Pines Housing Development #6 – Sherwood Forest Drive #7 – Water tower / Hopkins Park area #8 – NW corner of town #9 – Holiday Station / Bike Trail	
Fire Occurrence:	Approximately 6 wildland fires each year.	
Homes:	The Gilbert protection area covers about 12 square miles There are about 1800 residents in the area	
Businesses:	Mesabi Bituminous Restaurants, Bars, gas station, Delta Dental, AEOA Bus Garage, and various city offices and businesses (such as post office, etc.)	
Jurisdiction:	City of Gilbert Sparta area OHV Park area	
Infrastructure risk:	Local distribution lines; Recreational areas; OHV trails, Mesabi Bike Trail; Sherwood Forest Campground; Public utilities	
Community values:	Area churches, schools, parks, recreational facilities, campground, city offices, fire hall, public water access, playgrounds, VFW, restaurants, post office, businesses such as AEOA, Delta Dental, mining properties to the North	
Local Preparedness Capability:	1983 Int'l pumper Type 2 engine with a 800 gallon tank and a pump capacity of 1000gpm. 1958 Type 2 pumper with a 500 gallon tank and a pump capacity of 1000 gpm. (FWD) 2000 Int'l Type 1 pumper with a 500 gallon tank and a pump capacity of 1000 gpm. This unit also carries a 1500 gallon drop tank. 2005 Ford 4x4 Brush Rig with a 250 gallon tank and a pump capacity of 250 gpm. 1958 Portable Pump (2and 1/2 inch) 5000 Watt Generator	
Firewise Information:	No wildland fire outreach programs planned at this time	
Mutual Aid:	Mutual aid agreements are current and in place with Fayal, Eveleth, Virginia and Biwabik Township Mutual aid agreements with East Range Fire Coalition	
Fire Department Needs:	Additional members; Training for staff; PPE	
Other:	City budget is OK. Recent FEMA grant recipient DNR grants have been awarded every few years. Gilbert Fire Department completes numerous prescribe burns in the city each Spring for fuel reduction. These prescribe burns are good wildland fire training exercises.	

Name: Hoyt Lakes		WUI Area: Virginia Area
Access:	The community of Hoyt Lakes is accessed through 3 main highways. From the west HWY 110, from the east Forest HWY 11, from the north County Rd. 666 through Cliffs Erie Mining. Gravel roads provide additional access and egress in the rural areas east of Hoyt Lakes for Type 6 engine access.	
Topography:	Flat, accessible terrain except for scattered spruce bogs and wetlands. Open pit mines and mine dumps are also located to north of Hoyt Lakes.	
Fuel Hazards:	Heavy balsam fir understory	
Fire Occurrence:	10-20 wildland fires per year. All fires are human caused: debris burning, railroad, powerline, etc. (Railroad fires are common)	
Homes:	Most permanent residential homes are found within the city limits of Hoyt Lakes. Additional permanent and seasonal homes are located at Skibo which is 6 miles east of Hoyt Lakes.	
Businesses:	Several service businesses in the community including gas stations, restaurant, bars and a motel. Most businesses are within city limits. Cliffs Erie mining company is located 6 miles north of Hoyt Lakes. Minnesota Power-Laskin plant is located 1 mile west of Hoyt Lakes	
Jurisdiction:	T58N, R14W South ½ of T59N, R14W	
Infrastructure risk:	DMIR railroad High voltage transmission power line from the Minnesota Power plant Electrical substations located adjacent to the Minnesota power plant and Cliffs Erie plant.	
Community values:	Hoyt Lakes golf course, Fishermans Point recreation area, Colby Lake recreation area and longyear drill site visitors area.	
Local Preparedness Capability:	2-Type 1 engines 1-Type 6 engine *City water hydrants	
Firewise Information	Ongoing Level 1 Firewise assessments	
Mutual Aid	Mutual Aid agreements are in place and current with the DNR, USFS, east range coalition and adjacent fire departments.	
Fire Department Needs		
Other		

Name: Lakeland Fire Dept.		WUI Name: Virginia Area	
Access:	Primary arteries for the area include County Hwy #4 running North and South, County Hwy #20, also running North and South. There is a network of gravel roads, seasonal forestry logging roads, snowmobile trails, and ATV trails. There are gated roads. Numerous lakes and streams. Public water accesses. Residential and Seasonal homes with narrow access.		
Topography:	Forested landscape that is fairly level to gently rolling. Some remote areas with difficult access.		
Fuel Hazards:	Grasslands; Upland conifers; Bog - peatlands; Lowland conifers; Logging slash/debris; Aspen stands mixed with Balsam Fir, Balsam Fir understory Homes and cabins scattered throughout the areas - a high WUI (especially in the NE); Fire Trail and new logging in the NW part of the area		
Fire Occurrence:	Average of 5 - 8 wildland fires each year		
Homes:	Approximately 880 for population with many lake homes. Clusters of homes within the community, lake communities, rural farmsteads, hunting camps. This area has high property values		
Businesses:	None		
Jurisdiction:	Contract with St. Louis County; Mutual aid agreements with USFS and DNR; Coalition agreement; Mutual aid with Biwabik City, Biwabik Township, Fayal, Palo and Makinen T 57 R 16.		
Infrastructure risk:	Power distribution lines; Power substation on Hwy #4 across from the fire hall 115 KV lines; Public utilities; Recreational trails		
Community values:	High value country homes, Esquagama Country Club, Fire Hall, Baptist Church Recreational opportunities, recreational trails, public water accesses		
Local Preparedness Capability:	<p>~ Cold suit rescue equipment. Portable pumps</p> <p>~ 1992 Int'l water tender with a 2,800 gallon tank and a pump capacity of 425 gpm. Foam capability. Tender carries a 1,200 gallon drop tank. Type 2 tender.</p> <p>~ 1993 Int'l pumper with 1000 gallon tank and a pump capacity of 1000gpm Foam capacity</p> <p>~ 1997 Frtlnr command vehicle (vin # IFV3GXBC5UH831086)</p> <p>~1985 Chev Type 6 Brush Rig with a 250 gallon tank and pump capacity of 475gpm</p> <p>~ 2002 Ford Type 6 Brush Rig with a 300 gallon tank and pump capacity of 350gpm</p> <p>~1989 Track Vehicle OR-5 M1015A 800 gallon tank and a pump capacity of 350gpm (VIN # HAA01372HDP)</p> <p>~1989 Track Vehicle OR-6 M1015A1 880 gallon tank and pump capacity 350gpm and carries a 1200 gallon drop tank (VIN # XM0250)</p> <p>~ 1993 Tractor Trailer 1HSCHAZR1PH500818</p> <p>~ 1997 T2000 Kenworth Tractor Trailer</p>		
Firewise Information:	There are no wildland fire outreach programs planned at this time		
Mutual Aid:	Mutual aid agreements are in place and are current.		
Fire Department Needs:	Recruitment and retention; Wildland PPE; SCBA needed Bunker gear; First response vehicle; Replacement of pumper vehicle needed Training for staff; Communication upgrades needed; Contract services for maintenance and repairs		
Other:	The RFD has very good response time; however, perimeter areas may have longer response times. River Dr. - has a long response time Initial attack maps have been completed for the "Fire Trail" area.		

Name: Mt. Iron Fire Dept.		WUI Name: Virginia Area
Access:	Primary arteries: #169, #7, #102, #137 Secondary roads are mostly blacktop. One way access: 4 Mile Lake Housing Development Bonner Road (east of Spirit Lake) Reid Rd. south Spring Park Rd. – dead end Mott Pit Road	
Topography:	Topography is mostly level to gently rolling. Steep areas occur near mine dumps. South of Reid Road has poor access due to being undeveloped and USX operations. East Two and West Two Rivers originate and flow south out of Mt. Iron	
Fuel Hazards:	Logging slash; Conifer stands (lowland and upland) Areas of grass (lowland and upland); Aspen stands mixed with Balsam Fir, Balsam Fir understory; A high amount of urban interface is present	
Fire Occurrence:	History of large fires on Mother's Day 1977 and in 1982 Jct. 101 Fire in September of 2006 (50 Ac. Peat fire) Average 2 – 5 fires per year	
Homes:	Neighborhoods Include: Downtown Mt. Iron, South Grove, Wolf, Kinross, Parkville, West Gate, Ann's Acres and West Virginia. There are scattered family residences on all roads in the protection area.	
Businesses:	The city has multiple businesses: Enterprise Drive has numerous businesses located along Hwy #69. P&H, Ferrellgas, Lehmans and other businesses located south east side of West Virginia on both sides of the RxR tracks	
Jurisdiction:	City of Mt. Iron T58 – R18 Mutual aid agreements with East Range Coalition departments, DNR Forestry St. Louis County Sheriff Dept. provides law enforcement Agreement with Pike Sandy Britt Fire Dept to provide fire protection to homes located on Reid Road. (T58 R-19)	
Infrastructure risk:	<ul style="list-style-type: none"> - Chemical plant - West Two Rivers Campground - Mesabi bike trail corridor - Ferrellgas - Electrical sub station - LEA biomass plant - East Dhu sawmill - Residential, neighborhood interface problems 	
Community values:	Schools, churches, campground, Fire Hall, City Hall, library, bank, gas stations, homes, businesses, motels, bars, USX Mintac taconite plant	
Local Preparedness Capability:	Pumper - 300gal /1000gpm Pumper/Tender - 2500gal /1250gpm Pumper - 1000gal /1000gpm Brush Unit – 300gal /20gpm Good response times and good cooperation with Quad cities Fire Departments.	
Firewise Information:	<ul style="list-style-type: none"> - Fire Prevention week at the elementary school - YMCA Healthy Kids Day – usually held in April - No Firewise assessments on their coverage area as of 06/01/2007 	
Mutual Aid:	Good mutual aid agreements with all neighbors. * Buhl and Kinney Great Scott need to sign with them.	
Fire Department Needs:	New grass rig – recommend an F-550 or 450; Money; New wildland fire gear Bladder bags; Hand tools; Fire shelters	
Other:	1 ½ townships of fire coverage – 72 sq. miles Numerous homes and businesses within the protection area	

Name: Virginia FD		WUI Name: Virginia Area	
Access:	Paved roads, Snowmobile trails and ATV trail, Bike trail (paved), Controlled County Road (gated) for the landfill, Abandoned mining areas east of Mesabi Mt. Pit have limited access. Railroad grades, limited access mining property near Mittal Steel.		
Topography:	Mixed hardwood forest – in Midway, Mixed grass and brush south side area and east side. Two lakes, water filled mine pits, east and north side of city, mine dumps, rock, overburden for east and north side, mine dump, Honda Hills Swamp, south and north sides, landfill, railroad grades.		
Fuel Hazards:	Grass and brush areas. Abandoned buildings and old warehouses on Railroad Avenue. LP tanks – Hoover Road, ICO north side at 9 th St and Hoover Rd. Chlorine at the water treatment plant. Tankcars at the chemical plant - south side		
Fire Occurrence:	An average of two wildland fires each year.		
Homes:	Numerous homes and buildings; Bourgin Rd. Area, Ridgewood Area, Briarwood Area, Fairview Industrial Park Area, Midway Area. Edgewood Vista and St. Michaels nursing home units.		
Businesses:	Primary industry is mining with numerous retail and light industrial businesses including the conveyor belt service. There are also many motels, gas stations and restaurants. There are two shopping malls – the Thunderbird Mall and the Northwoods Mall. There is a fire department and ambulance service.		
Jurisdiction:	City Limits of Virginia; Mittal Steel; St Louis County		
Infrastructure risk:	Waste water plant, natural gas regulator stations, Midway dispatch, telecommunication junctions, ICO Fuels on Hoover Road, storage building, Pump station for city water.		
Community values:	Area churches, schools, hospital, clinics, parks, recreational facilities, fire hall, civic organizations, golf course, city hall and nursing homes.		
Local Preparedness Capability:	1 -105' 1500 gpm pump with a 500 gallon booster tank with foam; 1:1500 gpm,500 gallon engine, 1 500 gpm; 300 gallon with foam rescue truck; 1 500 gpm, 250 gallon foam brush truck; 1 utility 4x4 pick up; 4x4 ATV mule, boat and motor, 3 ALS ambulances		
Firewise Information:	Fire prevention activities in the schools. Juvenile Fire Setter Program. Annual DNR Fire Prevention Program for the pre – school classes.		
Mutual Aid:	Mutual aid is in place with Mt. Iron, Gilbert, Biwabik, Eveleth, Fayal and other East Range Fire Coalition members and the DNR.		
Fire Department Needs:	Additional staff; King radios; Backpack pumps; Wildland PPE; Wildland Training; S-130, S-190 and Annual refresher; Drop tank; Hand tools; Hard suction 2 ½” and 6”; Dry hydrants; Slip on unit for 4x4; SCBA and Structure PPE		
Other:	<p>Have requested to do Rx burns with the DNR for training.</p> <p>VIRGINIA FIRE DEPT. WILDFIRE CONCERN AREAS</p> <p>NORTH SIDE:</p> <ul style="list-style-type: none"> • ICO fuel loading and storage area located on the north end of Hoover Road near the golf course driving range. • The north side of Edgewood Vista apartments (17th St. North) is adjacent to a steep pit bank with dense vegetation. <p>FRANKLIN AREA</p> <ul style="list-style-type: none"> • Old warehouses used for storage located on the east and north end of Main Street. <p>BOURGIN ROAD AND COUNTY ROAD #921 LOOP</p> <ul style="list-style-type: none"> • A scrap / salvage yard is located on the #921 Loop. • Bourgin Road has interface potential. <p>SOUTH SIDE</p> <ul style="list-style-type: none"> • The area located behind Range Paper Corp. (1321 2nd Ave. South), • Southside tennis courts and Jim Transmission (3rd Ave. and 13th St. South). • The Hexion Chemical Plant (1507 Southern Drive). • A 40 – acre brush/grassland bordered on the North by 21st St. South, bordered on the West by 14th Ave. West, and bordered by Southern Drive on the South and East. • Briarwood Estate Trailer Park (Southern Drive – West of the RxR tracks). 		

X. Fire Planning and Operations:

A. Fire Plans and Guiding Documents

Fire suppression activities are governed by documents such as the:

Interagency Agreement for the Minnesota Interagency Fire Center; the MN-DNR Fire Suppression Handbook; National Interagency Mobilization Guide; Eastern Area Interagency Mobilization Guide; National Wildfire Coordinating Group; The Wildland Fire and Aviation Program Management and Operations Guide, Dept of Interior, Bureau of Indian Affairs; International Border Agreement Operating Guidelines for Wildfires in the Common Zone; The Governors Executive Order; Superior National Forest Fire Management Plan; Fireline Handbook; Minnesota Chippewa Tribe, Strategic Wildland Fire Management Plan and Environmental Assessment, 1999; and the Minnesota Incident Command System Mobilization Plan. These plans and handbooks guide our suppression actions.

Minnesota land management agencies have preparedness plans which address the pre-positioning of resources, fuels assessment and reductions, fire prevention, communications infrastructure and fire coordination. These preparedness plans are also supported by aviation plans. The Superior National Forest annually revises its Fire Management Plan and Forest Aviation Plan to reflect current suppression strategies, fuel conditions, changing policies and adjusts resource availability according to current congressional funding levels. The Minnesota Incident Command System (MNICS) organization also entered into an agreement with the Ontario Ministry of Natural Resources concerning wildfire response along the US-Canadian border.

MN Interagency Fire Center (MIFC) consists of MN Department of Natural Resources (DNR); Department of Homeland Security and Emergency Management; USDA Forest Service; Bureau of Indian Affairs; US Fish and Wildlife Service; and the National Park Service. There is an agreement between the participating agencies which outlines the purpose of providing effective and economical protection of life and property. An operating plan outlines cooperative fire suppression between the Minnesota DNR Forestry, Chippewa National Forest and the Superior National Forest on intermingled lands. It identifies zones of protection within intermingled lands where an individual agency provides fire suppression response on all lands. Large or complex incidents will be supported by expanded interagency resources, improved communication, and as necessary a unified command structure to address wildfire incidents.

The Northeast Minnesota Integrated Response Plan was developed as a result of the 1999 blowdown. The blowdown event drastically altered forest fuel conditions and the potential for extreme wildfire behavior. This has greatly expanded the potential for wildfires to threaten lives, property, and resources in northeastern Minnesota. The Integrated Response Plan has been created through extensive pre-planning activities to coordinate the actions of responsible agencies and personnel to maximize the effectiveness and coordination in response to emergency incidents. The cooperating agencies and individuals involved in this plan meet biannually. If a large incident occurs, the cooperating agencies will meet to evaluate the response to the incident and make any recommended changes to the plan. This plan is updated annually for personnel changes, contact number changes, accomplishments, and other content.

B. Suppression Responsibilities

The primary response agency for wildland fire suppression and prevention across all lands other than national lands (ie Superior National Forest) is the Minnesota Department of Natural Resources (MNDNR). The MN DNR also maintains Cooperative Fire Protection Agreements with local volunteer fire departments to provide assistance and cooperation in the prevention and suppression of wildland fires.

There are 71 fire departments which provide structural fire protection services within their jurisdictional boundaries throughout St. Louis County. Structural fire protection capabilities are listed in each community profile. Areas immediately outside specific fire department jurisdictions are provided coverage when mutual aid agreements are in place. Structural fire suppression, which includes exterior and interior actions on burning structures, is the responsibility of local fire departments. The map on page 38 shows jurisdictional protection boundaries for St. Louis County fire departments. A list of fire departments is found in the Appendix.

The United States Forest Service is responsible for wildland fire suppression on lands within their jurisdictional boundaries. Cooperative fire suppression agreements exist between the Superior National Forest and the MN Department of Natural Resources. Under this operating plan the agencies agree to provide fire protection to the other agency's fire protection lands as they would provide to their own lands. Each agency owns suppression resources and also shares suppression resources through interagency cooperative agreements. Mutual aid and equipment rental agreements exist with various private, contract and fire department wildland suppression resources.

Bois Forte and Fond du Lac Tribal governments, working in conjunction with the Bureau of Indian Affairs (BIA) have primary wildland fire suppression and prevention responsibilities for Trust Lands (Indian Lands) within their respective Reservation boundaries. The State has jurisdiction for non-Indian lands within the reservation.

A Cooperative Wildfire Agreement exists between the Bois Forte Band of Chippewa Indians, the BIA and the MN Department of Natural Resources. Under this Agreement, the agencies agree to provide fire protection to the other agency's fire protection lands within the boundaries of the agreed upon fire protection boundaries, as they would to their own protection lands.

Several land management agencies (BIA, DNR, NPS and USFS) and local volunteer fire departments provide additional wildland fire protection through mutual aid agreements to meet the needs of the public. There are some areas within St. Louis County, where no specifically assigned structural fire protection exists. The agency responsible for wildland fire can only provide limited exterior protection to these structures. Wildland firefighters are not trained to provide interior structure protection and can only apply minimal exterior structural protection efforts according to agency policy. Just as wildland firefighters are not trained to do structural protection, many structural firefighters are not trained to do wildland fire. With increasing Wildland Urban Interface, there are more demands made on local fire departments to respond to wildland fire.

C. Examples of Fire Protection Resources

The following suppression resources are examples of what may be available to the USFS, BIA and DNR :

- **CL-215 Aircraft** – These water scooping aircraft are capable of dropping up to 1,400 gallons of water, foam injected water, or retardant at one time. They can scoop water from nearby lakes shortening response times. The Minnesota Department of Natural Resources owns two CL-215's; the Superior National Forest and the Bureau of Indian Affairs may contract for CL-215's. These aircraft are normally stationed in Ely, Bemidji, Brainerd and Hibbing depending on fire danger. Contract durations can also vary depending on fire danger.
- **Air Attack Platform** – A small aircraft used to coordinate all aerial operations over an incident. It is also used to guide aerial water or retardant delivery to the fire. Depending upon activity this aircraft is stationed in Hibbing or Ely.
- **De Havilland Beavers** – A small float plane used to transport personnel and equipment. It has a 125 gallon water dropping capacity.
- **Type 1 Helicopter** - This is a large helicopter capable of dropping 2,000 gallons of water per drop. It draws water from nearby sources ensuring a short turn around time.

- **Type 3 Helicopter** – This is a smaller helicopter capable of picking up and dropping 90 gallons of water from almost any water source. Type 3 helicopters are stationed state-wide during the spring fire season and on a call-when-needed basis.
- **Crews (5 person or 20 person)** – Crews of this type are available through the MNICS organization. They come from throughout Minnesota (and nationwide) and are dispatched or pre-positioned as fire danger increases.
- **Type 4/6 Engines** - Engines of this type are available through the MNICS organization. They come from throughout Minnesota and are dispatched or pre-positioned to areas as fire danger increases. These are midsize wildland engines that carry a crew of three and up to 750 gallons of water.
- **Cache Vans** – Vehicles stocked with equipment and supplies that improve local area fire response capabilities. These vehicles can be ordered and pre-positioned as needed.
- **Sprinkler Systems** – Sprinkler systems are available for structure protection, wet line for back fires or fuel management techniques and staging area protection.
- **Mobile Radio Support Systems** – Radio support kits supplement existing radio system infrastructure to provide two-way radio communication for emergency response resources.

XI. Superior National Forest Plan - Five-Year Vegetation Management Plan

❖ Healthy Forests ❖ Watershed Health ❖ Wildlife Habitat ❖
❖ Timber Production ❖ Scenic Landscapes ❖

Contents:

- Roles of various natural resources in compelling vegetation management actions
- Vegetation management analysis areas
- Schedule for analysis
- Estimated outcomes and outputs (values and benefits) to the various resources

This five-year plan addresses both proposed and likely actions planned to manage forest vegetation in order to meet Forest Plan desired conditions and objectives for vegetation composition, structure, function, and spatial pattern. The purpose for vegetation management is to address the many current and future needs and interests of people in the many values and uses of forests. D-VG-1 and -2. The outcomes and outputs resulting from vegetation management would provide for key accomplishments (targets, objectives) for the following resources (Note: examples below not all-inclusive of pertinent Forest Plan direction):

Healthy Forests

- Vegetation will be managed to treat areas of highest fire risk to minimize effects of unwanted fire. O-ID-3
- Reduce fuels and control vegetation in understory O-ID-4
- Increase the amount of forest restored to or maintained in a healthy condition to reduce risk of and damage from fires, insects, and diseases. O-ID-1

Watershed Health

- Improve and protect watershed conditions to provide the water quality, water quantity, and soil productivity necessary to support ecological functions and intended beneficial water uses. O-WS-1

Timber

- Provide commercial wood for mills in northern Minnesota at a level that is sustainable over time. D-TM-1, O-TM-1

Wildlife Habitat

- Move terrestrial and aquatic habitats in the direction of desired conditions and objectives for management indicator habitats and indicator species. O-WL-2
- Maintain, protect, or improve habitat for lynx, wolf, eagle (O-WL-5) and three-toed woodpecker, boreal owl, goshawk, and black-throated blue warbler. (O-WL-18).
- In coordination with the State, Tribes and other wildlife and fish management agencies, provide habitat for aquatic and terrestrial game populations. O-WL-39

Scenic Landscapes

- Management activities will maintain the Forest's scenic resource values O-SC-1

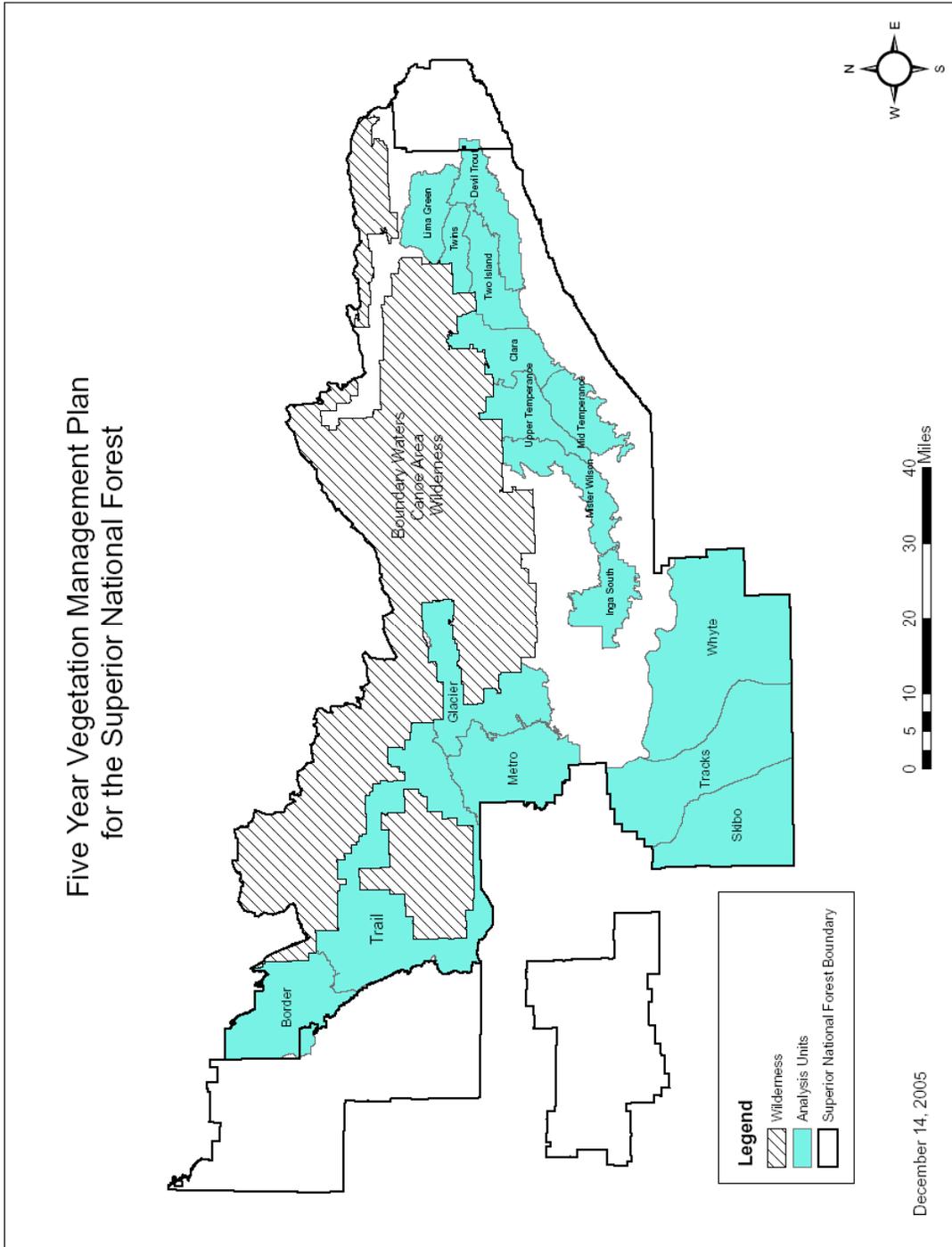


Figure 1: Map of SNF 5 YR Implementation Areas

Figure 2: Map of SNF Completed Implementation Areas

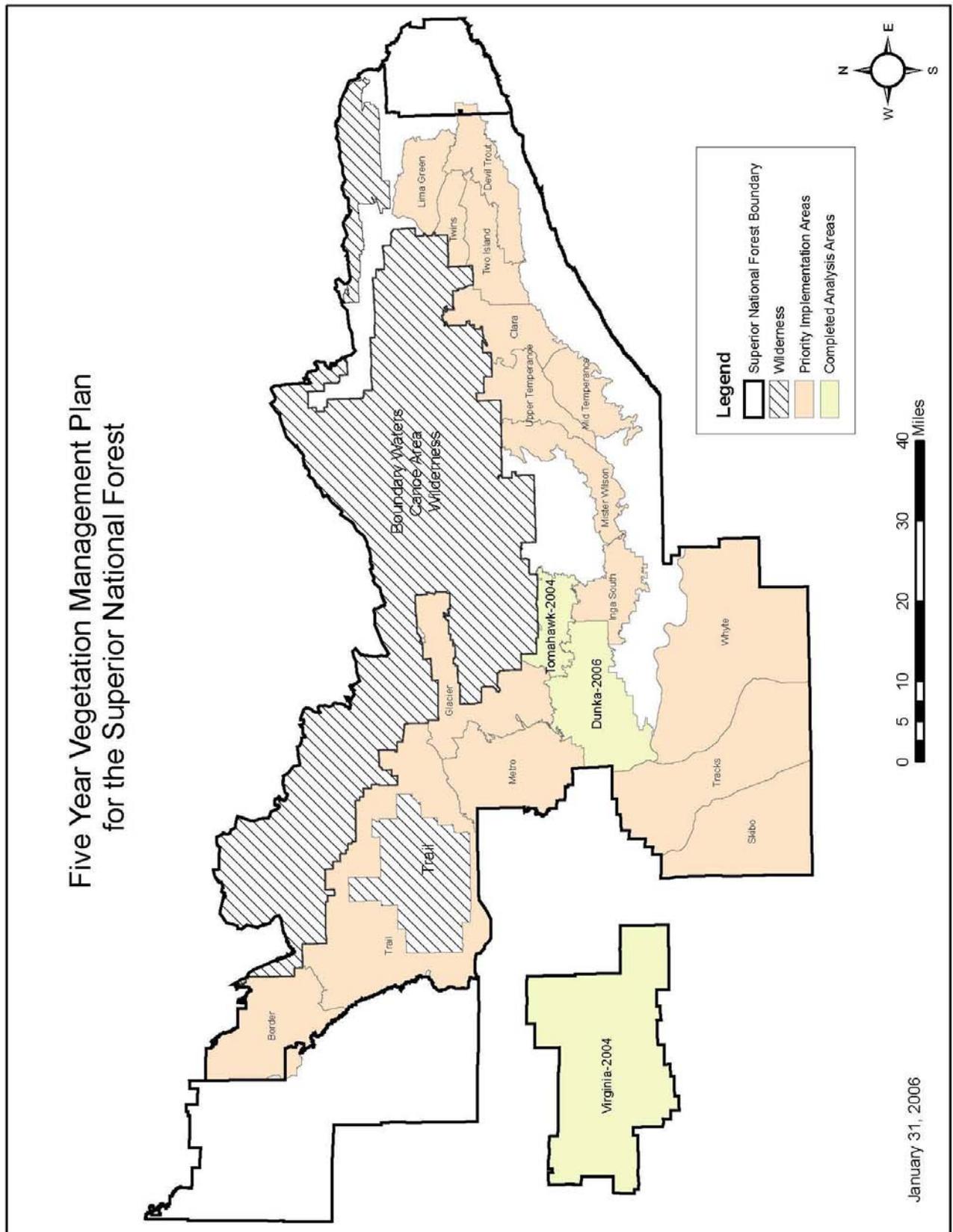


Table 1: Schedule of Analysis areas on Superior National Forest

District	Analysis Area	Mid-level	NEPA decision
2008			
Gunflint	Cascade EA (G4)	June 2006	Feb 2008
Kawishiwi	Glacier EIS	Feb 2007	May 2008
Gunflint	Ham Lake Salvage CE		Nov 2008
2009			
Tofte	Clara (T4)	Nov 2007	Oct 2008
LaCroix	Border	Oct 2007	Jan 2009
Gunflint	Lima Green (G6)	March 2008	April 2009
2010			
Laurentian	Tracks	Oct 2008	Oct 2009
Gunflint	Twins (G5)	May 2009	April 2010
Tofte	Upper Temperance (T5) & Mr. Wilson (T7)	Nov 2008	Feb 2010
2011			
Kawishiwi	Metroplus	Oct 2010	Sept 2011
Gunflint	North Shore (G1, G2)	May 2010	April 2011
2012			
LaCroix	Kab	Oct 2011	Sept 2012
Gunflint	North Greenwood	May 2011	April 2012
Tofte	T 1, 2, 3	March 2010	Feb 2012

XII. Mitigation Action Plan

A. Implementation

The St. Louis County Community Wildland Fire Protection Plan was developed by a planning committee consisting of community leaders, county, state and federal land management agencies, fire departments and other stakeholders. Plan recommendations were reviewed and modified by the local community. This plan is a working document and, in the future, will be enhanced collaboratively by the 14 local Wildland-Urban Interface communities that it serves.

Based on the community risk assessments and professional judgment from agency personnel and local fire departments, five of the 14 Wildland Urban Interface areas are identified as priorities for implementation projects. Because St. Louis County is so large and diverse it is reasonable and feasible to have five priority WUIs. These five WUI's, listed in alphabetical order, are all essentially equal in terms of community vulnerability.

- Ely Area WUI
- Hibbing Area WUI
- Southeast Area WUI
- Vermilion Basin Area WUI
- Virginia Area WUI

The St. Louis County CWPP will continue as a collaborative effort under the direction of a Steering Committee and the efforts of Implementation Teams. The structure, composition and roles of these groups are described below.

Steering Committee: This committee will meet at least annually and will be composed of the following individuals or their designee:

- St. Louis County
 - County Commissioner/Board chair and/or chairperson of Public Safety Committee
 - Land Commissioner
 - Sheriff's Office/ Emergency Management
- Minnesota Department of Natural Resources
 - Regional Forest Supervisor
 - Area Supervisor
- Fire Department representatives from within the County (contacted through Associations, Coalitions and individual contacts)
- Superior National Forest
 - Forest Supervisor
 - Forest Fire Management Officer.

The Steering Committee will provide guidance and oversight for the Implementation Teams. They will help identify implementation project areas and key personnel, secure funding, and ensure continued coordination and collaboration among partners. The Steering Committee will be responsible for yearly revisions and updates to the St. Louis County CWPP, including documentation of completed projects.

The Steering Committee will focus on the five priority Wildland Urban Interface (WUI) areas, but may consider additional projects as needed. This committee will identify goals for implementation of fuels reduction and hazard mitigation projects within each of the WUI areas. As efforts move toward plan implementation, community involvement will be escalated to ensure that the needs of the local community are incorporated in the planning, development and execution of projects within any given wildland urban interface area. Implementation of all fuels reduction and hazard mitigation projects will follow State, Federal and County land management policies and procedures.

Implementation Teams: These groups will be initiated as project areas are defined. A team will be identified for each project area and may consist of members of the following, based on land ownership of the project area: agency personnel (State, [Firewise rep, Fire Program leader, Foresters] County, Tribal, and Federal); fire department representatives; private landowners, industry representatives, and various technical specialists. There may be several implementation teams working at any given time. Their responsibilities are to:

- communicate with the public
- define, plan and implement the specific mitigating measures needed within a project
- provide the Steering Committee with documentation of on-going and completed projects

Members of the public can reach the Steering Committee and Implementation Teams through the St. Louis County Board of Commissioners and through the County Web site, www.co.st-louis.mn.us

As an implementation team looks towards a specific WUI, they will use the CWPP as a reference guide. This plan addresses the following general areas:

- access; fuels and fire hazards; fire regime and condition class; vegetation treatments;
- rare habitats; watersheds; biodiversity;
- infrastructure risks; community values; recreation economics; businesses;
- preparedness capabilities; fire prevention and Firewise activities.

Implementation teams will address these areas more specifically as projects are designed.

B. Current Activities and Projects.

- FEMA sprinkler system grants
- Firewise grants
- Level I Defensible Space assessments
- Level 2 Defensible Space assessments
- Residential, business, and other defensible space projects
- Public education-Community meetings, Firewise, evacuation, mitigation measures
- Hazardous fuel mitigation
- Ongoing mapping for fire department protection areas

C. Fire Prevention and Education:

(Taken in part from the Minnesota Interagency Fire Prevention Plan)

Ninety percent of Minnesota's wildfires are caused by humans. Twenty percent of these are suspected arson, with the remainder started through unintentional means, such as unattended campfires, pile burning or sparks from trains. Efforts to decrease the numbers of human caused wildfires have had a noticeable effect on the number of wildfires in the state. As an example, a thirty five percent decrease in wildfires has been recorded since the Department of Natural Resources instituted spring burning restrictions in the mid-1990's.

Historically, Minnesota has recorded fewer fires and smaller acreages burned than in the early part of the century due to prevention strategies and quicker response time. Today, urban interface issues; insect and disease; and the blowdown in the northeast portion of the state continue to be some of the most pressing fire hazard concerns local fire management officers are dealing with. Fire management personnel have been working to help landowners mitigate this danger.

To accomplish prevention goals, a combination of strategies will be used. These strategies include education, engineering, and enforcement. A brief description of each strategy is:

Education: Activities aimed at changing people's behavior by awareness and knowledge.

Engineering: Activities designed to shield an ignition source (ex. spark arrestor) or remove the fuel which may ignite from a spark or fire brand (ex. defensible space around a home).

Enforcement: Activities used to gain compliance with fire regulations and ordinances.

1. Prevention Goals

- a. Reduce human-caused wildfires throughout St. Louis County.
- b. Provide a continuing fire prevention and education programs.
- c. Work with communities to coordinate Firewise activities within the County.

2. Prevention Actions:

- a. Identify and update successful education programs to promote the fire prevention message.
- b. Encourage fire prevention messages at local community celebrations and events. Community member participation at local events is a good way to spread the fire prevention message.
- c. Keep fire prevention messages in schools focusing on grades K-2 for Smokey Bear Programs, grades 3-6 for Good Fire Bad Fire messages and Firewise messages in secondary school. Coordinate school visits so that all the schools are visited by an agency representative on an annual basis.
- d. Promote Firewise at the local level. Work with fire department within St. Louis County and landowners to share Firewise guidelines, and create or improve defensible space.
- e. Develop and use age appropriate fire prevention themes that address fire issues in St. Louis County.

- f. Provide the public alternatives to debris burning such as recycling and composting materials.
- g. Educate the public on burning permit requirements, safe burning techniques, weather conditions, and fire use.
- h. Foster public, interagency and interdisciplinary cooperation when identifying and developing hazardous fuels mitigation measures.
- i. Work with communities on pilot projects such as brush disposal sites or starting a burn barrel amnesty program.
- j. Reduce the number of wildfires caused by burning barrels and unattended campfires.

D. Mitigation Tools

Individual WUI Community mitigation and protection priorities will be addressed during plan implementation. The following is a list of fire protection and mitigation tools that the communities and coordination group can use to implement this plan.

- **Firewise Assessments** – Predetermined evaluation factors designed to assess potential hazards and risk to a homeowners structures.
- **Improve ingress/egress** – Improve road, approach and turn around capabilities for responding emergency vehicles such as structural fire engines and ambulances to provide better protection capabilities and evacuation procedures the community and the public.
- **Dry Hydrants** – A permanent pipe connected to a water source other than a piped, pressurized water supply system that provides a water supply for firefighting utilizing the suction capability of fire engines.
- **Homeowner Firewise mitigation measures** – Home owner actions to moderate the fire hazard or risk.
- **Sprinkler systems** – Water systems set up by home owners or fire agencies to wet structures or slow down the fire behavior of an approaching fire.
- **Prescribed burning** – Controlled application of fire to wildland fuels in either their natural or modified state, under specified environmental conditions, which allows the fire to be confined to a predetermined area, and to produce the fire behavior and fire characteristics required to attain preplanned fire treatment and resource management objectives.
- **Firewise communities** –Communities completing the designated projects and receiving designation under the Firewise community program
- **Chipper Days** – A day or two is arranged for neighborhoods needing brush clearance. Green waste is collected chipped and recycled after homeowners have cleared their own brush.
- **Harvesting/Thinning** –. The removal or pruning of strategic trees within pine stands to reduce the density of ladder fuels, provide fuel breaks, or reduce the potential of a crown fires. This can be done by selective cut, partial cut, and/or clearcut
- **Crushing** – A mechanical means of grinding/chopping vegetative materials to reduce fuel loading or build-up.
- **Biomass removal** – The reduction of fuels through cutting, piling and bundling (previously considered) non commercial small diameter wood for possible commercial use.
- **Pile and Burn:** Flammable fuels are piled, and then burned when conditions are appropriate. This treatment is appropriate where there is not enough merchantable timber to harvest, too

much dead and down fuel to broadcast burn, or near private property where structures are present.

- **Under burn:** A low fire intensity fire that burns beneath the canopy of a live timber stand. The fire removes ladder fuels that could spread fire from ground fuels into the crown of standing live timber. The under story materials to be removed include small down, dead, woody material. This may prevent a subsequent wildfire from spreading into tree crowns causing over story mortality. Under burns kill shrubs and most young trees that compete with over story canopy vegetation. Some live trees are burned during under story burns, but the main objective is to maintain the forest cover. Following the burn, the stand is a forest that is open underneath.
- **Patch Burn:** Patches of combustible materials are ignited within a larger treatment area. Only individual patches are burned within the larger area. Fire may spread outside of the patches to the surrounding area, but the surrounding area is not directly ignited. Following the burn, the landscape would consist of small burned areas amongst live vegetation patches

E. Plan Monitoring and Review: This will be tracked by the Steering Committee.

Who	Recommended Actions	Timelines
Steering Committee	Identify implementation project areas	Annual
	Identify key personnel for each project area.	As needed
	Secure agency funding and identify outside funding sources.	Annual
	Ensure continued coordination and collaboration among partners. Facilitate solutions as requested by Implementation Teams.	Ongoing
	Identify goals for implementation of fuels reduction and hazard mitigation projects within each of the WUI areas.	Annual
	Ensure Level One and Level Two assessments are entered into the Critical Infrastructure Assessment Database (CIAD), and that this information is readily available to fire departments and agency personnel.	Annual
	Yearly revisions and updates to the St. Louis County CWPP, including documentation of completed projects.	Annual
Implementation Team	Plan, implement and track vegetation management projects.	Ongoing
	Provide inputs to the Steering Committee for updates to the St. Louis County CWPP.	Annual
	Look for stewardship contract opportunities for implementation of vegetation management projects.	Annual
	Evaluate opportunities for biomass marketing and hazardous fuel reduction and utilization.	Ongoing
	Provide, implement and track fire prevention and education programs to document prevention objectives.	Ongoing
	Identify and provide fire department training and opportunities.	Annual

	Review emergency management policies and evacuation procedures	Annual
	Provide, implement and track projects directed to citizens with special needs as resources allow.	Ongoing
	Work at completing assessments in priority areas and other areas as resources allow.	Ongoing
	Work with St. Louis County communities on grant processes.	Ongoing
	Secure project funding.	Ongoing
	Work with Firewise to secure funding for mitigation projects.	Ongoing
	Continue Level One and/or Two Assessments in priority areas.	Ongoing
	Ensure completed assessment information is shared with fire departments, DNR and implementation teams.	Ongoing
	Obtain area specific vegetation management prescriptions from DNR, Forest Service, County, and private timber companies.	Ongoing
	Obtain updated spruce budworm maps	Annual
	Check DNR's database for private land stewardship plans	Annual

APPENDIX:

A. Website Information:

Forest Health Program - <http://na.fs.fed.us/>
 Minnesota Firewise Program - <http://www.dnr.state.mn.us/Firewise>
 National Firewise Program - <http://www.firewise.org>
 Special Technology Development Projects - <http://svinetfc2.fs.fed.us/stdp/>
 National Urban and Community Forestry - <http://treelink.org/nucfac>
 Midwest Urban and Community Forestry - <http://na.fs.fed.us/urban>
 Volunteer Fire Assistance - <http://www.stateforesters.org/> and <http://fs.fed.us/fire/partners/vfa/>
 Fire Management Assistance Grant Program - <http://fema.gov/assistance/indexshmt>
 Assistance to Firefighter's Grant Program - <http://www.firegrantsupport.com/afg/>
 St Louis County Community Wildfire Protection Plan - <http://www.co.st-louis.mn.us>
 CWPP Handbook electronic copy - <http://www.safenet.org/policyandpress/cwpp.cfm>
 CWPP development - <http://www.forestandrangelands.gov>
 Communities At Risk Field Guide - <http://www.stateforesters.org/reports/COMMUNITIESAT RISKFG.pdf>
 MN fire activity and fire conditions - <http://www.mnics.org>
 Fire Regime Condition Class Model Maps- <http://www.landfire.gov/>
 USDA Forest Service - <http://www.na.fs.fed.us>
 Fire Safe Councils - <http://www.firesafecouncil.org>
 National Assn. of State Fire Marshals - <http://www.firemarshals.org>
 Federal Emergency Management Agency - <http://www.fema.gov>
 Minnesota Department of Natural Resources (MNDNR)
<http://www.dnr.state.mn.us>
 MN DNR Forestry Fire website - <http://www.dnr.state.mn.us/forestry/fire/links.html>
 MN Homeland Security and Emergency Management
<http://www.hsem.state.mn.us/>
 Smokey Bear Official website - <http://www.smokeybear.com/>
 MN Rural Fire Assistance website - <http://www.dnr.state.mn.us/grants/ruralfire/index.html>

Great Lakes Forest Fire Compact website – <http://www.glffc.com>
 Eastern Area Coordination Center website – <http://gacc.nifc.gov/eacc/>
 Healthy Forest Initiative Implementation Guide – www.fs.fed.us/projects/hfi/field-guide/
 WUI Information – <http://www.ncrs.fs.fed.us/research/default.asp>
 The National Fire Plan: www.fireplan.gov
 Fire Safe Councils: www.firesafecouncil.org

B. Fire Departments in St. Louis County:
Mailing address and hall address if different from business mailing address.

- ALBORN VFD
6955 STONEY BROOK RD
ALBORN MN 55702
Hall Address 6390 HWY 7
- ARROWHEAD VFD
9797 HWY 2
BROOKSTON MN 55711
Hall Address 9798 HWY 2
- AURORA VFD
20 W CENTRAL AVENUE
AURORA MN 55705
- BABBITT VFD
71 SOUTH DR
BABBITT MN 55706
Hall Address 34 NORTH DR
- BEARVILLE VFD
63936 CO RD 557
COOK MN 55723
- BIWABIK CITY VFD
PO BOX 917
BIWABIK MN 55708
Hall Address 105 3 AV N
- BIWABIK TWP VFD
6555 OAK DR
GILBERT MN 55741
Hall Address 6517 OAK DR
- BOIS FORTE VFD
5344 LAKESHORE DRIVE
NETT LAKE MN 55772
Hall Address 5301 ST MARY DR
- BREITUNG VFD
PO BOX 337
SOUDAN MN 55782
Hall Address 31 1 AV S
- BRIMSON VFD
3127 HWY 44
BRIMSON MN 55602
- BUHL VFD
PO BOX 767
BUHL MN 55713
Hall Address 201 FOREST ST
- BUYCK VFD
8035 ORR BUYCK RD
BUYCK MN 55771
- CANOSIA VFD
4979 E PIKE LAKE RD
DULUTH MN 55811
Hall Address 5694 MARTIN RD
- CENTRAL LAKES VFD
7562 MURPHY LAKE RD
EVELETH MN 55734
- CHERRY VFD
10192 HWY 92
MT IRON MN 55768
Hall Address 9831 HWY 37
- CHISHOLM VFD
301 LAKE ST W
CHISHOLM MN 55719
- CLIFTON VFD
6092 HOMESTEAD RD
DULUTH MN 55804
Hall Address 2146 OLD NORTH SHORE RD
- CLINTON VFD
8694 SPRUCE DR
IRON MN 55751
Hall Address 8945 HWY 37
- COLVIN VFD
2723 LOWE ROAD
MAKINEN MN 55763
Hall Address 2577 VERMILION TR

- COOK VFD
PO BOX 155
COOK MN 55723
Hall Address 111 2 ST SE
- COTTON VFD
6844 BUG CREEK RD
COTTON MN 55724
Hall Address
7505 COMSTOCK LAKE RD
- CRANE LAKE VFD
7400 HANDBERG RD
PO BOX 407
CRANE LAKE MN 55725
- CULVER VFD
5571 HWY 31
CULVER MN 55727
- DULUTH FIRE DEPT
602 W 2 ST
DULUTH MN 55802
- EAGLES NEST VFD
1552 BEAR HEAD STATE PARK RD
ELY MN 55731
- EAST BREVATOR VFD
3575 HWY 33
CLOQUET MN 55720
Hall Address
7246 MORRIS THOMAS RD
- ELLSBURG VFD
PO BOX 308
MELRUDE MN 55766
Hall Address 1102 MINK RD
- ELMER VFD
7882 HWY 5
MEADOWLANDS MN 55765
- ELY VFD
209 E CHAPMAN ST
ELY MN 55731
- EMBARRASS VFD
PO BOX 144
EMBARRASS MN
Hall Address 4868 HWY 21
- EVELETH VFD
425 JACKSON ST
EVELETH MN 55734
- EVERGREEN VFD
7992 CARPENTER RD
ANGORA MN 55703
Hall Address 10233 HWY 65
- FAYAL VFD
4375 SHADY LN
EVELETH MN 55734
- FLOODWOOD VFD
BOX 348
FLOODWOOD MN 55736
Hall Address 206 8 AV E
- FREDENBERG VFD
5097 FISH LAKE RD
DULUTH MN 55803
- FRENCH VFD
PO BOX 41
SIDE LAKE MN 55781
Hall Address
7534 MCCARTHY BEACH RD
- GILBERT VFD ST N
BOX 878
GILBERT MN 55741
Hall Address 20 BROADWAY
- GNESEN VFD
4504 DATKA RD
DULUTH MN 55803
- GRAND LAKE VFD
6058 N PIKE LAKE RD
DULUTH MN 55811
Hall Address 5297 HWY 53
- GREANEY-RAUSCH-SILVERDALE VFD
10753 HWY 65
GHEEN MN 55771
- GREENWOOD VFD
3000 CO RD 77
TOWER MN 55790
Hall Address
4923 ARROWHEAD POINT RD
- HERMANTOWN VFD GROVE RD
5111 MAPLE GROVE RD
HERMANTOWN MN 55811

- HIBBING FIRE DEPARTMENT
2320 BROOKLYN DR
HIBBING MN 55746
- HOYT LAKES VFD
206 KENNEDY MEMORIAL DR
HOYT LAKES MN 55750
- INDUSTRIAL VFD
5030 INDEPENDENCE RD
SAGINAW MN 55779
Hall Address 7519 ALBERT RD
- KELSEY VFD
8561 MCKAY RD
KELSEY MN 55724
Hall Address 9091 HWY 7
- KINNEY/GREAT SCOTT VFD
510 SPRUCE AVE.
PO BOX 337
KINNEYMN 55758
- LAKE KABETOGAMA VFD
9820 GAMMA RD
RAY MN 56669
Hall Address 9843 GAMMA RD
- LAKELAND VFD
4667 VERMILION TR
GILBERT MN 55741
- LAKEWOOD VFD
2627 CENTERLINE RD
DULUTH MN 55804
Hall Address 5195 N TISCHER RD
- MAKINEN VFD
PO BOX 395
MAKINEN MN 55763
Hall Address 6661 WILSON RD
- MCDAVITT VFD
8447 ZIM RD
ZIM MN 55738
Hall Address 9042 ZIM RD
- MCKINLEY VFD
5498 1ST AVE E
MCKINLEY MN 55741
Hall Address
BOX 2098, 5454 GRAND AV
- MEADOWLANDS VFD
9955 HWY 133
MEADOWLANDS MN 55765
- MORSE/FALL LAKE VFD
PO BOX 660
ELY MN 5573
Hall Address LOOKOUT RIDGE RD
- MT IRON VFD
BOX 533
MT IRON MN 55768
Hall Address 8866 SLATE ST
- NORMANNA VFD
6472 FRENCH RIVER RD
DULUTH MN 55804
- NORTH STAR VFD
7700 PEQUAYWAN LAKE RD
DULUTH MN 55803
- NORTHLAND VFD
7483 HARRIS RD
CANYON MN 55717
Hall Address 7271 HWY 53
- ORR VFD
BOX 247
ORR MN 55771
Hall Address 4540 LAKE ST
- PALO VFD
4547 HWY 100
AURORA MN 55705
- PEQUAYWAN LAKE VFD
8835 PEQUAYWAN LAKE RD
DULUTH MN 55803
Hall Address
8764 PEQUAYWAN LAKE RD
- PIKE-SANDY-BRITT VFD
PO BOX 36
VIRGINIA MN 55792
Britt Hall Address 8228 HWY 68
Pike Hall Address 6867 HWY 68
- PROCTOR VFD
100 PIONK DR
PROCTOR MN 55810
Hall Address 223 5th AVE

- RICE LAKE VFD
4051 MARTIN RD
DULUTH MN 55803
- SILICA VFD
PO BOX 338
HIBBING MN 55746
Hall Address 1659 HWY 73
- SOLWAY VFD
4027 MUNGER SHAW RD
CLOQUET MN 55720
- TOIVOLA VFD
9094 HWY 5
MEADOWLANDS MN 55765
- TOWER VFD
PO BOX 576
TOWER MN 55790
Hall Address 402 PINE ST
- VERMILION LAKE VFD
9388 HOLTER RD
TOWER MN 55790
Hall Address 6703 WAHLSTEN RD
- VIRGINIA VFD
CITY HALL
327 1st St
VIRGINIA MN 55792
Hall Address 115 4th AVE N
- WEST BREVATOR VFD
7912 SIMON RD
CLOQUET MN 55720

C. Glossary

Biomass – Refers to living and recently dead biological material that can be used as a fuel or for industrial production. Biomass may also include biodegradable waste to be used as a fuel. Fossil fuels are not considered biomass by the generally accepted definition because they contain carbon that has been out of the carbon cycle for a very long time.

Crown fire – A fire advancing from top to top of trees or shrubs more or less independent of a surface fire.

Defensible space – An area of reduced fuels between your home and the untouched wildland. Creating a defensible space around your house can enable your home to survive a wildfire.

Derecho - A widespread and long-lived, violent convectively induced windstorm that is associated with a fast-moving band of severe thunderstorms usually taking the form of a bow echo. Derechos are usually not associated with a cold front, but a stationary front within a highly buoyant, warm airmass. A warm weather phenomenon, derechos occur mostly in summer, especially July (in the northern hemisphere), but can occur at any time of the year and occur as frequently at night as in the daylight hours. The traditional criterion which has been used to distinguish a derecho from a severe thunderstorm are sustained winds of 58 mph/92 km/h at some point during the storm.

Fuel reduction – Manipulation, including combustion, or removal of fuels to reduce the likelihood of ignition and/or to lessen potential damage and resistance to control.

Fuel treatment - Manipulation or removal of fuels to reduce the likelihood of ignition and/or to lessen potential damage and resistance to control (e.g., lopping, chipping, crushing, piling, and burning).
Synonym: Fuel Modification

ISO – Insurance Services Office collects information on a community's public fire protection and analyzes the data using our Fire Protection Rating Schedule. It then assigns a Public Protection Classification from 1-10. Class one represents the best public protection and class 10 indicates less than the minimum recognized protection.

Interface Community: The interface community exists where structures directly abut Wildland fuels. There is a clear line of demarcation between Wildland fuels and residential, business, and public structures. Wildland fuels do not generally continue into the developed area. The development density for an interface community is usually 3 or more structures per acre, with shared municipal services. Fire protection is generally provided by a local fire department with the responsibility to protect the structure from both an interior fire and an advancing Wildland fire.

Intermix Community: The intermix community exists where structures are scattered throughout a wildland area. There is no clear line of demarcation; Wildland fuels are continuous outside of and within the developed area. The development density in intermix ranges from structures very close together to one structure per 40 acres. Local fire departments and/or districts normally provide life and property fire protection and may also have Wildland fire protection responsibilities.

Mitigation - Is about knowing and avoiding unnecessary risks. This includes an assessment of possible risks to personal/family health and to personal property. Specialists can conduct risk identification and assessment surveys. Mitigation measures can be structural and non structural. Purchase of insurance covering the most prominent identified risks is a common measure. The FIREWISE program offers mitigation measures for homeowners in the urban interface.

NWCG – National Wildfire Coordinating Group – a federal interagency group comprised of those federal agencies with land management and fire management responsibilities.

Occluded Interface: The occluded community generally exists in a situation, often within a city, where structures abut an island of Wildland fuels (e.g., park or open space). There is a clear line of demarcation between structures and Wildland fuels. The development density for an occluded community is usually similar to those found in the interface community, but the occluded area is usually less than 1,000 acres in size. Fire protection is normally provided by local fire departments.

PPE – Personal protective equipment refers to protective clothing, goggles, helmets, gloves, pads, guards, shields, masks or other gear designed to protect the wearer’s body from injury. Common protective materials include Nomex and Kevlar.

Preparedness – (1) Condition or degree of being ready to cope with a potential fire situation. (2) Mental readiness to recognize changes in fire danger and act promptly when action is appropriate.

Response – Movement of fire fighting resources from assigned standby locations to another location or to an incident in reaction to dispatch orders or to a reported alarm.

RFD – Rural fire department or district – An organization established to provide fire protection to a designated geographical area outside of areas under municipal fire protection. Usually has some taxing authority and officials may be appointed or elected.

Risk – The chance of fire starting from any cause.

Rural Interface: The rural interface community exists in a situation where scattered small clusters of structures (ranches, farms, resorts, or summer cabins) are exposed to Wildland fuels. There may be miles between these clusters.

Silviculture – The art and science of controlling the establishment of growth, composition, health, and quality of forests to meet diverse needs and values of many landowner, societies, and cultures.

Suppression – The most aggressive fire protection strategy, it leads to the total extinguishment of a fire.

Surface fire – A fire that consumes fuels lying on or near the surface of the ground, including leaf and needle litter, dead branch material, downed logs, bark, tree cones, and low stature living plants.

Type – Refers to resource capability. A Type 1 resource provides a greater overall capability due to power, size, capacity etc., than would be found in a Type 2 resource. Resource Typing provides managers with additional information in selecting the best resource for the task.

Urban interface – Where wildland fuels threaten to ignite combustible homes and structures located there.

VFD – Volunteer fire department – A fire department of which some or all members are unpaid.

Wildland – An area in which development is essentially non-existent, except for roads, railroads, power lines, and similar transportation facilities. Structures, if any are widely scattered.

Wildland fire – Any fire occurring on the wild lands, regardless of ignition source, damages or benefits.

Wildland fuels - Fuel is required for any fire to burn. With regards to wildfire, fuels almost always consist of vegetation, both living and dead (trees, shrubs, dried grasses, fallen branches etc.) Houses, when involved in a wildfire, become a source of fuel. The amount, size, moisture content,

arrangement, and other fuel characteristics influence ease of ignition, rate of spread, flame length, and other fire behaviors

Wildland Urban Interface - An area where wildland fuels threaten to ignite combustible homes and structures.
