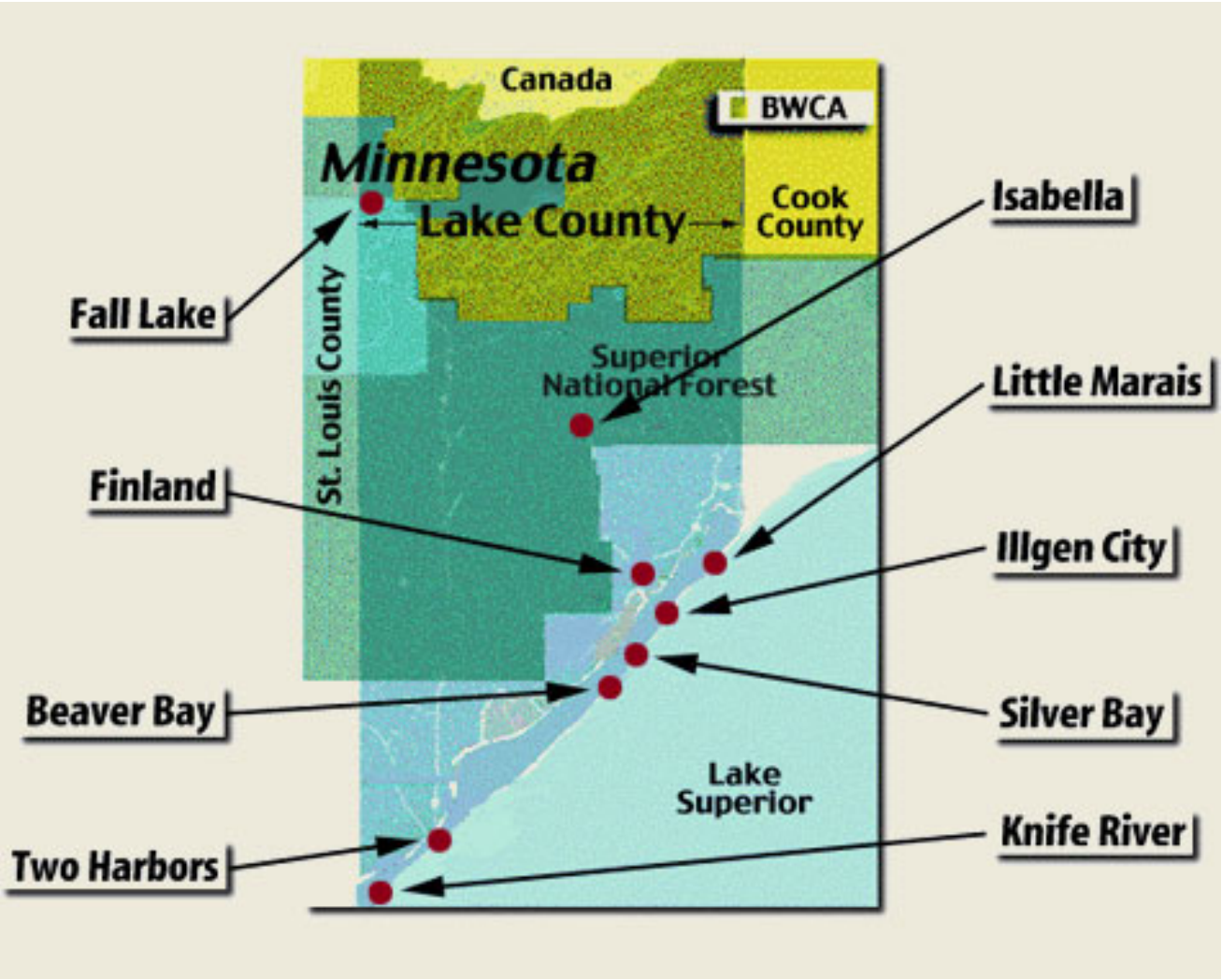
# Lake County
## Community Wildfire Protection Plan




**(Cover page from the Lake County website)**

**Lake County Community Wildfire Protection Plan**
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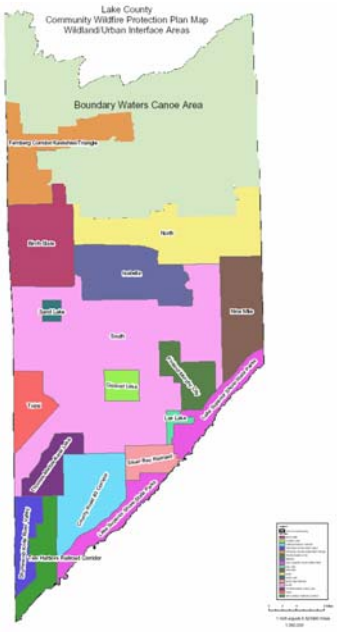
# I. Introduction:

**Lake County Wildland Urban Interface Areas**




The Lake County CWPP (Community Wildfire Protection Plan) has two objectives. **First**, it identifies and prioritizes Wildland/Urban Interface areas within Lake County (including State, County, federal and nonfederal lands) for hazardous fuels reduction treatments and recommends methods for achieving hazardous fuels reductions. **Second**, the plan outlines measures for reducing fire danger to structures throughout Lake County at-risk communities. The objectives for the aforementioned vegetative and structural treatments are broadly addressed within each wildland urban interface (WUI) community beginning on page 25. Every WUI area will be addressed in depth as the Coordination group works with WUI communities, its residents and partners in plan implementation.

Because people and natural elements interact in the wildland-urban interface, expanding development and recreational use is creating an increasingly complex landscape in Lake County. The term wildland-urban interface is defined as any area where wildland fuels (trees, brush and vegetative materials) threaten to ignite combustible homes and structures. With increasing WUI development, comes problems specific to these natural areas, such as the threat of catastrophic wildfire.

As fire history shows, large wildfires are not uncommon in Lake County. The threats to life and property, the assets lost, and the cost for fighting fires are continuously escalating. As wildfires affect more people, active public involvement becomes integral to the success of any wildfire management initiative. By being proactive, Lake County communities can work together to combat the wildland fire issue. It is impossible to stop all wildfires ignitions from occurring, but appropriate mitigation measures CAN make a difference. Wildfire and structure protection **is** everybody's responsibility!

The Lake County CWPP is a community based plan and was developed collaboratively amongst individuals; the local communities; local volunteer fire departments; 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. The goal of the Healthy Forest Restoration Act (HFRA) is to reduce wildland fire risk to firefighters, communities, and important landscapes while keeping with 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.

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 Healthy Forest Restoration act of 2003. 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 Lake County Community Wildland Fire Protection Plan defines the steps and recommendations developed by a core planning committee, and the final recommendations as edited, reviewed and

prioritized by the local community. This plan is a working document and will be enhanced collaboratively by the 16 local Wildland/Urban Interface communities which it serves. The Coordination group (which is responsible for plan implementation) will actively seek community input to help develop localized hazard reduction and mitigation projects. Community members wishing to comment and give suggestions to the implementation of the plan should contact the Lake County Board of Commissioners through their Secretary at 218-834-8320.

This plan will be implemented through the guidance of the Lake County CWPP Coordination group composed of a Lake County Commissioner, a Lake County Emergency Management Representative (Sheriff Department), a Lake County Land (forestry) Representative, two Department of Natural Resources Representatives (north & south Lake County), two Lake County Fire Department Representatives (north & south), and two representatives of the U.S. Forest Service (north & south).. Adjunct coordination group members may also include: a Fire Chief from the specific WUI being addressed, a Firewise representative, local affected property owners and other technical specialist representatives as deemed necessary.

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.

The Lake County Community Wildfire Protection Plan also addresses:

- Issues and elements involved in developing the plan,
- Elements discussed in assessing community risks and priorities,
- Development of fuels reduction and mitigation plans to address community risks.

This plan is based on local needs of 16 WUI areas. These sixteen areas were collaboratively defined by Lake County based communities with support from land management agencies.

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. In development of the Lake County Community Wildfire Protection Plan communities discussed and refined priorities for protecting life, property, and critical infrastructure within their County.

Three focus areas surfaced from the sixteen WUI communities. **These three WUI focus areas will become priorities** as the coordination group works toward plan implementation. ***The focus areas are; the Fernberg Corridor/Kawishiwi/Triangle Area, Two Harbors Railroad Corridor Area and the Birch/Slate Lake Area.***

Development of this plan has been a valuable process. County communities and stakeholders worked together discussing and defining issues with community leaders, members and local land management agencies. These discussions have lead to the completion of this Community Wildfire Protection Plan which lists common goals and fire management options for Lake County communities and their surrounding ecosystems.

## II. ROLES AND ACTIONS FOR DEVELOPMENT AND IMPLEMENATION OF THE LAKE COUNTY CWPP:

**State Foresters:**

- The HFRA (Healthy Forest Restoration Act) gives State Foresters 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 Lake County CWPP.
- To Provide statewide leadership in encouraging local, state, federal, and non-governmental stakeholders in development of the Lake County CWPP and facilitate the participation of state personnel in the development process.
- Through established relationships with Lake County city and county officials, local fire chiefs, state and national fire organizations, federal land management agencies, private homeowners, and community groups:
    - Assist in bringing together diverse community partners.
    - Initiate the planning dialogue, if necessary.
    - Facilitate the implementation of priority actions across ownership boundaries.
- Bring specialized natural resource knowledge and technical expertise into the planning process.
- Provide 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.
- When allocating federal grant funds (such as the mitigation portion of State Fire Assistance) for projects on nonfederal lands, to the maximum extent possible give priority to communities that have adopted a CWPP**.**

**USDA FS Regional Foresters, BLM State Directors, and Regional Directors of the US Fish & Wildlife Service and National Park Service:**

- Provide federal leadership in encouraging Lake County to develop a CWPP.
- Convey the importance of CWPPs to federal line officers and encourage their active participation in their development and implementation.
- In planning fuel reduction projects on federal land:
    - Ensure full collaboration with local communities, state agencies, and all interested parties; and…
    - Give priority to projects that provide for the protection of at-risk-communities or watersheds, or that implement recommendations in a CWPP.
- 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.
- 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, if completed, would reduce the risk to the community.
- Provide funding priority to projects and activities identified in a CWPP.
- Promote economic opportunities in rural communities where possible**.**

**Bureau of Indian Affairs (BIA) Regional Foresters:**

- Encourage Tribes to develop and implement, as appropriate, CWPPs (often referred to as wildland fire prevention plans) for landscapes at high-risk to wildland fire.
- 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 / 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.

**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.
- 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.
- Along with local fire chiefs, provide local leadership 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.
- In conjunction with local fire chiefs, clearly communicate to home and business owners their responsibility to reduce the ignitability of their homes and other structures, and to create defensible space around them**.**

**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.

- As trusted community members and leaders, 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.
- In conjunction with local government officials, clearly communicate to home and business owners their responsibility to reduce the ignitability of their homes and other structures, and to create 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.

## III. Fire Policies and Programs:

The State of Minnesota's Department of Natural Resources is governed by State Statues that provide fire protection direction; followed by Minnesota Department of Natural Resources internal policies. The fire policy and program for the Superior National Forest is outlined annually within the Forests' 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 direction.

Various local, state and federal programs and policies relate to fire protection and community fire planning. The Healthy Forest Restoration Act of 2003 calls for the development of Community Wildfire Protection Plans. This section describes requirements, as well as related county, state and federal programs.

**1. Healthy Forest Initiative (2002)**

***The Federal Healthy Forest Initiative of August 2003 was the impetus for***:

- Streamlining the administrative review process for NEPA and
- Creating new regulations under the Endangered Species Act for National Fire Plan projects to streamline consultation with federal regulatory agencies.
- It set the stage for discussion between the administration and Congress resulting in new legislation addressing forest health.
- Establishing new procedures provided for under the National Environmental Policy Act to allow priority fuel treatment (thinning and prescribed fire) and forest restoration (reseeding and planting) projects, identified through collaboration with state, local and tribal governments and interested persons, to proceed quickly without the need for lengthy environmental documentation.
- Improving the agencies' administrative appeal rules to expedite appeals of forest health projects and encourage early and more meaningful public participation.
- Providing guidance to Federal agencies to make consultations under the Endangered Species Act timelier while emphasizing long-term benefits to threatened and endangered species, and proposing new regulations under the Endangered Species Act (Section 7) to expedite consultation for forest health projects that are unlikely to harm threatened or endangered species or their habitat.
- Providing guidance from the Council on Environmental Quality to improve environmental assessments for priority forest health projects by preparing assessments for fifteen pilot fuels treatment projects.

The Healthy Forest Restoration Act of 2003 contains a variety of provisions to expedite hazardous-fuel reduction and forest-restoration projects on specific types of Federal land that are at risk of wildland fire or insect and disease epidemics. The act helps rural communities, States, Tribes, and landowners restore healthy forest and rangeland conditions on State, Tribal, and private lands.

**2. Stewardship Contracting (Expanded in 2003)**

On the legislative front, in 2003, Congress enacted legislation expanding 1999 stewardship contracting authority, allowing Federal agencies to enter into long-term (10 years) contracts with small businesses, communities and nonprofits to reduce wildfire risk and improve forest health. Stewardship contracts emphasize the vital role of local residents, though strong partnerships with federal land managers in formulating the goals of forest stewardship while accomplishing the necessary work. Stewardship contracts focus on desirable end results on the ground that improve forest health and provide benefits to

communities. Part of the President's Healthy Forests Initiative, stewardship contracting will improve the health of the land, ensure thriving landscapes and contribute to the development of dynamic economies by assisting land managers to enhance and restore forest and rangeland health while strengthening the role of communities and others who contribute to such efforts.

The expanded 2003 stewardship contracting, which Congress approved will help agencies achieve key land-management goals to:

- improve, maintain, and restore forest and rangeland 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.

Stewardship contracts allow private companies, communities and others to retain forest and rangeland products in exchange for the service of thinning trees and brush and removing dead wood. Long-term contracts (up to 10 years) foster a public/private partnership to restore forest and rangeland health by giving those who undertake the contract the ability to invest in equipment and infrastructure. This equipment and infrastructure are needed to productively use material generated from forest thinning, such as brush and other woody biomass, to make wood products or to produce biomass energy, at savings to taxpayers.

**3. Hazardous Fuels Reduction Act (2003)**

*Act Key provision:*

- Provide tools and additional authorities to treat acres quickly in order to expedite restoration goals. Strengthen public participation and provided incentives for local communities to develop community protection plans.
- Limit environmental analyses complexity for hazard reduction projects
- Provide a more effective appeal process
- Instructs the Courts when considering legal challenges to halt projects, to balance the short-term affects of implementing the projects against the harm from undue delay and long-term benefits of a restored forest.
- Encourages biomass removal from public and private lands.
- Provides technical, educational, and financial assistance to improve water quality and address watershed issues on non-Federal lands.
- Authorizes large-scale silvicultural research.
- Authorizes acquisition of Healthy Forest Reserves on private land to promote recovery of threatened and endangered species, and improve biodiversity and carbon sequestration.
- Directs the establishment of monitoring and early warning systems for insect or disease outbreaks.

**4. National Fire Plan (2001)**

The National Fire Plan implementation began in FY 2001. 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). Accountability and collaboration at the local level are stressed. The strategy focuses on five areas:

- Improving fire preparedness
- Restoring and rehabilitating burned areas
- Reducing hazardous fuels
- Assisting communities
- Research needs

**5. 10-Year Comprehensive Strategy (2001)**

This is a coordinated ten-year strategy to comprehensively manage wildfire, hazardous fuels, and ecosystem restoration. The implementation plan was developed in 2002. It was developed in collaboration with governors and in consultation with a broad range of stakeholders. The scope includes federal and adjacent state, tribal, and private lands. The primary goals are:

- Improve prevention and suppression
- Reduce hazardous fuels
- Restore fire-adapted ecosystems
- Promote community assistance
- Collaboration, priority setting, and accountability.

**6. Federal Emergency Management Agency Disaster Mitigation Act (2000)**

Federal Emergency Management Agency (FEMA) lists requirements under Title 44 CFR Part 201 of the Disaster Mitigation Act of 2000. This legislation specifies criteria for state and local hazard mitigation planning which require local and Indian tribal governments applying for Pre-Disaster Mitigation funds to have an approved local mitigation plan. These may include county-wide or multi-jurisdictional plans as long as all jurisdictions adopt the plan. Activities eligible for funding include management costs, information dissemination, and planning, technical assistance and mitigation projects.

*FEMA Pre-Disaster Hazard Mitigation Program* Establishes a National Pre-Disaster Mitigation Fund for a 3-year period

- Governors may recommend 5 or more local communities annually for assistance
- Funds are provided for technical assistance to communities
- “Small impoverished communities” may receive increased federal shares
- Federal Emergency Management Agency (FEMA) to establish an interagency task force to coordinate Federal pre-disaster mitigation

*FEMA Mitigation Planning*

- Requires local and Tribal governments to develop and submit mitigation plans
- Allows 7% of Hazard Mitigation Grant Program (HMGP) funds for planning purposes
- Increases HMGP from 15% to 20% for states meeting enhanced planning criteria

For Additional Fire Information Resources on the Web see Appendix G:

# IV. Background and History of Fire and Fire Risks in Lake County:

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

**1. History of Fire Occurrence/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 M.L. Heinselman 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.

Recent fire history indicates the potential for large wildland fire still exists in Lake County. Lake County has experienced several project fires over the past 20 years. Large Fires such as the Highway One fire, Balsam Lake, Topaz, Jack Pot Fire, Katherine Lake and Lookout Mountain Fire come to mind.

The four main causes of fires for Lake County are debris burning, lightning, escaped campfires and Railroad fires. Over the past 10 years, debris burning accounted for 21.19 % of the total wildfires, Lightning for 16.36%, escaped campfires for an additional 16.36% and railroad fires accounted for 11.52%. See the fire occurrence charts starting on page 15 for more information. Lightning is prevalent in the summer months, from May to October, with the peak occurrence in July and August. Lightning causes 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.

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 Lake County wildfire potential is vast acres of blowdown. A major windstorm which swept across northern Minnesota in July of 1999 impacted thousands of acres within Lake County, including a large amount of acreage within the Boundary Waters Canoe Area Wilderness (BWCAW). Northern portions of Lake County were impacted by this storm. Fire restrictions were also developed and are enacted in the blowdown area when fire indices and conditions so warrant.

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

## 2. General Fire Behavior Expected

(From the Superior National Forest Fire Management Plan, 2005)

Most large wildland fires occurring in Lake County are drought based and wind-driven. Slower spreading, small surface fires with occasional torching trees are the norm; 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. Lightning fires are prevalent, in the northern portions of the county during the summer months. 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 ½ to 7 miles are documented. Large runs like this occurred on the Sag Corridor Fire in neighboring Cook County. The presence of numerous lakes can make effective firebreaks under low to moderate conditions. During extreme fire conditions, ¼-mile to ½-mile spotting distances makes all but the largest lakes ineffective at stopping fire spread.

On July 4th On July 4th of 1999, portions of northern Minnesota including Lake County was were affected by a rare "derechco" 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.

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 (16km/hr). 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.

During the spring and fall (and droughty summers) when vegetation has cured railroad fires can be a problem. These fires can move quickly in the grass fuel models, brush and swamp grass spreading to timbered 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.

**3. History of Wildland Fire Occurrence for Lake County from 1994-2003**
**(All state and Federal agencies from FPA data)**

ALL FIRES

| *Cause* | *Count* | *Percent* | *Total* | 269 | |
|---|---|---|---|---|---|
| Lightning | 44 | 16.36% | | | |
| Equipment Use | 23 | 8.55% | | | |
| Smoking | 6 | 2.23% | | | |
| Campfire | 44 | 16.36% | Human | 225 | 83.64% |
| Debris Burning | 57 | 21.19% | | | |
| Railroad | 31 | 11.52% | Lightning | 44 | 16.36% |
| Arson | 12 | 4.46% | | | |
| Children | 9 | 3.35% | | | |
| Miscellaneous | 43 | 15.99% | | | |

National Forest

| *Cause* | *Count* | *Percent* | *Total* | 139 | |
|---|---|---|---|---|---|
| Lightning | 41 | 29.50% | | | |
| Equipment Use | 3 | 2.16% | | | |
| Smoking | 3 | 2.16% | | | |
| Campfire | 44 | 31.65% | Human | 98 | 70.50% |
| Debris Burning | 17 | 12.23% | | | |
| Railroad | 0 | 0.00% | Lightning | 41 | 29.50% |
| Arson | 10 | 7.19% | | | |
| Children | 3 | 2.16% | | | |
| Miscellaneous | 18 | 12.95% | | | |

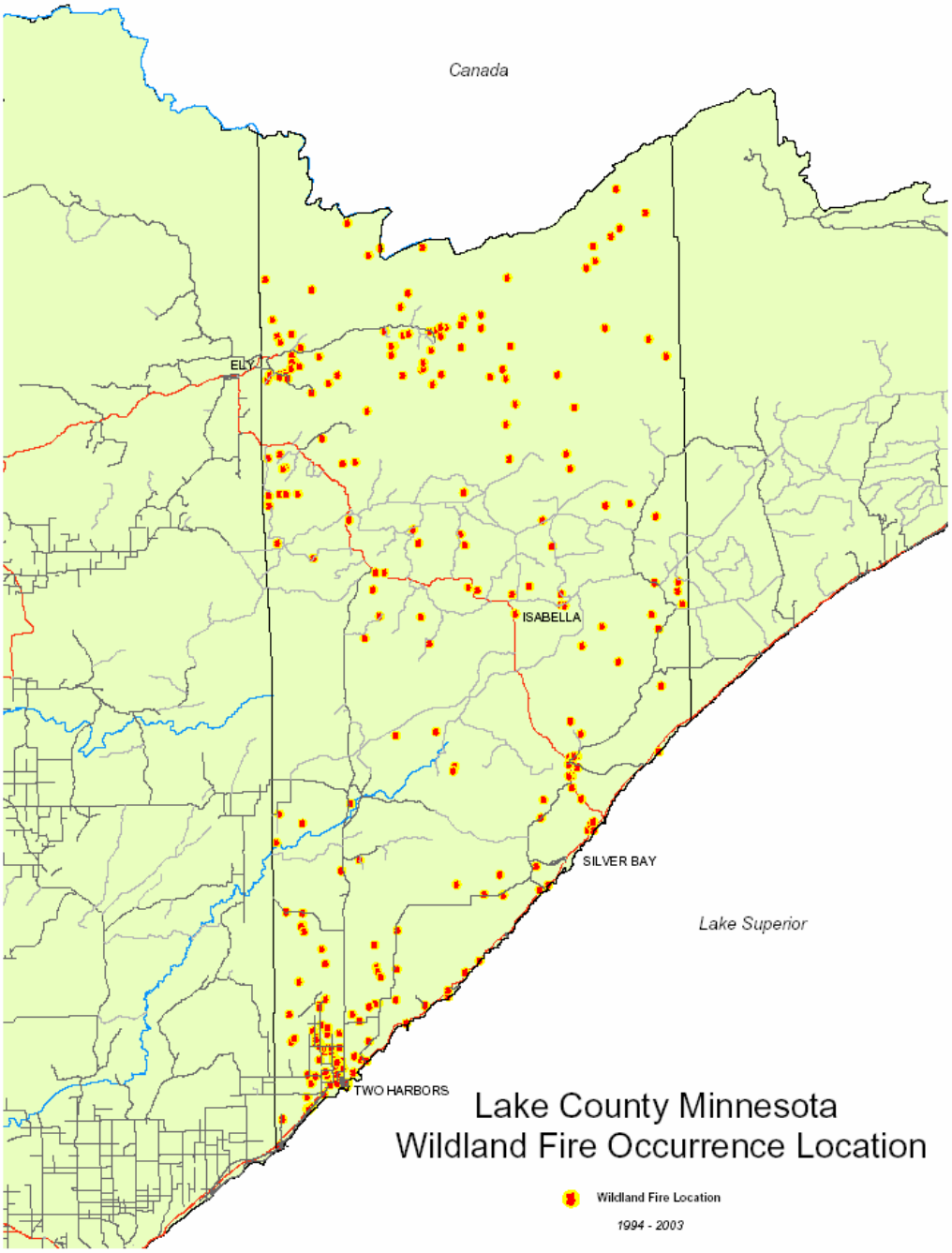
State

| *Cause* | *Count* | *Percent* | *Total* | 130 | |
|---|---|---|---|---|---|
| Lightning | 3 | 2.31% | | | |
| Equipment Use | 20 | 15.38% | | | |
| Smoking | 3 | 2.31% | | | |
| Campfire | 0 | 0.00% | Human | 127 | 97.69% |
| Debris Burning | 40 | 30.77% | | | |
| Railroad | 31 | 23.85% | Lightning | 3 | 2.31% |
| Arson | 2 | 1.54% | | | |
| Children | 6 | 4.62% | | | |
| Miscellaneous | 25 | 19.23% | | | |

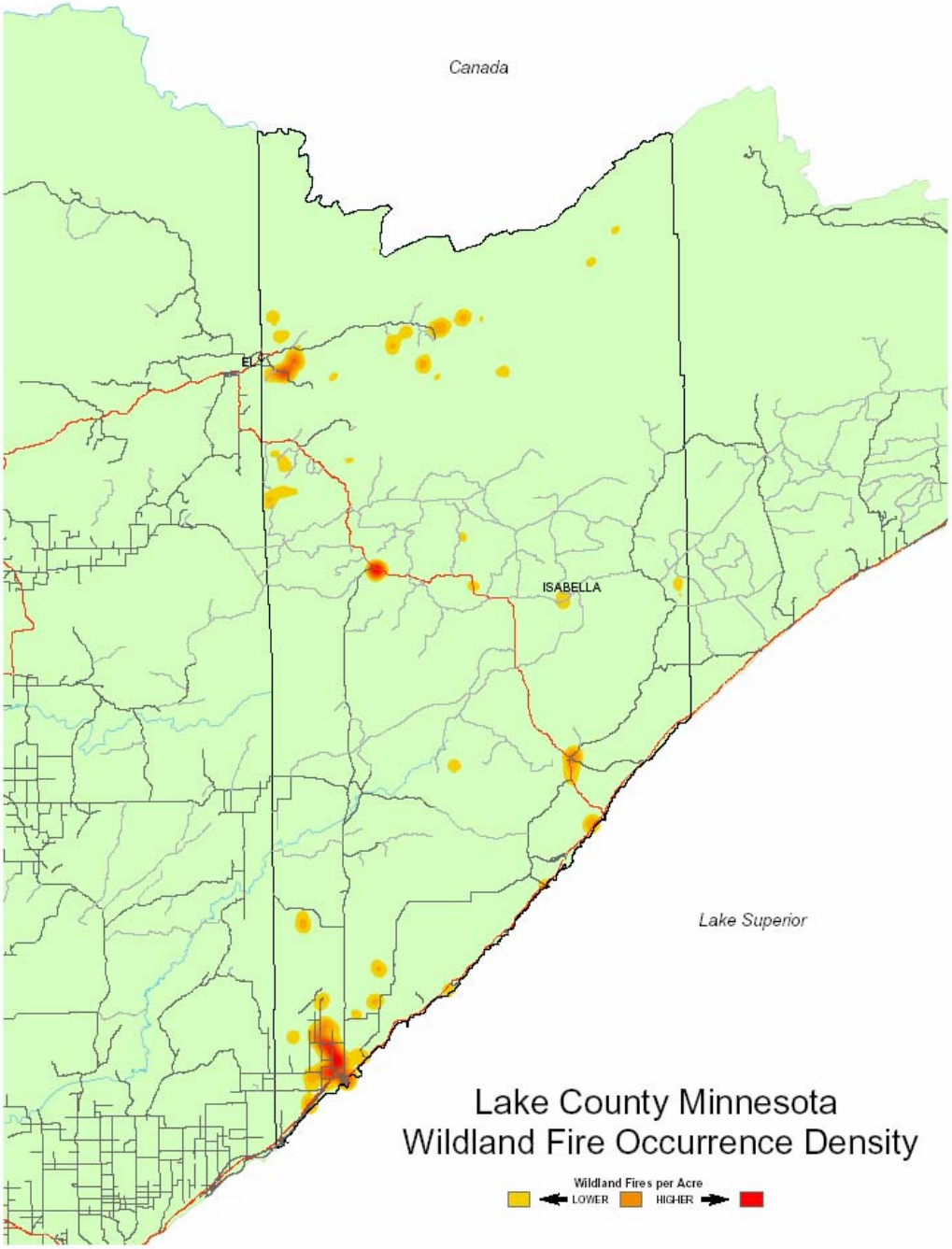
**(Information above supplied by Jerry Szymaniak through FPA data)**

**4. Point locations of State and Federal Wildland Fires from 1994 to 2003**

**(Map below supplied by Jerry Szymaniak through FPA data)**



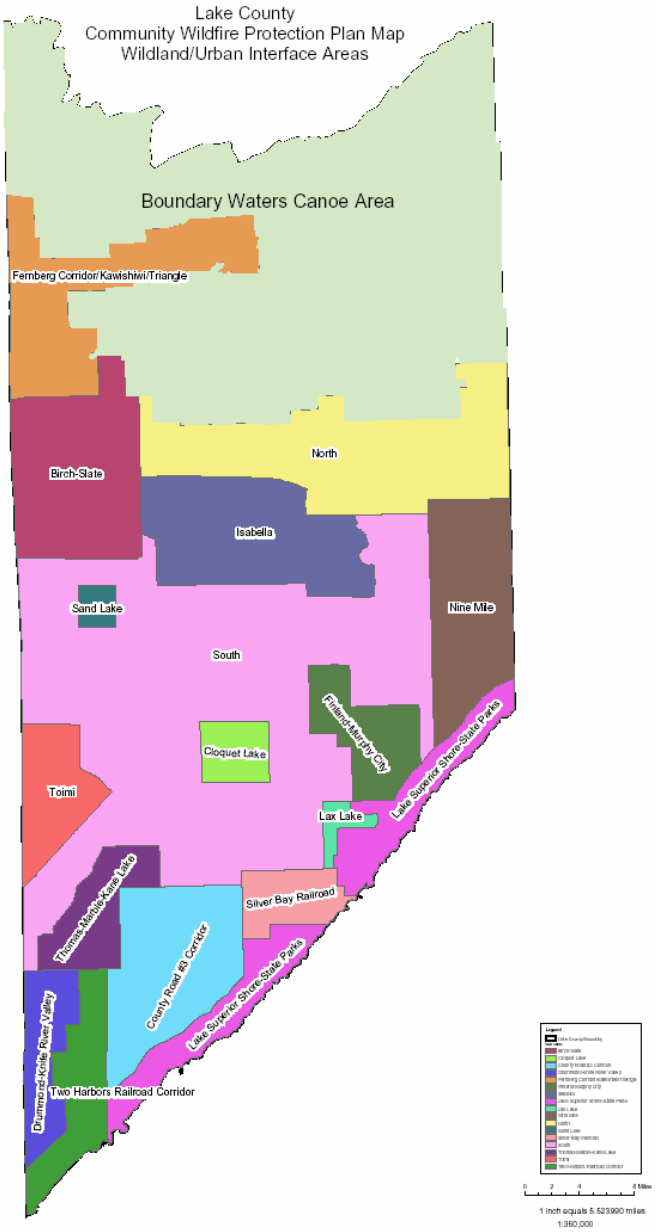
**5. Density of fire occurrence in Lake County between 1994 and 2003.**
**(Map below supplied by Jerry Szymaniak through FPA data)**



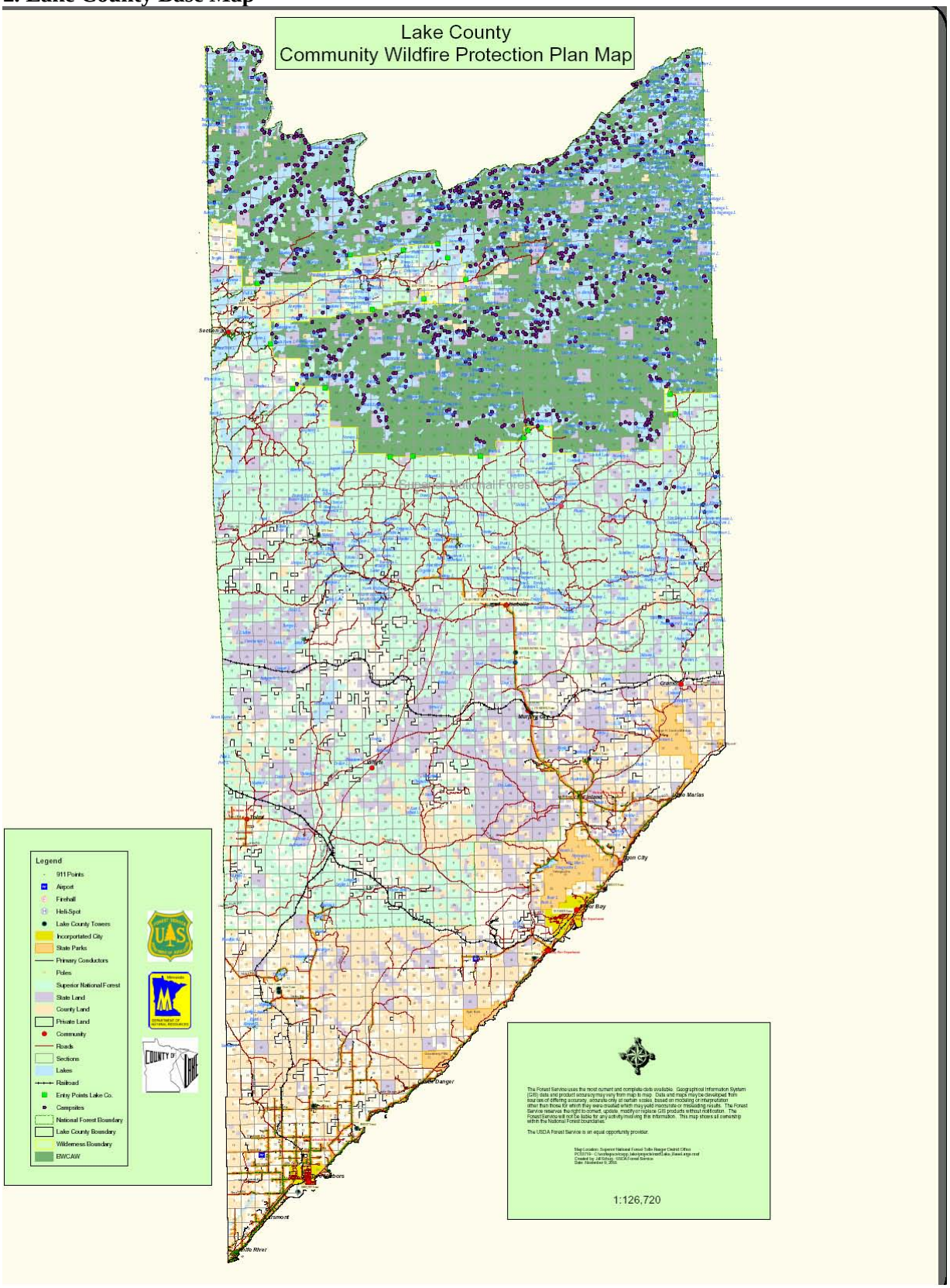
# V. Lake County Wildland Urban Interface Community Boundaries:

Lake County is divided into sixteen wildland urban interface (WUI) communities. After several community based discussions, the sixteen WUI areas were selected. The larger community size allowed 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 WUI community will serve as a planning area boundary for implementation of the Lake County Wildland Fire Protection Plan. Projects can over lap between WUI communities and cross different (ownership) jurisdictions where agreements are in place. The map below shows Lake Counties' sixteen WUI areas and boundaries. Detailed descriptions of each (16) WUI community can be found starting on page 26.

**1. Lake County – Wildland Urban Interface Areas (WUI)**



## 2. Lake County Base Map



### 3. Lake County Communities and Neighborhoods

The Lake County Community Wildfire Protection Plan (CWPP) offers a variety of benefits to communities at risk from wildland fire. Within Lake County, Sixteen Wildland Urban Interface (WUI) areas have been identified. Each area has its own set of unique circumstances and need for mitigating measures. Each of WUI areas was assessed and documentation for each of the 16 wildland urban interface community areas is found starting on page 26.

One significant benefit for Lake 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.*

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 Lake 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

### 4. Fire Districts and Unprotected Areas

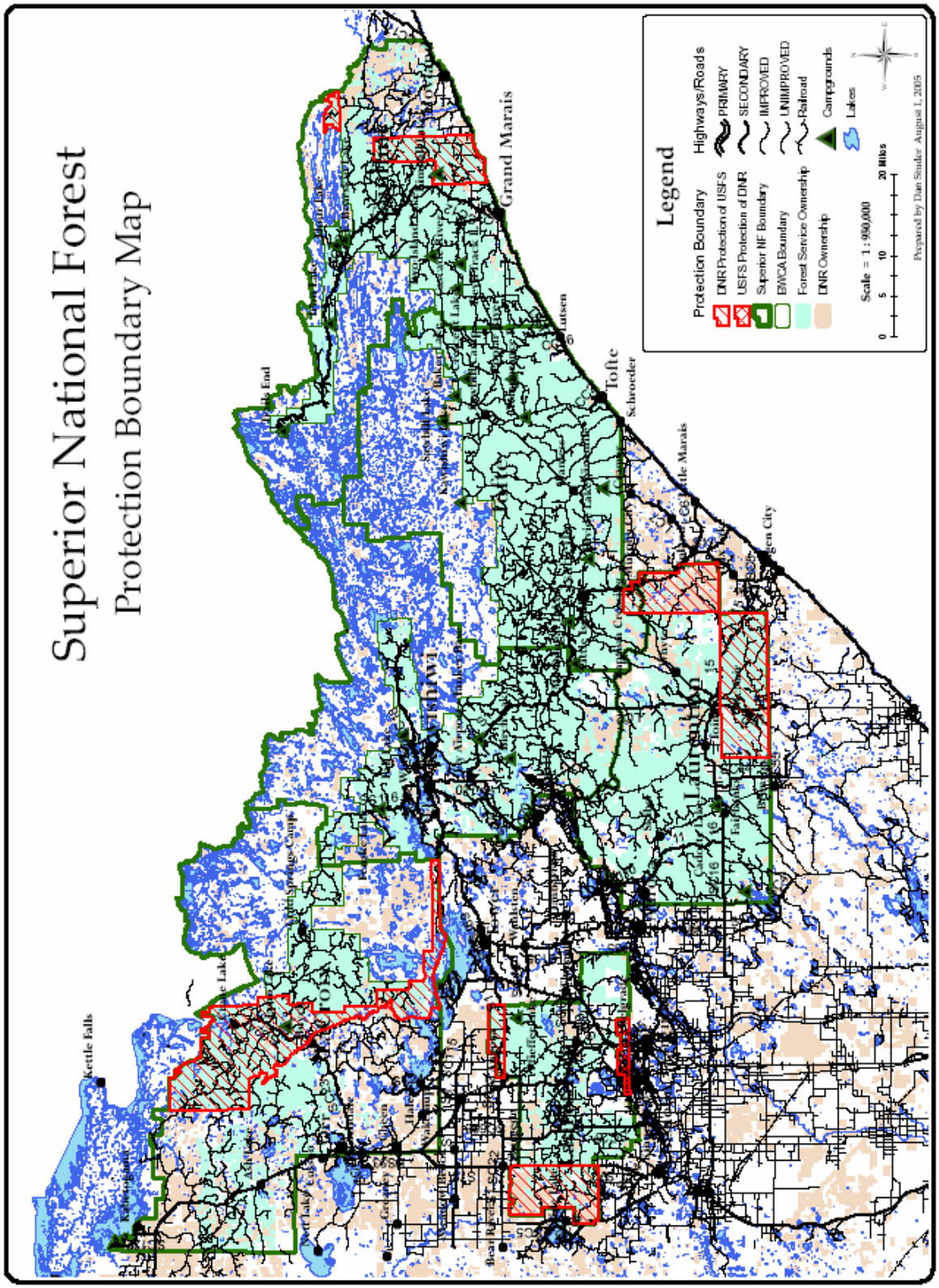
Because fire recognizes no boundaries, several land management agencies (BIA, DNR, NPS and USFS) and local volunteer fire departments provide **wildland** fire protection coverage to meet the needs of the public. There are some areas with in Lake County, where no specifically assigned **structural** fire protection exists. Protection of private property in these areas reverts back to the State. The State agency responsible (DNR) can only provide exterior protection to those structures. (Wildland firefighters are not trained to provide interior structure protection and can only apply minimal exterior structural protection efforts according to agency policy.)

Lake County is covered by eight volunteer fire departments which provide structural fire protection services within their jurisdictional boundaries. (Two Harbors, Finland, Beaver Bay, Silver Bay, Babbitt, Morse/Fall Lake Township, Ely, and Brimson Area VFD) Areas immediately outside specific fire department jurisdictions are sometimes provided coverage if 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 (within their jurisdictions). The map on page 23 shows jurisdictional protection boundaries for Lake County fire departments.

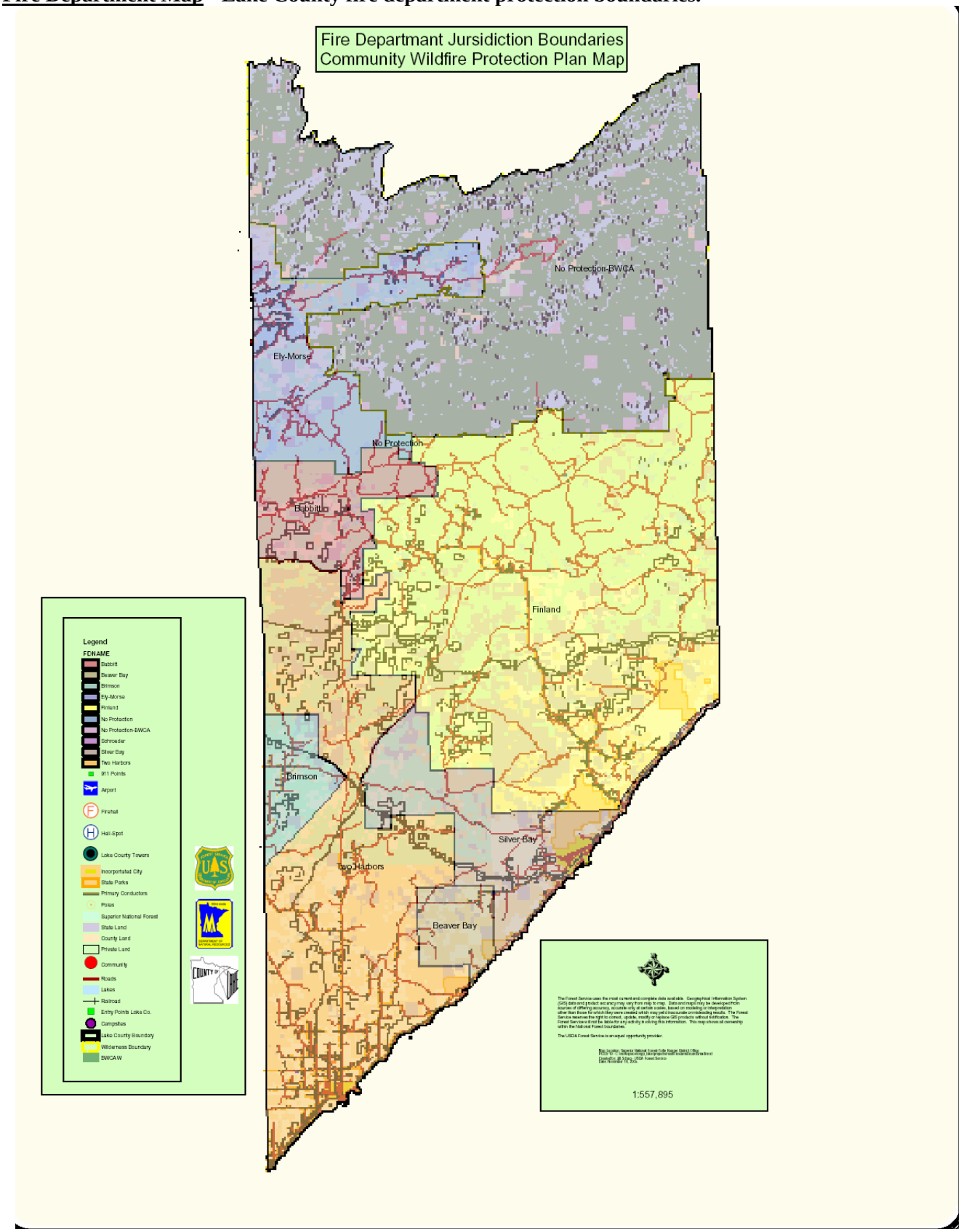
The Minnesota Department of Natural Resources is responsible for wildland fire suppression and prevention across all lands outside the National Forest. The Minnesota Department of Natural Resources also maintains Cooperative Fire Protection Agreements with local volunteer fire departments to provide assistance and cooperation in the prevention and suppression of wildland fires.

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 (Agreement No. 02-CA11090903-008). Under this Operating Plan the agencies agree to provide fire protection to the other agency's fire protection lands within the boundaries of the agreed on fire protection boundaries, as they would to their own protection lands. The map on page 22 shows wildland fire suppression boundaries for the United States Forest Service (Federal) and The Minnesota Department of Natural Resources (State). Each agency owns suppression resources; but they also share suppression resources and equipment through interagency cooperative agreements. Mutual aid and equipment rental agreements can and do exist with various private, contract and fire department wildland suppression resources.

**5. Wildland Fire Protection Map -**



**6. <u>Fire Department Map</u> - Lake County fire department protection boundaries.**



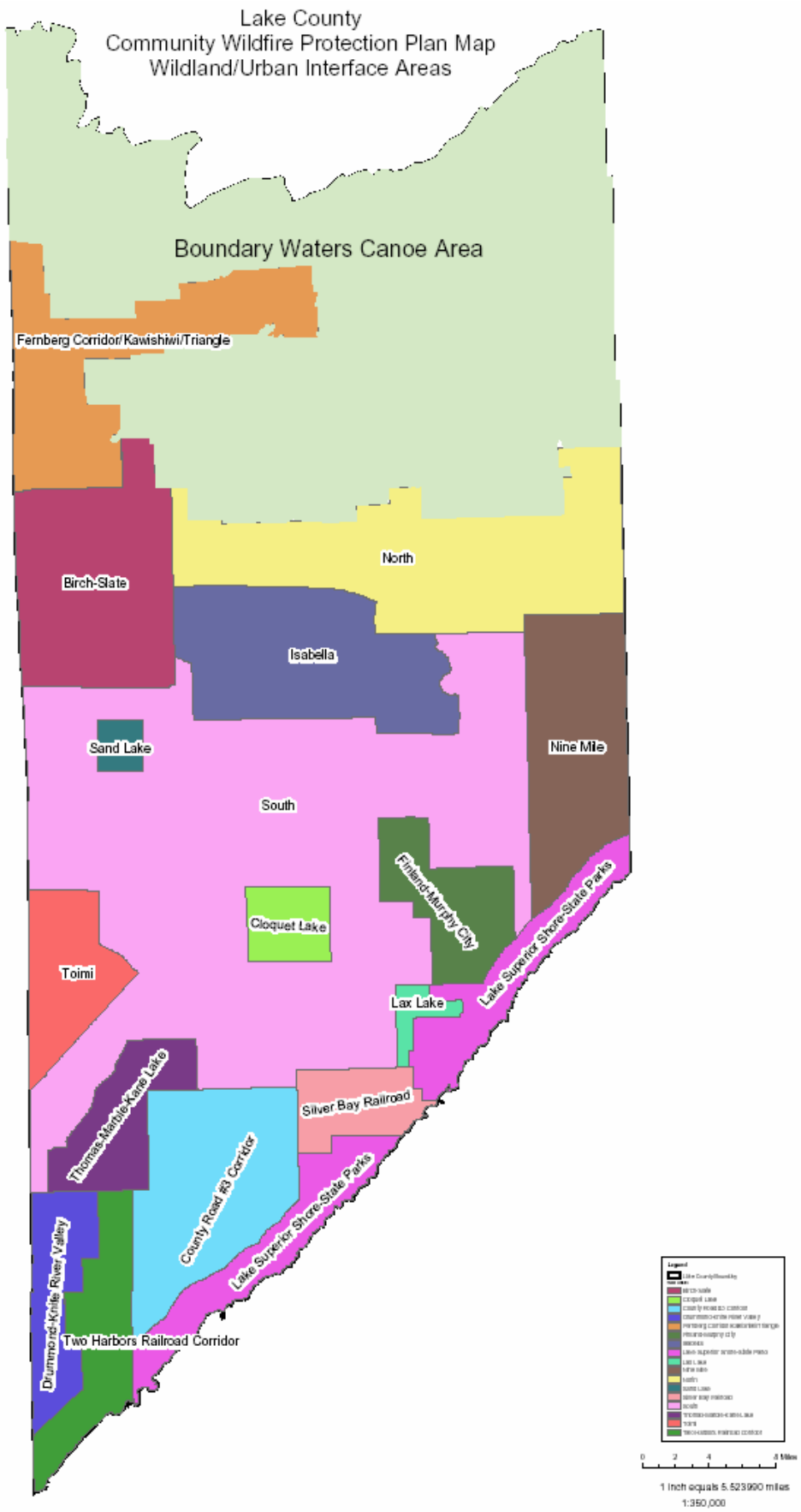
# VI. Descriptions of Community Wildland/Urban Interface Areas:

A core group of interagency and community based personnel discussed and formulated the wildland urban interface (WUI) community descriptions for Lake County. The 16 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:

DEFINITIONS

| **Priority**: Rating (1-5 with 1 being low) of community as it relates to safety and risk factors, evacuations, population density and economics as defined by risk. | **Name of WUI** Community |
|---|---|
| **Access:** | Condition or class of a road as it relates to acceptable access or egress for emergency evacuation, ambulance, fire engines and access for essential emergency services and community planning projects. |
| **Topography:** | Local configuration of the earth's surface, including its relief and the position of its natural and man made features. |
| **Fuel Hazards:** | A fuel complex defined by kind arrangement, volume, condition and location that forms a special threat of ignition or of suppression difficulty |
| **Fire Occurrence:** | The number of wildland fires started in a given area over a given period of time. |
| **Homes:** | Location and density of homes in a Wildland Urban Interface (WUI) community area. |
| **Businesses:** | Numbers of businesses and economic constraints |
| **Jurisdiction:** | Defines structural and wildland fire protection responsibilities for the WUI community |
| **Infrastructure risk:** | Defines infrastructure risks within the WUI community |
| **Community values:** | Important values at risk within the WUI community |
| **Local Preparedness Capability:** | Emergency protection capabilities (equipment, resources) available for community protection. |
| **Other:** | Any concerns not captured in previous categories. |
| **Fire Department Needs:** | List of any outstanding fire department needs |
| **Firewise Information:** | Program information about assessment need, completion and mitigation measures. |
| **Fire Department Contacts** | Name and number of local fire department contact. |
| **Wildfire Risk Assessment Rating** | A synopsis of fire risk associated with the area related to the type of fuels, fuel hazards, fire occurrence, and values at risk, infrastructure, suppression capabilities, and response times. |


Lake County
Community Wildfire Protection Plan Map
Wildland/Urban Interface Areas
Boundary Waters Canoe Area
Fernberg Corridor/Kawishiwi/Triangle
North
Birch-Slate
Isabella
Nine Mile
Sand Lake
South
Finland-Murphy City
Cloquet Lake
Toimi
Lax Lake
Lake Superior Shore-State Parks
Thomas-Marble-Kane Lake
Silver Bay Railroad
County Road #3 Corridor
Lake Superior Shore-State Parks
Drummond-Knife River Valley
Two Harbors Railroad Corridor
0 2 4 8 Miles
1 inch equals 5.523990 miles
1:350,000

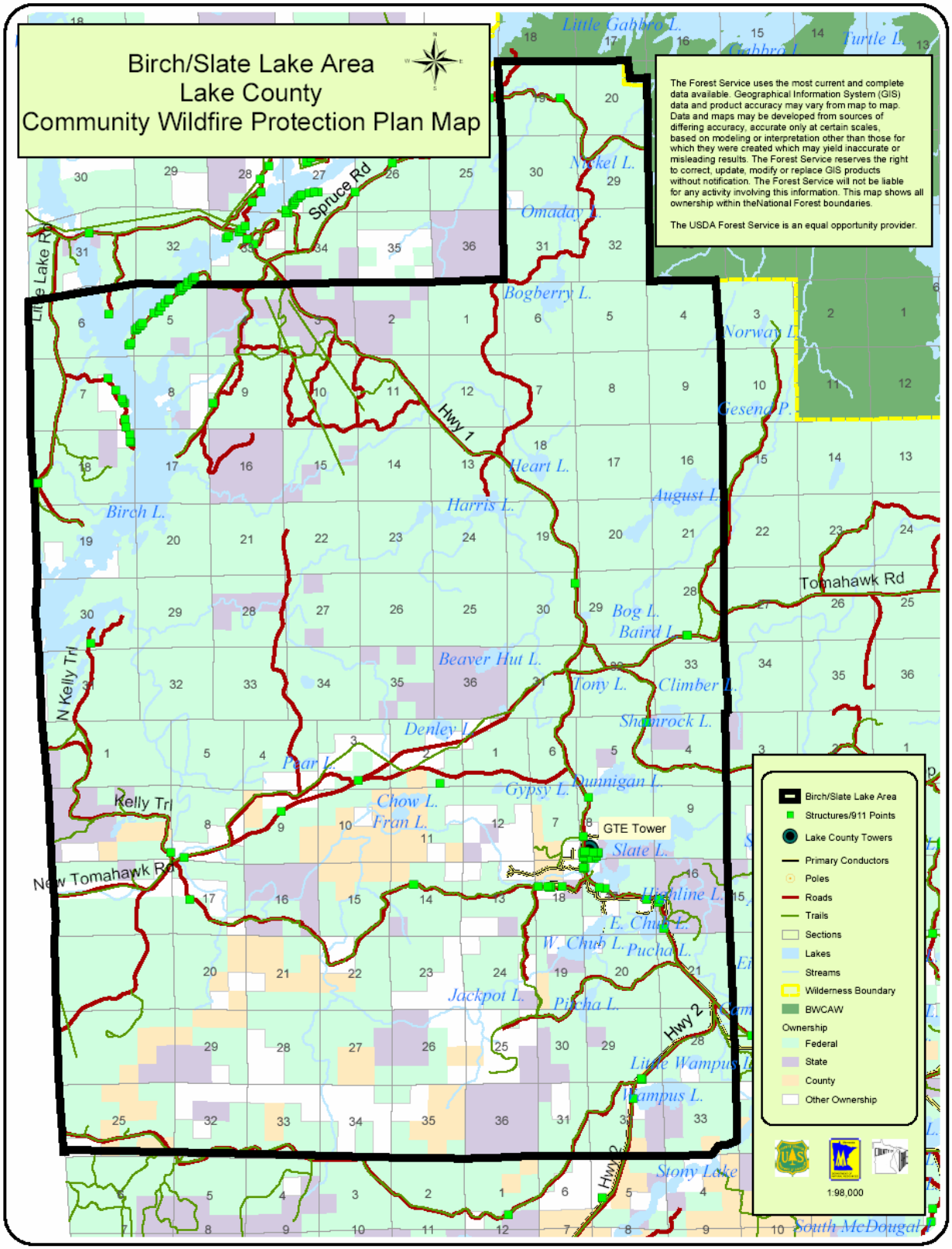
LAKE COUNTY WUI COMMUNITIES:

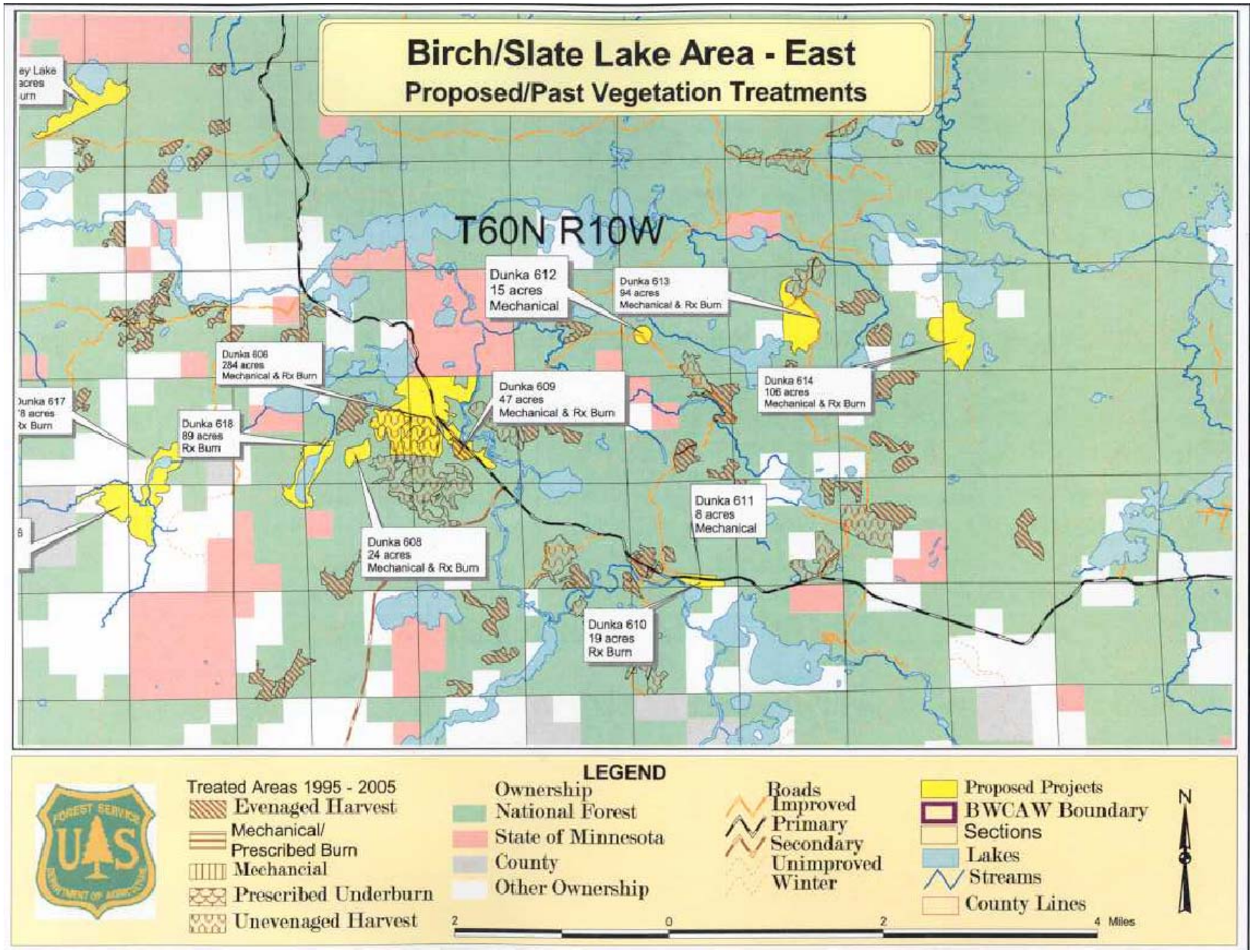
| Priority: 5 | Birch/Slate Lake Area |
|---|---|
| **Access:** | Hwy 1 is a slow, windy, paved road in this area. Emergency response is from Ely and Babbitt. Most other roads are gravel FS roads which include: FS 424 (Old Tomahawk) FS 186, FS 377, and FS 112 (S. Kelly Trail). |
| **Topography:** | Predominantly flat. Some rock ridges and rolling. |
| **Fuel Hazards:** | Areas with large volumes of balsam fir. |
| **Fire Occurrence:** | Moderate to high |
| **Homes:** | Residences and cabins on the following lakes: West Chub, Slate, Pitcha Lake, Stony River, South Kawishiwi summer homes, August Lake. |
| **Businesses:** | Resorts |
| **Jurisdiction:** | Babbitt FD, Ely FD Morse/Fall Lake FD (north only), and USFS |
| **Infrastructure risk:** | Power lines, phone lines, Birch Lake Dam, LP tanks |
| **Community values:** | Resorts, Birch Lake Campground |
| **Local Preparedness Capability:** | **Babbitt FD**: 1982 Pierce pumper: 750 gallon @1250 gpm; 1977 Ford pumper: 750 gallon at 1250 gpm: Brush rigs: 1988 and 1984 Ford 250 gal @ 250 gpm; Water Tenders: 1500 gal. and 1300 gal; floto pump; mark III pump; Chevy carry-all rescue truck; 3-4 racks 1 ½ inch hose; all personnel have portable radios; 2 drop tanks 2000 and 1000 gallons. **Ely FD**: Engines: 47 American LaFrance 750 gal@1500 gpm. 92 American LaFrance 550 gal@1250 gpm. 79 American LaFrance 750 gal @ 1500 gpm. Brush Rigs: 95 Hummer 250 gal @200 gpm; 85 Ford 1000gal @ 200 gpm; 76 Ford 2500 gal @500gpm. 82 International 5000 gal @ 300gpm; Pumps: 2 – 300 gpm hale portable pumps, 2 – 1000+ gpm trailered portable pumps, 1 fiberglass rescue boat, 1 zodiac, 1 thermal imager, 1 class A foam unit. **Morse/Fall Lake FD**: 2004 Type 1 engine International @ 1500 gpm/1000 gal. Tank. GMC water tender 400 GPM/1200 gal tank, 1978 Water Tender w2300 gal tank, 2 type 6 brush engines w200 gal tank/265 gpm. **USFS** two type 6 engines out of Ely, Aerial support during higher fire danger out of Ely. |
| **Other:** | Takes about 30 minutes to get to Hwy 1 from Babbitt. Area is not readily accessible from any response center. New development. |
| **Fire Dept Needs:** | Babbitt: Nomex clothing Ely, Babbitt and Morse: Hand held radios |
| **Firewise Information:** | Need support from governmental units (city, local fire departments, state and Federal) to help complete fire assessments for Lake Co. |
| **Fire Dept Contacts:** | **Ely FD Lou Gerzin 218-365-3227 Babbitt FD: Glenn Anderson 218-827-2611 Morse/Fall FD Ted Krueger 218-365-5583** |
| **Wildfire Risk Assessment Rating** | High. Fuel hazards within this area are of concern due to the amount of conifer (particularly balsam fir) component. This area also has a history of high fire occurrence. There are several high values at risk within this area. Suppression capabilities are fairly good; however there are areas where response times for suppression resources is very long. |

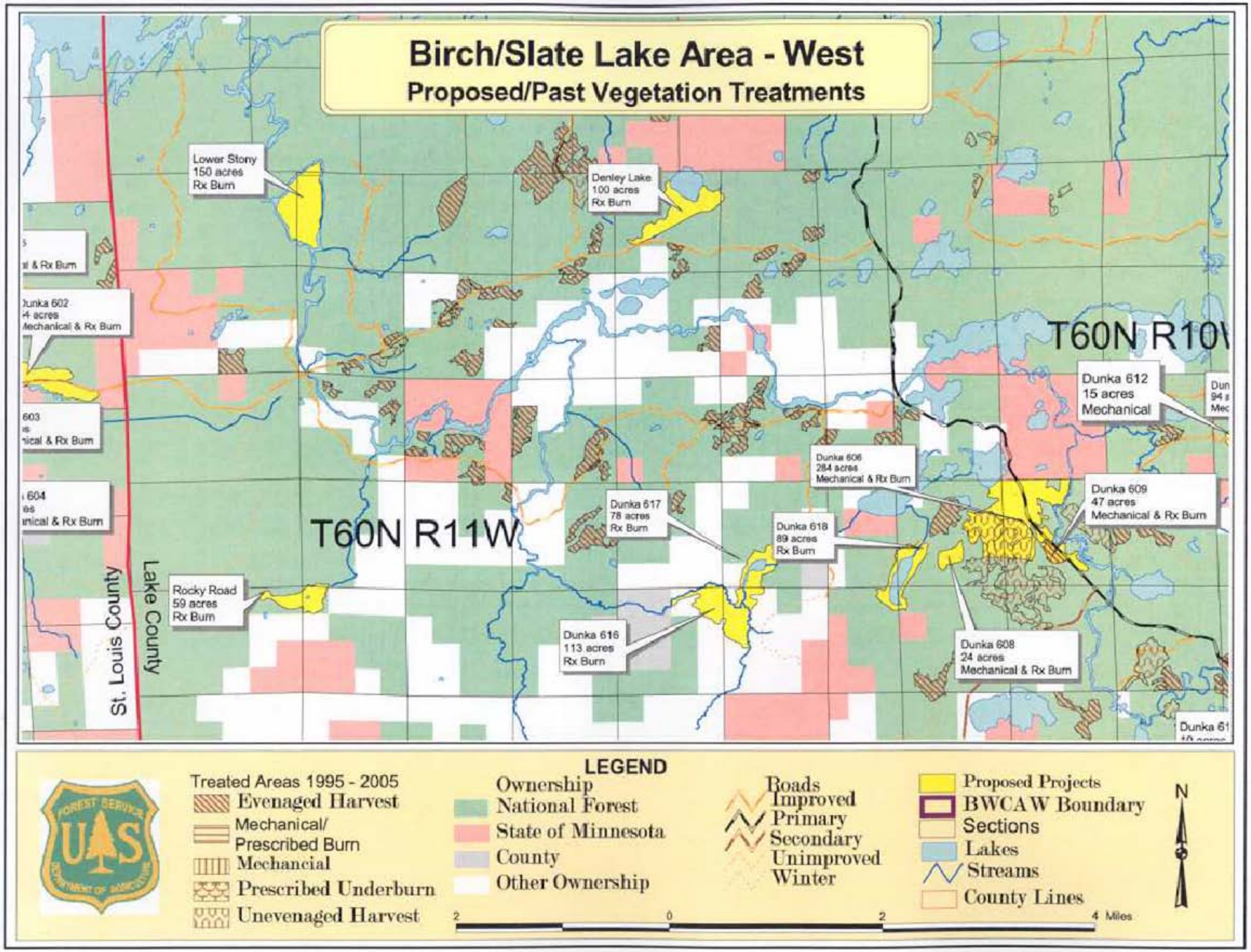
## Department of Natural Resources Birch/Slate Lake Area Prescription

**Taken from the Subsection Forest Resource Management Plan (SFRMP) which identifies forest treatment types and areas for DNR forestry and wildlife lands within Lake County over the next ten years (ending in 2014).**

| PRESCRIPTION | ACRES |
|---|---|
| **Clearcut with Reserves (3 treatments)** | **71** |
| **Commercial Thinning (5 treatments)** | **37** |
| **On-site evaluation – High Risk or Low Volume Stand (7 treatments)** | **114** |
| **Seed Tree (1 Treatment)** | **6** |
| **Community Total** | **227 Acres** |


Birch/Slate Lake Area
Lake County
Community Wildfire Protection Plan Map
The Forest Service uses the most current and complete data available. Geographical Information System (GIS) data and product accuracy may vary from map to map. Data and maps may be developed from sources of differing accuracy, accurate only at certain scales, based on modeling or interpretation other than those for which they were created which may yield inaccurate or misleading results. The Forest Service reserves the right to correct, update, modify or replace GIS products without notification. The Forest Service will not be liable for any activity involving this information. This map shows all ownership within theNational Forest boundaries.
The USDA Forest Service is an equal opportunity provider.
Little Gabbro L.
Gabbro L.
Turtle L.
Nickel L.
Omaday L.
Spruce Rd
Little Lake Rd
Bogberry L.
Norway L.
Gesenda P.
Hwy 1
Heart L.
August L.
Birch L.
Harris L.
Tomahawk Rd
Bog L.
Baird L.
Beaver Hut L.
Tony L.
Climber L.
N Kelly Trl
Shamrock L.
Denley L.
Pear L.
Gypsy L.
Dunnigan L.
Kelly Trl
Chow L.
Fran L.
GTE Tower
Slate L.
New Tomahawk Rd
Highline L.
E. Chub L.
W. Chub L.
Pucha L.
Jackpot L.
Pitcha L.
Hwy 2
Little Wampus L.
Wampus L.
Stony Lake
South McDougal
Birch/Slate Lake Area
Structures/911 Points
Lake County Towers
Primary Conductors
Poles
Roads
Trails
Sections
Lakes
Streams
Wilderness Boundary
BWCAW
Ownership
Federal
State
County
Other Ownership
1:98,000


Birch/Slate Lake Area - East
Proposed/Past Vegetation Treatments
T60N R10W
Dunka 612
15 acres
Mechanical
Dunka 613
94 acres
Mechanical & Rx Burn
Dunka 606
284 acres
Mechanical & Rx Burn
Dunka 609
47 acres
Mechanical & Rx Burn
Dunka 614
106 acres
Mechanical & Rx Burn
Dunka 618
89 acres
Rx Burn
Dunka 611
8 acres
Mechanical
Dunka 608
24 acres
Mechanical & Rx Burn
Dunka 610
19 acres
Rx Burn
LEGEND
Treated Areas 1995 - 2005
Evenaged Harvest
Mechanical/
Prescribed Burn
Mechancial
Prescribed Underburn
Unevenaged Harvest
Ownership
National Forest
State of Minnesota
County
Other Ownership
Roads
Improved
Primary
Secondary
Unimproved
Winter
Proposed Projects
BWCAW Boundary
Sections
Lakes
Streams
County Lines
N
2
0
2
4 Miles

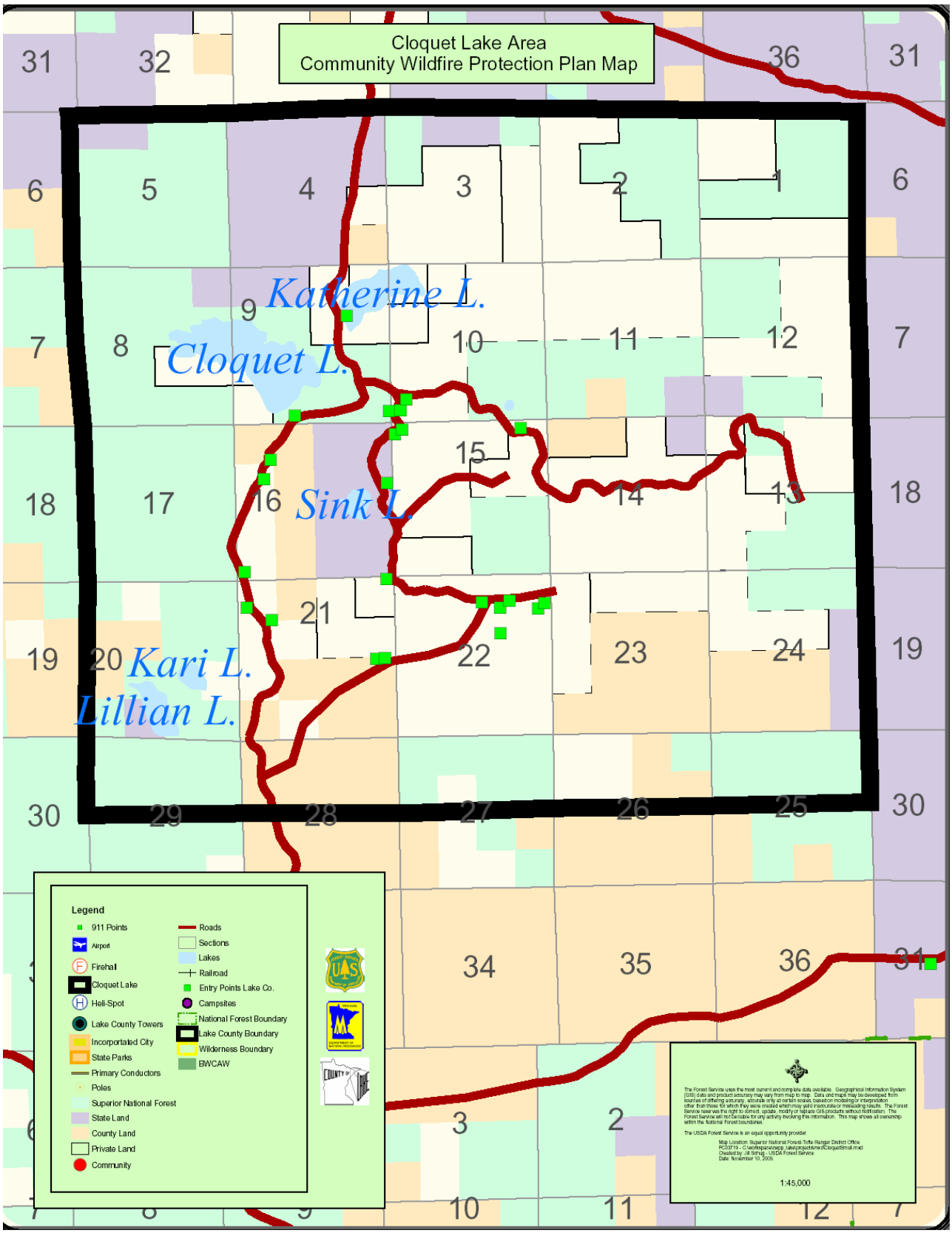

Birch/Slate Lake Area - West
Proposed/Past Vegetation Treatments
Lower Stony
150 acres
Rx Burn
Denley Lake
100 acres
Rx Burn
Dunka 602
Mechanical & Rx Burn
Dunka 612
15 acres
Mechanical
Dunka 606
284 acres
Mechanical & Rx Burn
Dunka 609
47 acres
Mechanical & Rx Burn
Dunka 617
78 acres
Rx Burn
Dunka 618
89 acres
Rx Burn
T60N R11W
T60N R10
Rocky Road
59 acres
Rx Burn
Dunka 616
113 acres
Rx Burn
Dunka 608
24 acres
Mechanical & Rx Burn
St. Louis County
Lake County
LEGEND
Treated Areas 1995 - 2005
Evenaged Harvest
Mechanical/
Prescribed Burn
Mechancial
Prescribed Underburn
Unevenaged Harvest
Ownership
National Forest
State of Minnesota
County
Other Ownership
Roads
Improved
Primary
Secondary
Unimproved
Winter
Proposed Projects
BWCAW Boundary
Sections
Lakes
Streams
County Lines
N
2
0
2
4 Miles

| Priority: 1 | Cloquet Lake Area |
|---|---|
| **Access:** | Remote area. Narrow, rough gravel roads, some roads too soft for structural engines when wet. 15+ miles (30 minutes +) travel for fire dept & wildland agencies. |
| **Topography:** | Rolling hills |
| **Fuel Hazards:** | Young balsam, mature to over mature mixed conifers, hardwoods & logging slash. |
| **Fire Occurrence:** | Low. |
| **Homes:** | 15 to 30 homes year round and seasonal. |
| **Businesses:** | Home based businesses |
| **Jurisdiction:** | Finland Fire Department, MN DNR, USFS |
| **Infrastructure risk:** | Power lines |
| **Community values:** | Recreational values |
| **Local Preparedness Capability:** | **Finland FD**: 18 personnel, 1200 gal. Pumper, 800 gal. Pumper, 3000 gal. Tanker, 1200 gal. Tanker, portable pumps and drop tanks. **DNR:** 2-5 personnel, 2 type 6 engines; aerial support during higher fire danger is 45+ min. away. 2-5 personnel and 2 type 6 engines available |
| **Other:** | New development is ongoing in this area. |
| **Fire Dept Needs:** | Water storage tank for fire hall, dry hydrants, communications upgrades, 4 wheel drive crew/utility vehicle |
| **Firewise Information:** | Need support from governmental units (city, local fire departments, state and Federal) to help complete fire assessments for Lake Co. |
| **Fire Dept Contacts:** | **Finland FD: Pete Walsh 218-663-7212** |
| **Wildfire Risk Assessment Rating** | Low. This area has not had a significant amount of fire occurrence. There are pockets of hazardous fuels, but overall does not have the fuel hazard to support large crown fires. There are a low number of values at risk within this area. Protection capabilities are poor within this area due to the remoteness of the area, poor access, and distance suppression resources have to travel to get to the area. |

## Department of Natural Resources Cloquet Lake Area Prescription:

**Taken from the Subsection Forest Resource Management Plan (SFRMP) which identifies forest treatment types and areas for DNR forestry and wildlife lands within Lake County over the next ten years (ending in 2014).**

| PRESCRIPTION | ACRES |
|---|---|
| **Clearcut with Reserves (3 treatments)** | **21** |
| **Commercial Thinning (5 treatments)** | **427** |
| **On-site evaluation – High Risk or Low Volume Stand (7 treatments)** | **64** |
| | |
| **Community Total** | **512 Acres** |

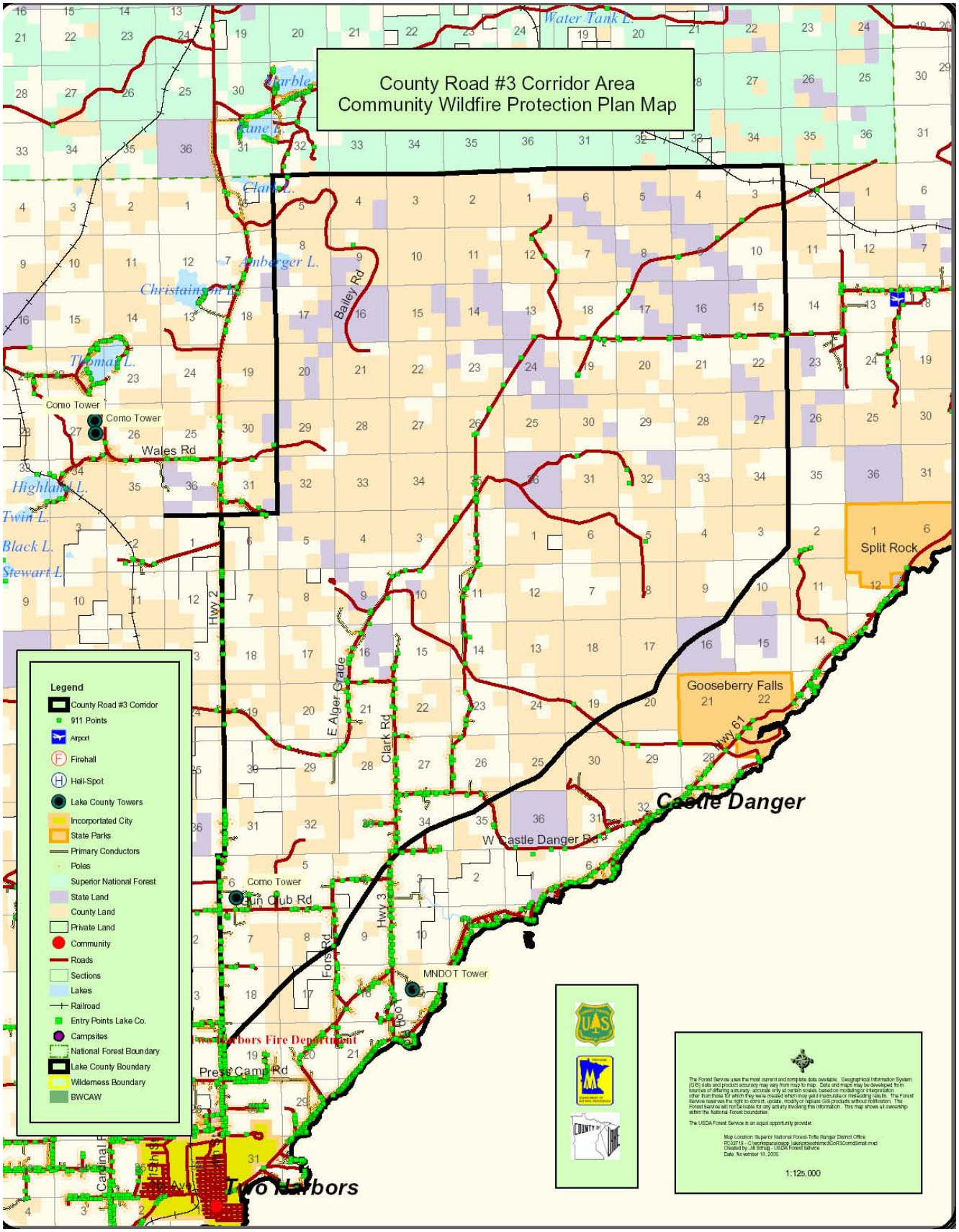

Cloquet Lake Area
Community Wildfire Protection Plan Map
Katherine L.
Cloquet L.
Sink L.
Kari L.
Lillian L.
Legend
911 Points
Airport
Firehall
Cloquet Lake
Heli-Spot
Lake County Towers
Incorporated City
State Parks
Primary Conductors
Poles
Superior National Forest
State Land
County Land
Private Land
Community
Roads
Sections
Lakes
Railroad
Entry Points Lake Co.
Campsites
National Forest Boundary
Lake County Boundary
Wilderness Boundary
BWCAW
The Forest Service uses the most current and complete data available. Geographical Information System (GIS) data and product accuracy may vary from map to map. Data and maps may be developed from sources of differing accuracy, accurate only at certain scales, based on modeling or interpretation other than those for which they were created which may yield inaccurate or misleading results. The Forest Service reserves the right to correct, update, modify or replace GIS products without notification. The Forest Service will not be liable for any activity involving this information. This map shows all ownership within the National Forest boundaries.
The USDA Forest Service is an equal opportunity provider.
Map Location: Superior National Forest-Tofte Ranger District Office
PC30719 - C:\workspace\cwpp_lake\projects\lmx\CloquetSmall.mxd
Created by: Jill Schug - USDA Forest Service
Date: November 10, 2006
1:45,000

| Priority: 4 | County Road #3 Corridor Area |
|---|---|
| **Access:** | 5 to 25 miles to a fire department or wildland suppression agency. Limited access for emergency vehicles. One way in and out for most residences. Limited width driveways, some with heavy fuels. |
| **Topography:** | Slightly rolling to rolling terrain |
| **Fuel Hazards:** | Grass fields, Balsam fir understory to mixed hardwoods |
| **Fire Occurrence:** | Low 1- 5/ year |
| **Homes:** | 200 homes widely distributed homes. 100 seasonal cabins |
| **Businesses:** | Home based businesses. Logging and general contractors. Gravel operations. Livestock |
| **Jurisdiction:** | Two Harbors FD, DNR, Silver Bay FD |
| **Infrastructure risk:** | Propane storage. High lines and local power lines. Phone lines. Natural gas line. Numerous natural gas farm taps |
| **Community values:** | Heavily used, popular, year-round outdoor recreation area |
| **Local Preparedness Capability:** | **THFD**: 20 personnel, portable and mobile radios, 2500gal. Pumper-tanker. 1000gal. 5 seat pumper. 1800gal. Tanker. 500gal. telesqirt pumper. 250gal mini-pumper/grass rig. Misc. wildfire tools and personal protective equipment. **DNR**: 3-10 personnel, 3 type 6 engines, 1tracked ATV (J-5), aerial support during higher fire danger is 45 min. + away. **Silver Bay FD:** Engines: 1993 freightliner 1000 gal @1250 gpm, 1979 Ford 1000 gal@1250 gpm, 2004 Ford F-550 300 gal @ 1000 gpm. Tenders: 1985 International 2400gal @ 300 gpm. Portable radios, 2-2500 gal port-a-tanks and various wildland firefighting gear. |
| **Other:** | Continuing new development into rural areas |
| **Fire Dept Needs:** | Upgrades to communication (phone, radio, and towers) systems to meet new technical requirements. Additional water tanks and dry hydrants needed. Timely upgrades of maps and 911 updates. Hardware, software, and tech support for GIS |
| **Firewise Information:** | Need support from governmental units (city, local fire departments, state and Federal) to help complete fire assessments for Lake Co. |
| **Fire Dept Contacts:** | **Chief: Steve Blettner 218-834-8816** |
| **Wildfire Risk Assessment Rating** | Low. This are has some areas with fuel hazards, but not extensive areas of concern. There are some values at risk and much mixed land ownership. Protection capabilities overall are good, but access to some areas is poor. |

## Department of Natural Resources County Road #3 Corridor Prescription:

**Taken from the Subsection Forest Resource Management Plan (SFRMP) which identifies forest treatment types and areas for DNR forestry and wildlife lands within Lake County over the next ten years (ending in 2014).**

| PRESCRIPTION | ACRES |
|---|---|
| **Clearcut with Reserves (9 treatments)** | **205** |
| **Uneven-Aged Regeneration Harvest (5 Treatments)** | **227** |
| **On-site evaluation – High Risk or Low Volume Stand (20 treatments)** | **404** |
| **Re-Inventory (5 treatments)** | **321** |
| **Community Total** | **1156 Acres** |

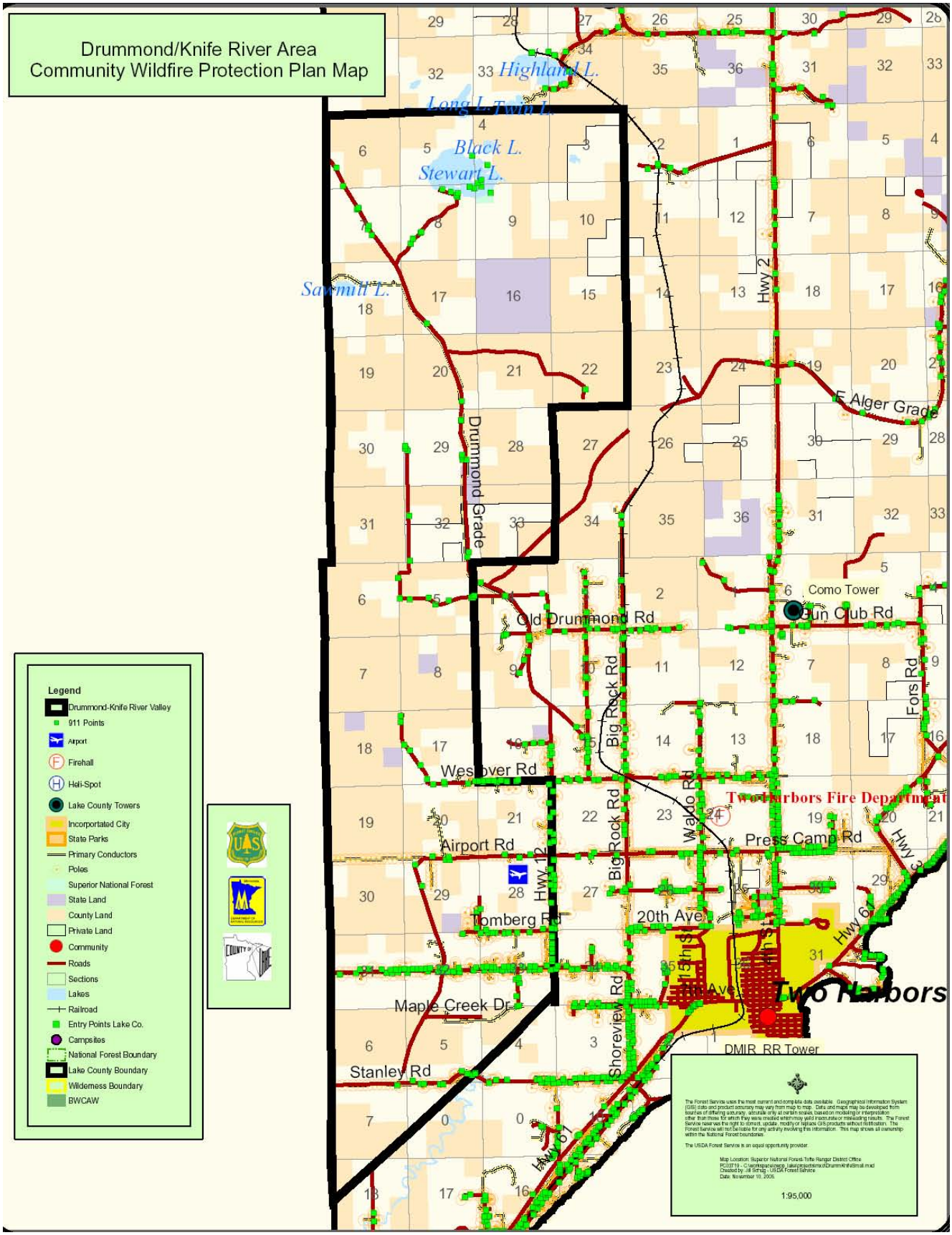

County Road #3 Corridor Area
Community Wildfire Protection Plan Map
Water Tank L.
Marble L.
Lane L.
Clark L.
Amberger L.
Christiansen L.
Thomas L.
Highland L.
Twin L.
Black L.
Stewart L.
Bailey Rd
Wales Rd
Como Tower
Hwy 2
E Alger Grade
Clark Rd
Hwy 3
Fors Rd
Hwy 61
Split Rock
Gooseberry Falls
Castle Danger
W Castle Danger Rd
Gun Club Rd
MNDOT Tower
Two Harbors Fire Department
Press Camp Rd
Two Harbors
Legend
County Road #3 Corridor
911 Points
Airport
Firehall
Heli-Spot
Lake County Towers
Incorporated City
State Parks
Primary Conductors
Poles
Superior National Forest
State Land
County Land
Private Land
Community
Roads
Sections
Lakes
Railroad
Entry Points Lake Co.
Campsites
National Forest Boundary
Lake County Boundary
Wilderness Boundary
BWCAW
1:125,000

| Priority:2 | Drummond / Knife River Area |
|---|---|
| **Access:** | 4 to 20 miles to a fire department or wildland suppression agency. Limited access for emergency vehicles. One way in and out for most residences. Limited width driveways, some with heavy fuels. |
| **Topography:** | Slightly rolling to rolling terrain |
| **Fuel Hazards:** | Grass fields, balsam fir understory to mixed hardwoods |
| **Fire Occurrence:** | 1-5 / year |
| **Homes:** | 200 homes widely distributed homes. 100 seasonal cabins. |
| **Businesses:** | Home based businesses. Logging and general contractors. Gravel operations. Livestock |
| **Jurisdiction:** | Two Harbors Fire Department. DNR |
| **Infrastructure risk:** | Propane storage. High lines, power lines and phone lines. Municipal airport Natural gas line. Numerous natural gas farm taps |
| **Community values:** | Heavily used, popular, year-round outdoor recreation area |
| **Local Preparedness Capability:** | **THFD**: 20 personnel, portable and mobile radios,. 2500gal. Pumper-tanker. 1000gal. 5 seat pumper. 1800gal. Tanker. 500gal. telesqirt pumper. 250gal mini-pumper/grass rig. Misc. wildfire tools and personal protective equipment. **DNR**:3-10 personnel, 3 type 6 engines, 1tracked ATV (J-5), aerial support during higher fire danger is 45 min. + away |
| **Other:** | Continuing new development into rural areas |
| **Fire Dept Needs:** | Upgrades to communication (phone, radio, and towers) systems to meet new technical requirements. Additional water tanks and dry hydrants needed. Timely upgrades of maps and 911 updates. Hardware, software, and tech support for GIS. |
| **Firewise Information:** | Need support from governmental units (city, local fire departments, state and Federal) to help complete fire assessments for Lake Co. |
| **Fire Dept Contacts:** | **TH Chief: Steve Blettner 218-834-8816 e-mail:thfdchief@frontier.net Secondary Contact: Rob Fasteland DNR** |
| **Wildfire Risk Assessment Rating** | Low. There are pockets of hazardous fuels, but overall does not have the fuel hazard to support large crown fires. There are some values at risk. Suppression capabilities in the area are fairly good. |

## Department of Natural Resources Drummond/Knife River Prescription:

**Taken from the Subsection Forest Resource Management Plan (SFRMP) which identifies forest treatment types and areas for DNR forestry and wildlife lands within Lake County over the next ten years (ending in 2014).**

| PRESCRIPTION | ACRES |
|---|---|
| **Clearcut with Reserves (1 treatments)** | **47** |
| **Uneven-Aged Regeneration Harvest (6 Treatments)** | **197** |
| **Community Total** | **244 Acres** |

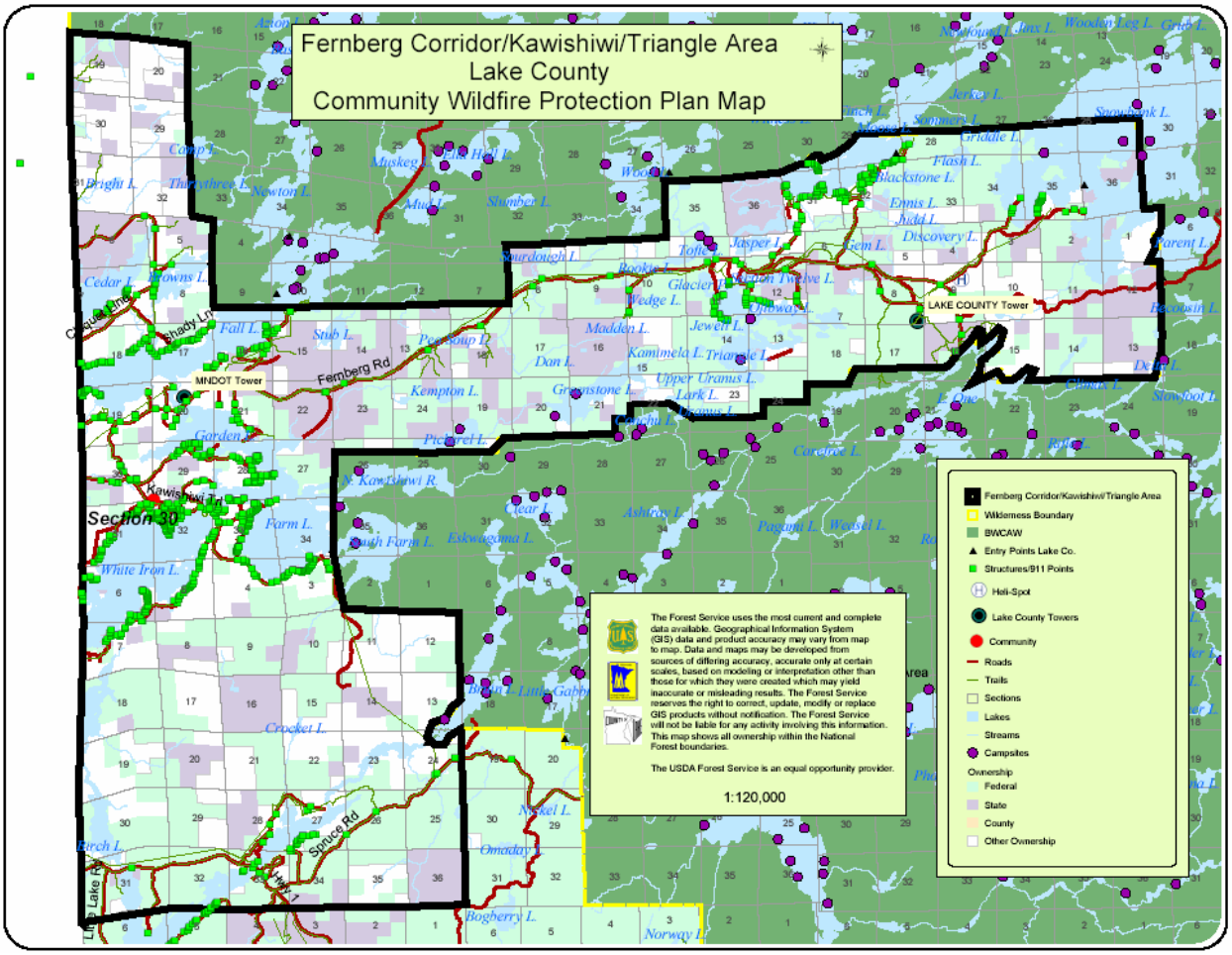

Drummond/Knife River Area
Community Wildfire Protection Plan Map
Highland L.
Long L.
Twin L.
Black L.
Stewart L.
Sawmill L.
Hwy 2
E Alger Grade
Drummond Grade
Como Tower
Gun Club Rd
Old Drummond Rd
Big Rock Rd
Fors Rd
Westover Rd
Waldo Rd
Two Harbors Fire Department
Press Camp Rd
Airport Rd
Hwy 12
Hwy 3
Tomberg Rd
20th Ave
Hwy 61
Maple Creek Dr
Shoreview Rd
Two Harbors
DMIR RR Tower
Stanley Rd
Legend
Drummond-Knife River Valley
911 Points
Airport
Firehall
Heli-Spot
Lake County Towers
Incorportated City
State Parks
Primary Conductors
Poles
Superior National Forest
State Land
County Land
Private Land
Community
Roads
Sections
Lakes
Railroad
Entry Points Lake Co.
Campsites
National Forest Boundary
Lake County Boundary
Wilderness Boundary
BWCAW
1:95,000

| Priority: 5 | Fernberg Corridor/Kawishiwi/Triangle Area |
|---|---|
| **Access:** | Good roads. Some private accesses may be limited especially those accessible by water only. Fernberg road, Co. Rd 16, Moose Lake Rd., Fall Lake Rd, and Hwy 1 are asphalt. Snowbank Rd, White Iron Rd, Spruce Rd and Cloquet line are all one way, gravel roads. All FS system spur roads off the above roads are gravel. |
| **Topography:** | Gently rolling topography towards the western part of the Fernberg Corridor. More exposed rock ridges to the eastern part of this area. |
| **Fuel Hazards:** | Blowdown in the Cedar Lake, Jasper Lake, Moose and Snowbank Lake Areas. |
| **Fire Occurrence:** | Prior to MNDNR spring burning restrictions, this area had a high fire occurrence Since the fire restrictions fire occurrence has dropped to the low/moderate range. |
| **Homes:** | 500-1000. Several annual residents as well as seasonal cabins and resorts. |
| **Businesses:** | Numerous outfitting businesses, cabin rentals, Red Rock Store, Girl Scout Base, and Boy Scout Base Outward Bound School, South Kawishiwi Campground. River Point Resort |
| **Jurisdiction:** | Ely FD, Morse/Fall Lake FD, Babbitt FD (south only)and USFS |
| **Infrastructure risk:** | Power/phone lines, MN power dam, many LP tanks, Fernberg Tower & water shed lab |
| **Community values:** | Numerous businesses and private landowners, Fall Lake FS campground, Fall Lake Dam, North Central Experiment Station Lab. |
| **Local Preparedness Capability:** | City of **Ely FD**: Engines: 47 American LaFrance 750 gal@1500 gpm. 92 American LaFrance 550 gal@1250 gpm. 79 American LaFrance 750 gal @ 1500 gpm. Brush Rigs: 95 Hummer 250 gal @200 gpm; 85 Ford 1000gal @ 200 gpm; 76 Ford 2500 gal @500gpm. 82 International 5000 gal @ 300gpm; Pumps: 2 – 300 gpm hale portable pumps, 2 – 1000+ gpm trailered portable pumps, 1 fiberglass rescue boat, 1 zodiac, 1 thermal imager, 1 class A foam unit, **Morse/Fall Lake FD**: 2004 Type 1 engine International @ 1500 gpm/1000 gal. Tank. GMC water tender 400 GPM/1200 gal tank, 1978 Water Tender w2300 gal tank, 2 type 6 brush engines w200 gal tank/265 gpm. Ely FD will ensure protection for city proper over going to outer areas of jurisdiction. **Babbitt FD**: 1982 Pierce pumper: 750 gallon @1250 gpm; 1977 Ford pumper: 750 gallon at 1250 gpm: Brush rigs: 1988 and 1984 Ford 250 gal @ 250 gpm; Water Tenders: 1500 gal. and 1300 gal; floto pump; mark III pump; Chevy carry-all rescue truck; 3-4 racks 1 ½ inch hose; all personnel have portable radios; 2 drop tanks 2000 and 1000 gallons. **USFS** two type 6 engines out of Ely, Aerial support during higher fire danger out of Ely |
| **Other:** | Lots of new development. |
| **Fire Dept Needs:** | Repair dry hydrants or install new ones. |
| **Firewise Information:** | Need support from governmental units (city, local fire departments, state and Federal) to help complete fire assessments for Lake Co. |
| **Fire Dept Contacts:** | **Ely: Lou Gerzin 218-365-3227 Morse/Fall: Ted Krueger 218-365-5583 Babbitt: Glenn Anderson 218-827-2611** |
| **Wildfire Risk Assessment Rating** | High. Fuel hazard concern due to the large amount of conifer component and presence of blowdown. This area has a history of high fire occurrence. There are many values at risk within the area. This area supports a large recreation/tourism economic base for the county. Suppression capabilities are good; but there are areas with poor access. |

## Department of Natural Resources Fernberg Corridor/Kawishiwi/Triangle Prescription:

From the Subsection Forest Resource Management Plan (SFRMP) which identifies forest treatment types and areas for DNR forestry and wildlife lands within Lake County over the next ten years (ending in 2014).

| PRESCRIPTION | ACRES |
|---|---|
| **Clearcut with Reserves** | **779** |
| **Shelterwood Thinning** | **.39** |
| **Seed Tree Harvest ion** | **49** |
| **Thinning** | **197** |
| **High Risk Stand Exam** | **180** |
| **Community Total** | **1310 Acres** |


Fernberg Corridor/Kawishiwi/Triangle Area
Lake County
Community Wildfire Protection Plan Map
LAKE COUNTY Tower
MNDOT Tower
Fernberg Rd
Section 30
Fernberg Corridor/Kawishiwi/Triangle Area
Wilderness Boundary
BWCAW
Entry Points Lake Co.
Structures/911 Points
Heli-Spot
Lake County Towers
Community
Roads
Trails
Sections
Lakes
Streams
Campsites
Ownership
Federal
State
County
Other Ownership
The Forest Service uses the most current and complete data available. Geographical Information System (GIS) data and product accuracy may vary from map to map. Data and maps may be developed from sources of differing accuracy, accurate only at certain scales, based on modeling or interpretation other than those for which they were created which may yield inaccurate or misleading results. The Forest Service reserves the right to correct, update, modify or replace GIS products without notification. The Forest Service will not be liable for any activity involving this information. This map shows all ownership within the National Forest boundaries.
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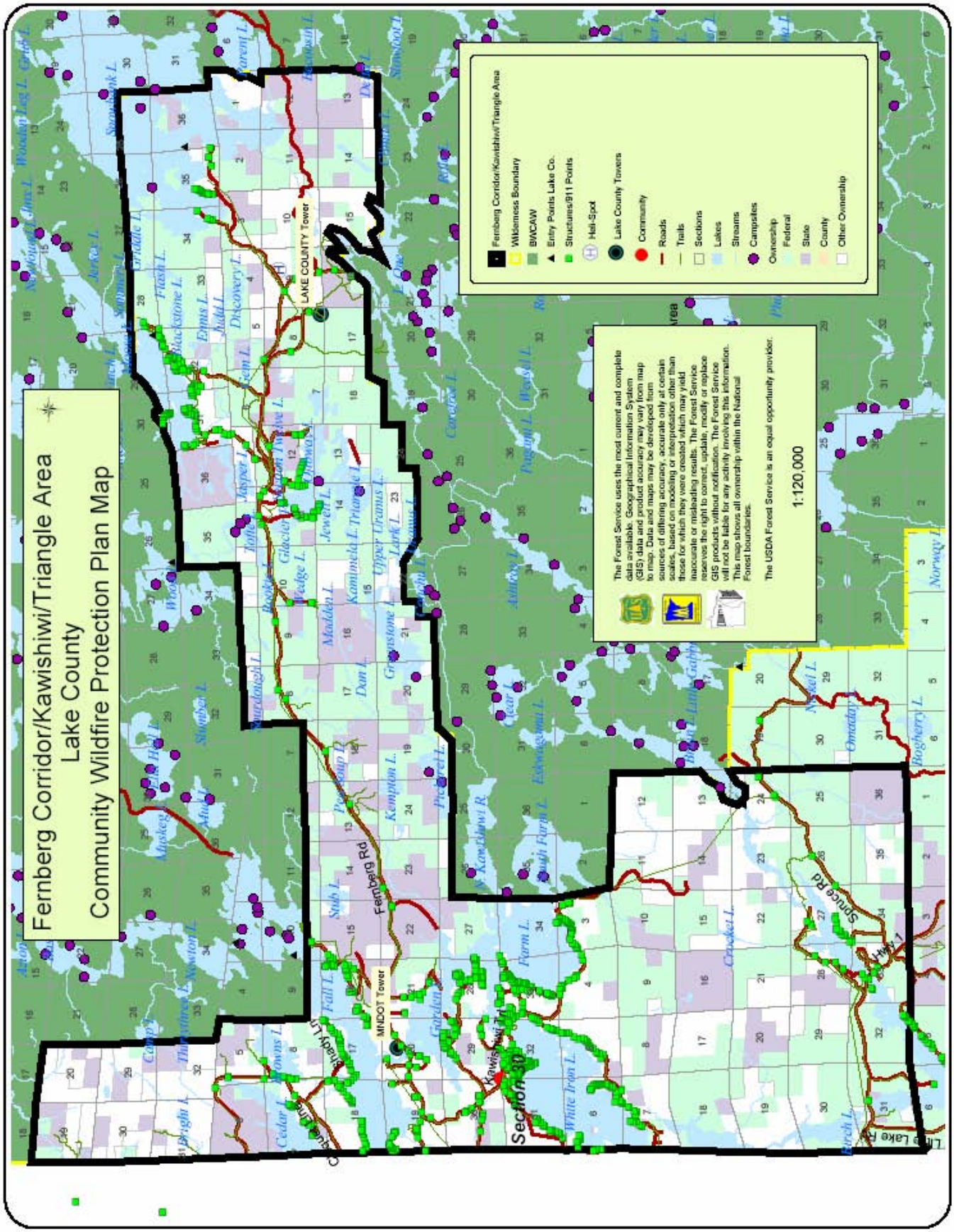
1:120,000


Fernberg Corridor/Kawishiwi/Triangle Area
Lake County
Community Wildfire Protection Plan Map
Fernberg Corridor/Kawishiwi/Triangle Area
Wilderness Boundary
BWCAW
Entry Points Lake Co.
Structures/911 Points
Hall-Spot
Lake County Towers
Community
Roads
Trails
Sections
Lakes
Streams
Campsites
Ownership
Federal
State
County
Other Ownership
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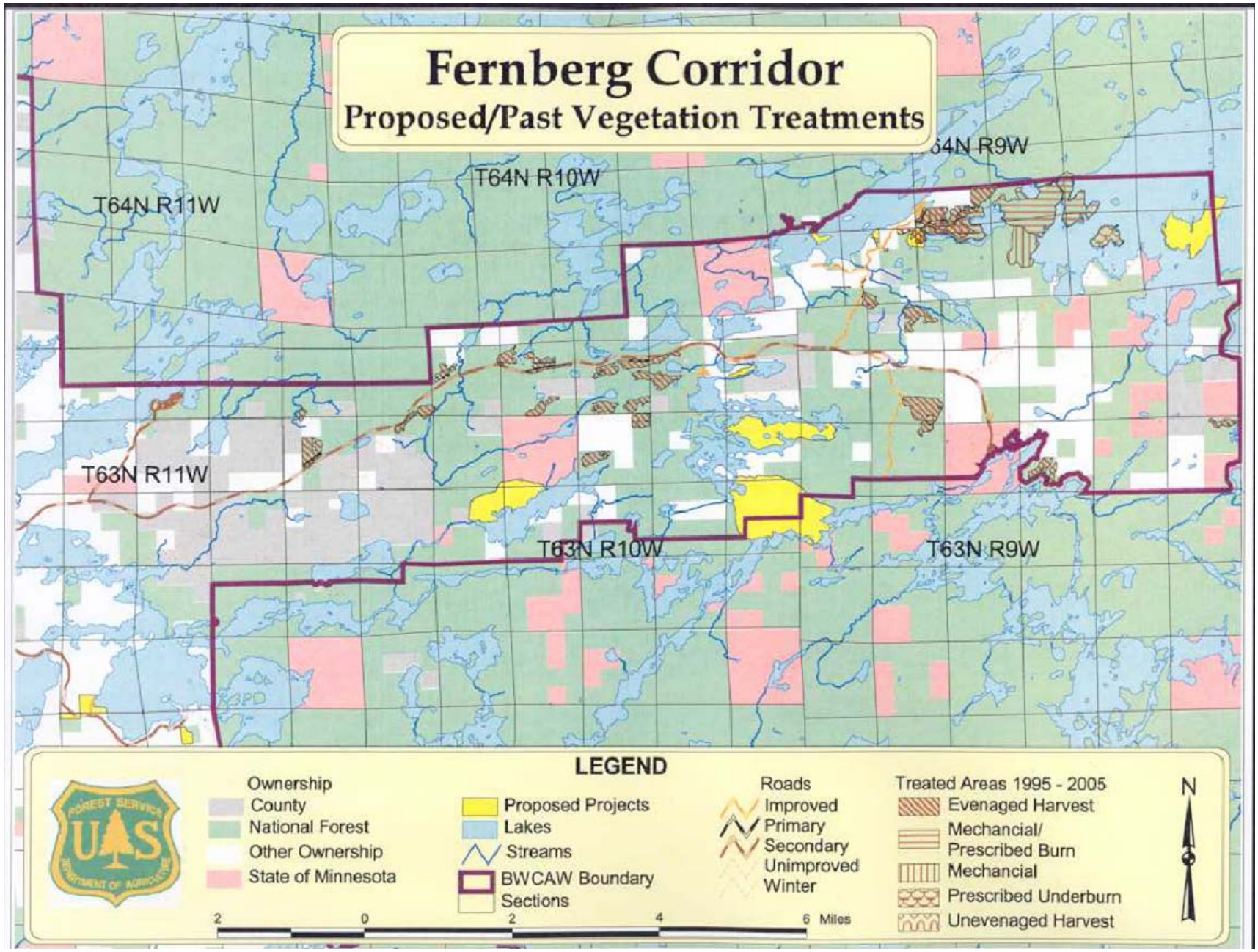
1:120,000
LAKE COUNTY Tower
MNDOT Tower
Fernberg Rd
Spruce Rd
Section 30

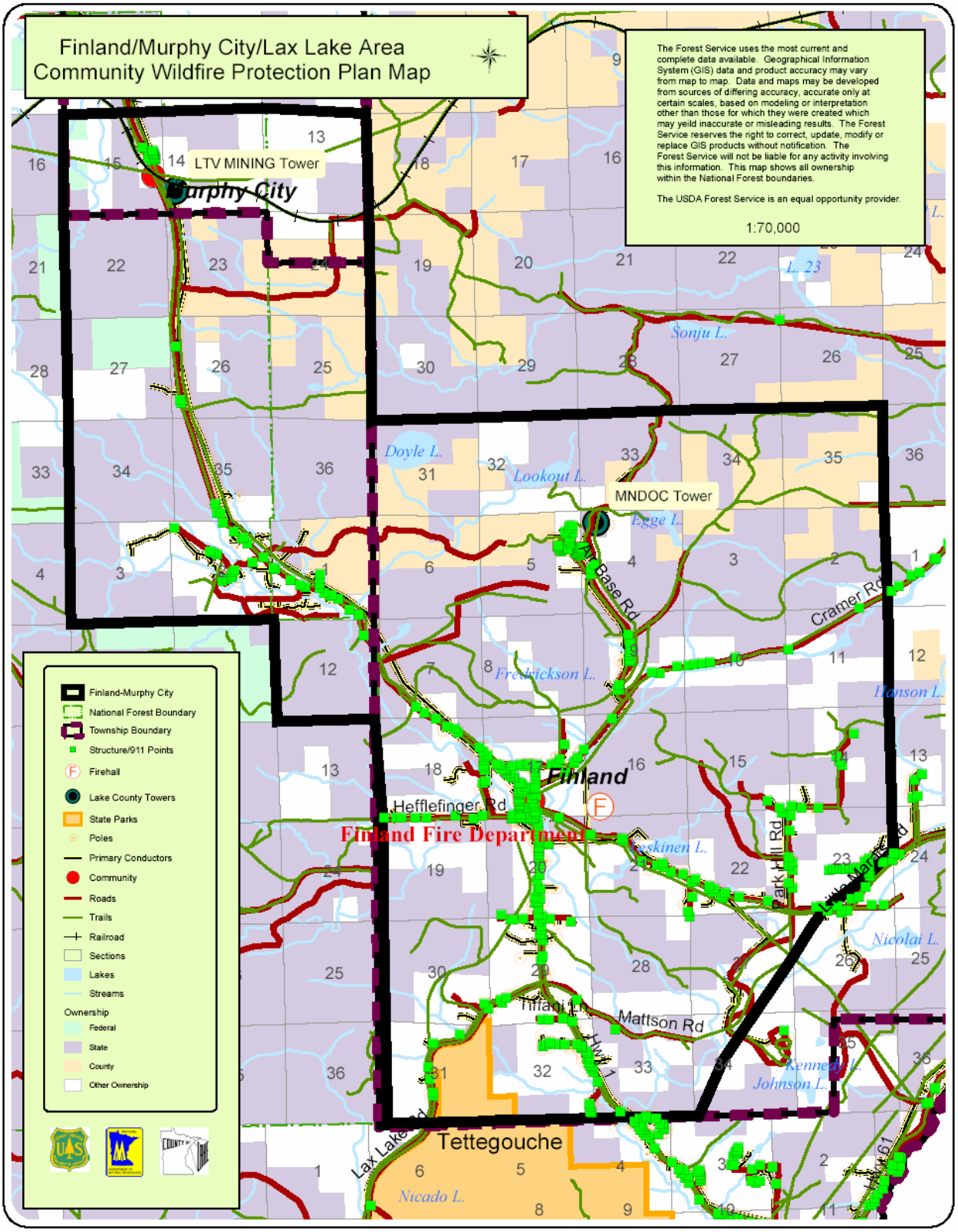

Fernberg Corridor
Proposed/Past Vegetation Treatments
T64N R11W
T64N R10W
T64N R9W
T63N R11W
T63N R10W
T63N R9W
LEGEND
Ownership
County
National Forest
Other Ownership
State of Minnesota
Proposed Projects
Lakes
Streams
BWCAW Boundary
Sections
Roads
Improved
Primary
Secondary
Unimproved
Winter
Treated Areas 1995 - 2005
Evenaged Harvest
Mechancial/
Prescribed Burn
Mechancial
Prescribed Underburn
Unevenaged Harvest
2 0 2 4 6 Miles
N

| Priority: 4 | Finland/Murphy City/Lax Lake Area |
|---|---|
| **Access:** | Good along Hwy 1, County Roads 4 and 6. One way in and out for most residences. Some narrow driveways limiting access for structural engines. 0 to 12 miles to fire department and wildland agency |
| **Topography:** | Rolling terrain. |
| **Fuel Hazards:** | Grass in road Row's, young Balsam fir understory, conifer plantations, mixed hardwood /conifer overstory |
| **Fire Occurrence:** | Low. 1-5 fires per year |
| **Homes:** | 400 to 500 year round homes and seasonal cabins – mostly year round |
| **Businesses:** | Town of Finland, home based businesses, Lax Lake resort, Wildhurst Lodge and campground. |
| **Jurisdiction:** | Finland Fire Department, USFS, MN DNR |
| **Infrastructure risk:** | Power lines, phone lines, bulk LP gas and diesel storage in Finland, communications towers |
| **Community values:** | Wolf Ridge Environmental Learning Center, Finland Historical Site, 4 campgrounds, Superior Hiking Trail. Area is heavily used for all types of outdoor recreation. |
| **Local Preparedness Capability:** | **Finland FD**: 18 personnel, portable and mobile radios, 1200 gal. Pumper, 800 gal pumper, 3000 gal. Tanker, 1200 gal. Tanker, portable pumps and drop tanks. **DNR** : 2-5 personnel, 2 type 6 engines, aerial support during higher fire danger is 45 min. + away |
| **Other:** | Continuing new development into rural areas |
| **Fire Dept Needs:** | Water storage tank for fire hall, dry hydrants, 4 wheel drive crew/utility vehicle, communications upgrades. |
| **Firewise Information:** | Need support from governmental units (city, local fire departments, state and Federal) to help complete fire assessments for Lake Co. |
| **Fire Dept Contacts:** | **Finland Chief: Pete Walsh 218-663-7212 Secondary Contact: Paul Moran** |
| **Wildfire Risk Assessment Rating** | Moderate. This area has not had a significant amount of fire occurrence. It does have areas where fuel hazards are a concern. There are some values at risk in the area, structure density is high, and land ownership mixed. Overall protection capabilities are good, but access to some areas is poor and response times to the area are fairly long. |

## Department of Natural Resources Finland/Murphy City/Lax Lake Area Prescription:

**Taken from the Subsection Forest Resource Management Plan (SFRMP) which identifies forest treatment types and areas for DNR forestry and wildlife lands within Lake County over the next ten years (ending in 2014).**

| PRESCRIPTION | ACRES |
|---|---|
| **Clearcut with Reserves (25 treatments)** | **334** |
| **Uneven-Aged Regeneration Harvest (19 Treatments)** | **229** |
| **Commercial Thinning (40 treatments)** | **943** |
| **On-site evaluation – High Risk or Low Volume Stand (50 treatments)** | **881** |
| **Community Total** | **2387 Acres** |


Finland/Murphy City/Lax Lake Area
Community Wildfire Protection Plan Map
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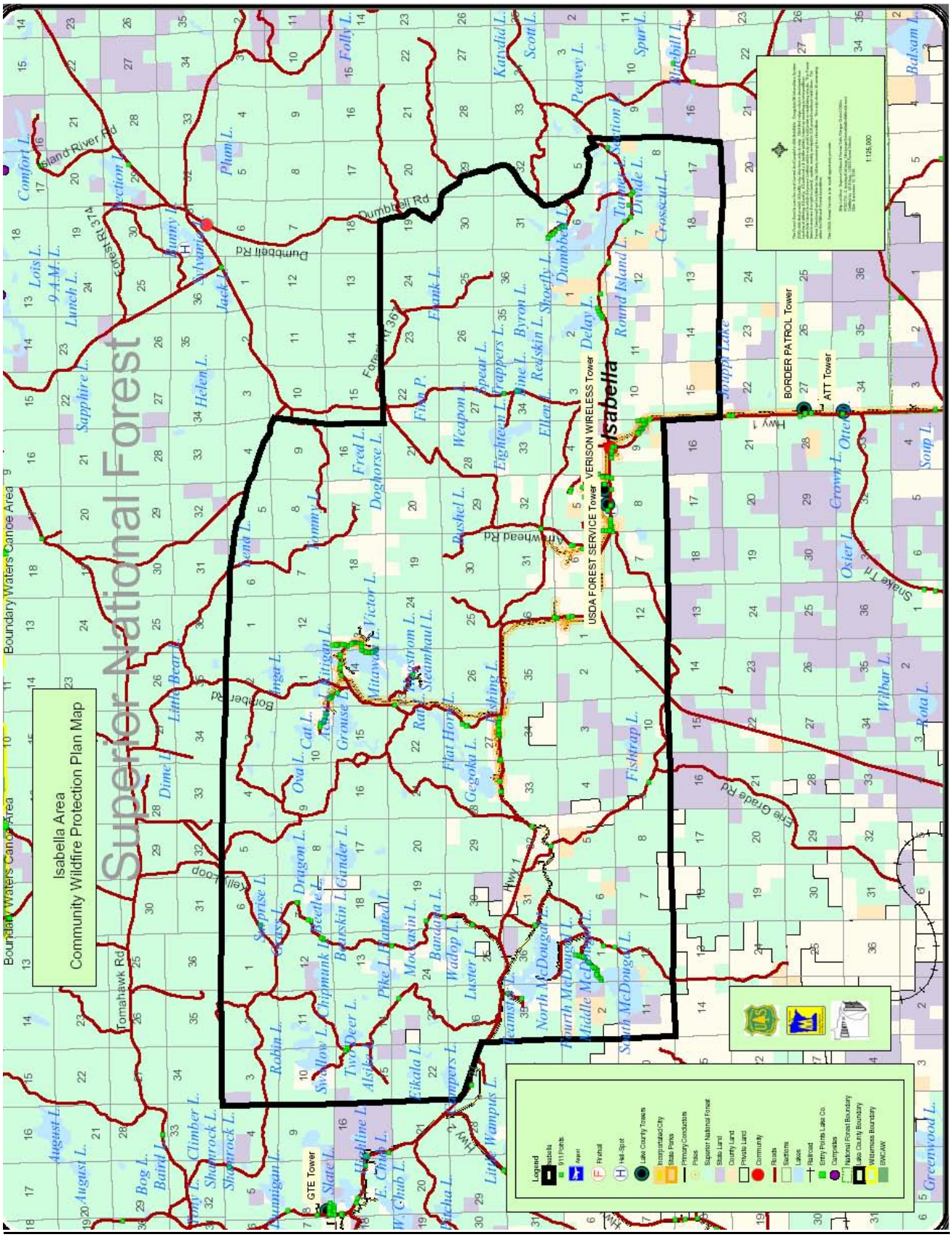
1:70,000
LTV MINING Tower
Murphy City
MNDOC Tower
Finland
Finland Fire Department
Tettegouche
Doyle L.
Lookout L.
Egge L.
Sonju L.
Fredrickson L.
Hanson L.
Nicolai L.
Johnson L.
Nicado L.
Hefflefinger Rd
Mattson Rd
Park Hill Rd
Cramer Rd
Lax Lake Rd
Finland-Murphy City
National Forest Boundary
Township Boundary
Structure/911 Points
Firehall
Lake County Towers
State Parks
Poles
Primary Conductors
Community
Roads
Trails
Railroad
Sections
Lakes
Streams
Ownership
Federal
State
County
Other Ownership

| Priority: 4 | Isabella Area |
|---|---|
| **Access:** | Many homes and cabins located on narrow winding roads. Many homes are located on Hwy 1 20+ miles to nearest fire dept. (Finland VFD and MN-DNR office) USFS Workstation located in Isabella |
| **Topography:** | Slightly rolling to level terrain with multiple lakes, streams and wetland bog areas. Isabella is highest town in Minnesota |
| **Fuel Hazards:** | Balsam ladder fuels, and under story, younger aged Red, White, and Jack Pine stands and plantations. Smaller patches of blowdown and logging slash scattered throughout area. Forested lands in close proximity to structures. |
| **Fire Occurrence:** | Low. Fire occurrence is mostly human caused, escaped trash and camp fires. |
| **Homes:** | Homes and seasonal cabins concentrated around lakes in the Mitawan, Gegoka, and No. McDougal lakes area. Homes in Isabella and along the Hwy 1 corridor |
| **Businesses:** | Bars and restaurants in Isabella. Several logging and general contractors located along Hwy 1 corridor. Small resorts, tourism |
| **Jurisdiction:** | Structural – Lake County Sheriff / Finland Volunteer Fire Dept. Babbitt FD. Wildland – MN-DNR and USFS |
| **Infrastructure risk:** | Local power lines, phone lines, Hwy 1 corridor |
| **Community values:** | Historic buildings at USFS. Heavily used year round recreational outdoor activities. Scenic and aesthetic value of area for residents and visitors |
| **Local Preparedness Capability:** | **Finland FD**18 personnel, portable and mobile radios, 1200 gal. Pumper, 800 gal pumper, 3000 gal. Tanker, 1200 gal. Tanker, portable pumps and drop tanks. Lacking structural fire initial attack capability due to long distance to nearest station. **Babbitt FD**: 1982 Pierce pumper: 750 gallon @1250 gpm; 1977 Ford pumper: 750 gallon at 1250 gpm: Brush rigs: 1988 and 1984 Ford 250 gal @ 250 gpm; Water Tenders: 1500 gal. and 1300 gal; floto pump; mark III pump; Chevy carry-all rescue truck; 3-4 racks 1 ½ inch hose; all personnel have portable radios; 2 drop tanks 2000 and 1000 gallons. Wildland capability w/ **USFS** Isabella w/ one type 6 and one type 7 engine available during wildland fire season only. |
| **Other:** | Continued development of private land. Construction of new cabins/homes. |
| **Fire Dept Needs:** | Possible substation for Finland or other county fire departments. Upgrades to communication system. |
| **Firewise Information:** | Need support from governmental units (city, local fire departments, state and Federal) to help complete fire assessments for Lake Co. |
| **Fire Dept Contacts:** | **Finland: Pete Walsh 218-663-7212 Babbitt: Glenn Anderson 218-827-2611.** |
| **Wildfire Risk Assessment Rating** | High. Fuel hazards within this are of concern due to the large amount of conifer component and the presence of blowdown. This area also has a history of high fire occurrence. There are values at risk of concern. Structure density around remote lakes is high within this area. Suppression resources are adequate within the area. However, the area is remote and access very poor. |

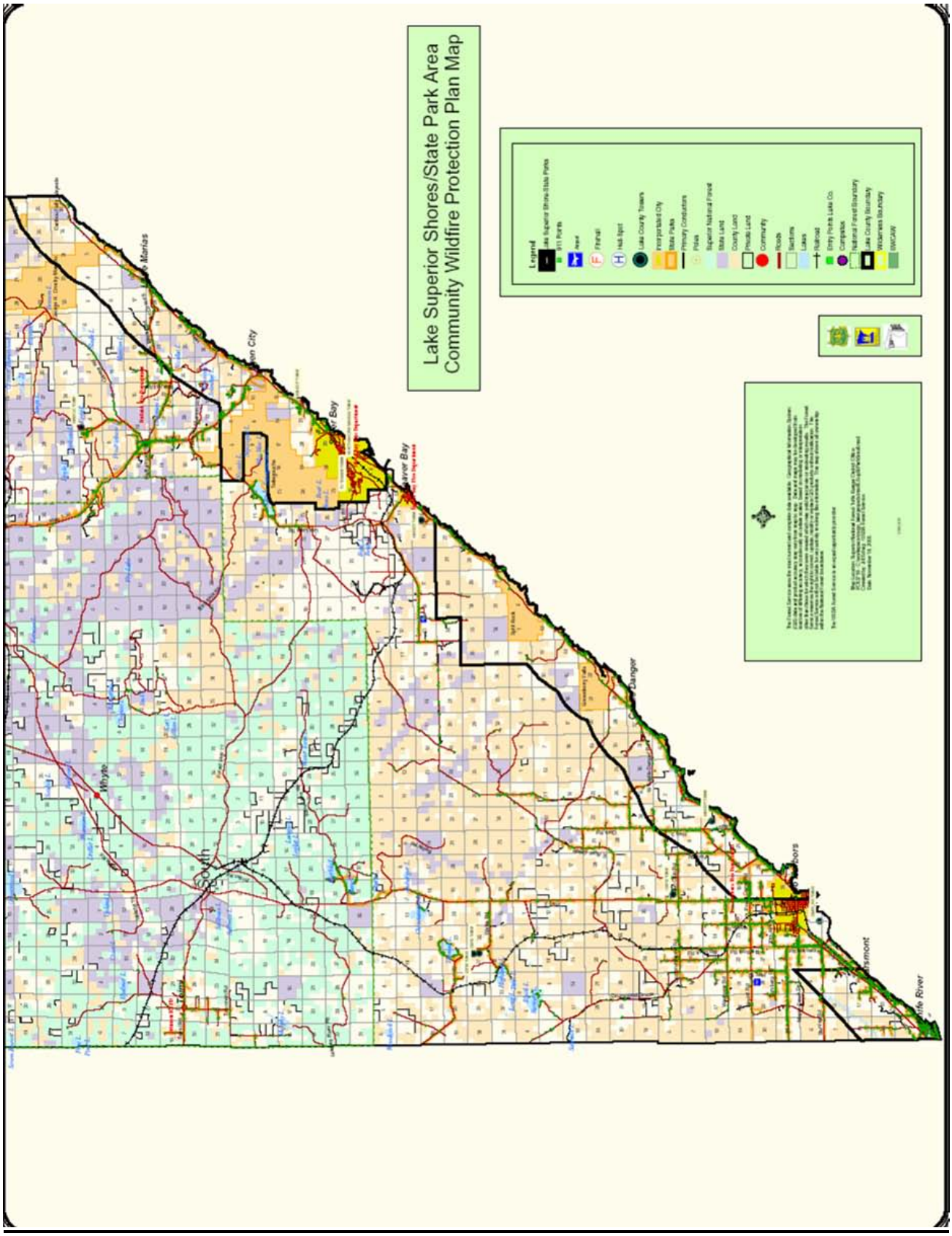
## Department of Natural Resources Isabella Area Prescription:

**Taken from the Subsection Forest Resource Management Plan (SFRMP) which identifies forest treatment types and areas for DNR forestry and wildlife lands within Lake County over the next ten years (ending in 2014).**

| PRESCRIPTION | ACRES |
|---|---|
| **Clearcut with Reserves (11 treatments)** | **230** |
| **Commercial Thinning (2 treatments)** | **11** |
| **On-site evaluation – High Risk or Low Volume Stand (11 treatments)** | **131** |
| **Community Total** | **372 Acres** |


Isabella Area
Community Wildfire Protection Plan Map
Superior National Forest
Boundary Waters Canoe Area
Isabella
USDA FOREST SERVICE Tower
VERISON WIRELESS Tower
BORDER PATROL Tower
ATT Tower
GTE Tower
Island River Rd
Dumbbell Rd
Forest Rd 374
Forest Rd 361
Airmhead Rd
Borbeau Rd
Tomahawk Rd
Hwy 1
Hwy 2
Erie Grade Rd
Snake Trail
Legend
Isabella
911 Points
Alert
Firehall
Hell-Spot
Lake County Towns
Incorporated City
State Parks
Primary Conductors
Poles
Superior National Forest
State Land
County Land
Private Land
Community
Roads
Sections
Lakes
Railroad
Entry Points Lake Co.
Campsites
National Forest Boundary
Lake County Boundary
Wilderness Boundary
BWCAW
1:125,000

| Priority: 3 | Lake Superior Shore and State Parks |
|---|---|
| **Access:** | Good access directly along highway 61 and connecting county roads. Most roads above and below highway 61 are narrow with steep driveways. Driveways are single access/egress-turn-a-rounds not designed for large emergency vehicles. Heavy fuels adjacent to roads. |
| **Topography:** | Gently sloping to steep and jagged. Generally south to south east aspects. |
| **Fuel Hazards:** | Heavy grasses w/balsam fir understory ladder fuels. Spruce-pine/mixed hardwood overstory. |
| **Fire Occurrence:** | Low to medium. Generally slower rates of spread and fire intensities due to climatic effects of Lake Superior. |
| **Homes:** | 800 + homes. 500 seasonal and second homes. 1000 cabins, condos, and rooms available for rent during the year round tourist season. |
| **Businesses:** | Heavily used tourist area on the State and National level, with tourist related businesses. Also businesses associated with two mid-sized cities adjacent to this area. There's a taconite processing plant; railroads and two shipping ports. |
| **Jurisdiction:** | Two Harbors Fire Department, Silver Bay Fire Department, Beaver Bay Fire Department, MN Department of Natural Resources. |
| **Infrastructure risk:** | Communications towers, with high lines, phone lines, power lines and gas lines. Major international highway with multiple bridges and tunnels, with limited ability for by-pass during incidents. Taconite processing plants and two shipping ports. Two larger towns and two smaller communities. Four State Parks with campgrounds. Numerous wayside rests and scenic overlooks. |
| **Community values:** | Natural resources, unique on a National level, are what draws the tourism clientele, drives the industry and contributes to the standard of living in Lake County and its communities. |
| **Local Preparedness Capability:** | **THFD**: 20 personnel, portable and mobile radios,. 2500gal. Pumper-tanker. 1000gal. 5 seat pumper. 1800gal. Tanker. 500gal. telesqirt pumper. 250gal mini-pumper / grass rig. Misc. wildfire tools and personal protective equipment. **DNR**:3-10 personnel, 3 type 6 engines, 1 J-5, aerial support is 45+ min. away |
| **Other:** | Very high level of new development in this area. |
| **Fire Dept Needs:** | Communication upgrades (phone, radio and towers) to meet new technical requirements. More water tanks and dry hydrants. Timely upgrades of maps and 911 updates. Hardware, software, and technical support for GIS systems. |
| **Firewise Information:** | Need support from governmental units (city, local fire departments, state and Federal) to help complete fire assessments for Lake Co. |
| **Fire Dept Contacts** | **TH: Steve Blettner 218-834-8816 SB: John Fredrickson 218-220-0217 B Bay: Jenny Stevens 218-220-1237** jenny@bayviewrealty.com |
| **Wildfire Risk Assessment Rating** | Moderate. There are low amounts of fuel hazards within this area. There are significant values of risk within the area that support all of Lake and Cook County in terms of economics, transportation routes, and recreation opportunities. In general, protection capabilities are good throughout the area. |


Lake Superior Shores/State Park Area
Community Wildfire Protection Plan Map
Legend
Lake Superior Shore State Parks
911 Points
Airport
Firehall
Hub Spot
Lake County Towns
Incorporated City
State Parks
Primary Conditions
Poles
Superior National Forest
State Land
County Land
Private Land
Community
Roads
Sections
Lakes
Railroad
Entry Points Lake Co.
Campsites
National Forest Boundary
Lake County Boundary
Wilderness Boundary
GWCAW
Marias
City
Bay
Bay
Whyte
Danger
Shores
Isabella
Silver Bay
Beaver Bay
Knife River

## Department of Natural Resources Lake Superior Shore and State Parks Prescription:

**Taken from the Subsection Forest Resource Management Plan (SFRMP) which identifies forest treatment types and areas for DNR forestry and wildlife lands within Lake County over the next ten years (ending in 2014).**

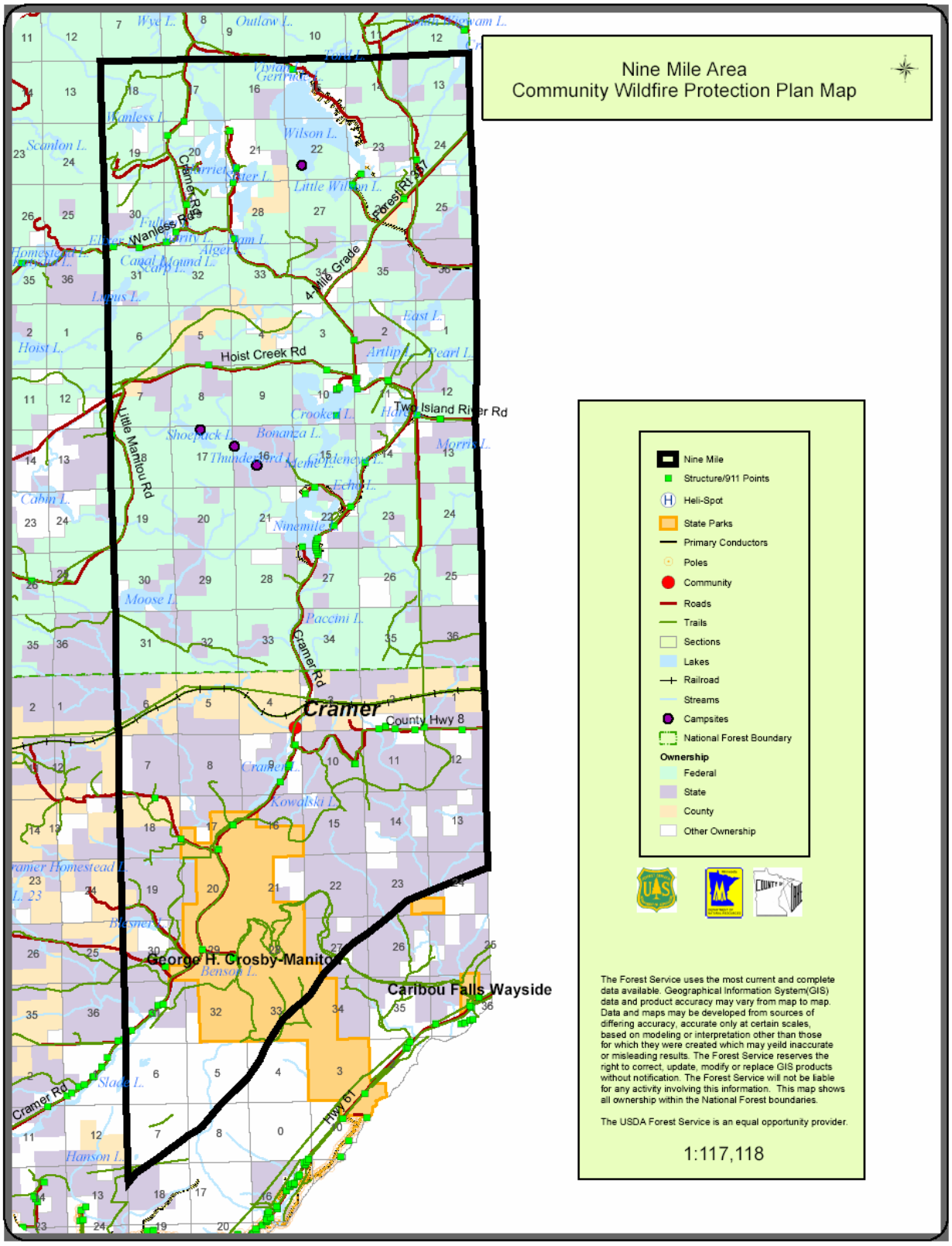
| PRESCRIPTION | ACRES |
|---|---|
| Clearcut with Reserves (3 treatments) | 82 |
| Uneven-Aged Regeneration Harvest (10Treatments) | 181 |
| On-site evaluation – High Risk or Low Volume Stand (33 treatments) | 949 |
| Re-Inventory (2 treatments) | 98 |
| Community Total | 1310 Acres |

| Priority: 5 | Nine Mile Area |
|---|---|
| **Access:** | County and USFS gravel roads are good. Many narrow one way in and out driveways not accessible by structural engines. 7-8 miles from Hwy 61. County Rd. 7 (Cramer Rd.) dissects area north to south. 10 to 30 miles to fire department or wildland agency. |
| **Topography:** | Rolling hills with many lakes and streams. Much of the area is forested with sugar maple /birch and mixed conifer.. |
| **Fuel Hazards:** | Young Balsam fir understory, conifer plantations, mixed conifer/hardwood overstory, logging slash, some blowdown. Forested lands (private, state, and federal) with close proximity to structures and interface |
| **Fire Occurrence:** | Low due to fuel type and condition. Fires associated w/ human activities, trash and pile burning. |
| **Homes:** | 25 to 50 homes and cabins, mostly seasonal. Numerous homes and seasonal cabins located on or adjacent to several larger lakes (Wilson, Nine mile, Crooked, Harriet, etc.) Hundreds of homes along the Cramer Rd. |
| **Businesses:** | Nine Mile Lodge, Crooked Lake Resort, Trestle Inn. Tourism associated w/ many campgrounds, fishing, boating, canoeing, picnic areas and access points. |
| **Jurisdiction:** | Finland Fire Department, USFS |
| **Infrastructure risk:** | Power line, Railroad corridor (currently inactive) Risk to power lines along Cramer Rd. and roads leading into developed residential and resort areas. |
| **Community values:** | USFS campgrounds and public water accesses. Heavily used outdoor recreation area. Tourism and scenic values to local residents and visitors |
| **Local Preparedness Capability:** | **Finland FD**: 18 personnel, 1200 gal. Pumper, 800 gal. Pumper, 3000 gal. Tanker, 1200 gal. Tanker, portable pumps and drop tanks. **DNR**: 2-5 personnel, 2 type 6 engines, aerial support during higher fire danger is 45+ min. away USFS – Two type 6 engines & a type 7 engine located within one hour of area. |
| **Other:** | New development of lakeshore lots on some lakes in area (Wilson, Nine Mile). Conversion of corporate lands to private individuals. |
| **Fire Department Needs:** | Water storage tank @ fire hall, dry hydrants, communications upgrades, 4 wheel drive crew/utility vehicle. Wildland equipment: pumps, hose, fittings, protective clothing (PPE), training, etc. |
| **Firewise Information:** | Need support from governmental units (city, local fire departments, state and Federal) to help complete fire assessments for Lake Co. |
| **Fire Dept Contacts:** | **Finland Chief: Pete Walsh 218-663-7212** |
| **Wildfire Risk Assessment Rating** | Moderate. No significant fire occurrence. Pockets of fuels exist, but overall fuel hazards do not support large crown fires. Values at risk within the area could have local community impact if damaged by fire. Protection capabilities are poor due to remoteness, poor access, and distance of travel to the area. |

## Department of Natural Resources Nine Mile Area Prescription:

**Taken from the Subsection Forest Resource Management Plan (SFRMP) which identifies forest treatment types and areas for DNR forestry and wildlife lands within Lake County over the next ten years (ending in 2014).**

| PRESCRIPTION | ACRES |
|---|---|
| **Clearcut with Reserves (10 treatments)** | **89** |
| **Uneven-Aged Regeneration Harvest (31 Treatments)** | **1005** |
| **Commercial Thinning (8 treatments)** | **255** |
| **On-site evaluation – High Risk or Low Volume Stand (39 treatments)** | **672** |
| **Re-Inventory (1 treatments)** | **14** |
| **Community Total** | **2035 Acres** |


Nine Mile Area
Community Wildfire Protection Plan Map
Nine Mile
Structure/911 Points
Heli-Spot
State Parks
Primary Conductors
Poles
Community
Roads
Trails
Sections
Lakes
Railroad
Streams
Campsites
National Forest Boundary
Ownership
Federal
State
County
Other Ownership
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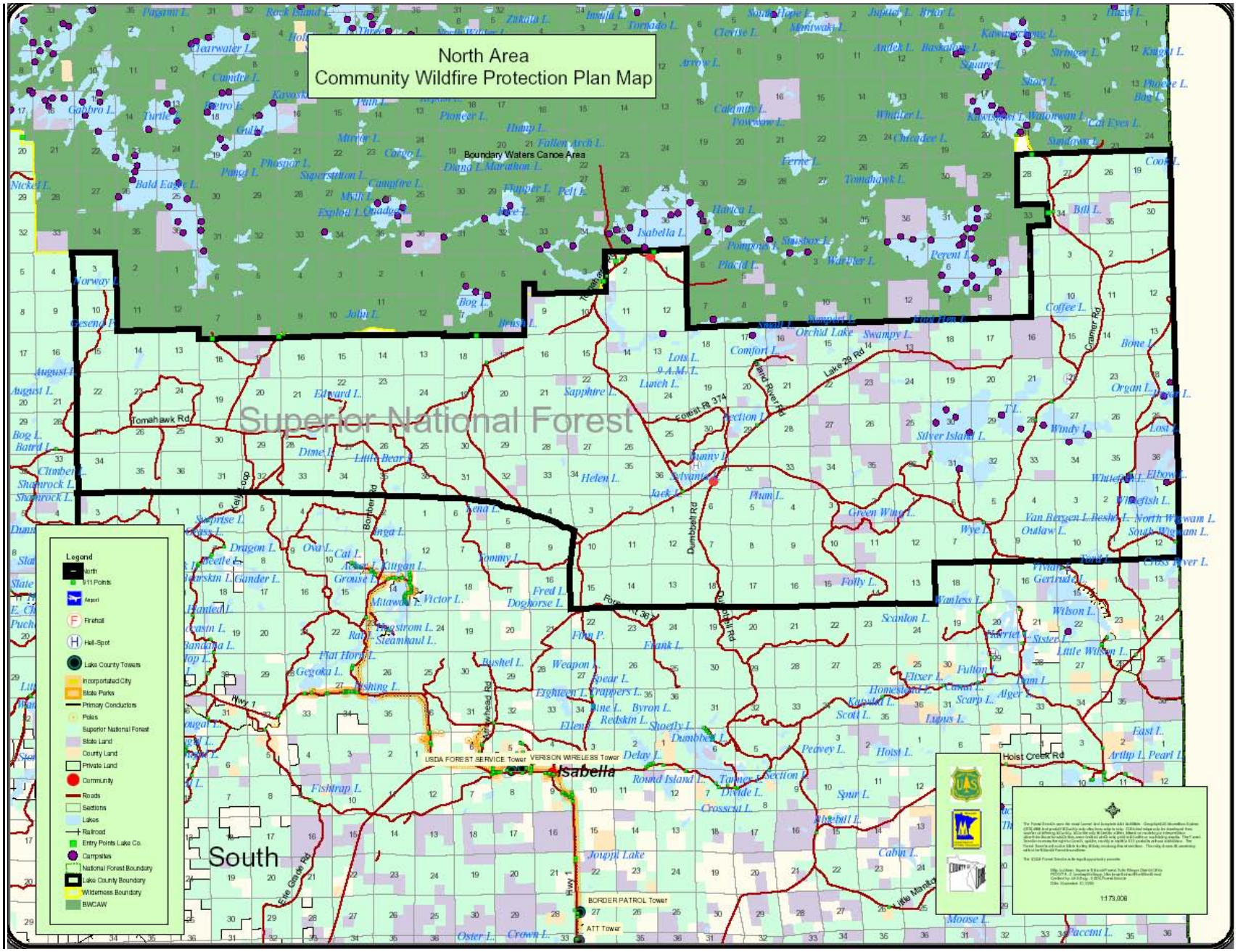
The USDA Forest Service is an equal opportunity provider.
1:117,118
Hoist Creek Rd
Two Island River Rd
Cramer
County Hwy 8
George H. Crosby-Manitou
Caribou Falls Wayside
Cramer Rd
Little Manitou Rd
Wanless Rd
4 Mile Grade
Forest Rd 137
Hwy 61

| Priority: 2 | North |
|---|---|
| **Access:** | 10-12 miles to USFS Isabella work station. 30+ miles to nearest VFD station. Mostly narrow winding forest roads with a few main roads and county roads. Much of area is road less and/or adjacent to BWCAW |
| **Topography:** | Slightly rolling to level terrain with many lakes, streams, and wetlands areas |
| **Fuel Hazards:** | Heavy underbrush and balsam fir undergrowth. Much of the area is continuous forest land with over mature conifer stands w/some blowdown patches and bug killed trees. Few natural or man-made fuel breaks |
| **Fire Occurrence:** | Few wildland, but high potential exists due to fuel conditions and access. Lightning fires with human caused fires associated w/recreational activities |
| **Homes:** | Very few to no homes in this area. No state/federal living structures in area |
| **Businesses:** | Local businesses depend on recreation activities provided in the area. Wilderness outfitters canoeing, campgrounds some logging operations in the area |
| **Jurisdiction:** | Finland FD, Babbitt FD, Ely FD and U.S. Forest Service |
| **Infrastructure risk:** | Low risk other than roads, campgrounds and access point facilities |
| **Community values:** | Scenic values to locals and many outside recreational and tourism visitors |
| **Local Preparedness Capability:** | Preparedness lies almost exclusively with U.S.F.S for any wildfire occurrence U.S.F.S personal available at Isabella and Tofte. **Babbitt FD**: 1982 Pierce pumper: 750 gallon @1250 gpm; 1977 Ford pumper: 750 gallon at 1250 gpm: Brush rigs: 1988 and 1984 Ford 250 gal @ 250 gpm; Water Tenders: 1500 gal. and 1300 gal; floto pump; mark III pump; Chevy carry-all rescue truck; 3-4 racks 1 ½ inch hose; all personnel have portable radios; 2 drop tanks 2000 and 1000 gallons. **Finland FD**: 18 personnel, 1200 gal. Pumper, 800 gal. Pumper, 3000 gal. Tanker, 1200 gal. Tanker, portable pumps and drop tanks. **Ely FD**: Engines: 47 American LaFrance 750 gal@1500 gpm. 92 American LaFrance 550 gal@1250 gpm. 79 American LaFrance 750 gal @ 1500 gpm. Brush Rigs: 95 Hummer 250 gal @200 gpm; 85 Ford 1000gal @ 200 gpm; 76 Ford 2500 gal @500gpm. 82 International 5000 gal @ 300gpm; Pumps: 2 – 300 gpm hale portable pumps, 2 – 1000+ gpm trailered portable pumps, 1 fiberglass rescue boat, 1 zodiac, 1 thermal imager, 1 class A foam unit, |
| **Other:** | Area contains campgrounds, motor boat fishing access points and hiking trails |
| **Fire Dept Needs:** | Not applicable in this area |
| **Firewise Information:** | Need support from governmental units (city, local fire departments, state and Federal) to help complete fire assessments for Lake Co. |
| **Fire Dept. Contacts** | **Ely: Lou Gerzin 218-365-3227 Babbitt: Glenn Anderson 218-827-2611 Morse/Fall Ted Krueger 218-365-5583 Finland: Peter Walsh 218-663-7212** |
| **Wildfire Risk Assessment Rating** | Low. This area has not had significant fire history. It does have some fuel hazards of concern. There are few values at risk in terms of infrastructure in the area. There are significant resource values within the area (i.e. timber). Suppression capabilities are poor due to the lack of suppression resources in the area, long response times, and poor access. |

## Department of Natural Resources North Prescription:

**Taken from the Subsection Forest Resource Management Plan (SFRMP) which identifies forest treatment types and areas for DNR forestry and wildlife lands within Lake County over the next ten years (ending in 2014).**

| PRESCRIPTION | ACRES |
|---|---|
| **Clearcut with Reserves (11 treatments)** | **180** |
| **Uneven-Aged Regeneration Harvest (10Treatments)** | **.27** |
| **On-site evaluation – High Risk or Low Volume Stand (33 treatments)** | **867** |
| **Re-Inventory (2 treatments)** | **14** |
| **Community Total** | **1089 Acres** |

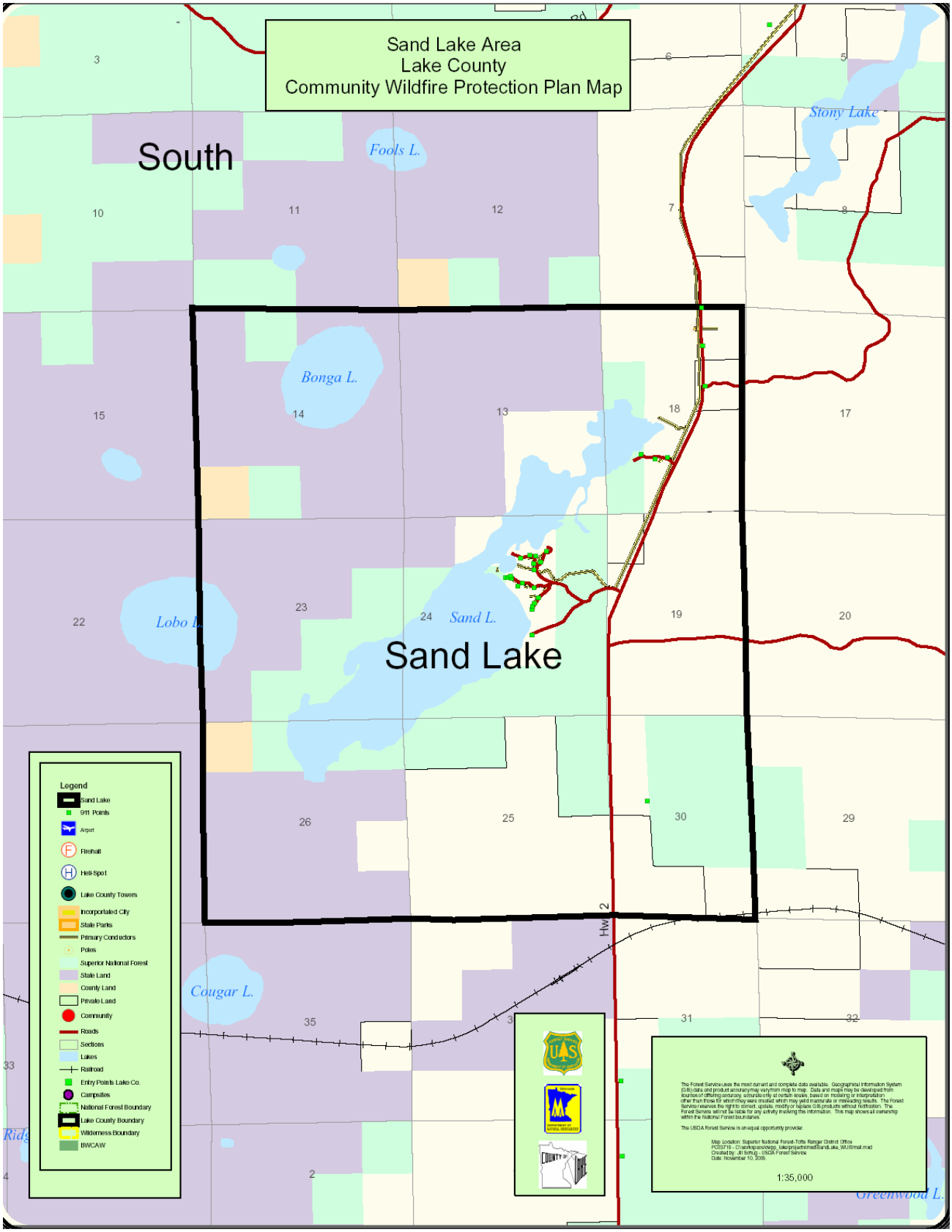

North Area
Community Wildfire Protection Plan Map
Boundary Waters Canoe Area
Superior National Forest
Tomahawk Rd
Forest Rd 374
Lake 29 Rd
Dumbbell Rd
Bombowl Rd
Kelly Loop
Carner Rd
Hoist Creek Rd
Hwy 1
USDA FOREST SERVICE Tower
VERISON WIRELESS Tower
Isabella
BORDER PATROL Tower
ATT Tower
South
Legend
North
911 Points
Airport
Firehall
Hell-Spot
Lake County Towers
Incorporated City
State Parks
Primary Conductors
Poles
Superior National Forest
State Land
County Land
Private Land
Community
Roads
Sections
Lakes
Railroad
Entry Points Lake Co.
Campsites
National Forest Boundary
Lake County Boundary
Wilderness Boundary
BWCAW
1:73,008

| Priority: 4 | Sand Lake Area |
|---|---|
| **Access:** | Sand Point Road from Highway-2 |
| **Topography:** | Flat to slightly rolling |
| **Fuel Hazards:** | Balsam fir understory and mixed pine overstory in parts. |
| **Fire Occurrence:** | Low |
| **Homes:** | Several seasonal and year-round residences on east shore of Sand Lake |
| **Businesses:** | None |
| **Jurisdiction:** | Two harbors Fire Department, Babbitt Fire Department, USFS |
| **Infrastructure risk:** | None |
| **Community values:** | Private landowners on Sand Lake |
| **Local Preparedness Capability:** | **THFD**: 20 personnel, portable and mobile radios, 2500gal. Pumper-tanker. 1000gal. 5 seat pumper. 1800gal. Tanker. 500gal. telesqirt pumper. 250gal mini-pumper / grass rig. Misc. wildfire tools and personal protective equipment. **Babbitt FD**: 1982 Pierce pumper: 750 gallon @1250 gpm; 1977 Ford pumper: 750 gallon at 1250 gpm: Brush rigs: 1988 and 1984 Ford 250 gal @ 250 gpm; Water Tenders: 1500 gal. and 1300 gal; floto pump; mark III pump; Chevy carry-all rescue truck; 3-4 racks 1 ½ inch hose; all personnel have portable radios; 2 drop tanks 2000 and 1000 gallons. **USFS** two type 6 engines out of Ely, Aerial support during higher fire danger out of Ely |
| **Other:** | Extended response times for Two Harbors F.D. for structure fires. Moderate response times for USFS (Aurora, Ely, Isabella) for wildland fires |
| **Fire Dept Needs:** | Explore dry hydrant locations on Sand or Greenwood Lakes |
| **Firewise Information:** | Need support from governmental units (city, local fire departments, state and Federal) to help complete fire assessments for Lake Co. |
| **Fire Dept Contacts:** | **TH: Steve Blettner 218-834-8816 Babbitt FD: Glenn Anderson 218-827-2611** |
| **Wildfire Risk Assessment Rating** | Low. This area has not had a significant amount of fire occurrence. There are hazardous fuels of concern within the area. There are some structures in the area, however structure density is fairly sparse and there is little other infrastructure in the area. Protection capabilities are poor within this area due to the remoteness of the area, poor access, and distance |

## Department of Natural Resources Sand Lake Area Prescription:

**Taken from the Subsection Forest Resource Management Plan (SFRMP) which identifies forest treatment types and areas for DNR forestry and wildlife lands within Lake County over the next ten years (ending in 2014).**

| PRESCRIPTION | ACRES |
|---|---|
| **On-site evaluation – High Risk or Low Volume Stand (8 treatments)** | **82** |
| **Community Total** | **82 Acres** |

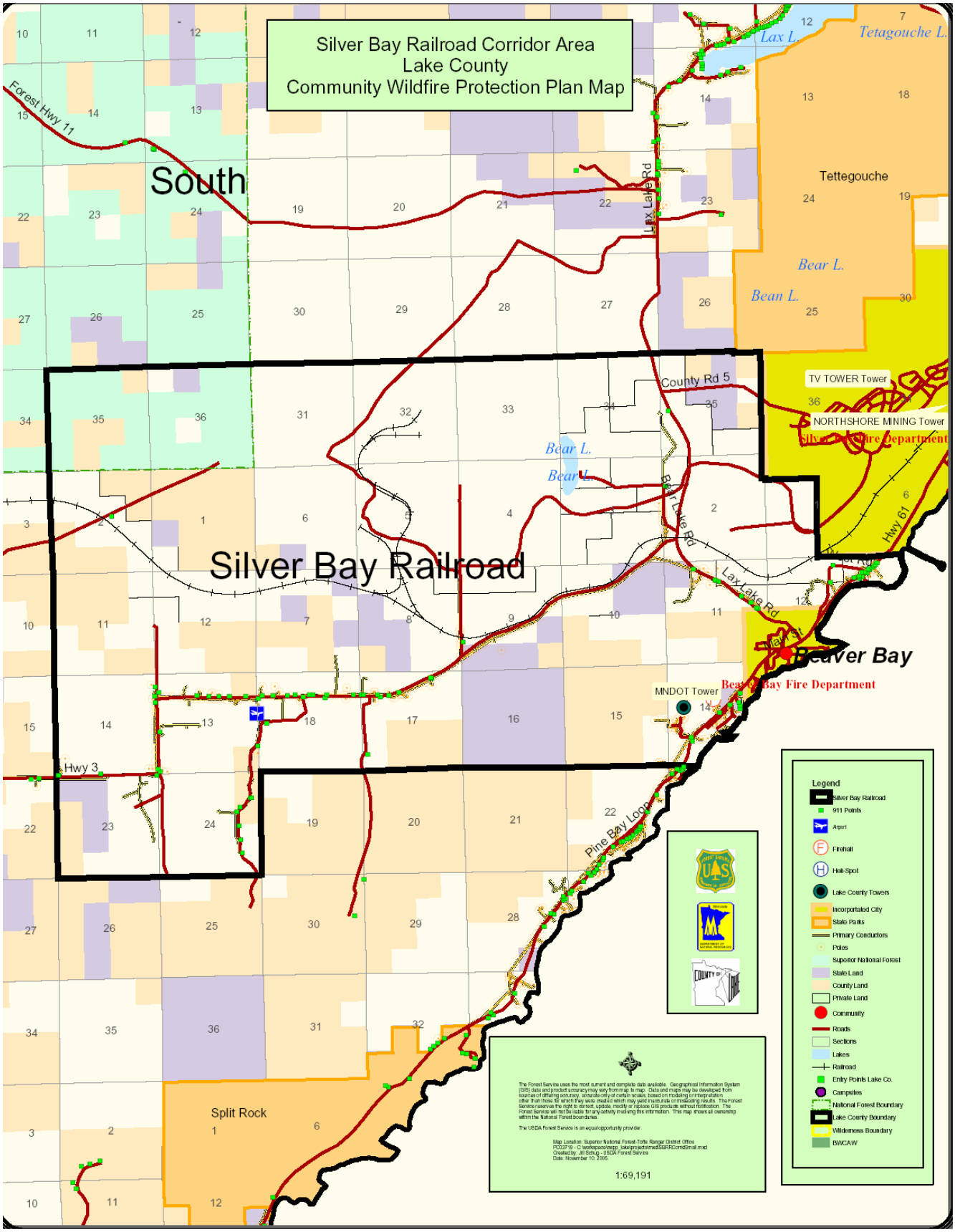

Sand Lake Area
Lake County
Community Wildfire Protection Plan Map
South
Fools L.
Stony Lake
Bonga L.
Lobo L.
Sand L.
Sand Lake
Cougar L.
Greenwood L.
Hwy 2
Legend
Sand Lake
911 Points
Airport
Firehall
Heli-Spot
Lake County Towers
Incorporated City
State Parks
Primary Conductors
Poles
Superior National Forest
State Land
County Land
Private Land
Community
Roads
Sections
Lakes
Railroad
Entry Points Lake Co.
Campsites
National Forest Boundary
Lake County Boundary
Wilderness Boundary
BWCAW
1:35,000

| Priority: | Silver Bay Railroad Corridor |
|---|---|
| **Access:** | Access in the City proper of Silver Bay is good. Access to the North Shore Mining Railroad is limited. There are access points to the North Shore Mining Railroad but no access along side of the railroad. Some access points are 5-10 miles apart. High rails can be set up for fire access. |
| **Topography:** | Steep rolling hills, rock bluffs, swamps. |
| **Fuel Hazards:** | Fair amount of young balsam. Railroad has done some hazardous fuel reduction along the railway to protect fiber optic switching signals. Heavy grasses with balsam fir understory ladder fuels to a spruce-pine/mixed hardwood overstory. |
| **Fire Occurrence:** | Moderate @ 5-10 fires per year. |
| **Homes:** | Sparse except in Silver Bay. |
| **Businesses:** | Community of Silver Bay, North Shore Mining, and Tourism related businesses. |
| **Jurisdiction:** | Beaver Bay FD, Silver Bay FD and DNR |
| **Infrastructure risk:** | Power lines, gas lines, Pipe line, Farm taps, communication towers, RR delivered chemicals. Railroad, airport, city water tanks. |
| **Community values:** | Popular year round recreational area. |
| **Local Preparedness Capability:** | **North Shore Mining** fire train with 10,000 gals and heavy equipment. **Beaver Bay FD:** 1970 Ford Engine holds 750 gallons pumps at 750 gpm. 1980 Chevy Engine holds 750 gallons pumps @ 750 gpm. 1979 Ford engine, 1000 gallons @ 1000 gpm. 1975 Ford 1000 gal water tender. 2 portable radios dump pool, 2 portable lake pumps, 8 bladder bags. Generator. **Silver Bay FD:** Engines: 1993 freightliner 1000 gal @1250 gpm, 1979 Ford 1000 gal@1250 gpm, 2004 Ford F-550 300 gal @ 1000 gpm. Tenders: 1985 International 2400gal @ 300 gpm. Portable radios, 2-2500 gal port-a-tanks and various wildland firefighting gear. |
| **Other:** | |
| **Fire Dept Needs:** | Dry hydrants, Upgrades to communication (phone, radio, and towers) systems to meet new technical requirements. Additional water tanks and dry hydrants needed. Timely upgrades of maps and 911 updates. Hardware, software, and tech support for GIS |
| **Firewise Information:** | Need support from governmental units (city, local fire departments, state and Federal) to help complete fire assessments for Lake Co. |
| **Fire Dept Contacts** | **Silver Bay: John Fredrickson 218-220-0217 Beaver Bay: Jenny Stevens 218-220-1237** jenny@bayviewrealty.com |
| **Wildfire Risk Assessment Rating** | Moderate. This area has a history of high fire occurrence, moderate amounts of fuel hazards, and some values at risk or concern. The area does have good suppression capabilities. |

## Department of Natural Resources Silver Bay Railroad Corridor Prescription:

**Taken from the Subsection Forest Resource Management Plan (SFRMP) which identifies forest treatment types and areas for DNR forestry and wildlife lands within Lake County over the next ten years (ending in 2014).**

| PRESCRIPTION | ACRES |
|---|---|
| **Clearcut with Reserves (5 treatments)** | **67** |
| **On-site evaluation – High Risk or Low Volume Stand (26 treatments)** | **472** |
| **Community Total** | **539 Acres** |

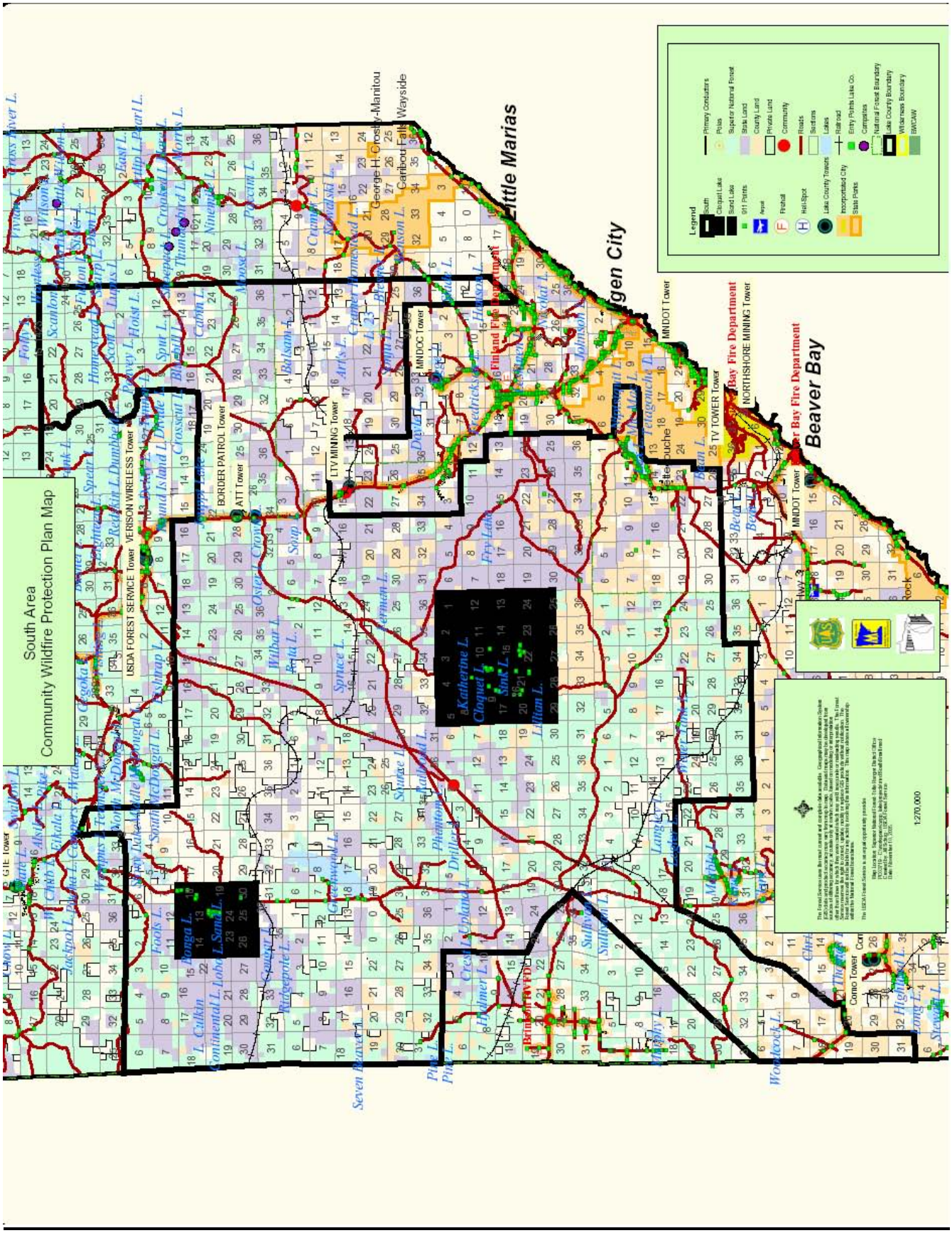

Silver Bay Railroad Corridor Area
Lake County
Community Wildfire Protection Plan Map
South
Silver Bay Railroad
Tettegouche
Lax L.
Tetagouche L.
Bear L.
Bean L.
Lax Lake Rd
Bear Lake Rd
County Rd 5
TV TOWER Tower
NORTHSHORE MINING Tower
Silver Bay Fire Department
Hwy 61
Beaver Bay
Beaver Bay Fire Department
MNDOT Tower
Hwy 3
Pine Bay Loop
Forest Hwy 11
Split Rock
Legend
Silver Bay Railroad
911 Points
Airport
Firehall
Heli-Spot
Lake County Towers
Incorporated City
State Parks
Primary Conductors
Poles
Superior National Forest
State Land
County Land
Private Land
Community
Roads
Sections
Lakes
Railroad
Entry Points Lake Co.
Campsites
National Forest Boundary
Lake County Boundary
Wilderness Boundary
BWCAW
1:69,191

| Priority: 1 | South |
|---|---|
| **Access:** | Three primary roads, otherwise gravel county roads and agency forestry roads |
| **Topography:** | Generally level to rolling |
| **Fuel Hazards:** | Balsam understory throughout, mixed deciduous and conifer on uplands. Large tracts of lowland conifer. |
| **Fire Occurrence:** | Low |
| **Homes:** | Very few homes |
| **Businesses:** | Logging operations |
| **Jurisdiction:** | Finland FD, THFD, Babbitt FD |
| **Infrastructure risk:** | Portions of two mining roads, with associated power lines |
| **Community values:** | Timber Values |
| **Local Preparedness Capability:** | **THFD**: 20 personnel, portable and mobile radios, 2500 gallon pumper-tanker. 1000 gal. 5 seat pumper, 1800 gal. Tanker, 500 gal. Telesqirt pumper, 250 gal mini pumper/grass rig, misc. wildland fire tools and PPE. **Finland FD**: 18 personnel, 1200 gal. Pumper, 800 gal. Pumper, 3000 gal. Tanker, 1200 gal. Tanker, portable pumps and drop tanks. **Babbitt FD**: 1982 Pierce pumper: 750 gallon @1250 gpm; 1977 Ford pumper: 750 gallon at 1250 gpm: Brush rigs: 1988 and 1984 Ford 250 gal @ 250 gpm; Water Tenders: 1500 gal. and 1300 gal; floto pump; mark III pump; Chevy carry-all rescue truck; 3-4 racks 1 ½ inch hose; all personnel have portable radios; 2 drop tanks 2000 and 1000 gallons. |
| **Other:** | Continuing development into rural areas. |
| **Fire Dept Needs:** | Upgrades to communication (phone, radio, and towers)<br>Systems to meet new technical requirements. Additional water tanks and dry hydrants as needed. Timely upgrades of maps and 911 updates. Hardware, software and technical support for GIS. |
| **Firewise Information:** | Need support from governmental units (city, local fire departments, state and Federal) to help complete fire assessments for Lake Co. |
| **Fire Dept Contacts:** | **THFD S. Blettner 218-834-8816 (Hwy 2 Corridor portion) Finland FD Peter Walsh 218-663-7212 Babbitt FD: Glenn Anderson 218-827-2611** |
| **Wildfire Risk Assessment Rating** | Moderate. There are pockets of hazardous fuels throughout the area. There are few infrastructure values at risk in the area. There are significant resource values within the area (i.e. timber). Suppression capabilities are poor due to the lack of suppression resources in the area, long response times, and poor access. |

## Department of Natural Resources South Area Prescription:

**Taken from the Subsection Forest Resource Management Plan (SFRMP) which identifies forest treatment types and areas for DNR forestry and wildlife lands within Lake County over the next ten years (ending in 2014).**

| PRESCRIPTION | ACRES |
|---|---|
| **Clearcut with Reserves (156 treatments)** | **3207** |
| **Uneven-Aged Regeneration Harvest (134 Treatments)** | **2856** |
| **Commercial Thinning (172 treatments)** | **4521** |
| **On site stand evaluation (1 Treatment)** | **14** |
| **On-site evaluation – High Risk or Low Volume Stand (39 treatments)** | **6427** |
| **Re-Inventory (4 treatments)** | **73** |
| **Community Total** | **17098 Acres** |

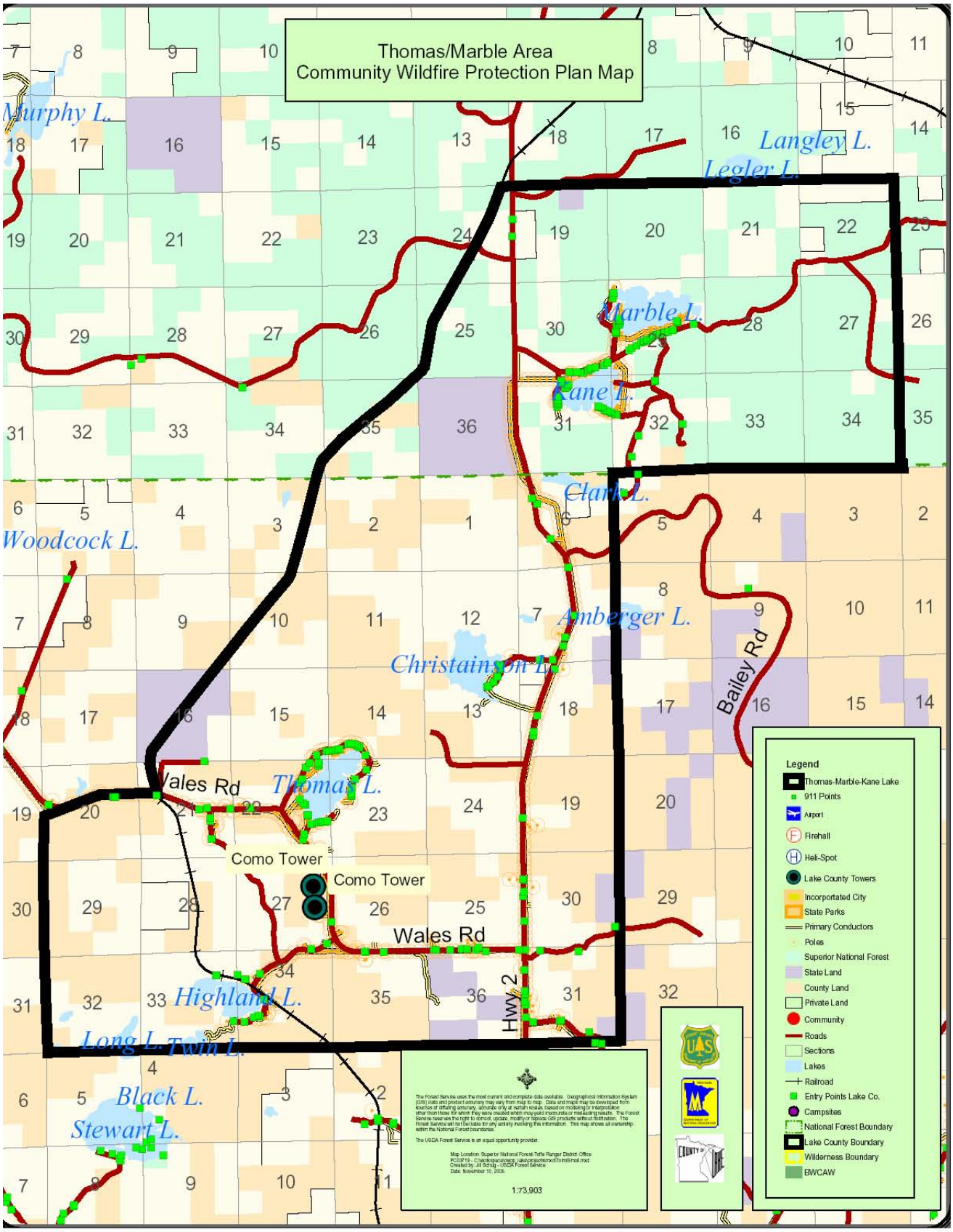

South Area
Community Wildfire Protection Plan Map
Little Marias
Beaver Bay
Finland Fire Department
Bay Fire Department
Beaver Bay Fire Department
USDA FOREST SERVICE Tower
VERISON WIRELESS Tower
BORDER PATROL Tower
ATT Tower
LTV MINING Tower
MNDOC Tower
MNDOT Tower
NORTHSHORE MINING Tower
TV TOWER Tower
Como Tower
Legend
Primary Conductors
Poles
Superior National Forest
State Land
County Land
Private Land
Community
Roads
Sections
Lakes
Railroad
Entry Points Lake Co.
Campsites
National Forest Boundary
Lake County Boundary
Wilderness Boundary
BWCAW
Lake County Towers
Incorporated City
State Points
Hotspot
Hellspot
1:70,000

| Priority: 5 | Thomas/Marble/Kane Lake Area |
|---|---|
| **Access:** | 25 miles to a fire department or wildland fire suppression agency. Limited access for emergency vehicles. One way in and out for most residences. Limited width driveways, some with heavy fuels and fuels accumulations. Poorly named roads as to the direction and ease of finding residences near lakes. Road names and numbers inconsistent. |
| **Topography:** | Slightly rolling to rolling terrain |
| **Fuel Hazards:** | Balsam ladder fuels, plantations, some blowdown, over mature mixed conifer. Young balsam understory. |
| **Fire Occurrence:** | Low |
| **Homes:** | 300 structures of which 70 are permanent residences, highly concentrated along lakes |
| **Businesses:** | Home based businesses, logging, general contractors, gravel operations and railroad maintenance shop |
| **Jurisdiction:** | Two Harbors Fire Department, Wildland – MN DNR, USFS. |
| **Infrastructure risk:** | Power lines, phone lines, LP tanks, air strip, communications towers near Thomas Lake, power company microwave tower, Canadian National railroad. |
| **Community values:** | Old fire tower, recreation, Kane Lake CCC Camp. This is a heavily used, popular, year-round outdoor recreation area. |
| **Local Preparedness Capability:** | **THFD:** 20 personnel, portable and mobile radios,. 2500gal. Pumper-tanker. 1000gal. 5 seat pumper. 1800gal. Tanker. 500gal. telesqirt pumper. 250gal mini-pumper / grass rig. Miscellaneous fire tools and personal protective equipment. **DNR**:3-10 personnel, 3 type 6 engines, 1tracked ATV (J-5), aerial support during higher fire danger is 45 min. + away **USFS** One type 6 engine out of Aurora, Aerial support during higher fire danger out of Ely |
| **Other:** | New development, upgrading of cabins to new homes, there is now conversion of corporate timber lands to private land. |
| **Fire Dept Needs:** | Upgrades to communication (phone, radio, and towers) systems to meet new technical requirements. Additional water tanks and dry hydrants needed. Timely upgrades of maps and 911 updates. Hardware, software, and tech support for GIS. |
| **Firewise Information:** | Need support from governmental units (city, local fire departments, state and Federal) to help complete fire assessments for Lake Co. |
| **Fire Dept Contacts:** | **TH Chief: Steve Blettner 218-834-8816** |
| **Wildfire Risk Assessment Rating** | High. This area has not had significant fire history. It does have some fuel hazards of concern. There are significant values at risk, high structure density, high fuel hazards around structures, and mixed land ownership. There are poor suppression capabilities due to the remoteness of the area and poor access. |

## Department of Natural Resources Thomas/Marble/Kane Lake Area Prescription:

**Taken from the Subsection Forest Resource Management Plan (SFRMP) which identifies forest treatment types and areas for DNR forestry and wildlife lands within Lake County over the next ten years (ending in 2014).**

| PRESCRIPTION | ACRES |
|---|---|
| **Clearcut with Reserves (5 treatments)** | **153** |
| **Uneven-Aged Regeneration Harvest (4 Treatments)** | **129** |
| **Commercial Thinning (8 treatments)** | **213** |
| **On-site evaluation – High Risk or Low Volume Stand (3 treatments)** | **20** |
| **Community Total** | **514 Acres** |

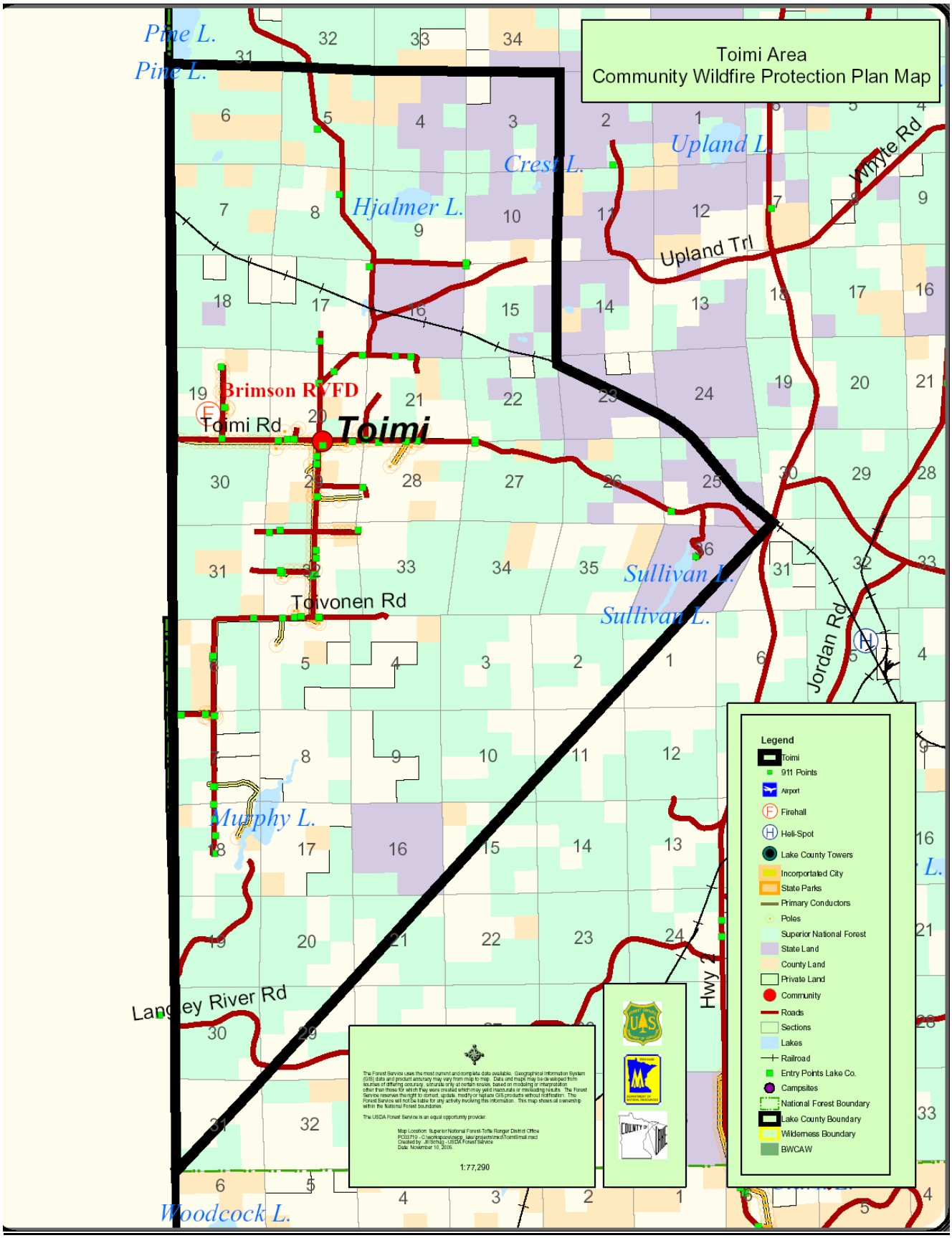

Thomas/Marble Area
Community Wildfire Protection Plan Map
Murphy L.
Langley L.
Legler L.
Marble L.
Kane L.
Clark L.
Woodcock L.
Amberger L.
Christainson L.
Bailey Rd
Vales Rd
Thomas L.
Como Tower
Como Tower
Wales Rd
Highland L.
Hwy 2
Long L.
Twin L.
Black L.
Stewart L.
Legend
Thomas-Marble-Kane Lake
911 Points
Airport
Firehall
Heli-Spot
Lake County Towers
Incorporated City
State Parks
Primary Conductors
Poles
Superior National Forest
State Land
County Land
Private Land
Community
Roads
Sections
Lakes
Railroad
Entry Points Lake Co.
Campsites
National Forest Boundary
Lake County Boundary
Wilderness Boundary
BWCAW
1:73,903

| Priority: 5 | Toimi |
|---|---|
| **Access:** | Poor to good access. Typical WUI area, exclusively single access/egress. Primarily gravel access roads. Several roads are not accessible with structural rigs. |
| **Topography:** | Located in Toimi drumlins consisting of rolling SW to NE running ridges interspersed with streams and lowlands |
| **Fuel Hazards:** | Primarily typical boreal forest with scattered blowdown. Extensive balsam fir. Some plantations, young conifers, mature red/white pine and areas of jack pine. |
| **Fire Occurrence:** | Low (1-2 fires per year) |
| **Homes:** | Lake cabins and around 50-60 homes both seasonal and year round. |
| **Businesses:** | Home based businesses. Logging and gravel |
| **Jurisdiction:** | Brimson Area Volunteer Fire Department (BAVFD), MN DNR, USFS |
| **Infrastructure risk:** | Power lines, phone lines, North Shore Mining RR, Forest Hwy 11 Corridor, Wilderness North Camp on Murphy Lake. |
| **Community values:** | Toimi School (historical site), two cemeteries, and one state forest campground. |
| **Local Preparedness Capability:** | **(BAVFD)** One fire hall located in St. Louis County. Eleven firefighters, several of whom work outside the community. One 1000 gal. Structural engine. Two water tenders: one 1200 gal. And one 1800 gal. One brush rig with 215 gal. Slip-on with foam capability. Three portable pumps. Hose, pump cans, wildland hand tools. **USFS** One type 6 engine out of Aurora, Aerial support during higher fire danger out of Ely **DNR**:3-10 personnel, 3 type 6 engines, 1tracked ATV (J-5), aerial support during higher fire danger is 45+ min. away |
| **Other:** | BAVFD has a large area of coverage including 1 unorganized township in Lake County (Toimi Area) and three organized townships in St.Louis County (Ault, Bassett and Fairbanks). |
| **Fire Dept Needs:** | Radios compatible with Federal and State Wildland fire agencies. Small structural engine with CAFS capability. Most trucks need to be updated. Up to date mapping of residences. Improved information for the response area such as seasonal verses year round homes, driveway widths and turnarounds, individual road access limitations for emergency vehicles, underground and overhead power line locations, propane tank locations, year round water source locations, |
| **Firewise Information:** | Need support from governmental units (city, local fire departments, state and Federal) to help complete fire assessments for Lake Co. |
| **Fire Dept Contacts:** | **Chief: Paul Tiné Secondary Contact: Diane Dickey, President** |
| **Wildfire Risk Assessment Rating** | Moderate. This area has not had a significant amount of fire occurrence. It does have areas where fuel hazards are a concern. There are some values at risk in the area. Protection capabilities are not good due to the remoteness of the area, poor access, and lack of adequate resources to respond to the area. |

## Department of Natural Resources Toimi Prescription:

**Taken from the Subsection Forest Resource Management Plan (SFRMP) which identifies forest treatment types and areas for DNR forestry and wildlife lands within Lake County over the next ten years (ending in 2014).**

| PRESCRIPTION | ACRES |
|---|---|
| **Clearcut with Reserves (19 treatments)** | **815** |
| **Commercial Thinning (10 Treatments)** | **185** |
| **On-site evaluation – High Risk or Low Volume Stand (10 treatments)** | **159** |
| **Community Total** | **1159 Acres** |

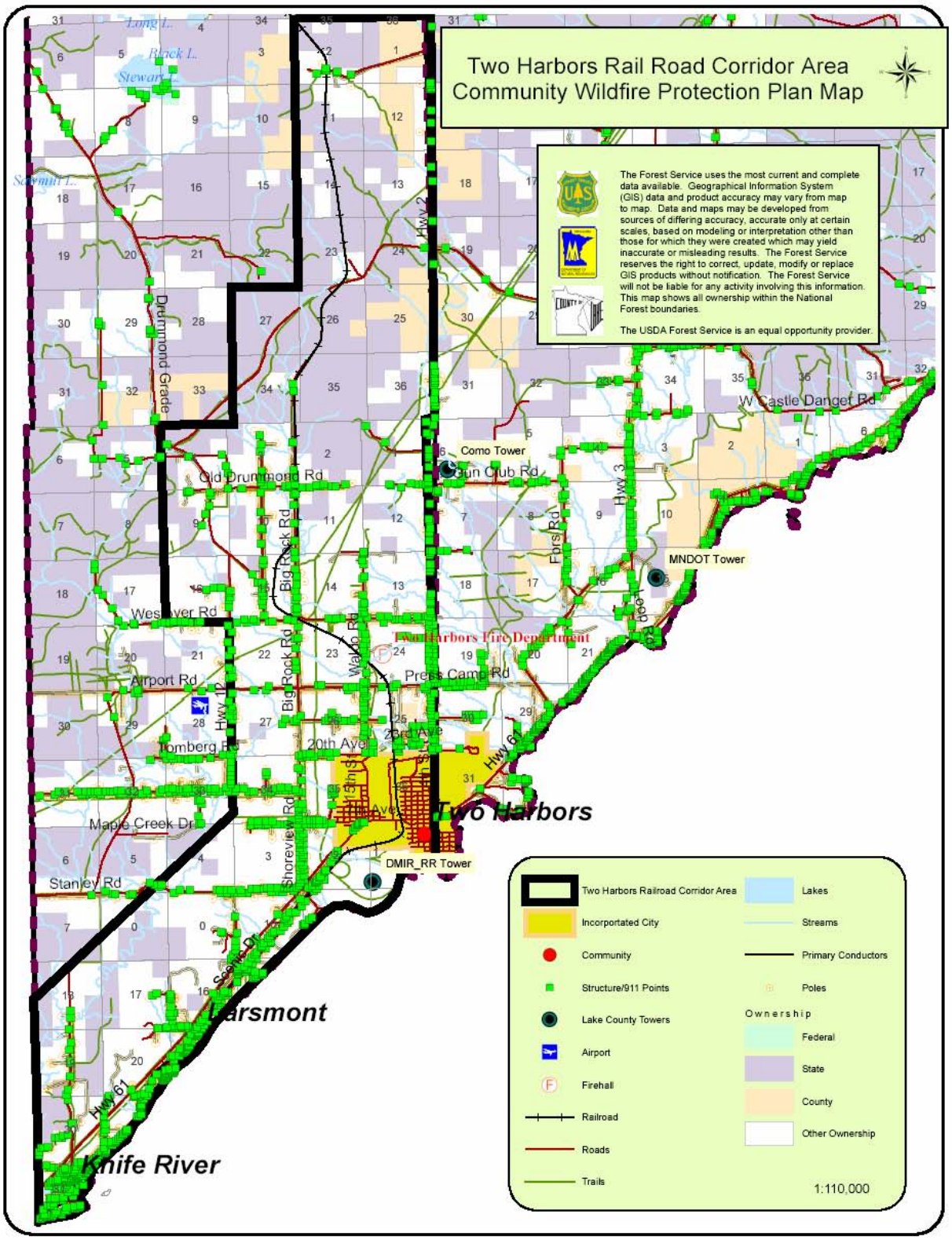

Toimi Area
Community Wildfire Protection Plan Map
Pine L.
Pine L.
Crest L.
Upland L.
Hjalmer L.
Upland Trl
Whyte Rd
Brimson RVFD
Toimi Rd
Toimi
Sullivan L.
Sullivan L.
Toivonen Rd
Jordan Rd
Murphy L.
Langley River Rd
Hwy 21
Woodcock L.
Legend
Toimi
911 Points
Airport
Firehall
Heli-Spot
Lake County Towers
Incorporated City
State Parks
Primary Conductors
Poles
Superior National Forest
State Land
County Land
Private Land
Community
Roads
Sections
Lakes
Railroad
Entry Points Lake Co.
Campsites
National Forest Boundary
Lake County Boundary
Wilderness Boundary
BWCAW
1:77,290

| Priority: 5 | Two Harbors Railroad Corridor |
|---|---|
| **Access:** | There's a road along the railroad tracks. Limited access to the homes along the RR. Dead ends with a lack of turnarounds. Narrow driveways. Heavy fuels in places. |
| **Topography:** | Steady climb in elevation for first 6 miles of the Railroad grade causing relatively large number of railroad ignitions. General topography is rolling to level with a few short steep runs. |
| **Fuel Hazards:** | Considerable amounts of ladder fuels, grass and balsam saplings, along the right of way. Periodically chemically treated with herbicide, leaving dead fuels. |
| **Fire Occurrence:** | High. 1-5 Railroad related fires per year with multiple starts occurring on each incident. Additional 1-5 non-railroad related starts. 15-20 starts per year average. |
| **Homes:** | Approximately 150 year round homes in this area. 50 seasonal hunting shacks |
| **Businesses:** | Industrial park, ready-mix plant, OSB plant with 50million cord wood yard, mining railroad, machine shops and railroad propane tanks. Bulk propane and fuel storage within this area. |
| **Jurisdiction:** | Two Harbors Fire Department, MN Department of Natural Resources. |
| **Infrastructure risk:** | Propane storage. High lines, telephone lines, local power lines and substations. Natural gas reducing station (TBS). Numerous natural gas farm taps. Communication towers, city water tanks, airport and a new high school. |
| **Community values:** | Stuart river recreational values. Heavily used, popular, year-round outdoor recreation area |
| **Local Preparedness Capability:** | **THFD:** 20 personnel, portable and mobile radios, 2500gal. Pumper-tanker. 1000gal. 5 seat pumper. 1800gal. Tanker. 500gal. telesqirt pumper. 250gal mini-pumper / grass rig. Misc. wildfire tools and personal protective equipment. **DNR**:3-10 personnel, 3 type 6 engines, 1tracked J-5, aerial support during higher fire danger is 45+min. away |
| **Other:** | Continuous expanding and development into the rural areas. |
| **Fire Dept Needs:** | Upgrades to communication (phone, radio, and towers) systems to meet new technical requirements. Additional water tanks and dry hydrants needed. Timely upgrades of maps and 911 updates. Hardware, software, and tech support for GIS. |
| **Firewise Information:** | Need support from governmental units (city, local fire departments, state and Federal) to help complete fire assessments for Lake Co. |
| **Fire Dept Contacts:** | **TH Chief: Steve Blettner 218-834-8816 Secondary Contact: Rob Fasteland DNR** |
| **Wildfire Risk Assessment Rating** | High. This area has had high occurrence of fire in the past. There are fuels hazards of concern in the area which could support large fire growth. There is high structure density and there are significant values at risk. Suppression capabilities are good within the area. |

## Department of Natural Resources Two Harbors Railroad Corridor Prescription:

**Taken from the Subsection Forest Resource Management Plan (SFRMP) which identifies forest treatment types and areas for DNR forestry and wildlife lands within Lake County over the next ten years (ending in 2014).**

| PRESCRIPTION | ACRES |
|---|---|
| **Uneven-Aged Regeneration Harvest (5 treatments)** | **118** |
| **On-site evaluation – High Risk or Low Volume Stand (1 treatments)** | **6** |
| **Community Total** | **123 Acres** |


Two Harbors Rail Road Corridor Area
Community Wildfire Protection Plan Map
The Forest Service uses the most current and complete data available. Geographical Information System (GIS) data and product accuracy may vary from map to map. Data and maps may be developed from sources of differing accuracy, accurate only at certain scales, based on modeling or interpretation other than those for which they were created which may yield inaccurate or misleading results. The Forest Service reserves the right to correct, update, modify or replace GIS products without notification. The Forest Service will not be liable for any activity involving this information. This map shows all ownership within the National Forest boundaries.
The USDA Forest Service is an equal opportunity provider.
Como Tower
MNDOT Tower
DMIR_RR Tower
Two Harbors Fire Department
Two Harbors
Larsmont
Knife River
Drummond Grade
Old Drummond Rd
Big Rock Rd
Westover Rd
Airport Rd
Hwy 12
Hwy 2
Hwy 3
Hwy 61
Gun Club Rd
Press Camp Rd
20th Ave
Shoreview Rd
Maple Creek Dr
Stanley Rd
W Castle Danger Rd
Two Harbors Railroad Corridor Area
Incorporated City
Community
Structure/911 Points
Lake County Towers
Airport
Firehall
Railroad
Roads
Trails
Lakes
Streams
Primary Conductors
Poles
Ownership
Federal
State
County
Other Ownership
1:110,000

# VII. Planning Process:

Lake County community wildfire protection planning began in November of 2004, led by local County Government officials working with area fire departments; the Minnesota Department of Natural Resources, and the US Forest Service. The core group met to determine interest in developing a Community Wildfire Protection Plan and to initiate an interagency inventory and assessment of fuel hazards and community related infrastructure protection and mitigation needs.

Using the background information gathered, an interagency core group proposed 16 different planning (Wildland/Urban Interface) areas to present to Lake County communities for project input, prioritization and review. Additional community meetings have been held to build upon and prioritize projects. **This plan is a work in progress and will be amended by the local community Coordination group, with continuing input from the public as individual projects are proposed and implemented.**

Private landowners and community members joined in the collaborative community efforts to address wildfire risk in the interface. Community members are 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 public lands within Lake County.

**a. Description of Participants**

Ely Fire Department
Finland Fire Department
Two Harbors Fire Department
Babbitt Fire Department
Morse/Fall Lake Fire Department
Lake County Commissioners
Lake County Department of Emergency Management
Lake County Sheriffs Department
Minnesota Department of Natural Resources
Small Business Representatives
MN Firewise Program
North Central Forest Experiment Station
Brimson Area Fire Volunteer Department
Louisiana Pacific
Silver Bay Fire Department
Beaver Bay Fire Department
University of MN Extension Service
MN Incident Command System
Lake County Planning and Zoning
Dept. of Emergency Mgmt – Homeland Security
USDA Forest Service – Superior National Forest
Individual Community Members
Lake County Forestry
Nature Conservancy

**b. Collaboration and 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, geographic regions and other special areas of interest. Lake County CWPP meetings were publicly announced in the local paper. Local community meetings were held at the Two Harbors law enforcement center and the Fall Lake Township Community Center. Community meetings were used to inform and update the 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 including State, Federal, and local agencies, the public, and various public interest groups

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

**c. Description of Community Meeting Steps**

**The Following were the steps used to complete the Lake County CWPP**

1. **Convene Decision makers**
In November of 2004, Lake County formed a core team including representatives from the County Commissioner's Office, County land office, Lake County fire departments, and the Minnesota Department of Natural Resources to begin development of a CWPP for Lake County.

2. **Involved Federal Agencies**
The County also involved their Federal partner the United States Forest Service as a part of the core team.

3. **Engaged Interested Parties**
The Lake County Core group advertised all meeting notices in the Two Harbors paper. Meetings were held approximately every four to six weeks. Most meetings were held at the Two Harbors Law Enforcement Center. A committee meeting was held at Fall Lake Township also, to accommodate interested parties in northern Lake County. Several interested parties joined and participated in the core group meetings.

4. **Established a Community Base Map**
The Core group worked together to establish a community base map which defines Lake County's 16 WUI communities and displays areas at risk, forested areas containing critical infrastructure, and areas at risk for large-scale fire disturbance.

5. **Developed a Community Risk Assessment**
The Lake County core group worked to develop a community risk assessment that considers fuel hazards; risk of wildfire occurrence to homes, businesses, and essential infrastructure at risk; other community values at risk; and local wildfire and structural preparedness capability. The group rated each risk factor and incorporated the results into this CWPP as appropriate.

6. **Established Community Priorities and Recommendations**
The Lake County core group used the base map and community risk assessment to facilitate collaborative community discussions. Two community meetings were held to address the three priority WUI areas. A meeting was held at Two Harbors Fire Department to address the Two Harbors Railroad Corridor WUI. Another meeting was held at Fall Lake Township to address the Fernberg Corridor/Kawishiwi/Triangle Area and the Birch/Slate Lake Area. The Coordinating group will lead additional Community discussions to identify specific local priorities for fuel treatment, reduction of structural ignitability, and other issues of interest as the implement the plan on the localized level.

7. **Developed an Action Plan and Assessment Strategy**
The Core planning group developed a detailed implementation strategy to accompany the CWPP and a monitoring plan that will ensure its long-term success. The Coordinating group will be responsible for plan implementation

8. **Finalize Community Wildfire Protection Plan**
Community partners finalized the CWPP and held a public hearing to share results with the community and key partners. The CWPP can be viewed on the Lake County website. www.co.lake.mn.us

# VIII. Lake County Community Profile:

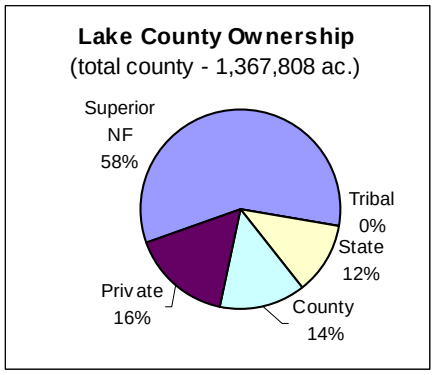
**a. General Information about Lake County**
(From the Lake County Website and Lake County Comprehensive Plan)

Lake County is located in Northeastern Minnesota's Arrowhead Region, with Canada forming the northern border, Lake Superior comprising the southern border, with Cook County to the east and St. Louis County to the west. Lake County is approximately 2,137 square miles with a population of 11,058 people, about 5.3 persons per square mile.

The largest city in the county is Two Harbors, where the county seat is located. Both Two Harbors and Silver Bay have operating harbors for shipping iron ore and taconite. The major industries in Lake County are mining, logging, wood products, shipping and transportation, manufacturing, health care and tourism.

The scenic beauty of Lake County, its abundance of natural resources, and its proximity to the mining, forestry, and tourism industries make it an attractive place to live and work. Within Lake County boundaries are four state parks, Gooseberry Falls, Split Rock Lighthouse, Tettegouche, and George Crosby-Manitou, Superior National Forest, the Boundary Waters Canoe Area Wilderness and the Superior Hiking Trail. All offer superior hiking, camping, fishing and winter recreational opportunities. Snowmobile, hiking, cross-country skiing and ATV trails are readily accessible throughout the county.

Bordering the county to the south is Lake Superior, the largest freshwater lake in the world. With its rugged beauty and pristine shoreline, it offers many recreational opportunities as well as historical shipwrecks, two operating lighthouses, and two public marinas.




While a vast majority of Lake County is in public ownership, areas around the cities of Two Harbors and Silver Bay and along Highway 61 have a full range of urban land uses. As vacant land in these areas develops, urban land uses could extend into adjacent forested and open areas, increasing development pressure. Coordination with local, state and federal jurisdictions is imperative in coping with existing and future pressures.

This base of natural resources has been shaped by a variety of factors. Initially forest fires, insects, wind and beavers were major agents of change in this environment. Human activities such as logging, trapping, hunting, fire suppression, road and trail construction, acid rain, mining and various forms of development from isolated cabins to cities have done much to alter local environments. Even though human activities dominated as environmental change agents, Mother Nature has also played her role with lightning, insect and disease infestations and a significant wind event.

As a result of and in response to human intervention, forests have undergone tremendous transformations in spatial patterns composition and structure. For example, in some areas which were once extensive stands of white and red pine, cedar and northern hardwoods have given way in a large part to aspen and aspen-birch. These changes in forest vegetation, set into motion over 100 years ago have been sustained through past forest management policies that emphasized clear cutting, select species reforestation and

fire suppression driven by a shifting focus of market demands. However, new science and changes in forest management policy and direction will redirect forest management over the next 10 years with the adoption of a new Superior National Forest Plan.

The Department of Natural Resources is provided forest management direction through their Subsection Forest Resource Management Plan (SFRMP). This plan identifies long-term strategic direction for the DNR Forestry and Wildlife administered forestlands. It will also identify forest stands to be treated over the next ten year period. The strategic component of the SFRMP focuses on long term strategic direction in response to identified issues, strategies to implement the general direction, and identification of quantifiable long term desired future forest composition (DFFC) goals.

b**. Population, demographics, socio-economic data**

(Information from Lake County Comprehensive Plan, Lake County website and US Census website)

*Population:* Approximately 11,058 (2000 census) people reside in Lake County. Much of the County's inland area is sparsely populated, and approximately 82 percent of the land is publicly owned. The three incorporated cities within Lake County are Two Harbors, Beaver Bay, and Silver Bay, with the cities of Silver Bay and Two Harbors comprising over half of the Counties population. The majority of Lake County's population lives within six miles of Lake Superior.

*Demographics:* The median age of residents is forty-three. Forty nine point one (49.1%) percent of the population is male and fifty point nine (50.9) percent are female. The majority of the population ranges from 18 to 64 years of age. Of the population 25 years and older, 86.4% are high school graduates and 19.5% hold bachelor's degrees.

*Socio-economics*: The major industries in Lake County are education health and social services 23.1%, Arts entertainment, recreation, accommodation and food services 13.7 %, Agriculture, forestry fishing and hunting, and mining at 10.6%, manufacturing at 9.6%, retail trade at 9.2%, Transportation, warehousing, and utilities at 6.4%, Construction at 6.1%, Professional, scientific, management, administrative, and waste management services at 5.1%, Finance, insurance, real estate, rental and leasing at 5.0%, Public Administration 4.1% Other services (except public administration) 4.1%, Information at 1.9% and wholesale trade at 1.1%.

$40,402 is the average median household income (1999). Occupations consist of the following: Management professional, and related occupations 29.7%, service occupations 19.7%, sales and office occupations 19.4%, production, transportation and material moving occupations are at 16.4%, construction, extraction and maintenance operations 13.1%, and farming, fishing, and forestry occupations are at 1.7%,

**c. Housing and Development Trends**

(Information from Lake County Plan and updated from 2000 US. Census data)

The median value of a home in Lake County is $71,300. Number of housing units is at 7,033 (2002 data), with a home ownership rate of 84% (2002). The housing goal for Lake County is to encourage the development of housing within the county that meets a variety of needs. The county will work with private developers, applicable State and Federal agencies, local organizations, and institutions to assess and address housing needs.

Lake County will encourage the development of housing in areas of the County that can be economically served with adequate transportation and utility infrastructure. They will also encourage the location of multi-family and high-density small lot residential development adjacent to cities or other areas with adequate infrastructure.

**d. Land Use and Projected Trends**

(From Lake County Plan of 1997 for all goals see the Lake County Comprehensive Plan)

The scenic beauty of Lake County, its abundance of natural resources, and its proximity to the mining forestry, and tourism industries make it an attractive place to live and work. While a vast majority of Lake County is in public ownership, area around the cities of Two Harbors and Silver Bay and along Highway 61 have a full range of urban land uses. As vacant land in these areas develops, urban land uses could extend into adjacent forested and open areas, increasing development pressure. Coordination with local, state and federal jurisdictions is imperative in coping with existing and future pressures.

**Lake County Land Use Goals**:

A. To support the development of industry within established communities with adequate infrastructure (with the exception of natural resource based industries)
B. Support the development of non-recreationally based commercial enterprises within communities with established infrastructure and clustered in areas with adequate infrastructure.
C. Minimize the impacts of land disturbing activities on natural features relative to erosion, storm water runoff, wetlands, and scenic views. Develop tools to preserve green space in an effort to prevent sprawl.
D. Minimize land use conflicts between industrial, commercial and residential areas.
E. Encourage development that protects the integrity of ridgelines.
F. Evaluate and strengthen the land use education and enforcement processes

**e. Lake County Transportation Goals**

A. Work with applicable State and Federal agencies and Townships to establish, construct, and improve all modes of the transportation system.
B. Work to upgrade Lake County's arterial and collector system.
    - Assess the potential for design and construction of a system of minor arterial roadways and major collectors, providing strategic links.
    - Assess the potential for the design and construction of a coordinated system of routes parallel to Highway 61.
C. Encourage the continued utilization and maintenance of harbor, rail and air facilities
D. Add and maintain consistent directional and community identification signage on roads and streets within the county.
E. Make access management an integral consideration in the transportation system.
F. Consider access management issues when making land use decisions.

**f. Lake County Recreational and Cultural goals**

A. Support the County Recreation Board
B. Coordinate the County's recreation program with other entities (state, federal, private, etc.) to ensure maximum public benefit.
C. Encourage cultural partnerships.
D. Encourage preservation of historic sites.
E. Support the multiple-use of public lands and recognize the importance of all recreational activities.

**g. Lake County Environmental Goals**

A. Educate residents, visitors, and elected officials of the importance of stewardship.
B. Recognize, promote, and implement management practices to foster stewardship of the County's environmental resources.
C. Continue to manage the county's resources in accordance with official controls and county plans.
D. Work with State and Federal resource management agencies to achieve consistency.

## IX. Wildfire Risk Assessment:.

The Lake County Wildland Fire Protection Plan 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. The analysis looks at each area and analysis factor and ranks them on a numerical scale. The Numerical weights given to each factor are summed at the end which formulates a rating for fire hazards and risks within an area. Areas with a higher sum of points have higher fire hazard associated with them; meaning the probability of having a fire that will spread quickly and intensely with potential to cause significant damage is higher.

**Risk**: the potential and frequency of wildfire ignitions (based on past occurrences)
**Hazard**: conditions that contribute to wildfire (fuels, slope, aspect, elevation and weather)
**Values**: the people, property and resources that could suffer losses in a wildfire event.
**Protection Capabilit**y: the ability to mitigate loss, prepares for, respond to and suppress wildland and structural fire.
**Structural Vulnerabilit**y: elements affecting the level of hazardous exposure to the structure (roof type and building materials, structure access, and whether or not there is treated fuel or ignition source reduction around the structure.)

****I**n the fuels analysis tables the total's of the rows will not add up to the sum of the numbers because some elements were weighted differently. Based on discussions during the developmental stages of the fuels analysis the following elements were rated as follows: Values at risk (high), fuel hazards (moderate) and protection capabilities (low). In calculations of the numerical analysis charts high values had an extra weighting of 5 points added to them and the moderate had a .25 weighting added, while low values were not given an extra weighted score. So in addition to the original score the weighted averages were also added on. The model used to calculate the numbers added the weighted elements automatically so the actual weighting does not show as being added in the manually tabulated table. The final column (total points) of each chart is the rating that is ultimately considered when determining the over all hazard and risk. (See tables on the following pages)

## a. Hazard and Risk

**Fire Frequency** – How frequent fire occurs on the landscape based on past fire history.
**Ladder Fuel Hazards** – the amount, type and height of fuels that can allow fire to climb from the ground up into the mature canopy.
**Crown Fire Potential –** Potential for fires to advance tree top to tree top more or less independent from the surface or ground fire.
**Fuel Model** – A simulated fuel complex for which all the fuel descriptors required for the mathematical fire spread model have been specified.
**Rate of Spread** – The relative activity of a fire in extending its horizontal dimensions, usually expressed in chains (66') per hour.
**Flame Length -** . The distance between the flame tip and the mid-point of the flame depth at the base of the flame (generally the ground surface), an indicator of fire intensity,
**Hazardous Fuels** – Live or dead fuels defined by kind, arrangement, volume, location or condition that forms a threat of ignition or

| COMMUNITY NAME | Fire Frequency L/M/H/ | Fire Frequency Points* | Ladder Fuel Presence L/M/H | Ladder Fuel Presence Points | Crown Fire Potential L/M/H | Crown Fire Potential Points | Hazard Rates of Spread L/M/H | Hazard Rates of Spread Points | Hazard Flame Lengths L/M/H | Hazard Flame Lengths Points | Hazard Fuels | Hazard Fuels Points | FINAL RATING L/M/H | TOTAL POINTS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Drummond Knife River | L | 0 | M/H | 15 | L | 0 | M | 10 | M | 10 | Balsam | 3 | L | 38 |
| Two Harbors RR Corridor | H | 20 | M/H | 15 | L | 0 | H | 20 | M/H | 15 | Grass Balsam | 6 | H | 86 |
| Silver Bay RR Corridor | M | 10 | M/H | 15 | L | 0 | H | 20 | H | 20 | Grass Balsam | 6 | M | 76 |
| Thomas Marble Kane Lake | L | 0 | M/H | 15 | M | 10 | M | 10 | M | 10 | Duff Balsam | 3 | L | 48 |
| Toimi | L | 0 | M/H | 15 | M | 10 | M | 10 | H | 20 | Balsam | 3 | M | 58 |
| Finland Murphy City Lax Lake | L | 0 | M/H | 15 | M | 10 | M | 10 | M | 10 | Balsam Grass Blodwn | 9 | L | 54 |
| County Road 3 Corridor | M | 10 | M/H | 15 | L | 0 | M | 10 | M | 10 | Balsam Grass | 6 | M | 56 |
| Lk Superior & State Park Area | L | 0 | L/M | 5 | L | 0 | L | 0 | L | 0 | Grass | 3 | L | 8 |
| Cloquet Lake | L | 0 | M/H | 15 | M | 10 | M | 10 | M | 10 | Duff Balsam Fir | 3 | L | 48 |
| Nine Mile | L | 0 | M/H | 15 | M/H | 15 | M | 10 | M | 10 | Balsam Fir | 3 | L | 53 |
| Sand Lake | L | 0 | M/H | 15 | M/H | 15 | M | 10 | M | 10 | Duff Balsam Fir | 3 | L | 53 |
| Fernberg Trail White Iron Lake | H | 20 | H | 20 | H | 20 | H | 20 | H | 20 | Duff Blowdown | 3 | H | 113 |
| Birch/Slate Lakes | H | 20 | H | 20 | M/H | 15 | M | 20 | M | 20 | Duff Insect & Disease. Balsam | 6 | H | 111 |
| Isabella | L/ M | 5 | H | 20 | H | 20 | M/H | 15 | M/H | 15 | Blowdown Duff Insect & Disease | 6 | H | 84 |
| South | M | 10 | M/H | 15 | M/H | 15 | M/H | 15 | M/H | 15 | Insect & Disease | 3 | M | 78 |
| North | L | 0 | H | 20 | H | 20 | M/H | 15 | M/H | 15 | Duff Insect & Disease Blowdown | 6 | M | 76 |

## b. 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 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 veg.

| Community Names | Economics L/M/H | Economic Pts* | Structure Density L/M/H | Structure Density Pts* | BLDG Hazard L/M/H | BLDG Hazard Points** | Infrastructure L/M/H | Infrastructure Pts* | Community Impact L/M/H | Community Impact Pts** | Land Ownership L/M/H | Land Ownership Pts | Spiritual /Cult. Hist. L/M/H | Spiritual/Cult. Hist. Points | Ecosystem Values L/M/H | Ecosystem Values Points | RATING L/M/H | TOTAL PTS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Drummond Knife River | M/H | 15 | M/H | 15 | M | 10 | L | 0 | M | 10 | H | 20 | M | 10 | M | 10 | M | 110 |
| Two Harbors RR Corridor | H | 20 | H | 20 | M | 10 | H | 20 | H | 20 | H | 20 | M | 10 | L | 0 | H | 158 |
| Silver Bay RR Corridor | H | 20 | M | 10 | M | 10 | H | 20 | H | 20 | M | 10 | M | 10 | L | 0 | M | 133 |
| Thomas Marble/Kane Lake | M | 10 | H | 20 | H | 20 | M | 10 | H | 20 | H | 20 | M | 10 | M | 10 | H | 150 |
| Toimi | L | 0 | M | 10 | H | 20 | M | 10 | H | 20 | M | 10 | M | 10 | M | 10 | M | 110 |
| Finland Murphy City Lax Lake | H | 20 | H | 20 | M | 10 | M | 10 | H | 20 | H | 20 | L | 0 | L | 0 | M | 133 |
| County Road 3 Corridor | M | 10 | M | 10 | M | 10 | L/M | 5 | M | 10 | H | 20 | L | 0 | L | 0 | L | 83 |
| Lk Superior Shore Area & State Parks | H | 20 | H | 20 | M | 10 | H | 20 | H | 20 | H | 20 | H | 20 | H | 20 | H | 188 |
| Cloquet Lake | L/M | 5 | L | 0 | M | 10 | L | 0 | L | 0 | M | 10 | L | 0 | M | 10 | L | 40 |
| Nine Mile | H | 20 | M | 10 | M | 10 | L/M | 5 | M | 10 | M | 10 | L | 0 | M | 10 | L | 98 |
| Sand Lake | M | 10 | L | 0 | M | 10 | L | 0 | L | 0 | M | 10 | L | 0 | M | 10 | L | 48 |
| Fernberg Trail/White Iron Lake | H | 20 | H | 20 | H | 20 | H | 20 | H | 20 | H | 20 | M | 10 | M | 10 | H | 180 |
| Birch/Slate Lakes | M/H | 15 | M | 10 | M | 10 | H | 20 | M | 10 | M | 10 | M/H | 15 | M | 10 | M | 128 |
| Isabella | M | 10 | M | 10 | H | 20 | M | 10 | H | 20 | M | 10 | M | 10 | M | 10 | M | 125 |
| South | L/M | 5 | L | 0 | M | 10 | M | 10 | M/H | 15 | M | 10 | L | 0 | M | 10 | L | 74 |
| North | H | 20 | L | 0 | L | 0 | L | 0 | L | 0 | L | 0 | L | 0 | M | 10 | L | 40 |

## c. Protection Capabilities

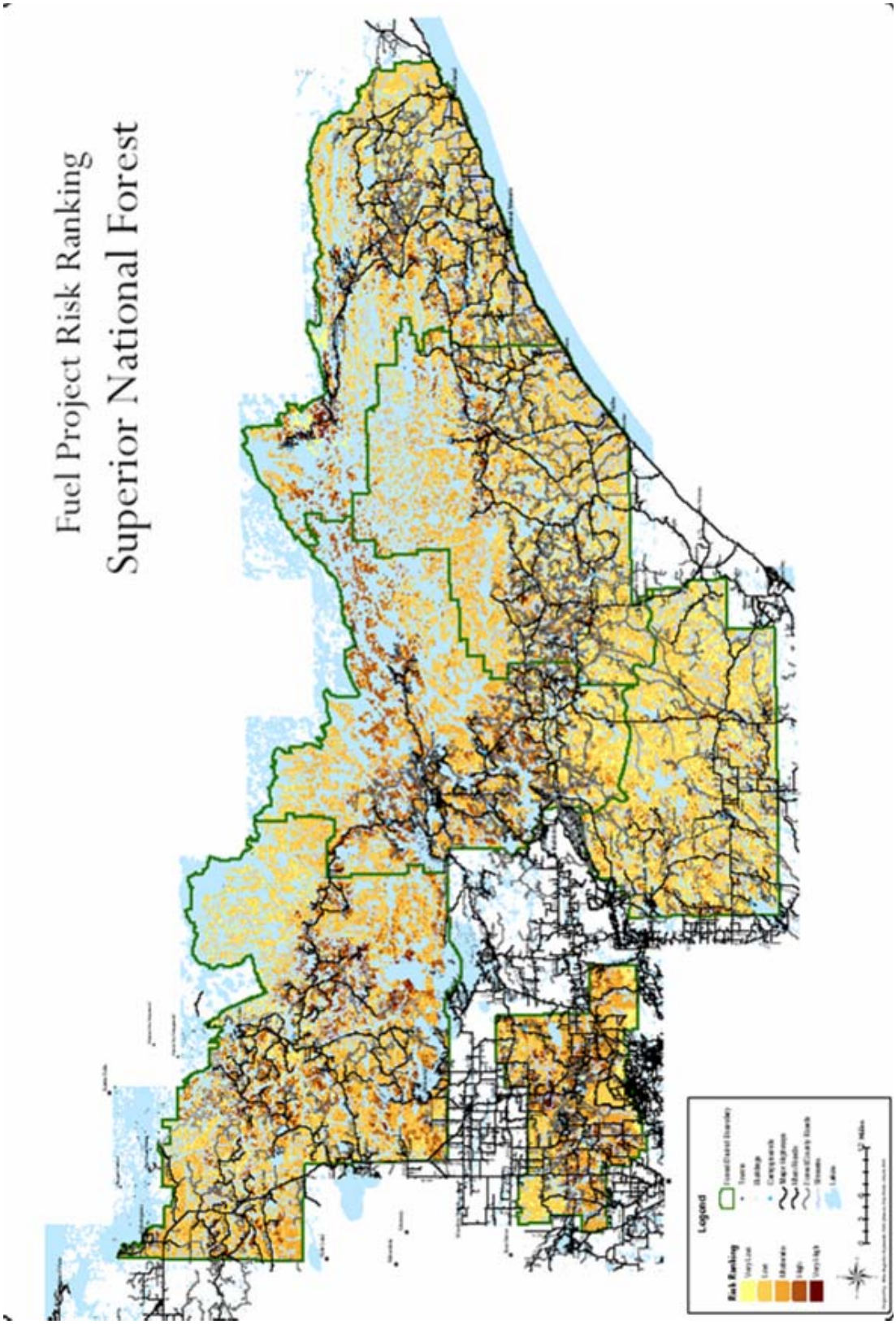
**Interagency Partnerships** – Working relationships with local community, local government and land mgmt agencies.
**Numbers or protection Resources** – Number of resources available for fire suppression needs.
**Access** – Ability of emergency service vehicles to gain access to an area and ease of 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 burning period.

| COMMUNITY NAME | Interagency Partnerships L/M/H | Interagency Partnerships Pts | # 's of Protection Resources L/M/H | #,s of Protection Resources Pts | 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 Pts | Technical Communications L/M/H | Technical Comm. Pts* | FINAL RATING L/M/H | TOTAL POINTS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Drummond Knife River | **L/M** | **5** | **M** | **10** | **M** | **10** | **M** | **10** | **H** | **20** | **L** | **0** | **H** | **20** | **L** | **88** |
| TwoHarbors RR Corridor | **L/M** | **5** | **M** | **10** | **M** | **10** | **L** | **0** | **H** | **20** | **M** | **10** | **H** | **20** | **L** | **88** |
| Silver Bay RR Corridor | **L/M** | **5** | **M** | **10** | **M** | **10** | **M** | **10** | **H** | **20** | **M** | **10** | **H** | **20** | **L** | **98** |
| Thomas/Marble Kane Lk | **L/M** | **5** | **M** | **10** | **H** | **20** | **H** | **20** | **H** | **20** | **M** | **10** | **H** | **20** | **H** | **120** |
| Toimi | **L/M** | **5** | **H** | **20** | **H** | **20** | **H** | **20** | **H** | **20** | **L/M** | **5** | **H** | **20** | **H** | **125** |
| Finland Murphy City Lax Lake | **L/M** | **5** | **M** | **10** | **M/H** | **15** | **H** | **20** | **H** | **20** | **M/H** | **15** | **H** | **20** | **M** | **119** |
| County Road 3 Corridor | **L/M** | **5** | **M** | **10** | **M/H** | **15** | **M** | **10** | **H** | **20** | **M** | **10** | **H** | **20** | **M** | **104** |
| Lk Superior Shore & State Parks | **L/M** | **5** | **M** | **10** | **M** | **10** | **M** | **10** | **H** | **20** | **L** | **0** | **H** | **20** | **L** | **88** |
| Cloquet Lake | **L/M** | **5** | **M** | **10** | **H** | **20** | **H** | **20** | **H** | **20** | **M** | **10** | **H** | **20** | **H** | **120** |
| Nine Mile | **L/M** | **5** | **M** | **10** | **M** | **10** | **H** | **20** | **H** | **20** | **M** | **10** | **H** | **20** | **M** | **108** |
| Sand Lake | **L/M** | **5** | **M** | **10** | **M** | **10** | **H** | **20** | **H** | **20** | **L** | **0** | **H** | **20** | **L** | **98** |
| Fernberg Trail White Iron Lake | **L/M** | **5** | **H** | **20** | **L** | **0** | **M** | **10** | **M** | **10** | **M** | **10** | **H** | **20** | **L** | **85** |
| Birch/Slate Lakes | **L/M** | **5** | **M** | **10** | **M** | **10** | **H** | **20** | **M** | **10** | **M** | **10** | **H** | **20** | **L** | **98** |
| Isabella | **L/M** | **5** | **H** | **20** | **M** | **10** | **H** | **20** | **H** | **20** | **L/M** | **5** | **H** | **20** | **M** | **113** |
| South | **L/M** | **5** | **H** | **20** | **H** | **20** | **H** | **20** | **L** | **0** | **M** | **10** | **H** | **20** | **M** | **110** |
| North | **L/M** | **5** | **H** | **20** | **M** | **10** | **H** | **20** | **H** | **20** | **M** | **10** | **H** | **20** | **M** | **118** |

**d. Community Vulnerability Summary**

| COMMUNITY NAME | HAZARD RATING L/M/H | Total Hazard Points | VALUES PROTECTED RATING L/M/H | Values Points | PROTECTION CAPABILITES RATING L/M/H | Protection Capabilities Points | SUMMARY RATING L/M/H | Total Points |
|---|---|---|---|---|---|---|---|---|
| Drummond Knife River | **L** | **38** | **M** | **110** | **L** | **88** | **L** | **300** |
| Two Harbors Railroad Corridor | **H** | **86** | **H** | **158** | **L** | **88** | **H** | **431** |
| Silver Bay RR Corridor | **M** | **76** | **M** | **133** | **L** | **98** | **M** | **391** |
| Thomas/Marble /Kane Lake | **L** | **48** | **H** | **150** | **H** | **120** | **H** | **405** |
| Toimi | **M** | **58** | **M** | **110** | **H** | **125** | **M** | **363** |
| Finland Murphy City Lax Lake | **L** | **54** | **M** | **133** | **M** | **119** | **M** | **385** |
| County Road 3 Corridor | **M** | **56** | **L** | **83** | **M** | **104** | **L** | **298** |
| Lake Superior Shore Area & State Parks | **L** | **8** | **H** | **188** | **L** | **88** | **M** | **379** |
| Cloquet Lake | **L** | **48** | **L** | **40** | **H** | **120** | **L** | **240** |
| Nine Mile | **L** | **53** | **L** | **98** | **M** | **108** | **M** | **320** |
| Sand Lake | **L** | **53** | **L** | **48** | **L** | **98** | **L** | **235** |
| Fernberg Trail White Iron Lake | **H** | **113** | **H** | **180** | **L** | **85** | **H** | **496** |
| Birch/Slate Lakes | **H** | **111** | **M** | **128** | **L** | **98** | **H** | **428** |
| Isabella | **H** | **84** | **M** | **125** | **M** | **113** | **H** | **404** |
| South | **M** | **78** | **L** | **74** | **M** | **110** | **M** | **318** |
| North | **M** | **76** | **L** | **40** | **M** | **118** | **L** | **273** |

**e. Fuel Risk Rating**



## f. Fuel Models

A fuel model is a description of the type of dead and down fuel present in a forest. It is used to predict fire behavior of an area based on the types and amounts of fuel present. Fuel models for Lake County are classified by two fuel model systems. One is the Fire Behavior Prediction System (FBPS), developed and used in the US. The other is the Fire Prediction System (FPS) developed and used in Canada. FBPS is widely known and understood among the fire community in Minnesota. FBPS is based on fuel models that are commonly found in Western states. Therefore, FPS is more representative of the type of fuel models that are present in Northern Minnesota.

US Fuel Models
There are 13 fuel models within the US fuel model system. There are eight (2, 5, 6, 8, 9, 10, 11, 12) of these fuel models found within Lake County. Only the predominant fuel models are described below. For information on other fuel models descriptions see Anderson, 1982.

*Fuel Model 8*: 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*: This model describes both long-needle conifer and hardwood stands that have not leaved 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.

*Fuel Model 10*: 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.

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. FBP – Fire Behavior Prediction System (Canadian based)**

*Mixed Wood (M1) and (M2)*: Mixed boreal (back or white spruce, balsam mixed with hardwoods) stand types are included in this fuel model. The stands typically contain 75% conifer and 25% deciduous component. 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 latter fuels in these stand types. There is 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 and mixed wood stands. The stands contain 60% dead balsam fir and 40% live mixed wood species. There is continuous leaf litter in deciduous portions of the stand and needle litter and hardwood leaves in the mixed portions. There is 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 in the understory 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 (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. 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.

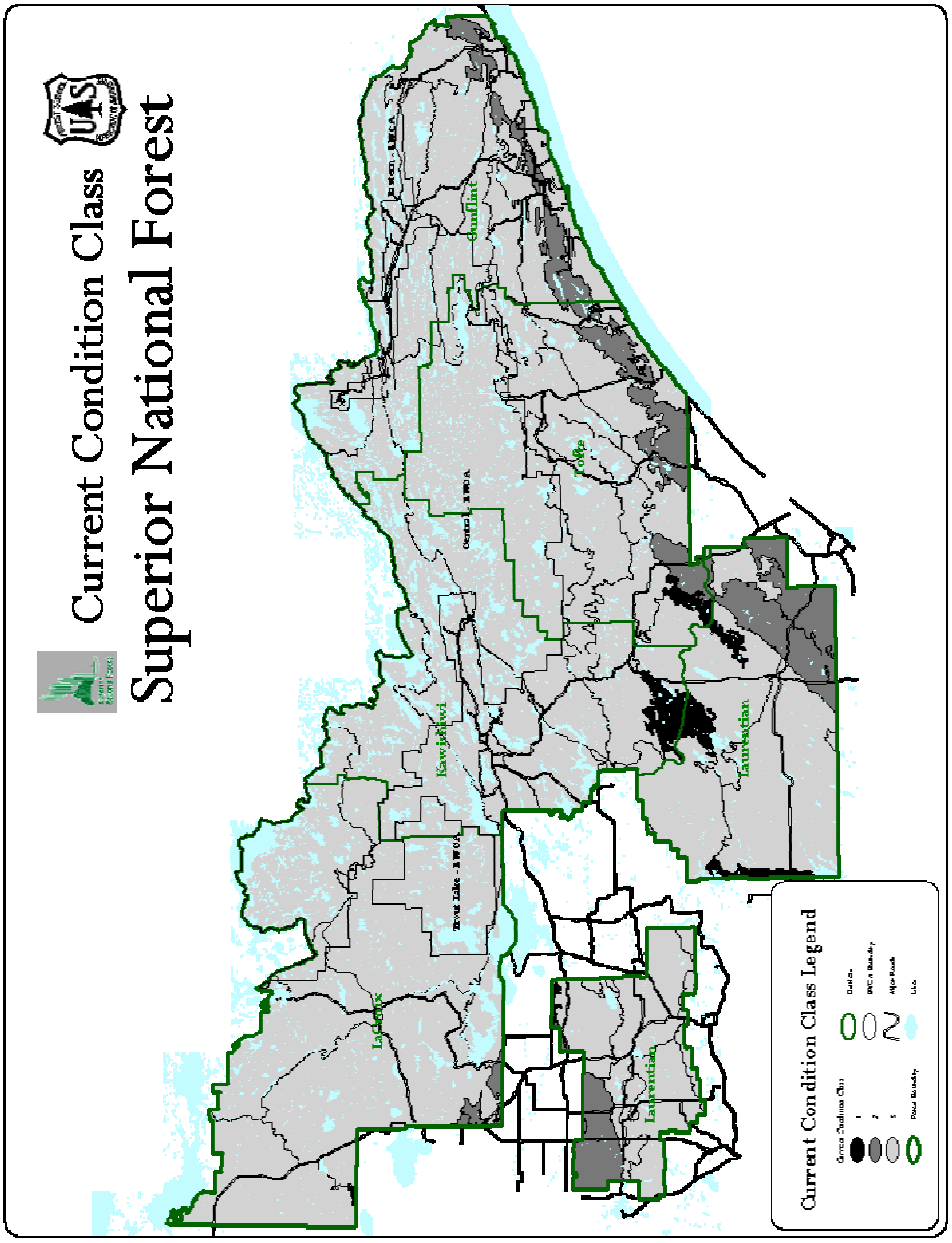
*Deciduous (D1)*: This fuel models describes mature stands of aspen and birch. They generally have continuous leaf litter and very little dead and down fuels in the understory. Fires generally burn in the understory leaf little with little intensity, but can burn more intensely with moderate spread rates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

**h. Buffers**

Buffers 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 were 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 suppression resource to be able to arrive at a fire in the given area. The faster the spread rates, the large 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.

References: Anderson, H.E. 1982. Aids to Determining Fuel Models for Estimating Fire Behavior. USDA Forest Service General Technical Report INT-122, Intermountain Forest and Range Experiment Station, Ogden, Utah. 22p

## i. Condition Class Map




| | *Fire regime* | *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. |

**j. Definition of Fire Regime Condition Class (FRCC)**

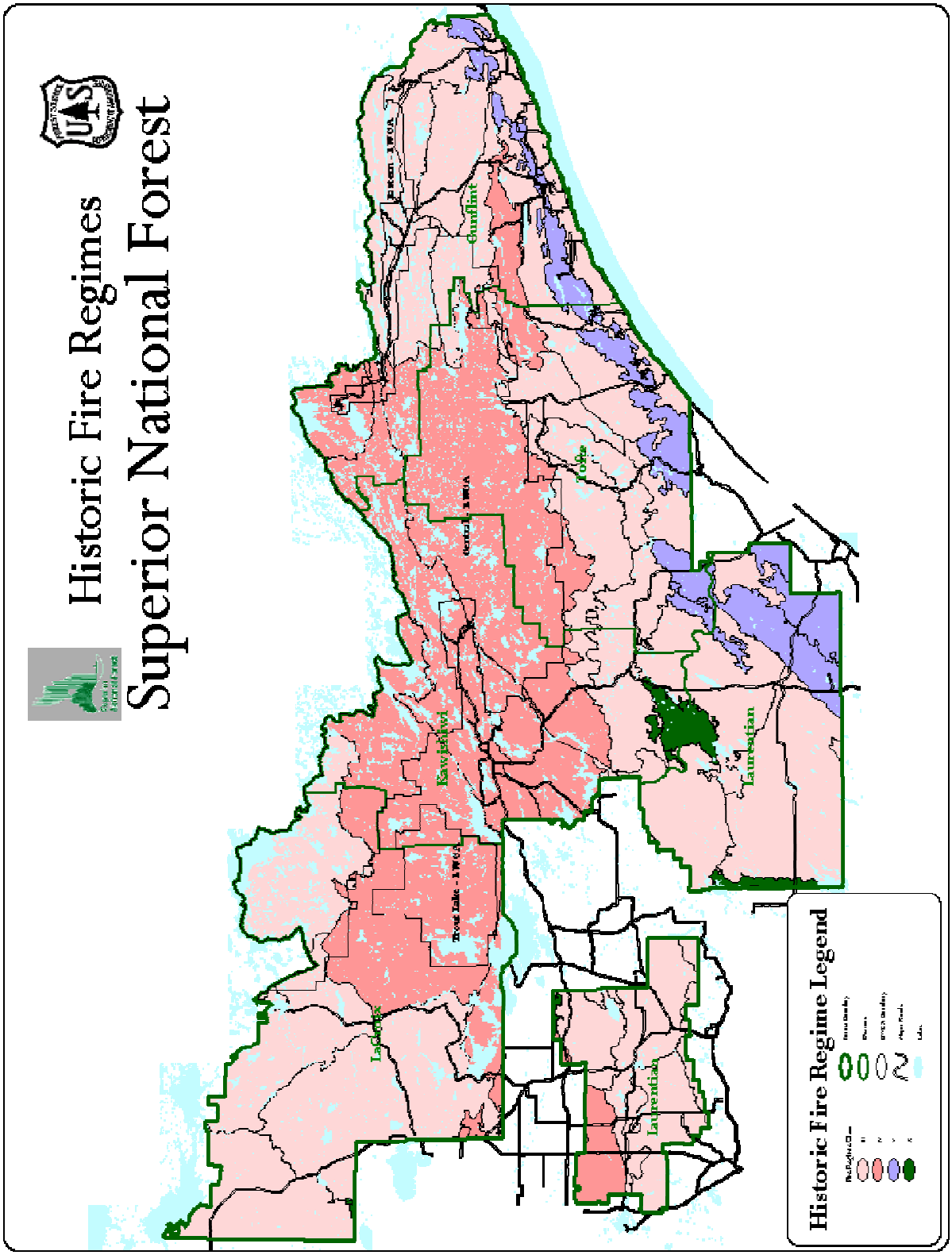
DESCRIPTION: Fire Regime Condition Class is a tool developed to evaluate current against natural landscape characteristics with respect to vegetation-fuel composition and structure, fire frequency, fire severity, and other disturbances.

DEFINITIONS: 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* | *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 |

[1] Fire frequency is the average number of years between fires.
[1] Fire severity is the effect of fire on the dominant overstory vegetation.

**k. Historic Fire Regime Map**



## l. Fire Hazard

Most large wildland fires in Lake County are essentially wind-driven. Slower spreading, surface type fires with occasional torching are the norm, with wind speeds less than 15 mph. Short duration "mini-droughts" quickly dry out shallow ridge top soils, and crown fires will develop on ridges if crown closure and wind speeds are adequate. Single burning period runs of 1 1/2 to 7 miles have been documented. While the presence of numerous lakes might make effective firebreaks under low to moderate conditions, during extreme fire conditions, ¼-mile to ½-mile spotting distances make all but the largest lakes ineffective at stopping forward spread.

Fires in blowdown can be expected to burn at higher, prolonged intensities, with increased daily spread rates as compared to fires occurring prior to the blowdown. However, it is not expected to reach the same rapid spread rates achieved by previous standing timber, with crowning and spotting associated with winds exceeding 10 mph (16km/hr). In addition to the normal threat of wind-driven fire, threat of plume-dominated fire has increased due to available fuel loading from the blowdown. Spotting distances for this type of fire can exceed one to three miles.

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.

## m. Seasonal weather patterns affecting fire behavior

Fire Danger thresholds were studied during the *Fuels Risk Assessment of Blowdown in the Boundary Waters Canoe Area Wilderness and Adjacent Lands*; Leuschen and others, 2000. It was felt that significant differences existed between the spring (April-June) and fall (July-October) fire seasons to break out threshold levels accordingly. The following chart indicates 90$^{th}$ and 97$^{th}$ percentile values for NFDRS indices:

**Spring Fire Behavior Thresholds (May – June)**

| | | |
|---|---|---|
| Energy Release Component (ERC) | 90% = 36 | 97% = 46 |
| Burning Index (BI) | 90% = 46 | 97% = 56 |
| Relative Humidity (RH) | 90% = 20% | 97% = 16% |
| Temperature | 90% = 83 degrees | 97% = 85 degrees |
| 100 Hour Fuels | 90% = 12% | 97% = 10% |
| 1000 Hour Fuels | 90% = 16% | 97% = 14% |
| 20 Foot Wind Speeds | 90% = 12 mph | 97% = 15 mph |

**Fire Behavior Thresholds (July – October) Fall**

| | | |
|---|---|---|
| Energy Release Component (ERC) | 90% = 32 | 97% = 37 |
| Burning Index (BI) | 90% = 36 | 97% = 44 |
| Relative Humidity (RH) | 90% = 30% | 97% = 25% |
| Temperature | 90% = 80 degrees | 97% = 84 degrees |
| 100 Hour Fuels | 90% = 14% | 97% = 12% |
| 1000 Hour Fuels | 90% = 18% | 97% = 16% |
| 20 Foot Wind Speeds | 90% = 12 mph | 97% = 15 mph |

**Canadian Forest Fire Behavior Prediction System Fire Behavior Thresholds**

| | | |
|---|---|---|
| Fire Weather Index (FWI) | 90% = 22 | 97% = 33 |
| Build-up Index (BUI) | 90% = 54 | 97% = 78 |
| Initial Spread Index (ISI) | 90% = 11 | 97% = 17 |
| Drought Code (DC) | 90% = 278 | 97% = 375 |
| Duff Moisture Code | 90% = 41 | 97% = 64 |
| Fine Fuel Moisture Code (FFMC) | 90% = 90.8 | 97% = 93.1 |

# X. Emergency Operations:

**a. Protection Capabilities***
***See each individual community profile for structural fire protection capabilities (starting on page 26)***

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, International Border Agreement Operating Guidelines for Wildfires in the Common Zone, The Governors Executive Order, Superior National Forest Fire Management Plan, Fireline Handbook and The MNICS Mobilization Plan. These plans and handbooks guide our suppression actions whenever a fire is detected.

Minnesota land management agencies (MNICS) have Preparedness Plans which addresses propositioning 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. Members of the Minnesota Incident Command System (MNICS) have also entered into an agreement with the Ontario Ministry of Natural Resources concerning wildfire response along the US-Canadian border.

Interagency Agreement R9-9-96-IA-46 (MIFC Agreement) speaks to 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.

Despite massive changes in fire suppression demands, due to a changed landscape and fuel conditions; these zone agreements will be maintained. Incidents are supported by expanded interagency resources, stronger communication, and as necessary a unified command structure to address wildfire incidents.

**b. Inventory of Fire Protection Resources***
***See each individual community profile for structural fire protection capabilities (starting on page 26)***

Based on a changed forest condition, the USFS, BIA and DNR identified the need for expanded initial attack resources. The following suppression resources are available:

- **4 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 contract for Exclusive Use CL-215's on a yearly basis. These aircraft are normally stationed in Ely, Bemidji, Brainerd and Hibbing depending on fire danger. Contract durations can also very depending on fire danger.

- Conventional water or retardant delivery aircraft- These aircraft are dispatched based on national priority at the time an order is placed.

1. **1 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. This helicopter, based in Ely, is normally available mid May through June.

2. **1 Type 3 Helicopter** – This is a smaller helicopter capable of picking up and dropping 90 gallons of water from almost any water source. This aircraft is based out of Ely from June through October. Type III helicopters are also available in Cloquet and Hibbing during the spring fire season and on a call-when-needed basis.

3. **1 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 the fire. Depending upon activity this aircraft is stationed in Hibbing or Ely.

**4-6 (5 person) Crews –** Crews of this type are available through the MNICS organization. They come from throughout Minnesota and are dispatched or propositioned as fire danger increases.

**2 to 4 Type 4/6 Engines -** Engines of this type are available through the MNICS organization. They come from throughout Minnesota and are dispatched or propositioned to areas as fire danger increases. These are midsize wildland engines that carry a crew of three and up to 750 gallons of water.

**2 Cache Vans –** Two Ryder type trucks stocked with equipment and supplies that improve local area fire response capabilities. These trucks can be ordered and propositioned as needed.

**100 + Sprinkler Systems –** Sprinkler systems are available for structure protection, wet line for back fires or fuel management techniques and staging area protection.

**4 Mobile Radio Support Systems –** Radio support kits supplement existing radio system infrastructure to provide two-way radio communication for emergency response resources.

**Staging areas –** These are locations where crews and equipment would be placed or deployed, including fire camps and command posts.

# XII. Mitigation Action Plan

**a. Plan Implementation:**

Implementation of the Lake County CWPP will continue as a collaborative effort. To facilitate continued collaboration during implementation; a coordinating group representing a variety of stakeholders was established. This coordinating group will meet monthly to define, plan and implement the specific mitigating measures (needed) within the 16 WUI areas. The Coordinating Group is also responsible for yearly revisions and updates to the Lake County CWPP and continuous documentation of completed projects.

**Coordinating Group Members:** The core coordinating group is composed of a County Commissioner, a Lake County Land (forestry) Representative, Lake County Emergency Management Representative, two Department of Natural Resources Representatives (north & south), two Lake County Fire Department Chief's Representatives, a , a Firewise Representative and two U.S. Forest Service Representatives (north & south).

**Adhoc Coordinating Group Members:** On a project specific basis, various technical specialists will be added to the coordination group to help facilitate planning and implementation processes. Adhoc group members may include local fire department members, members of the local citizenry and lake associations, emergency management personnel, biologists, siviculturalists, botanists, fuels and fire specialists, environmental representatives, and others on an as needed basis. These people will serve as temporary consultants or advisors to the team.

**The current Lake County CWPP Coordinating Group** is composed of County Commissioner; Claire Nelson, Lake County Forester; Tom Martinson, Lake County Emergency Management; Sheriff Steve Peterson, Department o Natural Resources; Rob Fasteland, Lake County Fire Chiefs; Lou Gerzin of Ely FD and John Fredrickson of Silver Bay FD, Firewise Representative; William Gleasner, and US Forest Service Representative; Brian Jenkins.

Members of the public can reach the Coordination group through the Lake County Board of Commissioners by e-mail at wilma.rahn@co.lake.mn.us or by phone at 218-834-8320 or in person or by mail at the Lake County Courthouse, 601 Third Avenue, Two Harbor, MN 55616

The Coordination group will focus on the three top Wildland/Urban Interface (WUI) priority areas listed in the plan, but will consider additional projects as priorities require. The team will set standards for implementation of fuels reduction and hazard mitigation projects within each of the WUI areas. As the team moves toward plan implementation, 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.

As the team looks towards a specific WUI, their first step will be to go to the pages in the plan that outline each community (see pages 26 – 62), these community descriptions were developed by a broad based community group. The following areas were addressed in general and these subjects along with others will be addressed in more specificity as individual implementation projects are designed. Areas to be addressed include: access; fuels and fire hazard; 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

Project decisions for implementation will be made on a case by case basis specific to each WUI area. The plan is that each representative Coordination group member will bring specific information back to their representative groups and agencies (that they represent) to make sure all stakeholders are informed. Throughout the planning process, Coordination group members will also seek information and feedback from the public to ensure the best possible actions occur in support of the community.

The development of this CWPP has built closer relationships between communities, fire departments, the County, State and Federal partners. This cohesive team 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 all hazard and risk planning. In the event of a hazard situation, all entities within the county will be better prepared to work with one another to best meet the needs of local citizens.

**b. Current Activities and Projects.**

Based on community efforts and the hazard and risk assessments (page 68), three top priority Wildland/Urban Interface areas were selected. Priority areas currently being addressed are: Two Harbors Railroad Corridor (page 61); Fernberg Trail/White Iron Lake Area (page 36); and Birch/Slate Lake Area (page 26) Community members wishing to comment and give suggestions for actions in the WUI areas listed above should contact the Lake County CWPP Implementation Board (see address previously listed in this section)

**c. Fire Prevention and Education (Community Outreach)**
**(Parts taken 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.

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**

1. Reduce human-caused wildfires throughout Lake County.
2. Provide a continuing fire prevention and education programs.
3. Work with communities to coordinate Firewise activities within the County.

**2. Key Prevention Actions:**

1. Identify and update successful education programs to promote the fire prevention message.

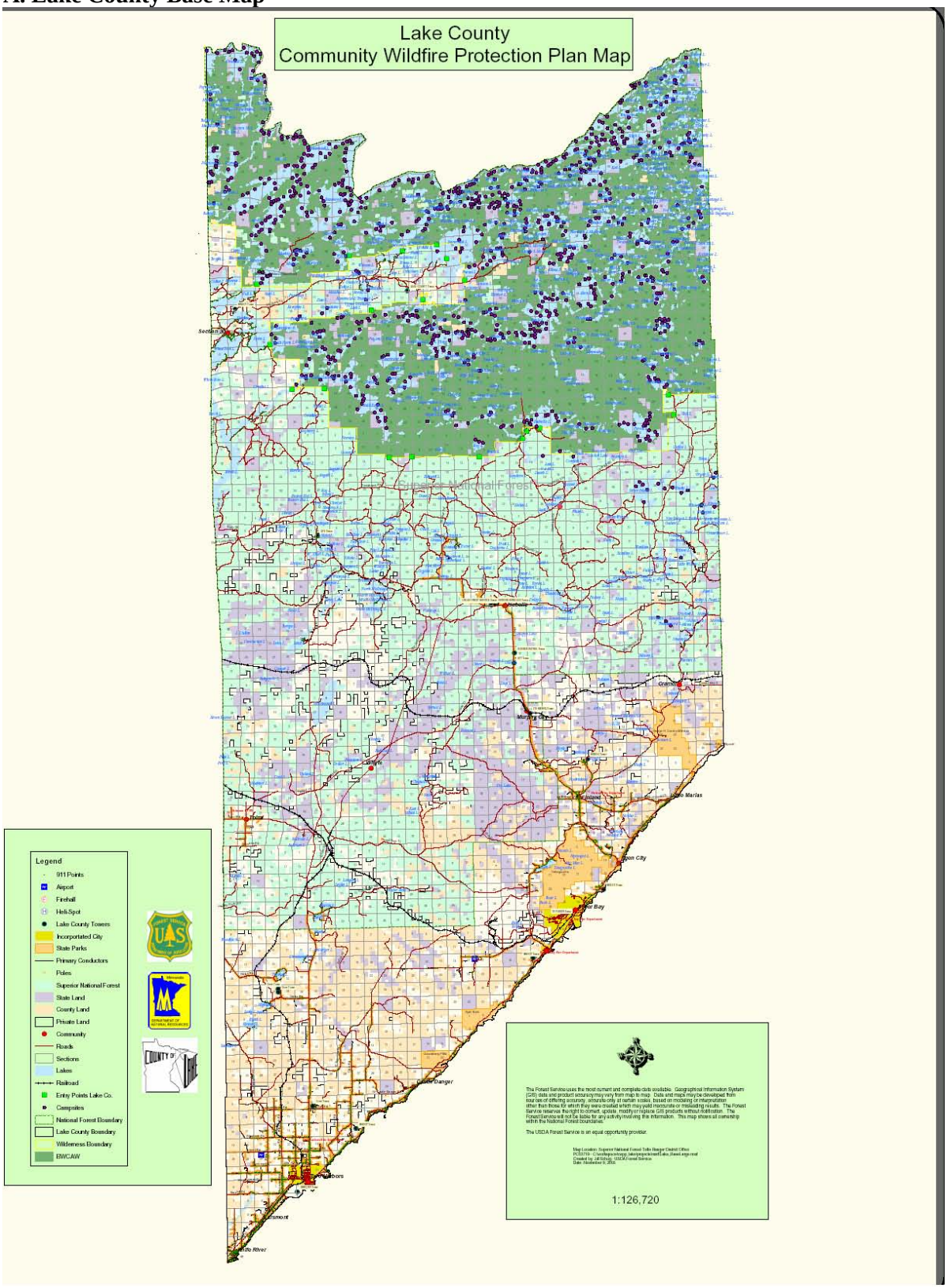
2. Encourage fire prevention messages at local community celebrations and events. Community member participation at local events is a good way to spread the fire prevention message.
3. Keep fire prevention messages in schools focusing on grades K-2 for Smokey Bear Programs, grades 3-6 for Good Fire Bad Fire messages and Firewise messages in secondary school. Coordinate school visits so that all the schools are visited by a representative on an annual basis.
4. Promote Firewise at the local level. Work with Lake County fire departments and landowners concerning Firewise, and what can be done to improve defensible space. Share Firewise information with homeowners.
5. Develop and use age appropriate fire prevention themes that address fire issues in Lake County.
6. Provide the public alternatives to debris burning such as recycling and composting materials.
7. Educate the public on burning permit requirements, safe burning techniques, weather conditions, and fire use.
8. Foster public, interagency and interdisciplinary cooperation when identifying and developing hazardous fuels mitigation measures.
9. Work with communities on pilot projects such as brush disposal sites or starting a burn barrel amnesty program.
10. Reduce the number of wildfires caused by burning barrels and unattended campfires.

**d. Monitoring and Futuring**: This will be tracked by the implementation team.

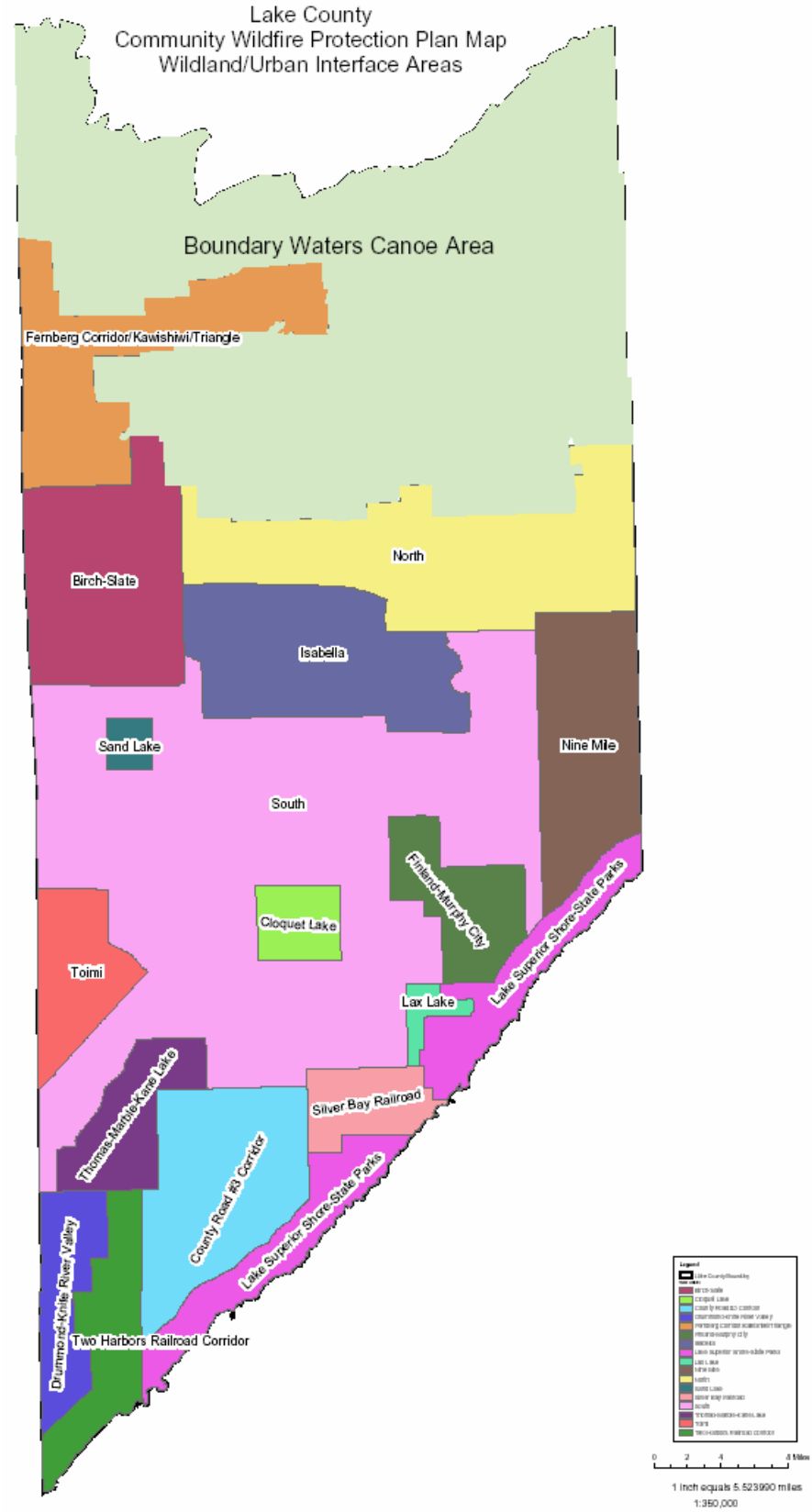
| Projects | Recommended Actions | Who | Timelines |
|---|---|---|---|
| Implementation Team | Prioritize Hazardous Fuel Treatments Annually | | Annual |
| | Meet monthly to ensure Lake County CWPP project implementation | | Ongoing |
| | Encourage local communities participation in projects | | Ongoing |
| | Where possible track homeowners fuel mitigation projects | | Annual |
| | Track veg mgmt projects as they are implemented | | Ongoing |
| | Revise and update the Lake County CWPP as needed | | Ongoing |
| | Look for stewardship contract opportunities to reduce hazards. | | Annual |
| | Evaluate opportunities for biomass marketing and hazardous fuel reduction and utilization | | Annual |
| Fire Prevention | Track prevention and education programs to document prevention objectives. | | Annual |
| Fire Departments | Identify and provide cross departmental training and opportunities | | Annual |
| Emergency Mgmt | Review emergency management policies/evacuation procedures | | Annual |
| | Evacuation exercise; focus on how well the evacuation procedure functions | | 2 years |
| Firewise | Track grant dollars and projects directed to citizens with special needs | | Annual |
| | Work at completing assessments in priority areas, and other areas resources allow. | | On going |
| | Work with Lake County communities on grant processes. | | Annual |
| | Monitor # of evacuation corridors/roads treated for fire on county, private, state and federal roads | | Annual |
| | Track fuels reduction grants | | Annual |

**APPENDIX:**

## A. Lake County Base Map



## B. Lake County WUI Community Map



**C. Fire Department Contact Numbers:**

| FIRE DEPARTMENT CONTACTS | | | | | |
|---|---|---|---|---|---|
| **FIRE DEPT.** | **ADDRESS** | **CITY** | **ZIP** | **CHIEF** | **DAY PHONE** |
| **Beaver Bay** | **PO Box 416** | **Beaver Bay** | **55614** | **Jenny Stevens** | **218 220-1237** |
| **Babbitt** | **71 South Drive** | **Babbitt** | **55706** | **Glenn Anderson** | **218 827-2611** |
| **Brimson/Toimi** | **2493 Hwy 44** | **Brimson** | **55602** | **Paul Tine** | **218 848-2435** |
| **Ely** | **209 E. Chapman St.** | **Ely** | **55731** | **Lou Gerzin** | **218 365-3227** |
| **Finland** | **PO Box 566** | **Finland** | **55603** | **Peter Walsh** | **218 663-7212** |
| **Morse/Fall Lake Township** | **PO Box 660** | **Ely** | **55731** | **Ted Krueger** | **218 365-5583** |
| **Silver Bay** | **7 DAVIS DRIVE** | **Silver Bay** | **55614** | **John Fredrickson** | **218 226-3418** |
| **Two Harbors** | **522 First Ave** | **Two Harbors** | **55616** | **Steve Blettner** | **218 834-8816** |

**D. Emergency Contacts**

**Lake County Sheriff**

Steve Peterson
601 West 2nd Street
Two Harbors, MN 55616
218-834-8385
Steve.peterson@co.lake.mn.us

## E. Grant and Funding Process

**Northeastern Area Non-Formula Funding Opportunities FY 2006**

*(Amounts and Dates May Change Annually)*

| ***Forest Health Program*** | |
|---|---|
| ***Forest Health Monitoring – Evaluation Monitoring*** | |
| ***Purpose:*** | **Evaluate forest health problems detected on existing FHM plots that: 1) are not well understood or 2) are fire-related.** |
| ***Amount Available:*** | *$700,000 Base EM ($240,138 current projects, and $459,862 new projects to include $150,000 regional projects). $576,000 Fire Plan EM ($267,608 current projects and $308,392 new projects).* |
| ***Eligibility:*** | *Any organization: state cooperators, universities, other governments, scientists, etc.* |
| ***Timing:*** | *The St. Paul Field Office actively solicits projects and a call letter is also sent out about Sept. 15. A review process is conducted in Oct. to select the top proposals for competition at the National level. Those projects that are more regional in scope can be selected for consideration at the Regional level. Projects are selected in January and funding is awarded when the final national budget allocations are made.* |
| ***Match:*** | *Not required for projects within Forest Service, but for projects outside 50/50.* |
| ***Contact:*** | *Manfred Mielke, St. Paul Field Office, 651/649-5267.* ***mmielke@fs.fed.us***<br>**FHM website:** http://www.na.fs.fed.us/spfo/fhm/index.htm |
| ***Special Technology Development Projects - STDP*** | |
| ***Purpose:*** | *Restore and protect the health of America's forests through rapid implementation of research findings.* |
| ***Amount Available:*** | *Funding varies by budget year. Historically, about $1 million nationally for new and continuing projects.* |
| ***Eligibility:*** | *Any organization can apply for funding, but each proposal needs a Forest Health Protection staff member as the lead contact.* |
| ***Timing:*** | *Call letter in July. Pre-proposals due in mid-August. Selected proposals (up to 5 from NA) due in October. Proposals ranked in December.* |
| ***Match:*** | *No set amount, but some contribution required.* |
| ***Contact:*** | *Michelle Frank, Area Office, Newtown Square, PA, 610/557-4113.* ***mfrank@fs.fed.us***<br>*website:* ***http://stdpweb.fs.fed.us/stdp/*** |

| *Urban and Community Forestry* | |
|---|---|
| ***National Urban and Community Forestry Advisory Council - NUCFAC*** | |
| ***Purpose:*** | *Categories: Change annually. Past categories included Education, Communication, and Outreach Projects; Research and Technology Development Projects; and Urban and Community Forestry for and with Underserved Populations.* |
| ***Amount Available:*** | *Approximately $1 million nationally.* |
| ***Eligibility:*** | *Any non-federal organization. Collaboration with Federal agencies is encouraged.* |
| ***Timing:*** | *Request for Pre-proposals first week of September. Pre-proposals due in November, reviewed in February. Full proposals due in April. Selections made in June. Funding available by September.* |
| ***Match:*** | *50/50* |
| ***Contact:*** | *Suzanne del Villar, Executive Assistant to NUCFAC, 909/585-9268.* ***sdelvillar@fs.fed.us***<br>*NUCFAC website:* ***http://www.treelink.org/nucfac*** |

| *Urban and Community Forestry - continued* | |
|---|---|
| ***Midwest Center for Urban and Community Forestry*** | |
| ***Purpose:*** | *Promote improved health, natural resource protection, and better management of urban forests through partnerships, innovative technologies, and cooperative programs.* |
| ***Amount Available:*** | *Unknown* |
| ***Eligibility:*** | *State and local governments, universities, and non-profits located in the 7 midwestern states or that partner with organizations in the Midwest.* |
| ***Timing:*** | *Call letter sent Aug./Sept. Pre-proposals due Oct./Nov. Pre-proposals ranked in December.* |
| ***Match:*** | *50/50* |
| ***Contact:*** | *Jill Mahon, St. Paul Field Office, 651/649-5253.* ***jilljohnson@fs.fed.us***<br>**Website:** http://na.fs.fed.us/urban |

| ***Economic Action Programs*** | |
|---|---|
| ***Wood Education and Resource Center*** | |
| ***Purpose:*** | *Focus on projects to enhance opportunities for sustained forest products production for primary and secondary hardwood industries located in the eastern hardwood forest region. Priority will be given to proposals that accomplish one or more of the following: maintain the economic competitiveness of hardwood industries; bring marketing and processing information and technology to existing and emerging wood products businesses including urban wood and hazardous fuels projects, and use of biomass as an energy source; encourage the adoption of new technologies; support entrepreneurs and start-up businesses; and address global issues such as phytosanitation of wood packaging materials and invasive species such as the emerald ash borer.* |
| ***Amount Available:*** | *Amount varies by budget year. Focus on Cooperative Agreements.* |
| ***Eligibility:*** | *Anyone, with a preference for State Forestry Agency and non-profit organizations.* |
| ***Timing:*** | *Linked to the developmental needs of the WERC* |
| ***Match:*** | *50/50* |
| ***Contact:*** | *Ed Cesa, Morgantown Field Office, 304/285-1530.* ***ecesa@fs.fed.us*** |

| ***Integrated Program Funding*** | |
|---|---|
| ***NA/NE Civil Rights Committee Special Project Fund*** | |
| ***Purpose:*** | Strengthen and enhance Area and Station civil rights outreach activities through expressed need, current emphasis, long-term value, or imaginative integration of civil rights concerns with NA/NE missions. |
| ***Amount Available:*** | *$15,000 Area-wide in FY2006.* |
| ***Eligibility:*** | *NA/NE staff and partners. Projects with partners must show benefits to NA/NE mission.* |
| ***Timing:*** | *Biannual grants: Spring grants call letter in February. Due date in March. Ranking of proposals in April. Fall grants call letter in September. Due date in October. Ranking of proposals in November.* |
| ***Match:*** | *Matching funds may be required from non-Forest Service entities.* |
| ***Contact*** | *Victor Mercado, Area Office, Newtown Square, PA 610/557-4036.* ***vmercado@fs.fed.us*** |

| ***Cooperative Fire Protection Program*** | |
|---|---|
| ***State Fire Assistance - National Fire Plan Hazard Mitigation Funds*** | |
| ***Purpose:*** | *Support state coordinated hazard mitigation activities in the wildland-urban interface, focused on reducing property loss, decreasing fuels hazards, and increasing public awareness, developing fire plans and citizen-driven solutions in rural communities.* |
| ***Amount Available:*** | *$3 million Area-wide.* |
| ***Eligibility:*** | *State Forestry agency or any nonprofit organization authorized by the State Forestry Agency. Focus on high risk Wildland Urban Interface communities.* |
| ***Timing:*** | *Call letter in late September/early October. Proposals due mid-December. Ranked in January.* |
| ***Match:*** | *50/50* |
| ***Contact:*** | *Alan Zentz, Area Office, Newtown Square, PA, 610/557-4108.* ***azentz@fs.fed.us*** |
| ***Volunteer Fire Assistance - VFA*** | |
| ***Purpose:*** | *Provides funds for fire equipment, training, and initial fire department organization to fire departments serving small communities.* |
| ***Amount Available:*** | *Amounts available to states vary by budget year. Typical grants are ~$5,000.* |
| ***Eligibility:*** | *Any fire agency or volunteer fire department that serves a community of 10,000 or less.* |
| ***Timing:*** | *Call letters vary by state. Generally initiated in the Spring. Proposal due in late Spring. Award in early Summer.* |
| ***Match:*** | *50/50* |
| ***Contact:*** | *Your State Forester -* ***http://www.stateforesters.org/***<br>**VFA website:** http://www.fs.fed.us/fire/partners/vfa/<br>**Jan Polasky, Area Office, Newtown Square, PA, 610/557-4144.** jpolasky@fs.fed.us |

***Rev. 2/6/06***

Web site information:
USDA Forest Service
Northeastern Area, State and Private Forestry
http://na.fs.fed.us
Northeastern Area staff directory:
http://na.fs.fed.us/staff/index.cfm
k/spfo/programs/grants/FY06_nonformula_funding_list.doc

**Web site information: See Appendix G**

Congress has provided increased funding assistance to states through the USDA Forest Service State and Private Forestry programs since 2001. The focus of much of this additional funding was mitigating risk in Wildland Urban Interface (WUI) areas. State Fire Assistance (SFA) funding is available and awarded through a competitive process with emphasis on hazard fuel reduction, information and education, and community and homeowner action. This portion of the National Fire Plan was developed to assist interface communities manage the unique hazards they find around them. Long-term solutions to interface challenges require informing and educating people who live in these areas about what they and their local organizations can do to mitigate these hazards.

The 10-Year Comprehensive Strategy focuses on assisting people and communities in the WUI to moderate the threat of catastrophic fire through the four broad goals of improving prevention and suppression, reducing hazardous fuels, restoring fire-adapted ecosystems, and promoting community assistance. The Wildland Urban Interface Grant may be used to apply for financial assistance towards hazardous fuels and educational projects within the following four goals.

Goal #1 – Improve Prevention in the Interface:
Expand outreach and education about wildfire prevention in the interface through the use of programs such as Firewise in order to reduce the risks to homes and private property. Homeowners and local governments bear much of the responsibility for improving the defensibility of homes in the interface but may lack the knowledge and information regarding what needs to be done and how to accomplish it. Additionally, they may lack the experience and expertise to deliver educational outreach programs to individuals and communities. States can provide the leadership needed to coordinate, develop and distribute educational materials and the partnering between homeowners, communities, insurance companies and government agencies.

Examples of projects that qualify (not all inclusive):

1. Firewise or similar programs 2. Living with Fire newspaper inserts
3. Fire education such as Project Learning Tree 4.Pamphlets, brochures, handouts

Goal #2 – Reduce Hazardous Fuels:
Fuel reduction projects and vegetation treatments have been identified as a means of mitigating wildfire hazards. These are projects that remove or modify fuels in and/or adjacent to WUI development. Effective fuels mitigation treatments can be implemented across jurisdictional boundaries, on adjoining private lands, or within the respective communities. The states can facilitate the required coordination, collaboration, and partnering of these projects. Projects of this type include fuel breaks, thinning, pruning, landscape modifications, etc. The overall purpose is to modify or break up the fuels in such a way as to lesson catastrophic fire and its threat to public and firefighter safety and damage to property. Project proposals should consider all elements required to implement treatments on the ground, which includes acquiring the necessary permits and consultations needed to complete plans and assessments.

Examples of projects that qualify (not all inclusive):

- Defensible space around homes and structures
- Shaded fuel breaks
- Fuels reduction beyond defensible space
- Removal of slash including piling and burning; mulching; grinding; etc.
- Prescribed fire

Goal #3 – Restore Fire-adapted Ecosystems:
Millions of acres of forest and rangeland face high risks of catastrophic fire due to deteriorating ecosystems health and drought. One way to prevent future large, catastrophic wildfires from threatening communities is by carrying out appropriate treatments (such as prescribed burning or thinning) to restore and rehabilitate forest and grassland health in and adjacent to the WUI. Such treatments have reduced the

severity of wildfires, and may have additional desirable outcomes, such as providing sustainable environmental, social and economic benefits. Projects require planning, consultation, design, and sometimes contracting, and may take several years to implement completely. Monitoring and evaluating effectiveness of treatments is usually necessary.

Examples of projects that qualify (not all inclusive):

- Fuels reduction beyond defensible space
- Removal of slash including piling and burning; mulching; grinding; etc.
- Prescribed fire
- Thinning
- Promoting the establishment of native plants

Goal #4 – Promote Community Assistance:

Creating conditions in and around individual structures that will limit the transmission of fire from wildland to structures is basic to reducing the fire hazard in the Interface. This is a responsibility of homeowners and communities. The states can facilitate these actions through safety inspections; demonstration projects; training and education of homeowners, officials and service personnel; fostering fire safe groups; and coordination of projects, services, and supplies.

Examples of projects that qualify (not all inclusive):

- Homeowner-association sponsored fuels reduction projects
- Municipal, fire district, county coordination of slash disposal
- Multi-jurisdictional hazard reduction projects

States are encouraged to identify local needs and submit proposals using one or a combination of these grant focus elements. Needs in any community depend on local fuels, topography, organization, public knowledge of the issues, and the will to address the issues?

Examples of Projects that DO NOT Qualify (not all inclusive):

- Purchase of fire department equipment (try VFA grant program)
- Small business start-up funding
- Research and development projects (try Economic Action Program)
- Preparedness and suppression capacity building (other SFA funds)

Funding Parameters:

Each grant request will be limited to a maximum of $500,000.
No state will receive more than 15% of the funds available in the west.
At least 25% of all available grant funds must be awarded to new projects.

Applications will be screened for eligibility based on:

1) A 50/50 match. This means that the allocated grant amount must be matched in full by the recipient using a non-federal source. This matching share can be either soft match (which includes training, donated time, etc.) and/or hard match (which is actual dollars spent other than grant funds within the specified scope of work.)

2) Meeting the Hazard Mitigation Criteria in one or more of the following areas:

a) Fuels: Recipients may facilitate and implement mitigating fuel treatments in or adjacent to identified fire prone communities to reduce the threat of wildfire to communities. This can be conducted across jurisdictional boundaries, on adjoining private lands, or within respective communities, including all components necessary to plan and implement the project.

b) Education: Recipients can provide leadership to coordinate, develop, and distribute wildland urban interface education programs in association with insurance companies, communities, local government agencies, and other partners. Informational and educational programs must target prevention and mitigation of loss. Programs should lead to the use or establishment of one or more fire program

elements such as fires safety codes, implementation of Firewise safety practices, fuels treatments within fire prone communities, or community planning to define fire safe actions suited to the local ecosystem.
c) Planning: Priority will be given to those activities that tie back to an established community fire plan. Community Wildfire Protection Plans (CWPP's) are created by local developments and may address issues such as wildfire response, hazard mitigation, community preparedness, or structure protection-or all of the above. The process of developing these plans can help a community clarify and refine its priorities for the protection of life, property, and critical infrastructure in the wildland-urban interface.

Eligible applications will then be scored based upon:
1) Is this project doable? (time, goals, etc.)
2) Is this project measurable? (# of acres treated, # of education/outreach programs, etc.)
3) Is the applicant clearly showing collaborative elements and partners? (Confidence level)
4) Is this project implemented from an existing community plan or is the request to develop the plan?
5) Is the applicant clearly showing future maintenance for this project?
Application Due Dates:

**The standard application form for 2006 must be used.**
This deadline applies to prioritized applications from the states.
Each state should set its own internal deadlines for its cooperators, partners, and client's applications so they may be reviewed and prioritized at the state level before submission to **Steve Winward** by the deadline above.

## F. **Glossary**

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

**ISO** – Insurance Services Office – ISO 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.

**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.

**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.

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

**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 an individual fire fighting resource from its assigned standby location 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.

**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.

**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** - trees, brush and other vegetative materials.

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

## G. Website Information

### a. Fire Information Resources on the Web:

Lake County Community Wildfire Protection Plan: www.co.lake.mn.us
Local Fire Information: www.mnics.org
Healthy Forest Initiative Implementation Guide: www.fs.fed.us/projects/hfi/field-guide/
Communities at Risk Field Guide: www.stateforesters.org/reports/COMMUNITIES AT RISKFG.pdf
The National Fire Plan: www.fireplan.gov
Fire Safe Councils: www.firesafecouncil.org
Firewise: www.firewise.org
Firewise Minnesota: www.dnr.state.mn.us/firewise/index.html
National Association of State Fire Marshals: www.firemarshals.org
Federal Emergency Management Agency: www.fema.gov

http://www.ncrs.fs.fed.us/research/default.asp#fire
http://www.fs.fed.us/eacc/predictive_services/index.shtml
http://silvis.forest.wisc.edu/projects/WUI_Main.asp
http://wui.forest.wisc.edu/website/wui/viewer.htm

For localized information about Minnesota fire activity and fire conditions log onto *www.mnics.org*. This interagency website contains state and national daily wildfire situation updates, wildfire location maps, fire weather forecasts, National Weather Service homepages, statewide fire danger ratings, BWCAW blowdown restriction information, w

### b. Grant Information websites:

Northeastern Area, State and Private Forestry
www.na.fs.fed.us

Northeastern Area, State and Private Forestry
St. Paul Field Office (assisting Illinois, Indiana, Iowa, Michigan, Minnesota, Missouri, Wisconsin)
www.na.fs.fed.us/spfo/

St. Paul Field Office staff directory:
www.na.fs.fed.us/spfo/staff/staffdir/who.htm

www.firewise.org

www.dnr.state.mn.us/firewise/index.htl

### *H. 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.