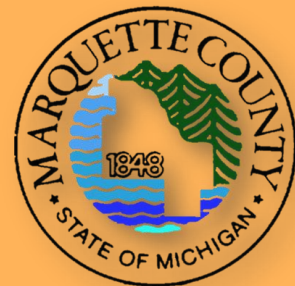




# Marquette County Community Wildfire Protection Plan

July, 2014

Prepared by the Marquette County  
Resource Management Department,  
Planning Division



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## **I. Background and Planning Process**

### **Introduction**

Community Wildfire Protection Plans were established under the Healthy Forests Restoration Act of 2003. That act followed the Disaster Mitigation Act of 2000 and the National Fire Plan of 2001. The laws and plan were a response to the rising costs of fighting wildfires, as development increasingly encroached on forested areas. Governments at all levels have been searching for ways to better protect the public and to reduce the costs of responding to wildfires. By taking steps to reduce wildfire risk, communities can accomplish both goals.

Particular interest is focused on the Wildland Urban Interface (WUI). This is the zone where homes are built near or among lands prone to wildfire. In Marquette County, the largest population in the Upper Peninsula lives in an area that is 85 per cent forested. The WUI is very large.

The Community Wildfire Protection Plan supports the Marquette County Hazard Mitigation Plan, which was adopted in 2008 and is currently being updated. That plan identifies wildfires as the hazard with the third greatest risk in Marquette County, after severe winter weather and public health events (disease). Indeed, like much of Michigan, Marquette County has a long history of fires.

### **Planning Process**

On August 20, 2013, a meeting of the Marquette County Firefighters Association was held at the new Marquette Township Fire Hall, near Marquette. At that meeting, the plan was introduced, and preliminary maps showing fire risk and water sources were distributed for feedback. Some fire officials responded with corrections or additions to the maps. The local FIREWISE educator, from MSU Extension, also gave a brief talk on services available through his office.

A Firewise education session was held in cooperation with MSU Extension and the Marquette County Conservation District, February 25, 2014, at the Marquette Township Fire Hall, Marquette, MI (Figure 1). About a dozen citizens showed up on a very cold night to hear about Firewise, wildfire mitigation planning, and private forest management. Feedback was positive, especially because the workshop focused on actions that individual property owners could take.



Figure 1. FIREWISE education meeting, February 25, 2014, at the Marquette Township Fire Hall, Marquette, MI.



Figure 2. Meeting of the Marquette County Firefighters Association, June 17, 2014, at the Forsyth Township Emergency Services Building, Gwinn, MI.

On June 17, 2014, the plan was discussed at length at a meeting of the Marquette County Firefighters Association, at the Forsyth Township Emergency Services Building in Gwinn (Figure 2). Representatives from the DNR also attended and participated in the meeting, which was well-attended by firefighters from throughout Marquette County. Specific action items were discussed, as well as operational problems in fighting wildfires and hurdles in educating the public about wildfire mitigation. An overwhelming concern of the firefighters was access to water supplies.

Concurrent with development of the Community Wildfire Protection Plan, numerous meetings with township and city officials across the county meetings were held to discuss the update of the county's

Hazard Mitigation Plan. As one of the county's top hazards, wildfire was always a topic. Fire officials were present at many of the meetings.

## **II. Community Description**

### **Introduction**

Marquette County's area of 1860 square miles makes it the largest in Michigan. Approximately 85% of the County is covered in forest lands. Woven into this forested landscape is the Upper Peninsula's largest population, primarily focused along the US-41 corridor from Harvey to West Ishpeming. Beyond the corridor, however, dispersed development has led to a large Wildland Urban Interface (WUI). These factors combined in 2013 to trigger more wildfires in Marquette County than in any other county in Michigan.

The area's forests are essential part of the landscape. Not only is forestry one of the mainstays of the local economy, but tourism and "camps" are part of the way of life in Marquette County. Without healthy forests, the area would lose much of the aesthetic value that makes it a destination.

### **Population**

Of Marquette County's 67,634 people, 32,393 live in the cities of Marquette, Negaunee, and Ishpeming. Sixty-six per cent of the County's population lives within a mile of US-41. The number of people living outside the cities has steadily grown, increasing population pressure on the WUI.

Like the rest of the country, Marquette County is experiencing an aging population. Many people retire to the woods for the active phase of their retirement, and then move to the cities late in life. Baby Boomers have retired to houses in the woods, often converting camps to year-round residences. This has increased the population of the WUI. Because people often prefer to be away from neighbors, the new development tends to be very dispersed, spreading risk more effectively through the WUI.

### **Economic Setting**

Marquette County's economic development began with the discovery of iron ore at Negaunee in the 1840s. Since that time, natural resource extraction has been important to the regional economy. As the largest city in the Upper Peninsula, Marquette has developed into a regional shopping, health care, and educational center.

While forestry is not as large a proportion of the economy as it once was, it remains important. In addition to numerous logging operations in the County, a few wood products industries operate in the area. At K.I. Sawyer, Potlatch operates a sawmill and Michigan Renewable Carbon produces wood fuel pellets. Robins Flooring in Ishpeming is also dependent on the steady flow of wood products for its supply.

### **Transportation**

Marquette County, like the rest of the Upper Peninsula, does not have a dense, well-connected road network. Many of the roads were built for natural resource extraction, and therefore are more focused



on local rather than regional connections. This creates a problem for fire response, as the routes to fires can be round-about. In addition, many roads are in poor condition, further hampering accessibility. Access to back-country locations is often by way of logging roads, which are temporary and have widely-varying conditions.

## **Physical Setting**

Marquette County lies on the south shore of Lake Superior, which strongly influences its climate. The region is kept somewhat cooler in the summer and warmer in the winter because of moderating winds from Lake Superior. The lake also influences precipitation patterns, particularly in the winter.

Precipitation patterns have been changing so that more moisture arrives during the winter and less during the summer. The Union of Concerned Scientists predicts that drier, longer summers will lead to increased fire danger. Higher temperatures may shift the zones where specific species of trees are able to live. While those conditions may in the long run favor less-risky hardwood species, they also are likely to create greater stress and disturbance for existing species, making them more susceptible to fire.

## **III. Community Fire Risk Assessment**

### **Introduction**

Assessment is an essential part of responding to wildfire risk. In Marquette County, assessment combined a compilation of 30-year fire history with a map inventory of risk factors. This was important in shaping participants' views. At beginning of process, some firefighters indicated that they saw no particular pattern to wildfires, they just popped up here and there. After the map of 30-year history was produced, the conversation about risk zones changed and became more focused on high-risk areas.

### **Marquette County Fire History**

Like the rest of the Great Lakes region, Marquette County was logged in the 19<sup>th</sup> century by lumbermen who shipped their wood to Chicago and other large markets. Much of the wood was used locally in the development of the mining industry. Like the rest of Michigan, the county saw many fires, particularly in slash left behind in the wake of logging operations.

After the old-growth forests were logged, forest management and fire suppression was applied to the second-growth forest, a pattern that has continued. Much of the county's forest land was managed by companies such as Mead, Champion, and Longyear. Additional acres were acquired by the State of Michigan, particularly with the aim of restoring forest resources in the "cutover" lands. With scientific management, the forests largely did recover.

The risk of wildfires in Marquette County is likely to increase during the 21<sup>st</sup> century. Models of climate change show a trend toward warmer, drier summers and longer fire seasons. Precipitation seems likely to be increasingly concentrated outside the growing season. Variability is also expected to increase, meaning that cooler, wetter years will still occur, but extreme events are also more likely. These trends, if they come true, will increase natural hazards of all kinds.



To assess the current wildfire risk, a 30-year survey of wildfires in Marquette County was compiled for this plan. Records from the Michigan Department of Natural Resources were used, focusing on “reportable” fires, or fires that could not be contained by local fire departments, triggering a response by the DNR. Databases of local fires were not accessible, and the sheer number of non-reportable fires in the paper database was too overwhelming to include for a 30-year history. DNR officials were very helpful in acquiring the necessary data.

### Wildfire Causes

Figures 3, 4, and 5 show the distribution of fires by cause over the period 1985-2013. The vast majority of wildfires in Marquette County can be attributed to human causes. Approximately 14 per cent of wildfires in Marquette County over the last 30 years have been caused by lightning. The remainder, 86 per cent, had some human involvement. By acreage burned, three fires accounted for 94 per cent of the area destroyed by wildfire. None of the three was caused by lightning or natural causes.

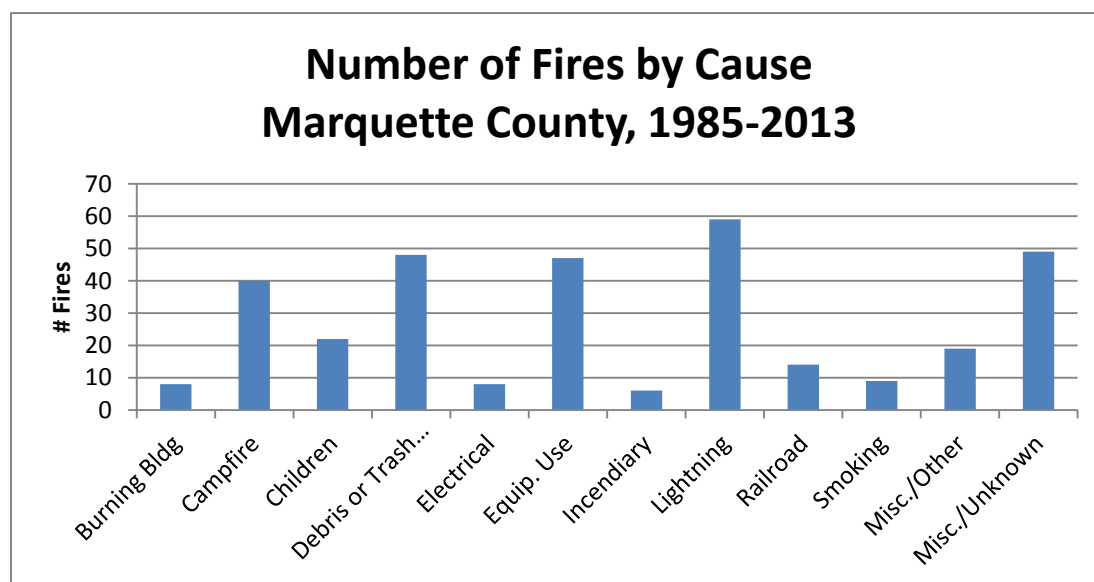


Figure 3. Number of fires by cause, Marquette County, 1985-2013.

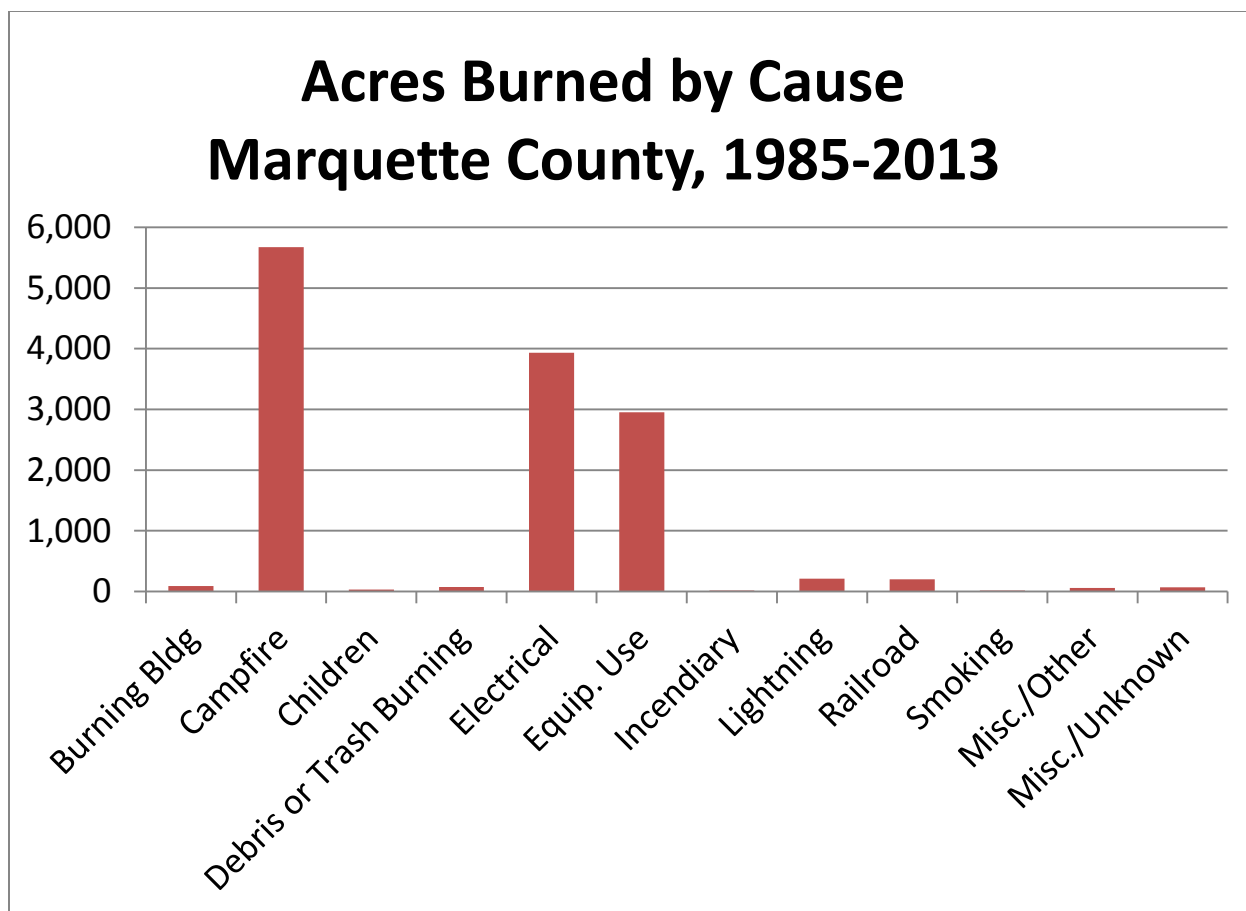


Figure 4. Number of acres burned by cause, Marquette County, 1985-2013.

## Structures

As part of the project, structures throughout the County were mapped from aerial photography. The principle of “a dot on every roof” was applied, meaning that outbuildings as well as principal structures were mapped. Over 48,000 structures were identified in this way.

Seasonal “camps” are a part of the Upper Peninsula way of life, and they are dispersed throughout the County. They range from very simple one-room hunting shacks to fairly elaborate summer homes. Along waterfront areas in particular, many of these seasonal structures are being converted for permanent, year-round use. This pattern puts an increasing number of people in regular contact with the forest.

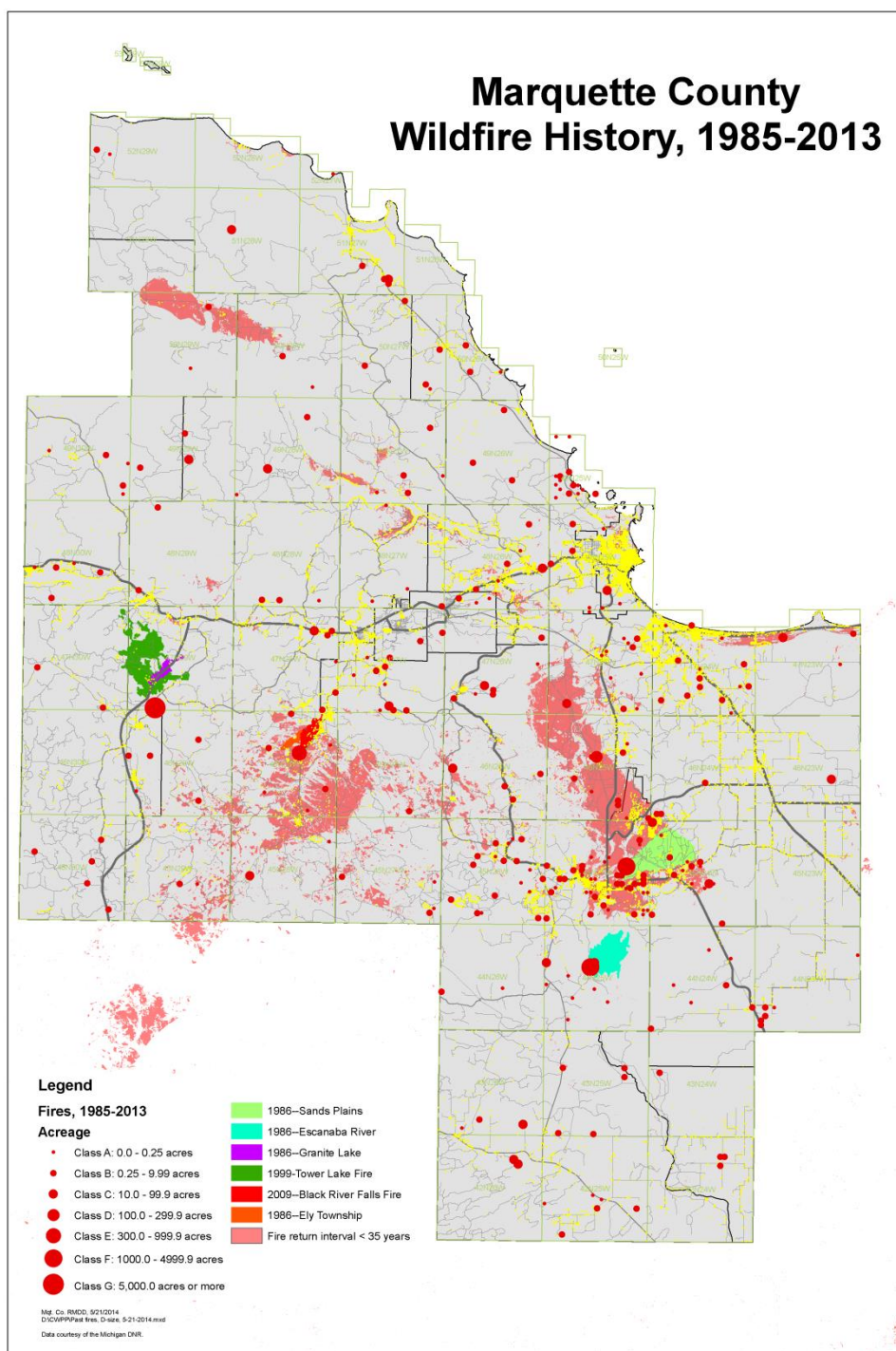


Figure 5. Marquette County wildfire history, 1985-2013.

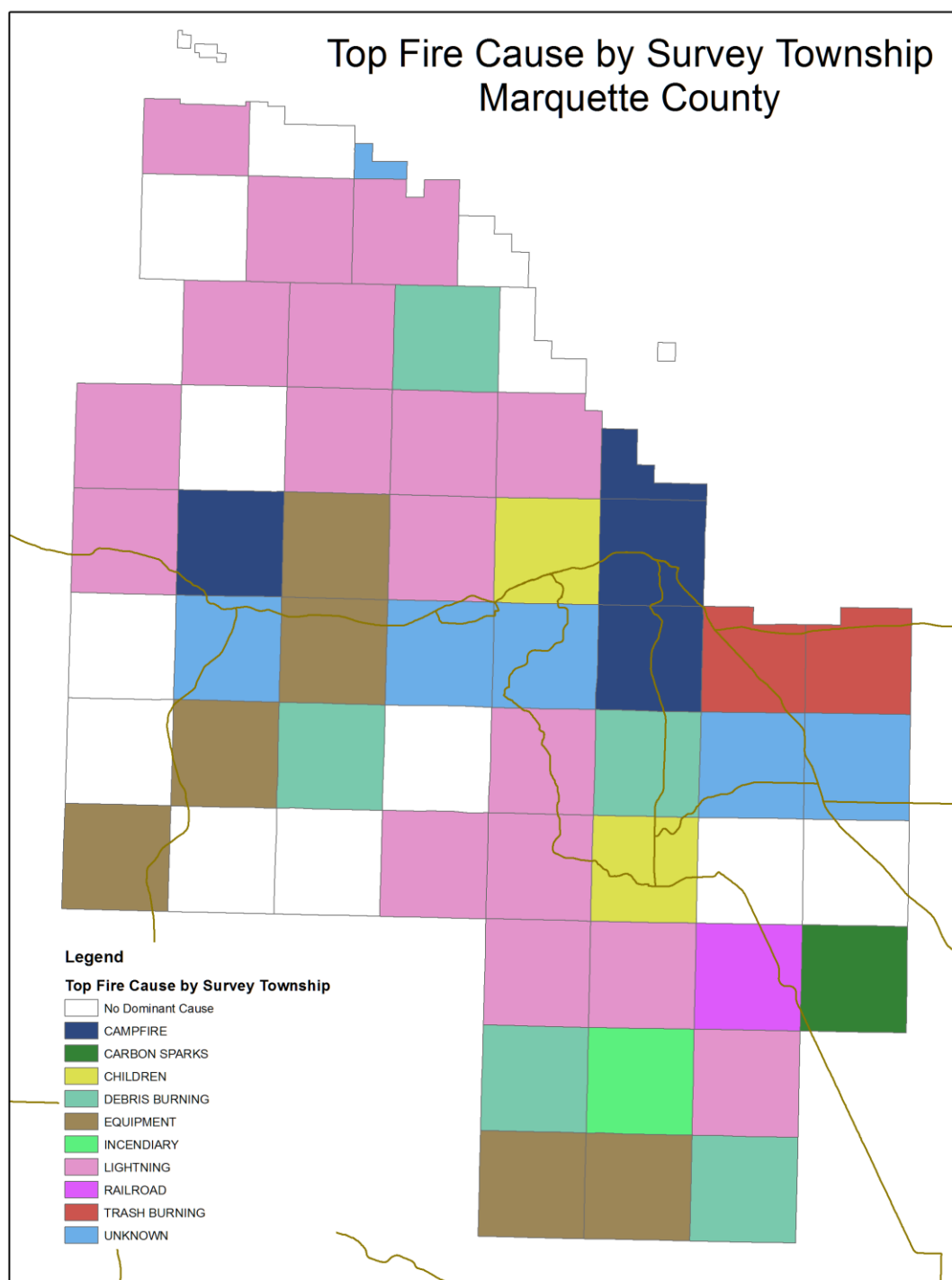


Figure 6. Top fire cause by survey township, Marquette County.

## Mapping Fire Risk

Fire potential was mapped using a combination of factors:

- Vegetation
- Structures
- Roads
- Distance from fire stations
- Water sources
- Sensitive sites / critical infrastructure

The different factors were mapped and given half-mile buffers. They were then overlain in weighted layers to produce an overall risk map, as shown in the table below.

Category	Description	Weight (%)
Vegetation	Current vegetation, related to fuel hazard	40
Risk of Fire	Opportunities for fires to start	30
Structures	All buildings, including outbuildings, buffered by ½ mile	40
Trails	Recreational trails, both motorized and non-motorized	5
Wildfire History	Locations of wildfires, 1985-2013	30
Roads	All roads	20
Recreation sites	Boat launches, campgrounds, and other recreation sites	5
Fire Preparedness	Ability to respond to fires and escape	10
Fire Stations	All areas within 3 miles of a fire station	40
Water sources	Water sources for firefighting, including municipal systems, dry hydrants, and tanks	40
Escape routes	Roads	20
Infrastructure at Risk	Critical infrastructure that could burn	15
Structures	All mapped structures	35
Utilities	Natural gas lines, electric transmission lines	10
Railroads	Railroads	5
Sensitive Facilities	Fire stations, township and city halls, DNR facilities	30
Escape route	State roads	20

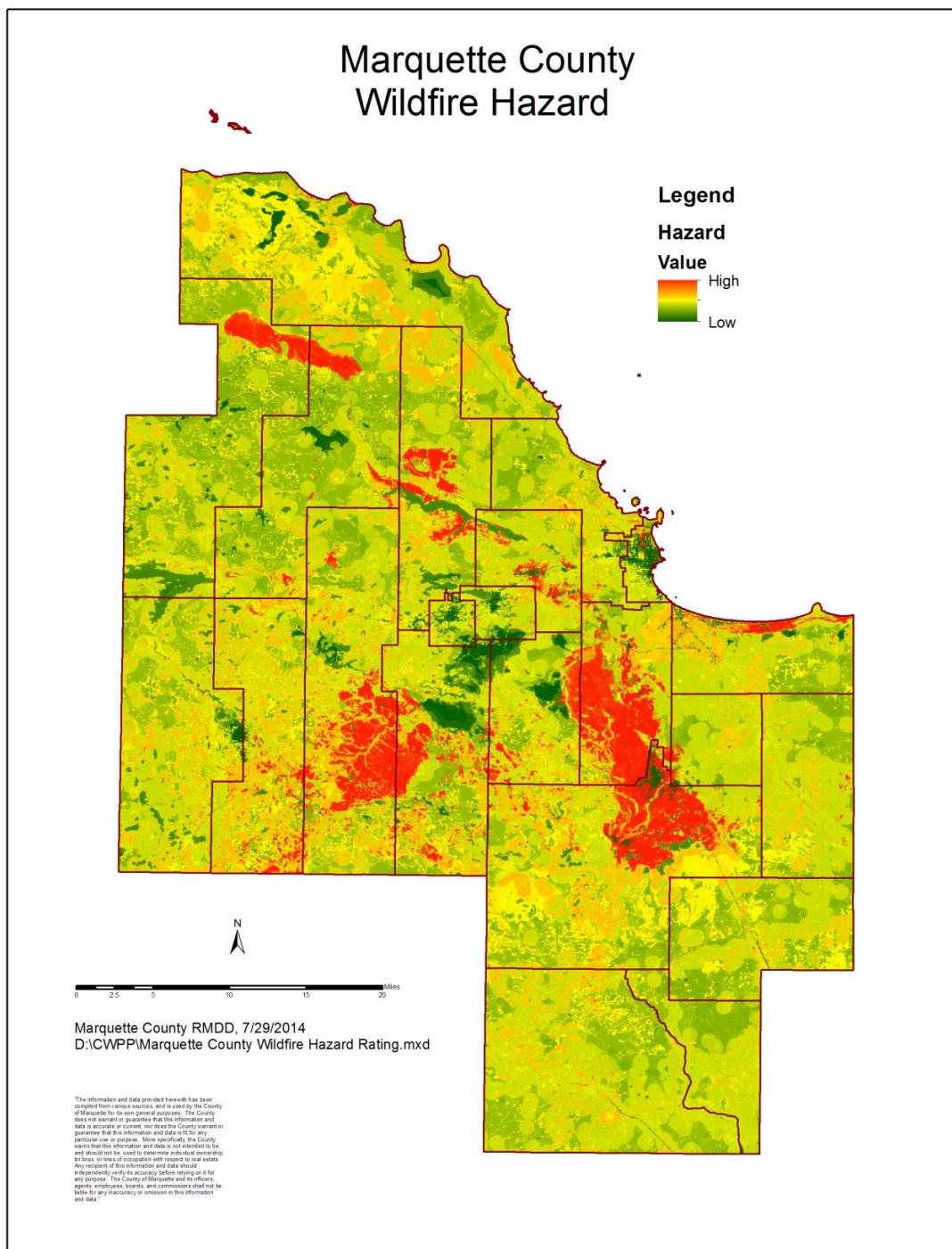


Figure 7. Marquette County wildfire hazard.



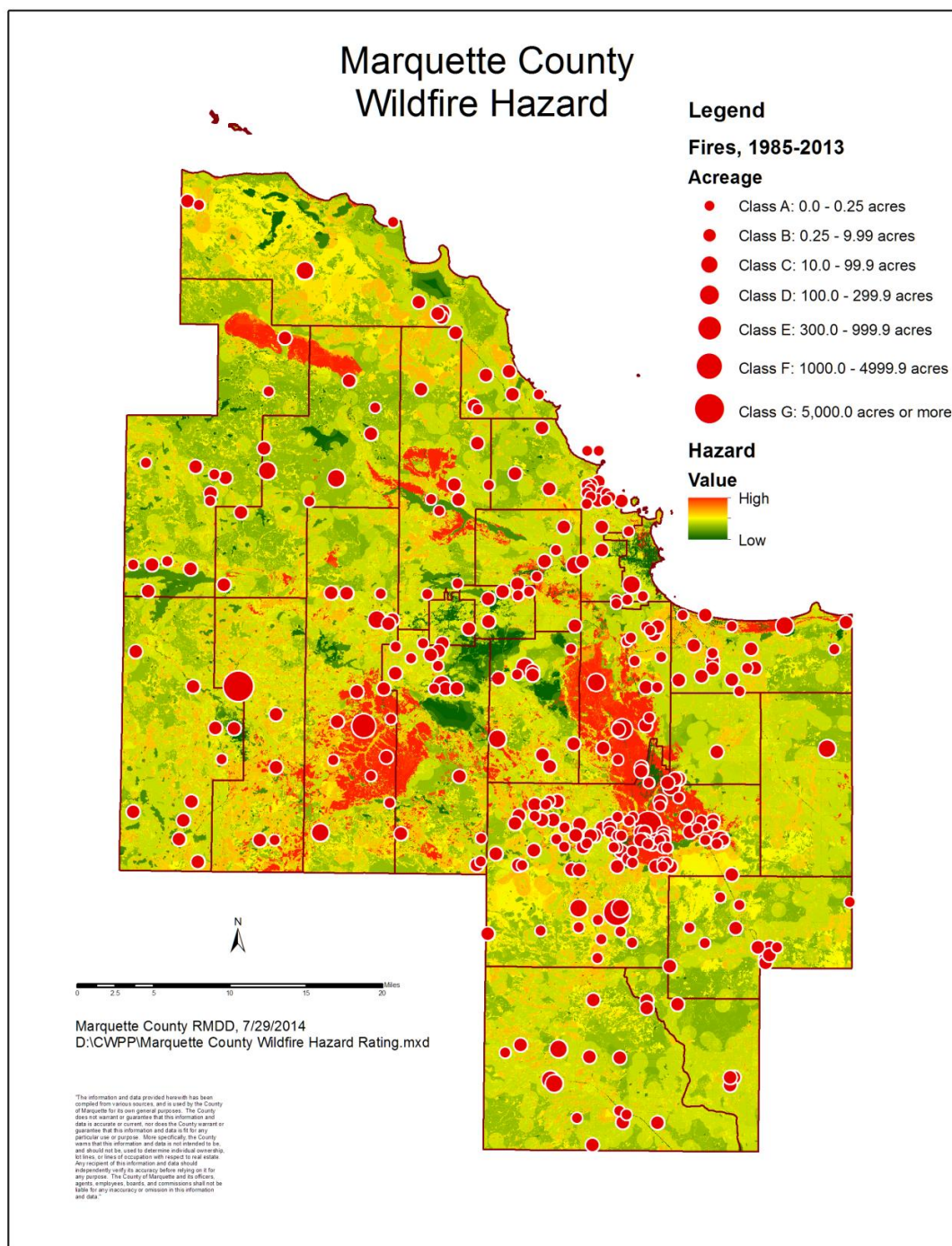


Figure 8. Marquette County wildfire hazard, with fire history shown.



The high-risk areas of Marquette County are generally sandy outwash plains with jack pine forests. By far, the greatest wildfire threat lies in the Sands Plains, a sandy outwash plain between Gwinn and Marquette, where the dominant tree type is jack pine (Figure 5). In addition to the inherent flammability of the trees, risk is heightened by the large human presence in the forest. K.I. Sawyer is surrounded by high-risk forest on three sides, while Gwinn is almost completely surrounded. Roughly one-third of all Marquette County fires from 1985-2013 occurred in this area.

The addition of fire history to the fire hazard map shows that wildfires are by no means confined to areas with a high hazard (Figure 6). For this reason, fire response zones were not confined to areas of high flammability. Instead, the county was divided into districts with generally common characteristics.

## **Fire Response Zones**

Based on fire history and response, the following zones can be delineated (Figure 8):

### **Sands Plains**

The Sands Plains area is a DNR-designated Zone Dispatch area, and has seen the most fires of any part of Marquette County over the last thirty years. The Sands Plains are a sandy outwash plain whose predominant native vegetation is jack pine. Much of the area is managed for jack pine production by either the DNR or Marquette County. In areas with better soils, red pines often replace jack pines.

A major problem in the Sands Plains is the large population living in the hazardous zone. Not only do people live in the jack pines, but they also enjoy spending free time in the forest. A labyrinth of trails criss-cross the area and are regularly used by a variety of vehicles. Residents also enjoy hiking, camping, hunting, and blueberry picking in the forest. As a result, there are many opportunities for accidental fires to start. The Swanzy Lake Fire of 1986 burned an extensive area and nearly forced the evacuation of residents from K.I. Sawyer Air Force Base. A fortuitous wind shift saved the community, but nearby Martin Lake was overrun.

Responding units: Sands Township, Forsyth Township, Skandia-West Branch Township, DNR Gwinn, Richmond Township

### **County Road 581 Corridor**

The “581 Corridor” is also a DNR-designated Zone Dispatch area. Like the Sands Plains, it is dominated by sandy outwash, pine trees, and residential development. Fewer fire departments cover this area, however, and those that do tend to be farther away. The last large wildfire in Marquette County, the Black River Falls Fire, occurred along County Road 581 in 2009.

Responding units: Ishpeming Township, DNR Ishpeming, Humboldt Township

### **M-28 Corridor**

The most populated WUI area in Marquette County, the M-28 Corridor stretches along the south shore of Lake Superior from the Chocoday River east to the Alger County line. While the area of jack pine there is much smaller than in either the Sands Plains or the 581 Corridor, it is intermixed with relatively dense

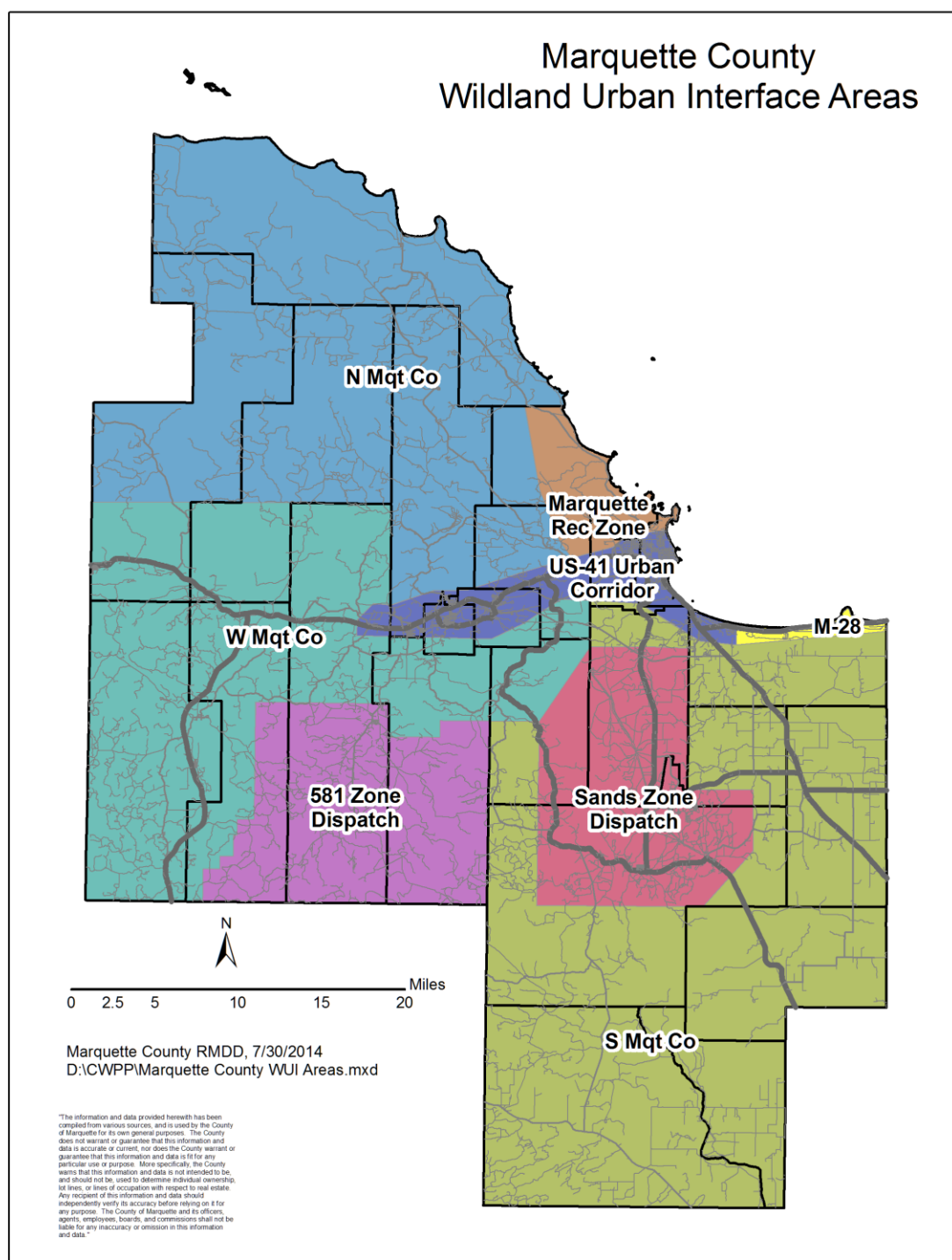


Figure 9. Marquette County WUI areas.

development, particularly along Lakewood Lane, M-28, and Kawbawgam Road. Large fires have not been reported from this area in the last thirty years, but the potential for a serious wildfire is very high.

A primary concern of firefighters in this zone is the lack of water supply. Ironically, Lake Superior is not a viable water source. No pockets of deep enough water come close enough to shore for fire trucks to fill up. Instead, the primary water sources are in Harvey at the west end of the zone, and a dry hydrant near Kawbawgam Lake. The eastern part of Chocolay Township currently has no water sources for firefighting.

Responding unit: Chocolay Township

### **Marquette Recreation Zone**

North of the City of Marquette, along County Road 550 and the Lake Superior shoreline, is an area of public land that has long been favored by Marquette residents and college students for recreation. Favorite destinations include Sugarloaf Mountain, Hogsback Mountain, Wetmore Landing, Little Presque Isle, and Harlow Lake. While none of these places have formal campgrounds, informal camping is common. Campfires are the leading cause of wildfires in this zone.

Responding unit: Marquette Township

### **Northern Marquette County**

Characterized by hills, bedrock knobs, and difficult access, this is the part of Marquette County where lightning is the leading cause of wildfires. In fact, half of all lightning-caused fires in the county occurred in this zone. While people do go into this zone for recreation, it is less accessible than the Marquette Recreation Zone. Large private landholders dominate, including Longyear, Plum Creek, and the Huron Mountain Club.

The Yellow Dog Plains are an outwash plain, forested largely by jack pine, in many ways similar to the Sands Plains. Unlike the Sands Plains, however, the Yellow Dog Plains have had only two reportable fires over the last 30 years. This is because, until recently, the area was more remote than other parts of the county, and has seen little building development. The development of the Eagle Mine has changed that, but the mine's activities are in an area that is nearly clear of trees. The difference in fire history between the Yellow Dog Plains and the Sands Plains highlights the importance of human activities as a fire source.

An area of concern within the Northern Marquette County zone is near the Dead River Storage Basin. There are high-risk areas immediately north and south of the reservoir. The development pattern of the area makes it a particular concern. Historically, the Basin was surrounded by "camps" used strictly for seasonal use, leased out by the Dead River Campers Association. In the early 2000s, many of the camps were sold to individuals, many of whom converted the camps to year-round homes. The population of the Basin increased by 32% from 2000 to 2010. At the same time, a building boom occurred in the area, greatly increasing the number of structures. Despite this boom, access to the area is relatively difficult, through a fragmented patchwork of county and private roads, many with limited fire equipment access.

Access to the north side of the Basin is further limited because there are no bridges across the 17-mile reservoir.

Responding units: Powell Township, Ishpeming Township, Negaunee Township, Marquette Township

### **Western Marquette County**

The western part of Marquette County is characterized by rocky terrain dissected by streams and swamps. Forests tend to be more coniferous than in the eastern part of the County. Some areas of this zone were farmed until the mid-20<sup>th</sup> century. Fire departments are located along US-41 and M-95, and access to interior areas can be difficult.

In 2012, Humboldt Township took ownership of the former ELF facility, a U.S. Navy installation used to communicate with submarines worldwide until it was closed in 2004. Part of the township's interest in the facility was acquisition of wells and storage tanks that could be used for firefighting in a part of the county that is not well-served with water supplies.

While the Western Marquette County zone shows less wildfire risk than other parts of the county, it was the site of the largest wildfire over the past 30 years, the Tower Lake Fire of 1999. The fire began during a dry spring and at one point threatened the community of Champion. A wind shift helped firefighters to control the blaze. Some of the affected area had been burned the previous year in the Autio Lake Fire. Tower Lake was the only wildfire in Michigan history to be given a Presidential Disaster Declaration.

Responding units: Michigamme-Spurr Township, Republic Township, Champion Township, Humboldt Township, Ishpeming Township, Richmond Township, Negaunee Township, City of Ishpeming, City of Negaunee

### **Southern Marquette County**

Most of Marquette County's agriculture is concentrated in this zone. As a result, debris burning is a common cause of wildfires in the area. The DNR also has large holdings in southern Marquette County. The landscape is characterized by swamps, sometimes very large. Unlike the western and northern parts of Marquette County, there is not much exposed bedrock. If water levels drop in the swamps, they can be very flammable. One of Marquette County's largest wildfires occurred in the Cyr Swamp south of Gwinn in 1986.

Responding units: Forsyth Township, Richmond Township, Wells Township, Tri-Township, Skandia-West Branch Township, Chocolay Township, Sands Township

### **US-41 Urban Corridor**

While wildfires do occur in this area, it is less forested and more populated than any other zone of the County. More than half of the fire departments in the County are based in this zone, so response is relatively quick.

Responding units: Chocolay Township, Sands Township, City of Marquette, Marquette Township, Negaunee Township, City of Negaunee, City of Ishpeming, Ishpeming Township

## **IV. Wildfire Mitigation**

### **Fuel Management**

Reduction of hazardous fuels is an effective way of reducing wildfire risk in an area. This has happened in Marquette County through two methods: fire breaks, and treatment of fuels on individual properties.

Fire breaks require large areas of contiguous ownership and management. After the Swanzy Lake Fire of 1986, a fire break was established around the then-active K.I. Sawyer Air Force Base. The base was surrounded by forest lands managed by Marquette County. A half-mile buffer was created to reduce the threat of wildfire to the residents of K.I. Sawyer.

The recent demand for biofuels has changed practices in the logging industry, as wood that was formerly left to rot (or burn) in the field now is picked up and taken to the mill. This trend will only occur as long as prices remain high enough to justify it, and even then, only in areas closer to mills where the transportation costs are not too high. Nonetheless, while it lasts, the practice effectively removes dead wood from the forest and reduces fire danger in areas that are already susceptible because of disturbance. How long will the market for slash make it profitable to remove it?

Firewise techniques can be effectively applied to individual properties. They involve creating a defensible zone around a home, free of highly-flammable materials and plants. More details can be found in Appendix A.

### **Reducing Structural Ignitability**

Wood is the overwhelming building material of choice in the county. Strategies to reduce structural ignitability focus on managing areas around buildings so that there is less fuel available. This has taken on two forms, fire breaks and the techniques promoted in the Firewise program, discussed above.

## **V. Fire Management**

### **Local Firefighting Setting**

Most local firefighting is done by volunteer fire departments. Of the 22 cities and townships in Marquette County, only the City of Marquette has a full-time professional fire department. Additional firefighting resources in wildlands are provided by the Michigan Department of Natural Resources (DNR). Fire calls are dispatched by a county-wide central dispatch system, and mutual aid and cooperation between departments is routine and well-established in the local firefighting culture.

Most townships and cities are served by unique fire departments, but in a few cases, townships have banded together to create larger fire districts (Figure 7). Ely and Tilden townships have a contract with Ishpeming Township to provide firefighting. Michigamme Township has a joint fire department with Spurr Township in neighboring Baraga County, and Turin and Ewing townships have a joint fire department with Maple Ridge Township in neighboring Delta County (the Tri-Township Fire Department, based in Rock). A former joint fire department, the Champion-Humboldt Fire Department,

has split into two departments at the initiative of Humboldt Township, which wanted its own fire department.

Diminished resources and increased training standards have squeezed local fire departments. Few people are willing to dedicate the time for training and living “on call.” At the same time, an aging population means that the pool of potential firefighters is shrinking. These factors have forged a strong spirit of cooperation between fire departments in the area. While mutual aid agreements exist, cooperation extends beyond them. One fire chief recently said, “We would respond to any department in the county who asked us.” His attitude is typical. Meanwhile, DNR firefighting resources have also been squeezed. Better mitigation of the fire hazard is needed to reduce the burden on fire departments.

### **Ownership Details**

- 21.5% of County land owned by State of Michigan (primarily DNR)
- The federal government is a relatively minor landholder in Marquette County. There are two areas owned by the U.S. Forest Service: the McCormick Tract (managed by the Ottawa National Forest) in the northwestern part of the county, and the Dukes Experimental Forest (managed by the Hiawatha National Forest) in the eastern part of the county. Both of these areas have special designations within the U.S. Forest system. The McCormick Tract is a Research Natural Area, maintained as a scenic resource. The Dukes Experimental Forest is also a Research Natural Area, but is managed for scientific forestry projects by the Northern Research Station Laboratory in Grand Rapids, Minnesota.

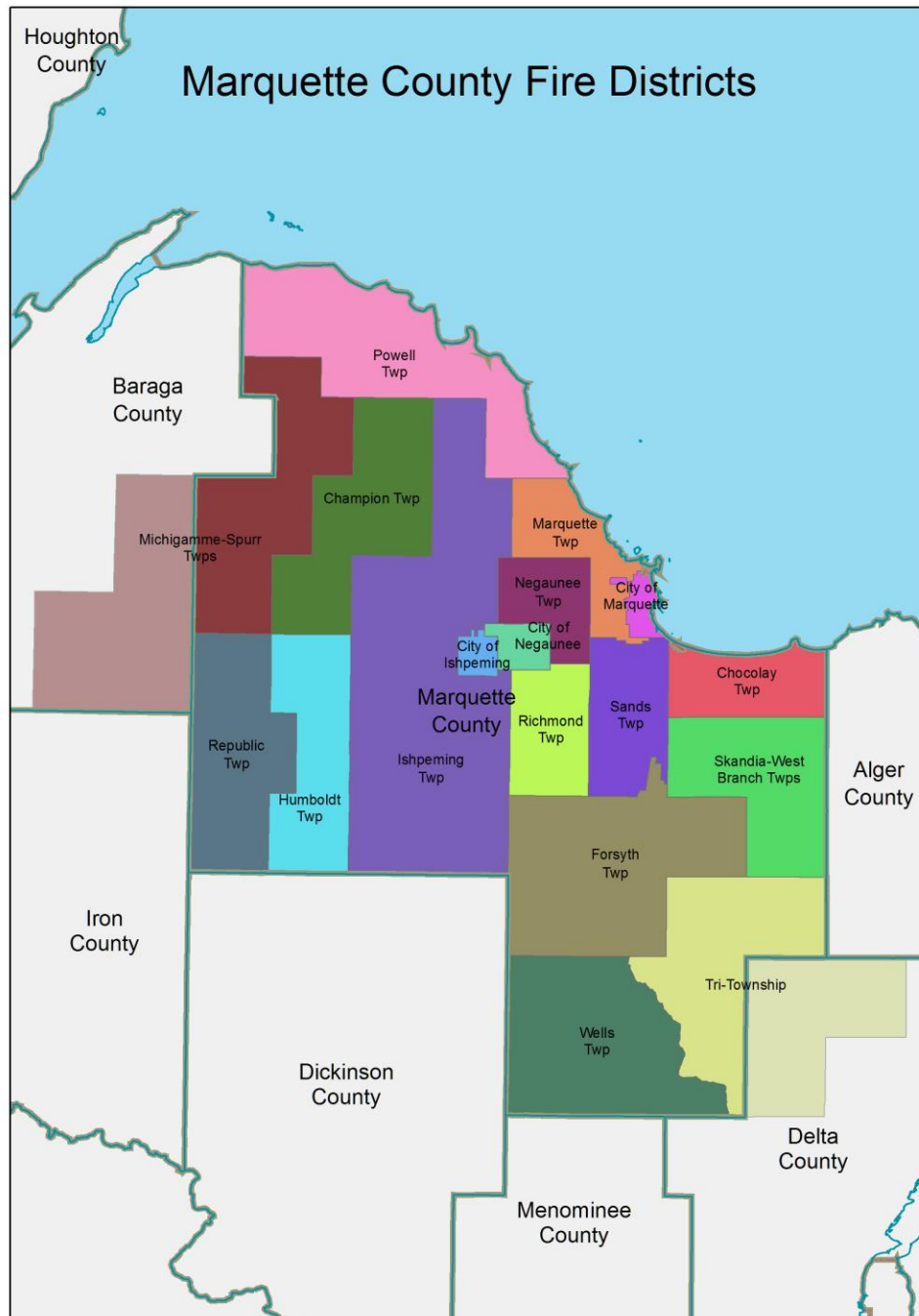


Figure 10. Marquette County fire districts.



## **VI. Community Input**

### **Planning Meetings and Content Development Workshops**

At the June 17<sup>th</sup> meeting, firefighters ranked suggested ideas and added their own to the rankings. The ranked lists follow.

#### **Fire suppression**

1. Water sources / access
2. Wildland dispatch zone creation (automatic mutual aid)
3. Equipment, paid for with grant money, tied with Inter-agency purchases
4. Dry hydrants, tied with Private road ordinances
5. Private road improvements, tied with Storage tanks / wells and Inter-agency Training

#### **Fire Prevention**

1. Education
2. Inter-agency cross-training
3. Buffer zone, tied with Support/resources for vulnerable population
4. Site visits / evaluation

#### **Fuel Sources identified by firefighters (no ranking)**

- Jack pine
- Lightning
- Trains
- Motorized equipment
- Electric utility
- “Debris” burning
- ATV areas
- Party spots
- Terrain features—hills
- Campfires
- Fireworks
- Youth
- Wind
- Burn barrels
- Smoking / cigarettes
- Fuel conditions
- Meth labs

## VII. Long Term Actions

### Hazard Mitigation Planning Coordination

Wildfire is one of the top-ranked hazards in the Marquette County Hazard Mitigation Plan. In 2009, the Black River Falls fire destroyed a number of homes in Ely Township. Previously, the 1999 Tower Lake Fire burned a large area in Humboldt and Republic townships. Wildfires happen frequently enough that they are on people's minds more than many other hazards.

One issue is the capability of firefighting organizations to fight several large fires at once. This happened on May 6, 1986, when several large fires burned in the county simultaneously. Mutual aid can be taxed in these situations, because the conditions that make so many fires possible are often occurring on a regional scale. Coordination is needed on multiple levels to make sure that resources are available. This is done on a hierarchical basis: when local governments exhaust their resources, they appeal to the State of Michigan. When the state is overstretched, its officials appeal for federal help.

At the June 17<sup>th</sup> meeting, inter-agency cross training was second only after education under as a desired fire prevention measure. Pete Glover, Unit Fire Supervisor with the DNR, had just completed three sessions in the spring around the county, but firefighters expressed interest in getting more training. This demonstrates both the interest in wildfire at the local level and the degree of cooperation between DNR and local firefighters.

**Action:** Continue cooperation on mapping of fire hazards and structures.

**Agencies:** Marquette County Planning, Marquette County Central Dispatch, DNR, local fire departments.

**Action:** Continue inter-agency cross training in techniques for fighting wildfires.

**Agency:** DNR, local fire departments.

### Improved Firefighting Infrastructure

Water supply is a continual concern. Several solutions have been proposed:

1. More dry hydrants at suitable sites.
2. Permanent water tanks with supply wells. Sands Township maintains such a supply at their fire hall. Humboldt Township had similar plans for large wells at the former ELF facility when they applied to receive it from the federal government.
3. Large mobile water tankers, owned jointly by several fire departments and strategically located near the most difficult fire zones. The tankers would offer a large amount of water that could quickly be moved on scene. They would supplement the existing fleet of tankers that townships and the DNR have, but would be larger.

Dispatch zones have been created for the Sands Plains and 581 Corridor areas, because of the increased risk of wildfires spreading and becoming serious. The dispatch zone designation means that any fire within the zone automatically triggers mutual aid, so that resources are applied to the fire while it is still small. At the June 17<sup>th</sup> firefighters' meeting, creation of new dispatch zones was identified as a way to improve fire suppression. The M-28 corridor in Chocolay Township may be a candidate for this kind of zone.

**Action:** Pursue grants for additional dry hydrants, particularly in higher-risk and more remote areas.

**Agencies:** Local fire departments, applying for funds from the DNR. When the Marquette County Hazard Mitigation Plan update is approved, additional funds may be available through FEMA.

**Action:** Pursue permanent well-fed water tanks for firefighting water supplies.

**Agency:** Local fire departments.

**Action:** Purchase a large water tanker truck to support firefighting in areas without ready water supplies.

**Agency:** Local fire departments would work together to purchase, house, and maintain a tanker.

## Firewise Communities Program

MSU Extension has a Government and Public Policy Educator trained in presenting Firewise materials, and Firewise education is a stated mission for his branch of MSU Extension. He has also written materials for use statewide, including a front page article in *Planning and Zoning News*. There are a number of groups in the county who could host talks about how to protect their homes and property from wildfire. The educator has appeared in various venues, including the spring home builders' show, the recreation show, township meetings, and National Night Out.

**Action:** Continue presenting Firewise programs to the public.

**Agency:** MSU Extension.

## Planning and Zoning Approaches

Some of the WUI development can be forestalled or mitigated through effective planning and zoning at the township level. In particular, two approaches could be used:

1. Strengthen private road ordinances. A number of townships have passed private road ordinances, specifying that new private roads must be built to Marquette County Road Commission standards. This ensures that emergency vehicles will be able to pass on the new roads. Unfortunately, the ordinances are usually passed in response to problems with existing

private roads that severely restrict the passage of emergency vehicles. Still, the ordinances help to prevent the creation of new problems.

**Action:** Work with local units of government to strengthen private road ordinances in order to make sure that new roads are built to dimensions that will accommodate fire trucks and other emergency vehicles.

**Agency:** Marquette County Planning Division

2. Include information about Firewise in zoning compliance permits for development in the WUI. In many agricultural areas near cities, new rural residents are given pamphlets with titles like “So You Want to Live in the Country,” detailing the sometimes unpleasant realities of living in a rural environment (farm smells, snowed-in roads, downed power lines, etc.). A “So You Want to Live in the Woods” pamphlet could be a part of the zoning compliance process in areas where fire risk is high.

**Action:** Write a “So You Want to Live in the Woods” pamphlet for distribution with zoning compliance permits.

**Agencies:** Marquette County Planning and MSU Extension, in cooperation with township planning commissions.

## Continuing Wildfire Education

A meeting with citizens at the Sawyer Community Alliance would be useful in promoting awareness of fire danger and people’s activities that help to start fires. Marquette County owns much of the forest adjacent to the residential area of K.I. Sawyer and manages it for timber production. Firebreaks were established in the 1990s and 2000s, but residents wanted to see buffer strips (single rows of trees) between their properties and the fire breaks. This has not worked well, as the trees have subsequently died, creating a greater fire risk near the homes. More communication is needed to help homeowners understand why clear-cutting is the best management practice for jack pines near their homes.

The MSU Extension Land Use Educator regularly appears at the annual National Night Out in Ishpeming Township.

Meet with Dead River Campers Association to explain both Firewise techniques and the need for better emergency vehicle access. The patchwork of private roads in the area is a hindrance to effective emergency response.

**Action:** Conduct a forestry discussion session with the Sawyer Community Alliance, along with a discussion of Firewise techniques.

**Agency:** Marquette County Forest Management, MSU Extension.

**Action:** Conduct a wildfire discussion session with the Dead River Campers Association, along with a discussion of Firewise techniques.

**Agency:** Marquette County Forest Planning, Ishpeming Township, Negaunee Township, MSU Extension.

## Stewardship Contracting

Homeowners need to be aware of their risk and act accordingly. Local fire agencies could pursue a grant to support on-site Firewise assessment of individual properties, with the information compiled on a door hanger that the property owner can see. This would be an excellent way to raise awareness of Firewise techniques and make them directly applicable to individual property owners. If property owners are on site when the assessment is made, the added benefit of face-to-face conversation is added.

**Action:** Pursue a grant to support on-site Firewise assessment of individual properties, particularly in the Sands Plains and 581 Corridor zone dispatch areas.

**Agencies:** DNR, local fire departments

## **Appendix A. Participant sign-in sheets.**

**Marquette County  
COMMUNITY WILDFIRE PROTECTION PLAN  
August 20, 2013**

## Sign In Sheet

**PLEASE PRINT**

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# **FIREWISE WORKSHOP REGISTRATION** **Alger and Marquette Forestry Assistance Program**



First Name	Last Name	Company	Day Phone	Evening Phone	Email	Mailing Address	City	State	Zip
Misa	Cady	NPCS					MQT		
Chuck	Hartman	Mich North Woods Club					MQT		
Gregg	HARDY	N/A					SKANDIA		
CHIFF	STAMMER	N/A					MACQUETTE	MI	48865
Colin	Bornblad	ICP					Crystal Falls	MI	49920
Kelly	Woodward	Chesday Twp					Marquette		
A.J.	Campbell	FAP					Kingsford	MI	48702
Lyn	Durant	MQT TWP					W. MQT		49853
Reggie	Durant	Landowner							
Vicki	Slater	Landowner							
Dave	Slater	Landowner							
Pete	Glover	MI-DNR					Gwin	MI	49841
ERIC	Polnerst	Landowner					Gwin		49841
Carol	Hook	Landowner					SKANDIA	MI	49865
Steve	Lawry	Ches Twp					SKANDIA	MI	49869
Eric	Anderson						MQ		
Brad	Neumann								
Matt	Witkeys	MCCD							
Ally	Dale	MCCD							
Kenne	Leow	MCCD							
Don	DeMause	Mqt Twp Fire							

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Marquette County  
COMMUNITY WILDFIRE PROTECTION PLAN

June 17, 2014

## Sign In Sheet

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## **Appendix B. Firewise materials.**



## A guide to Firewise principles

THE FIREWISE COMMUNITIES PROGRAM provides homeowners with simple and easy steps to help reduce a home's wildfire risk by preparing ahead of a wildfire. These steps are rooted in principles based on solid fire science research into how homes ignite. The research comes from the world's leading fire experts whose experiments, models and data collection are based on some of the country's worst wildland fire disasters.

Below are Firewise principles and tips that serve as a guide for residents:

**When it comes to wildfire risk, it is not a geographical location, but a set of conditions that determine the home's ignition potential in any community.**

Wildfire behavior is influenced by three main factors: topography (lie of the land), weather (wind speed, relative humidity and ambient temperature) and fuel (vegetation and man-made structures). In the event of extreme wildfire behavior, extreme weather conditions are normally

present, like extended drought, high winds, low humidity and high temperatures, coupled with excess fuel build up including the accumulation of live and dead vegetation material. Additionally, the inherent lie of the land influences the intensity and spread a fire takes. Fires tend to move upslope, and the steeper the slope the faster it moves.

Of these three factors, **fuel** is the one we can influence.

Debris like dead leaves and pine needles left on decks, in gutters and strewn across lawns can ignite from flying embers. Fire moving along the ground's surface can "ladder" into shrubs and low hanging tree limbs to create longer flames and more heat. If your home has flammable features or vulnerable openings, it can also serve as fuel for the fire, and become part of a disastrous chain of ignitions to other surrounding homes and structures.

**A home's ignition risk is determined by its immediate surroundings or its "home ignition zone" and the home's construction materials.**

According to fire science research and case studies, it's not where a home is located that necessarily determines ignition risk, but the landscape around it, often referred to as the "home ignition zone." The home ignition zone is defined as the home and its immediate surroundings up to 200 feet (60 m).

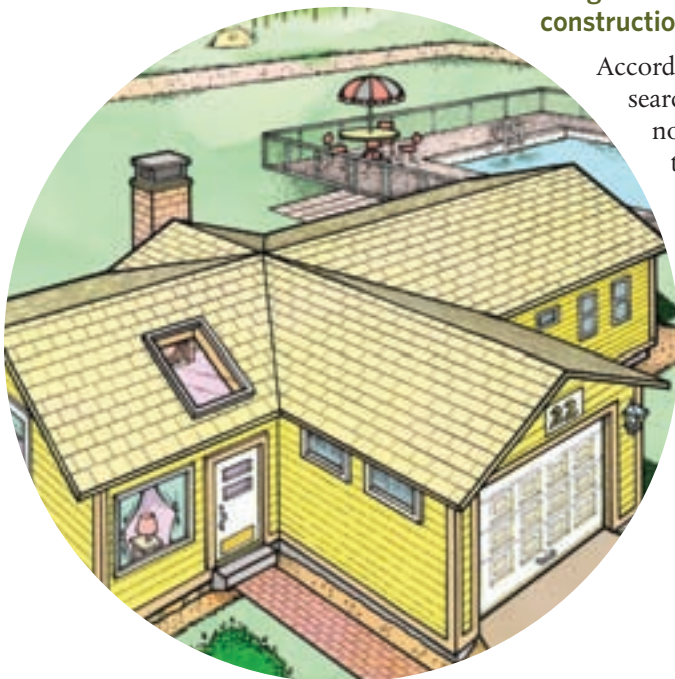
The Firewise Communities Program provides tips for reducing wildfire risk based on the home ignition zone concept:

**Home Zone:** Harden your home against wildfire. This includes fences, decks, porches and other attachments. From the point of view of a fire, if it's attached to the house it is a part of the house. Non-flammable or low flammability construction materials—especially for roofs, siding and windows—are recommended for new homes or retrofits. Keep any flammables, including plantings and mulch out of the area within 5 feet of your home's perimeter.

**Zone 1:** This well-irrigated area encircles the structure for at least 30 feet on all sides including decks and fences, and provides space for fire suppression equipment in the event of an emergency. Lawns should be well maintained and mowed. Plantings should be limited to carefully-spaced low flammability species. In particularly fire prone areas, non-flammable mulch should be considered.

**Zone 2:** This area encircles 30 – 100 feet from the home. Low flammability plant materials should be used here. Plants should be low-growing and the irrigation system should extend into this section. Shrubs and trees should be limbed up and spaced to prevent crowns of trees from touching.

**Zone 3:** This area encompasses 100 – 200 feet from the home. Place low-growing plants and well-spaced trees in this area, remembering to keep the volume of vegetation (fuel) low.





**Zone 4:** This furthest zone from the structure is a natural area. Selectively prune and thin all plants and remove highly flammable vegetation.

### Homeowners can and must take primary responsibility for wildfire safety action around the home.

There are not enough fire fighting resources to protect every house during severe wildfires, and with shrinking budgets it means we need to do more with less. Fire fighters are trained to safely and efficiently suppress wildland fires, but their effectiveness is reduced when they must sweep decks, move wood piles and patio furniture while trying to fight a fire. According to fire science research, individual efforts do make a difference even in the face of a catastrophic wildfire.

The following steps are outlined by the Firewise program to reduce home ignition risk, based on this principle:

- Prune low hanging limbs to reduce ladder fuels
- Clean roofs and gutters of pine needles and dead leaves
- Keep flammable plants and mulches at least 5 feet away from your home's perimeter
- Use low-growing, well pruned and fire-resistant plants around home
- Screen or box-in areas below patios and decks with wire screening no larger than 1/8-inch mesh
- Sweep decks and porches clear of fallen leaves
- Move woodpiles away from the home during non-winter months
- Bring doormats and furniture cushions inside when an area is threatened by a wildfire

- Close garage doors when leaving your home in the event of an evacuation

### We all have a role to play in protecting ourselves and others.

Your home ignition zone extends up to 200 feet—and it's quite common to have neighbors whose home ignition zone overlaps yours. Buildings closer than 100 feet apart can ignite one another if they are in flames. In addition, many communities have commonly owned property, including natural or wooded areas that can pose fire risks to all. This means that to be most effective, neighbors need to work together and with their local fire service to achieve greater wildfire safety.

Together, community residents can work with agencies and elected officials to accomplish the following:

- Ensure that homes and neighborhoods have legible/clearly marked street names and numbers
- Create "two ways out" of the neighborhood for safe evacuation during a wildfire emergency
- Create phone trees to alert residents about an impending fire
- Review any existing community rules or regulations on vegetation management and construction materials to see if they are "Firewise-friendly"
- Use the "Ready, Set, Go!" program with the fire department to educate neighbors
- Use the Firewise Communities/USA® Recognition Program to create and implement an ongoing action plan that will also earn the neighborhood national recognition for their efforts

**LEARN MORE** about how to keep families safe and reduce homeowners' risk for wildfire damage at [www.firewise.org](http://www.firewise.org).

**ADDITIONALLY,** complimentary brochures, booklets, pamphlets, videos and much more can be found on the information and resources page of the website and ordered online through the Firewise catalog.

