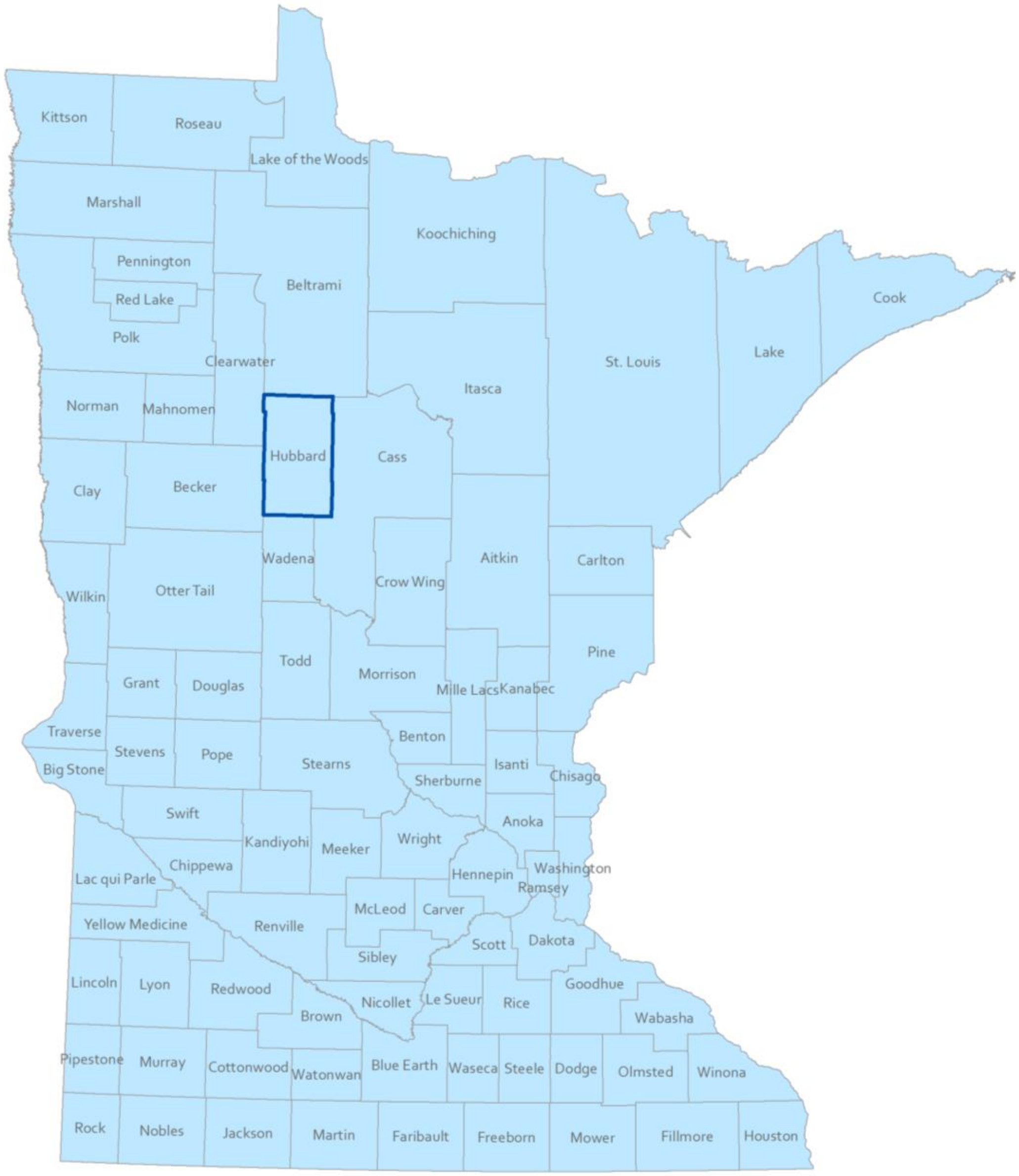
Multi-Hazard Mitigation Plan

Hubbard County, Minnesota, 2017



Geospatial Analysis Center

HUBBARD COUNTY
EST. 1883 MINNESOTA

Multi-Hazard Mitigation Plan
Hubbard County, Minnesota

2017

Contact:

Hubbard County Sheriff's Office
301 Court Avenue
Park Rapids, MN 56470

Brian Halbasch, Deputy Sheriff & Emergency Management Director
bhalbasch@co.hubbard.mn.us
(218) 732-2588

Prepared By:

Geospatial Analysis Center
Swenson College of Science and Engineering
University of Minnesota Duluth
140 Engineering Building
1303 Ordean Court
Duluth, MN 55812

Stacey Stark, Director
slstark@d.umn.edu
(218) 726-7438

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Section 1 – Introduction

1.1 Introduction

Hazard mitigation is defined as any sustained action to reduce or eliminate long-term risk to human life and property from hazards. The Federal Emergency Management Agency (FEMA) has made reducing hazards one of its primary goals; hazard mitigation planning and the subsequent implementation of resulting projects, measures, and policies is a primary mechanism in achieving FEMA's goal.

Between 1960 and 2014, natural hazards cost the U.S. an annual average loss of $15.6 billion (Hazards & Vulnerability Research Institute, 2015).

Hazard mitigation planning and preparedness will be the most effective instrument to diminish losses by reducing the impact of disasters upon people and property. Although mitigation efforts will not eliminate all disasters, each county shall endeavor to be as prepared as possible for a disaster.

The Multi-Hazard Mitigation Plan (MHMP) is a requirement of the Federal Disaster Mitigation Act of 2000 (DMA 2000). The development of a local government plan is required in order to maintain eligibility for certain federal disaster assistance and hazard mitigation funding programs. In order for communities to be eligible for future mitigation funds, they must adopt an MHMP.

According to an analysis by the Multihazard Mitigation Council (a public/private partnership designed to reduce the economic and social costs of natural hazards), for every dollar spent by the federal treasury on FEMA mitigation grants, $3.65 is saved: "The present value of potential annual savings to the federal treasury because of the FEMA grants studied is approximately $970 million compared to an annual budget expenditure on these grants of $265 million" (Multihazard Mitigation Council, 2005). Thus, every dollar spent on mitigation grants leads to an average of $3.65 in avoided costs post-disaster and increased federal tax revenues.

Between 1940 and 2014, natural hazards cost the United States an average of $15.6 billion in annual losses (Hazards & Vulnerability Research Institute, 2014).

Hubbard County is vulnerable to a variety of potential natural disasters, which threaten the loss of life and property in the county. Hazards such as tornadoes, flooding, wildfires, blizzards, straight-line winds, ice storms, and droughts have the potential for inflicting vast economic loss and personal hardship. In 2013, Minnesota had some of the highest weather-related disaster claims in the country (MN Environmental Quality Board, 2014).

This Multi-Hazard Mitigation Plan represents the efforts of Hubbard County and its local governments to fulfill the responsibility for hazard mitigation planning. The intent of the plan is to reduce the actual threat of specific hazards by limiting the impact of damages and losses.

1.1.1 Scope

The Hubbard County Emergency Management Director and the University of Minnesota Duluth Geospatial Analysis Center have combined efforts to update the 2010 Hubbard County Multi-Hazard Mitigation Plan.

This Multi-Hazard Mitigation Plan evaluates and ranks the major natural hazards affecting Hubbard County as determined by frequency of event, economic impact, deaths, and injuries. Mitigation recommendations are based on input from state and local agencies, public input, and national best practices.

The University of Minnesota Duluth Geospatial Analysis Center (GAC) performed the hazard risk assessment for 100-year floods using the Hazus-MH GIS tool. In recognition of the importance of planning in mitigation activities, FEMA created **Haz**ards **US**A **M**ulti-**H**azard (Hazus-MH), a powerful geographic information system (GIS)-based disaster risk assessment tool. This tool enables communities of all sizes to predict estimated losses from floods, hurricanes, earthquakes, and other related phenomena and to measure the impact of various mitigation practices that might help reduce those losses. The Minnesota Homeland Security and Emergency Management (HSEM) office has determined that Hazus-MH should play a critical role in Minnesota's risk assessments, and therefore the 100-year flood hazard analysis is introduced in this plan.

This is a multi-jurisdictional plan that covers Hubbard County, including the cities of Park Rapids, Nevis, Laporte and Akeley. The Hubbard County risks and mitigation activities identified in this plan also incorporate the concerns and needs of townships, school districts, and other entities participating in this plan.

Members from each of these jurisdictions actively participated in the planning process by attending workgroup meetings, providing information, suggesting mitigation strategies and reviewing the plan document. Each jurisdiction will adopt the plan by resolution after approval by FEMA. County and local city resolutions will be added by Hubbard County after final approval by FEMA, in Appendix D in the back of the plan.

Hubbard County has specified the following goals for this Multi-Hazard Mitigation Plan:

- To evaluate and rank the hazards that impact Hubbard County.
- To determine the extent of existing mitigation programs and policy capabilities within Hubbard County.
- To create a detailed, working document that will establish a standardized process for ensuring coordination of hazard mitigation efforts and to implement an ongoing and comprehensive hazard mitigation strategy.
- To familiarize state and local officials and the general public about comprehensive hazard mitigation in Hubbard County and obtain their support.

1.1.2 Hazard Mitigation Definition

Hazard mitigation may be defined as any action taken to eliminate or reduce the long-term risk to human life and property from natural hazards. Potential types of hazard mitigation measures include the following:

- Structural hazard control or protection projects
- Retrofitting of facilities
- Acquisition and relocation of structures
- Development of mitigation standards, regulations, policies, and programs

- Public awareness and education programs
- Development or improvement of warning systems

1.1.3 Benefits of Mitigation Planning

The benefits of hazard mitigation planning include the following:

- Saving lives, protecting the health of the public, and reducing injuries
- Preventing or reducing property damage
- Reducing economic losses
- Minimizing social dislocation and stress
- Reducing agricultural losses
- Maintaining critical facilities in functioning order
- Protecting infrastructure from damage
- Protecting mental health
- Reducing legal liability of government and public officials

1.2 State Administration of Mitigation Grants

FEMA currently has 3 mitigation grant programs that are administered by the State of Minnesota: the Hazard Mitigation Grant Program (HMGP), the Pre-Disaster Mitigation Program (PDM), and the Flood Mitigation Assistance (FMA) Program. The HMGP, PDM and FMA are administered through the Department of Public Safety, Division of Homeland Security and Emergency Management.

Section 2 – Public Planning Process

2.1 Steering Committee Information

The Hubbard County multi-hazard mitigation plan steering committee is headed by the Hubbard County Emergency Management Director, who is the primary point of contact. University of Minnesota Duluth staff under contract with Hubbard County includes Stacey Stark (GAC Director), Steve Graham (GAC Research Analyst) and Micaella Penning (GAC Research Assistant). GAC also sub-contracted with planner Bonnie Hundrieser of Hundrieser Consulting, LLC. Members of the Hubbard County MHMP steering committee include representatives from the public, private, and governmental sectors. Table 1 identifies the steering committee individuals and the organizations they represent.

Table 1. Multi-Hazard Mitigation Steering Committee

Name	Jurisdiction/Agency/ Organization	Title
Brian Halbasch	Hubbard County	Deputy Sheriff & Emergency Management Director
Billy Krotzer	City of Akeley	City Council
Brad Witkin	MN DNR	Fire Program Forester
Cammie Vogel	Beltrami Eclectic Coop	Plant Accountant
Dan Carroll	MN DNR	Firewise Specialist
Dawn Veit	City of Nevis	Administrator
Don Unthun	City of Nevis	Maint. Superintendent
Greg Parks	School District 308	Superintendent
Harvey Johnson	School District 306	Superintendent
Holly Solo	Beltrami Eclectic Coop	Engineering & Operations clerk
Jason Andersen	MN Power	DSR
Jed Nordin	Hubbard Co. Hwy Dept & Solid Waste	Asst. Engineer
Jeff Appel	City of Park Rapids	Police Chief
Kay Rave	Hubbard Co.	Auditor
Kelly VandenEykel	City of Akeley	Maint. Superintendent
Lance Bagstad	School District 309	Superintendent
Melody Boettcher	City of Akeley	Clerk/Treasurer
Nicole Lalum	PRLA Chamber	President
Nicole Lueth	Hubbard County	Hubbard County Recorder
Patricia Gendron	City Of Laporte	Council Member
RaeAnn Mayer	Hubbard Co. Public Health	Director
Rich Riewer	Beltrami Eclectic Coop	Engineering manager
Russ Johnsrud	Henreitta Twp.	Vice Chair
Ryan Matchisrud	City of Park Rapids	City Planner

Name	Jurisdiction/Agency/ Organization	Title
Sandy Rittgers	Hubbard Co. Auditors Office	Deputy Auditor
Tim Shwartz	MN Power	Lead Lineworker
Tom Vanderwahl	Greater NWEMS	Director
Vern Massie	Hubbard Co. Commissioner	Board Chair

Jurisdictional representatives participating on the steering committee were contacted throughout the plan update process to provide feedback on the hazards of concern to their community and the mitigation actions which they would seek to implement upon plan adoption. The list of final mitigation actions was divided into jurisdiction-specific mitigation action charts so that each could see and address those actions that applied specifically to their cities (see *Appendix G: Mitigation Actions by Jurisdiction*).

2.2 Review of Existing Plans

Hubbard County and its local communities utilized a variety of planning documents to direct community development. These documents include comprehensive plans, water plans, and emergency operations plans. The planning process also incorporated the existing natural hazard mitigation elements from previous planning efforts. Table 2 lists the plans, studies, reports, and ordinances used in the development of the plan.

Table 2. Planning Documents used for MHMP Planning Process

Author(s)	Year	Title	Description	Where Used
Minnesota Division of Homeland Security and Emergency Management	2014	Minnesota All-Hazard Mitigation Plan Update	Statewide hazard mitigation plan.	Section 4
Hubbard County Soil and Water Conservation District	2016	Local Water Management Plan	The Hubbard County Local Water Management Plan (HCLWMP) is committed to protecting, preserving and improving water resources in Hubbard County by being proactive, efficient, customer focused, organized and innovative while being good stewards of the county's resources.	Section 3
Hubbard County	2015	Shoreland Management Ordinance No. 17	The purpose of this ordinance is to preserve and enhance the quality of surface waters; preserve the economic and natural environmental values of shorelands; and provide for the wise utilization of waters and related land resources.	Section 4

2.3 Planning Process Timeline and Steps

In order to update the 2010 Hubbard County Multi-Hazard Mitigation Plan, UMD consultants worked in coordination with the Hubbard County Emergency Management Director, State of Minnesota Hazard Mitigation officials, and members of the steering committee. The goals of the updating process were to include more recent data documenting the critical infrastructure and hazards faced by Hubbard County, reformat and reorganize the plan to reflect definitions of hazards as expressed in the 2008 State of Minnesota Multi-Hazard Identification and Risk Assessment Plan, and reflect current hazard mitigation priorities in Hubbard County. Therefore, the new plan includes not only new data documenting the types of hazards faced by Hubbard County residents and Emergency Planning officials, but also new thinking about how to best address these hazards.

This is a multi-jurisdictional plan that covers the Hubbard County and the cities of Park Rapids, Nevis, Laporte and Akeley. The Hubbard County risks and mitigation activities identified in this plan incorporate the concerns and needs of townships, school districts, and other entities participating in this plan.

On July 12, 2016, the Geospatial Analysis Center hosted a kickoff webinar, which was attended by the Hubbary County Emergency Management Director. The webinar included a project overview, GAC background, the roles and responsibilities of the Emergency Management Director, contents of the Multi-Hazard Mitigation Plan, planning process and projected timeline (see *Appendix E: Steering Committee Meetings* for webinar slides).

A steering committee meeting took place on November 30, 2016, at the Hubbard County Law Enforcement Center in Park Rapids, which included the Hubbard County MHMP steering committee, UMD staff, and Bonnie Hundrieser of Hundrieser Consulting, LLC. The steering committee was provided with an overview of the purpose, process and timeline for the Hubbard County Multi-Hazard Mitigation Plan update, as well as the role and responsibilities of steering committee members. Appendix E provides documentation of steering committee meeting summaries, including participant sign-in sheets and presentation slides.

Steering committee members were engaged in providing feedback on plans and programs in place as they relate to hazards facing the county, and they discussed potential mitigation actions to be added to the plan. This information was used to inform the development of mitigation strategies in the updated plan.

In February 2017, Hubbard County issued a news release inviting public feedback and participation for the Hubbard County MHMP update (for complete documentation, see *Appendix F: Public Outreach & Engagement Documentation*).

On March 23, 2017, members of the Hubbard County Multi-Hazard Mitigation (MHMP) Planning Team convened to conduct a review and discussion of the draft mitigation action charts developed for Hubbard County and the city jurisdictions participating in the plan. The meeting was facilitated by Bonnie Hundrieser, a member of the University of Minnesota – Duluth Geospatial Analysis Center (GAC) planning team that is leading the update of the Hubbard County MHMP. See Appendix E for a full meeting summary.

For more information on the planning process, see sections 5 and 6.

An Esri Story Map was made documenting past hazards in the county. Story maps combine mapping and analysis with multi-media content such as images, videos, text, and hyperlinks. Data layers such as the 100-year floodplain and potential economic loss produced with the FEMA Hazus-MH tool were integrated with poignant imagery from past events, in the hope that the story map would serve as a helpful tool for visually 'reminding' residents about hazards, to encourage their participation in future mitigation (http://arcg.is/2hR4Q0d).

In order to provide opportunity for public input, Hubbard County issued a second new release in (month), 2017 inviting public review and feedback on the draft plan. The news release provided information on where the plan could be viewed and comments submitted.

Info needed on gathering public input.

Table 3. Hubbard County Hazard Mitigation Update Meetings and Public Outreach

Meeting Type	Date	Location
Kickoff Webinar	7/12/2016	Hosted online by GAC in Duluth
Steering Committee	11/30/2016	Hubbard County Law Enforcement Center, Park Rapids
Steering Committee	3/23/2017	Hubbard County Emergency Operations Center, Park Rapids
Public Outreach	2/2017	News release inviting public feedback
Public Outreach		

At the close of the public outreach period, the UMD consultants worked with the Hubbard County Emergency Management Director and members of the steering committee to incorporate comments from the public into the Multi-Hazard Mitigation Plan.

Section 3 – Hubbard County Profile

This section offers a general overview of Hubbard County to provide a basic understanding of the characteristics of the community, such as the physical environment, population, and the location and distribution of services.

3.1 General County Description

Hubbard County is located in north-central Minnesota, about 180 miles northwest of the Minneapolis/St. Paul metropolitan area, and 120 miles west of Duluth, MN. According to the U.S. Census Bureau, Hubbard County covers approximately 926 square miles, and has a total population of 20,428 as of 2010. The county seat is Park Rapids, which is also the largest city in the county.

The 4 cities of Hubbard County include Park Rapids (3,903), Nevis (390), Akeley (432), and Laporte (111). The county has 28 organized townships and 5 unincorporated communities. Between 2000 and 2010 the population increased from 18,376 to 20,428 (11.17%).

3.2 Environmental Characteristics

Hubbard County is comprised of land characterized by glacial geomorphology, much like its adjacent counties. The headwaters of the Mississippi lay just to the west of the county, with the river itself running through the northern portion. Deciduous forest makes up the majority of land cover throughout the county, with many areas for agricultural activity.

Among species native to the region, there are a myriad of reports of different invasive species. According the MN DNR, the most notable among them are reed canary grass, Canadia Thistle, buckthorn and bull thistle.

Lakes pockmarking the northern and southern portions of the state lay among mostly level or rolling hills, which are suitable for agricultural production. Running through the geographic center of the county are more hummocky areas, not suitable for farming, but certainly so for deciduous and evergreen forest. Soil types throughout the county include loam in the south, and till prairie and plain soils with peat in the southeastern corner and scattered throughout. Most of the county has an organic composition ranging from 4% to 8% in the northern and southern portions, and upwards of 40% in the central portion of the county.

A large proportion of land cover in Hubbard County is useful for outdoor recreation and forest wildlife. The climate of the region does not allow for less hearty crops, but according to the USDA is still suitable for corn, grains and some livestock.

3.3 Hydrography

Water resources are an important part of Hubbard County. Aside from recreation, available freshwater is vital to the overall function of the community, providing not only drinking water, but enabling wastewater treatment and agricultural irrigation. The county's lakes and rivers provide healthy ecosystems for fish and other wildlife throughout the region, while also supporting the many households, vacation homes, and economic interests of the communities around the county.

Hubbard County receives approximately 26" of precipitation annually, which drains into the upper Mississippi drainage basin. Within the county there are 3 major watersheds, including the Mississippi River Headwaters, Leech Lake River and Crow Wing River watersheds, while surface water accumulates in the many lakes throughout the county.

3.3.1 Groundwater

In 1989, the Minnesota Pollution Control Agency published a statewide evaluation of groundwater contamination susceptibility. The assessment used four parameters (aquifer materials, recharge potential, soil materials, and vadose zone materials) to delineate areas of relative susceptibility to groundwater contamination (MN DNR, 1989). According to this analysis, the majority of Hubbard County is in the highest susceptibility areas.

Water table aquifer vulnerability (using 2011 data from the Minnesota Department of Agriculture) and public wells are mapped in Figure A - 14.

3.3.2 Lakes

There are 1,205 lakes of at least 2 acres in size in Hubbard County. The majority of both chains of larger lakes and smaller bodies of water are in the southern portion of the county, between Park Rapids and Akeley. Of the named lakes, 137 are considered to have deep-water habitats. These lakes cover 46,909 acres of Hubbard County's 639,360 total acres (7%).

According to the MN DNR, there are 44 bodies of water that are considered impaired. The two reasons for their listing as impaired waters are mercury in fish tissue and an excess amount of nutrients in the water. Among the 1,463 bodies of water in the state that were listed as impaired in 2013, all are listed because of mercury in fish, or excess nutrients while some also include dissolved chlorine, PCBs in fish and Perfluorooctane Sulfonate. Minnesota's waters are among the cleanest and most widely used in the world. For residents of Hubbard County, the lakes as well as the groundwater in their communities are the direct source of their potable water. With no municipal water purification available in the county, the quality of water available to residents has a direct impact on how well it can be purified by consumers.

3.3.3 Rivers

There are 8 major rivers that flow through Hubbard County; the Crow Wing, Kabekona, Mississippi, Necktie, Sand, Schoolcraft, Shingobee and Straight rivers. There are also 15 major creeks that run throughout the county: Alcohol, Big Swamp, Birch, Bungoshine, Cold, Hellcamp, Hennepin, Kawishiwash, LaSalle, Muckey, Pokety, Schoolcraft, and Stall creeks.

Hubbard County is completely within the Upper Mississippi Drainage Basin, whose major tributaries are the Mississippi, Crow Wing, and Leech Lake Rivers.

3.3.4 Wetlands

Wetlands are an important feature to the hydrography of an ecosystem. Wetlands of all types help to naturally filter water, and provide nutrients required to help support the local ecology. They are also helpful in mitigating flooding, as their porous nature allows for water storage.

In Hubbard County there are 6 types of wetland, including wet meadow, shallow and deep marsh, shrub swamp, wooded swamp and bogs. All of these lay alongside bodies of water and in the lower elevations of the county, and serve as an effective defense against flooding from increased flow or high amounts of precipitation. Wetlands constitute 323,901 acres (506 square miles) in Hubbard County, which is about 50% of all land in the county. This is not only a sizable portion of land cover, but also poses a major challenge to the county in terms of environmental protection. With so much land adjacent to both agricultural land and residential properties, in addition to lakes and major rivers, wetlands can become susceptible to the high amounts of human-affected runoff. Although wetlands have a high capacity for filtration, ever-increasing amounts of effluent are increasing pressure on more sensitive parts of the wetland ecosystem.

3.4 Climate

The climate of Hubbard County ranges from reaching 90°F in the summer to -40°F in the winter. The annual mean temperature for Hubbard County is 39°F in the central portion of the county, and 40°F in the southern portion of the county. The central region of Minnesota is characterized by this wide range in temperature.

Annual precipitation in the county ranges from 26 inches in the central region running east and west, with 25 inches in the northern and southern regions. In Hubbard County, the average last-frost date is somewhere between May 29th-June 4th in the southern region and June 5-11th in the northern region. According to the MN DNR, the mean annual snowfall in Hubbard County is 45 inches, which is about 20 inches higher than the national average.

3.4.1 Climate Change

Minnesota's climate is currently changing in ways that affect the environment, economy and everyday life. Historical weather data show changing trends in some weather phenomenon over the past few decades, and future changes are likely. Definite predictions are difficult to make, as changes may vary depending on geographical location, even within Minnesota. Intense study of these topics is ongoing.

According to the 2015 Minnesota Weather Almanac,

> *During the three most recent decades, the Minnesota climate has shown some very significant trends, all of which have had many observable impacts…Among the detectable measured quantity changes are: (1) warmer temperatures, especially daily minimum temperatures, more weighted to winter than any other season; (2) increased frequency of high dew points, especially notable in mid- to late summer as they push the Heat Index values beyond 100°F; and (3) greater annual precipitation, with a profound increase in the contribution from intense thunderstorms* (Seeley M. , 2015).

Winter temperatures in Minnesota have been warming nearly twice as fast as annual average temperatures, a trend that has been noticed throughout the Midwest. There has also been a distinct spread of warmer lows into the northern portion of the state, and 7 of the top 10 warmest years in Minnesota since record-keeping began in 1895 have occurred within the last 15 years (Minnesota Department of Health, 2015). Various studies have also concluded that the frequency and intensity of precipitation in the Midwest has increased, with more storm events leading to flooding.

Rural communities are particularly vulnerable to climate change, due to their dependence upon natural resources, physical isolation, limited economic diversity, higher poverty rates and aging populations. According to *Climate Change Impacts in the United States: The Third National Climate Assessment*,

> *Warming trends, climate volatility, extreme weather events, and environmental change are already affecting the economies and cultures of rural areas. Many rural communities face considerable risk to their infrastructure, livelihoods, and quality of life from observed and projected climate shifts…These changes will progressively increase volatility in food commodity markets, shift the ranges of plant and animal species, and, depending on the region, increase water scarcity, exacerbate flooding and coastal erosion, and increase the intensity and frequency of wildfires across the rural landscape* (Hales, et al., 2014).

The Assessment also notes that transportation systems in rural areas are more vulnerable to risks such as flooding, since there are typically fewer transportation options and infrastructure redundancies. In addition, power and communication outages due to severe weather events typically take longer to repair in rural areas, which can increase the vulnerability of elderly populations. Rural areas are also more vulnerable since they typically have more limited financial resources to deal with the effects of climate change.

The composition of the region's forests are expected to change as increasing temperatures shift tree habitats northward. While forests in the Midwest are currently acting as a net absorber of carbon, this could change in the future due to projected increases in insect outbreaks, forest fires, and drought, which will result in greater tree mortality and carbon emissions (Pryor, et al., 2014).

The National Climate Assessment suggests that infrastructure planning (particularly water resources infrastructure) should "be improved by incorporating climate change as a factor in new design standards and asset management and rehabilitation of critical and aging facilities, emphasizing flexibility, redundancy, and resiliency" (Georgakakos, et al., 2014).

Federal, state, and tribal governments are increasingly integrating climate change adaptation into existing decision-making, planning, or infrastructure-improvement processes (Georgakakos, et al., 2014).

3.5 Demographics

The 2010 census reports 20,428 people living in Hubbard County. The population is spread among 32 different communities throughout the county, comprised of 4 cities and 28 townships (Table 4 and Figure 1).

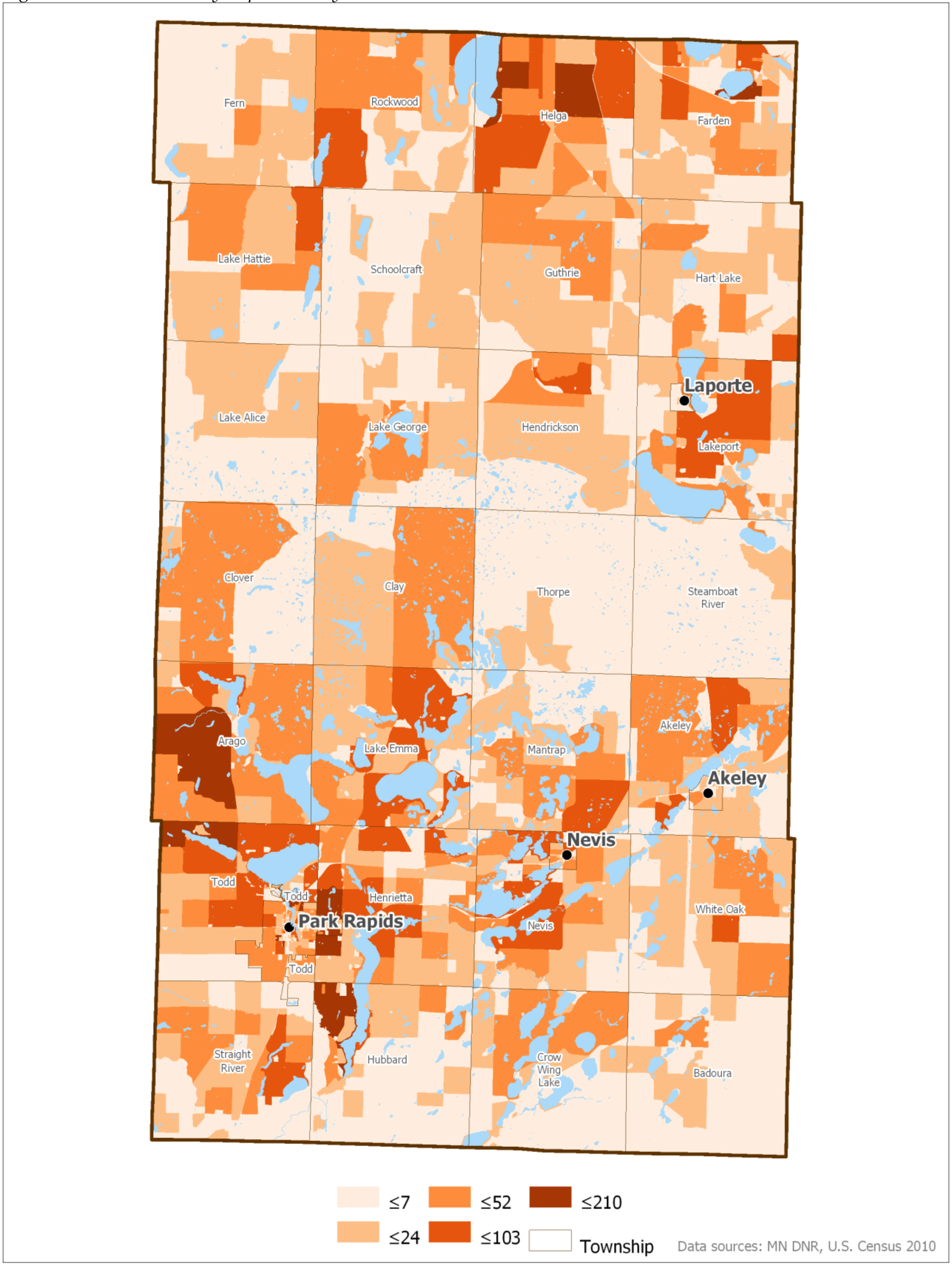
Part of the Leech Lake Band of Ojibwe Tribal Reservation is in the northeastern corner of Hubbard County. According to the 2010 census, Leech Lake Reservation had the highest population of any reservation in Minnesota with 10,660 residents. The majority of the reservation and its population are within Cass County.

Table 4. Hubbard County Population by Community, 2010

Community	2010 Population	% of County
Akeley	432	2.11%
Laporte	111	0.54%
Nevis	390	1.91%
Park Rapids	3,709	18.16%
Akeley Township	551	2.70%
Arago Township	607	2.97%
Badoura Township	128	0.63%
Clay Township	69	0.34%
Clover Township	154	0.75%
Crow Wing Lake Township	332	1.63%
Farden Township	1,137	5.57%
Fern Township	270	1.32%
Guthrie Township	555	2.72%
Hart Lake Township	509	2.49%
Helga Township	1,401	6.86%
Hendrickson Township	314	1.54%
Henrietta Township	1,642	8.04%
Hubbard Township	784	3.84%
Lake Alice Township	93	0.46%
Lake Emma Township	985	4.82%
Lake George Township	378	1.85%
Lake Hattie Township	202	0.99%
Lakeport Township	845	4.14%
Mantrap Township	519	2.54%
Nevis Township	1,009	4.94%
Rockwood Township	430	2.10%
Schoolcraft Township	103	0.50%
Steamboat River Township	126	0.62%
Straight River Township	726	3.55%
Thorpe Township	49	0.24%
Todd Township	1,393	6.82%
White Oak Township	475	2.33%
Total:	**20,428**	

Source: U.S. Census Bureau, 2015

Figure 1. Hubbard County Population by Census Block, 2010



Population trends have an important part in the decision-making processes for all kinds of services, including transportation, law enforcement and emergency response. An understanding of population trends and locations of population concentrations is important for making projections regarding potential impacts in the event of a disaster.

As of 2010 Hubbard County had a population of 20,428 residents, with a population density of 20/sq mi. Park Rapids, the largest city in the county and the county seat, has a population of 3,709. The population of the county between 1990 and 2000 increased 23%, and 11% between 2000 and 2010. The population in the county only fell between 1950 and 1960, but grew steadily from the 1970s onward (Table 5).

Table 5. Hubbard County Population Change (1940-2010)

1940	1950	1960	1970	1980	1990	2000	2010	Change 1940-2010	Change 2000-2010
11,085	11,085	9,962	10,583	14,098	14,939	18,376	20,428	+84%	+11%

Source: U.S. Census Bureau, 2013

Hubbard County's population is projected to grow 5% between 2015 and 2045. Table 6 below shows population projections for Hubbard County through 2045.

Table 6. Hubbard County Population Projections (2015-2045)

2015	2020	2025	2030	2035	2040	2045	Projected Change 2015-2045
21,980	22,675	22,815	22,858	22,789	22,855	23,162	+5%

Source: Minnesota State Demographic Center, Minnesota Planning, 2015

3.6 Economy

In 2012, the education and health services industry accounted for the largest number of jobs (22%), followed by the trade, transportation and utilities sector (20%). The third largest industry was manufacturing, which held 14% of the county's jobs. Between 2004 and 2014 the number of jobs in Hubbard County decreased by 11%. Table 7 provides an overview of the annual average employment by major industries in Hubbard County.

Table 7. Annual Average Employment by Major Industry Sector, Hubbard County

Industry	Number of Jobs (2004)	Number of Jobs (2014)
Natural Resources and Mining	374	359
Construction	457	314
Manufacturing	1,331	809
Trade, Transportation, Utilities	1,115	1,142
Information	63	62
Financial Activities	244	202
Professional /Business Services	197	178
Education and Health Services	1,450	1,305
Leisure and Hospitality	786	742
Public Administration	277	454
Other Services	211	199
Total Number of Jobs:	**6,507**	**5,767**

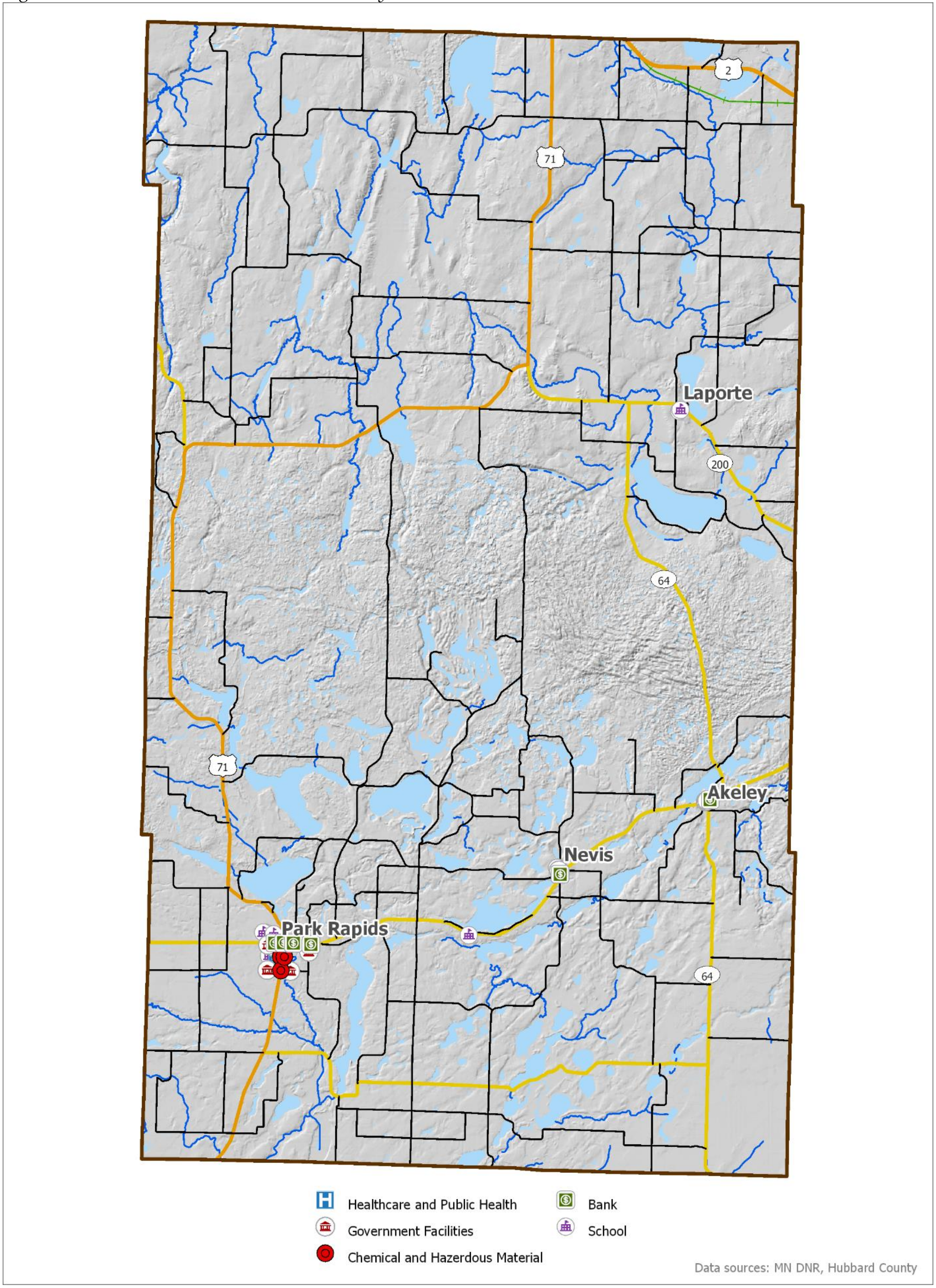
Source: Minnesota Dept. of Employment and Economic Development. Note: data discrepancies between segment values and totals exist due to data suppression for confidentiality.

In 2014, the median household income in the county was $46,412, compared to the Minnesota average of $60,828. Between 2009 and 2014 the median household income in Hubbard County increased 5%, compared to a 7% increase of Minnesota's median household income. In 2014, it was estimated that 2,561 individuals were considered below the poverty line, about 13% of the working population in the county, as compared to Minnesota's 11.5%.

3.7 Community Services & Infrastructure

The following section provides an overview on community services and infrastructure within Hubbard County. Examples of community services include healthcare and public safety, while examples of community infrastructure include power utilities, water and sewer facilities, and the transportation network. Figure 2 below shows critical facilities in the county, and tables of all critical facilities can be found in Appendix B.

Figure 2. Critical Facilities in Hubbard County



3.7.1 Health Care Providers

There is an Essentia Health Clinic and one hospital in Hubbard County, St. Joseph's in Park Rapids. The facility is a 25-bed critical access hospital, which also has a 24-hour Emergency Department. Park Rapids also has the Sanford Health Clinic.

Ambulance service is based out of Park Rapids. Other ambulances are available from Bemidji and Cass Lake.

Figure A - 13 in Appendix A depicts health services in Hubbard County.

3.7.2 Public Safety Providers/Government Services

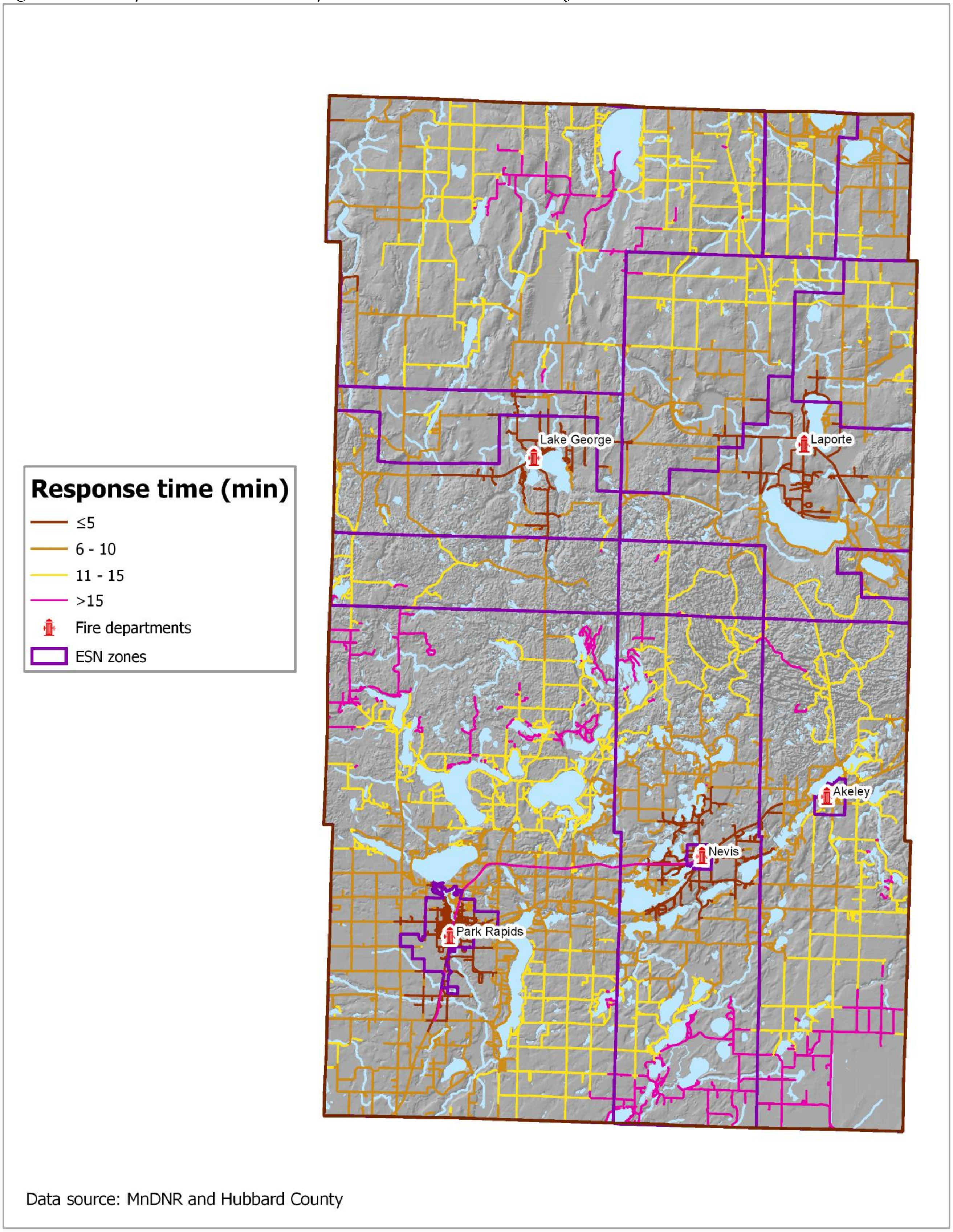
The Hubbard County Sheriff's Department is charged with providing emergency and safety services to the entire county. The Hubbard County Sheriff is the chief law enforcement officer in the county. Outside of regular law enforcement, the Sheriff's Department provides mutual assistance to law enforcement offices around the county. Other departments include the Park Rapids Police Department and Akeley City Police Department, as well as surrounding departments like the Leech Lake Tribal Police Department, Cass Lake Police Department and Bemidji City Police Department.

Figure A - 4 in Appendix A depicts government and emergency facilities, including city halls, fire departments, police departments, sheriff's department, and the Hubbard County Courthouse.

There are fire departments located in Park Rapids, Akeley, Nevis, Laporte and Lake George. In addition, several outside fire departments service Hubbard County: Menahga Fire Department, Carsonville Fire Department, Bemidji Fire Department, and Cass Lake Fire Department.

Figure 3 shows fire departments and fire response times in Hubbard County. These drive times were created using the ArcGIS Network Analyst extension and Esri's Business Analyst. The user may note discrepancies between MnDOT road data and the map in this document; Network Analyst requires a seamlessly-connected data source in order to perform the calculations for drive times, which Business Analyst provides but MnDOT does not. The Business Analyst data was used for this reason. According to this model, several areas of the county are over 15 minutes away from the nearest fire department.

Figure 3. Fire Departments and Fire Response Times in Hubbard County



3.7.3 Utilities/Communications

There are 4 electrical power companies in Hubbard County: The Itasca Mantrap Co-Op Electric Association, Minnesota Power, Todd-Wadena Electric Company, and Beltrami Electric Cooperative Inc.

In addition to electric power, there are a number of propane companies that serve Hubbard County, including Gas Service Company and Lakes Area Co-Op in the county itself, as well as Bemidji Oil & Propane Co. and Lakes Gas Co. in Cass County.

3.7.4 Transportation

Hubbard County is home to over 1,700 miles of roadway, ranging from county to state highways. Major routes that run through the county include US-2, US-71, MN-34, 64, 87, & 200. These roads are maintained primarily by MN DOT, with federal- and state-allocated funding, and constitute 160 miles of roadway. There are also 490 miles of CSAH and county roads running through Hubbard County, which are maintained by the county and municipal authorities as needed. There are no municipal transportation services, but privately operated services exist, including dial-a-ride and countywide transportation for a fare.

There are 2 airports in the county, the Park Rapids Municipal Airport and the Nary National Airport. Both have asphalt runways. The Park Rapids Municipal Airport is publicly owned by the City of Park Rapids, and has an average of 43 aircraft operations per day. The Nary National Airport is privately owned, and has an average of 42 aircraft operations per week.

3.8 Land Use and Ownership

Hubbard County covers a total of 926 square miles (592,640 acres). Parts of 2 state parks are located within the county: La Salle Lake State Park and Itasca State Park, both of which are located on the western boundary of the county.

A small portion of the Leech Lake Band of Ojibwe Tribal Reservation lies within Hubbard County, along the northeastern county boundary.

In 2012, 406 farms existed in the county, covering 116,941 acres (20% of the county). Of this farming land, 59% is cropland, 23% is classified as woodland, and 12% is pastureland. The rest is classified as "other uses." The number of farms in the county decreased by 13% between 2007 and 2012, while the number of acres farmed decreased by 7% (Census of Agriculture, 2012). According to the 2016 update of the Hubbard County Local Water Management Plan, in the last year the county's forest cover has seen vast changes in conversion from forested to irrigated row crop agriculture with many new center pivot irrigation systems being installed.

According to Minnesota DNR data, the number of feedlots in Hubbard County is 69. For a map of all feedlots in the county, see Figure A - 24 (*Appendix A: Hubbard County Maps*).

Land ownership categories from the 2008 U.S. Geological Survey GAP (Gap Analysis Program) are shown in Figure A - 8 (*Appendix A: Hubbard County Maps*). Land cover is also mapped in Figure A - 7.

Section 4 – Risk Assessment

The goal of mitigation is to reduce the future impacts of a hazard including loss of life, property damage, disruption to local and regional economies, and the expenditure of public and private funds for recovery. Sound mitigation practices must be based on sound risk assessment. A risk assessment involves quantifying the potential loss resulting from a disaster by assessing the vulnerability of buildings, infrastructure, and people.

Basing risk assessments on the best information available is important in developing effective mitigation actions that benefit communities. Geographic Information System (GIS) tools are not only helpful in producing maps, but they also show structures at risk and may determine damage estimates for potential hazard scenarios. MN Homeland Security and Emergency Management (HSEM) mitigation staff encourages the use of GIS tools in risk assessments because they produce good information to be used in the risk assessment process. In recognition of the importance of planning in mitigation activities, FEMA created **Haz**ards **US**A **M**ulti-**H**azard (Hazus-MH), a powerful GIS-based disaster risk assessment tool. This tool enables communities to predict estimated losses from floods, hurricanes and other related phenomena and to measure the impact of various mitigation practices that might help reduce those losses. Hazus-MH was used by UMD Geospatial Analysis Center staff in the flood hazard risk assessment (see section 4.4.5).

This assessment identifies the characteristics and potential consequences of a disaster, how much of the community could be affected by a disaster, and the impact on community assets. A risk assessment consists of 3 components — hazard identification and prioritization, risk profile, and vulnerability profile. The last step is the risk ranking for each jurisdiction.

4.1 Hazard Identification/Profile

4.1.1 Hazard Identification

The cornerstone of the risk assessment is identification of the hazards that affect jurisdictions. To facilitate the planning process, several sources were employed to ensure that the natural hazards are identified prior to assessment.

The county maintenance of the plan includes continual updates of the hazards identified in the initial plan. The mitigation steering committee compared the hazards in the initial plan to current publications to determine if new hazards should be considered or if some should be deleted.

Natural hazards are identified in the FEMA publication "Multi-Hazard Identification and Risk Assessment – A Cornerstone of the National Mitigation Strategy," also known as MHIRA. FEMA Region V developed a list based on state mitigation plans in the region. The list was divided into natural (Table 8) and other hazards (Table 9) as was done in the 2014 Minnesota State Hazard Mitigation Plan.

Table 8. FEMA MHIRA Natural Hazards in the 2014 Minnesota State Hazard Mitigation Plan

Flooding	Hail	Drought
Dam/Levee Failure	Lightning	Extreme Heat
Wildfire*	Winter Storms	Extreme Cold
Windstorms	Erosion	Earthquakes
Tornadoes	Land Subsidence (Sinkholes & Karst)	

**Addressed in the State Mitigation Plan because Minnesota is a heavily forested state compared to other states in Region V.*

For the purpose of this plan, FEMA defines other hazards or "man-made hazards" as technological hazards and terrorism. These are distinct from natural hazards primarily in that they originate from human activity. In contrast, while the risks presented by natural hazards may be increased or decreased as a result of human activity, they are not inherently human-induced. The term "technological hazards" refers to the origins of incidents that can arise from human activities such as the manufacture, transportation, storage, and use of hazardous materials. For the sake of simplicity, this guide assumes that technological emergencies are accidental and that their consequences are unintended. The term "terrorism" refers to intentional, criminal, and malicious acts. There is no single, universally accepted definition of terrorism, and it can be interpreted in many ways. For the purposes of this plan, FEMA refers to "terrorism" as the use of Weapons of Mass Destruction (WMD), including biological, chemical, nuclear, and radiological weapons; arson, incendiary, explosive, and armed attacks; industrial sabotage and intentional hazardous materials releases; and "cyber terrorism."

Table 9. FEMA MHIRA Other Hazards in the 2014 Minnesota State Hazard Mitigation Plan

Terrorism	Nuclear Generating Plant Incidents	Ground and Surface Water Supply Contamination*
Infectious Disease Outbreak	Hazardous Materials Incidents	
Fires (Structures and Vehicles)	Transportation Incidents	

**Addressed in the State Hazard Mitigation Plan because Minnesota has made a high investment in its prized resource, water.*

4.1.2 Vulnerability Assessment by Jurisdiction

The steering committee met multiple times to review and update the hazards faced by residents of Hubbard County, update the existing mitigation actions published in the 2010 Multi-Hazard Mitigation Plan, and propose new mitigation actions.

To engage in this process the committee drew on a number of data sources. First, the committee examined the hazards identified in the 2010 Multi-Hazard Mitigation Plan (Table 10). The natural hazards that pose risk to Hubbard County were discussed and adjusted to reflect the definitions of natural hazards used in the 2014 Minnesota State Hazard Mitigation Plan. This was done in order to assure that the risks faced by Hubbard County were categorized the same way as the priority hazards established by the State of Minnesota.

Table 10. Hazards identified in the 2010 Hubbard County Multi-Hazard Mitigation Plan

Natural Hazards		
Flooding	Wildfires	Tornados
Winter Storms	Dam Failure	Windstorms
Manmade Hazards		
Pandemic/Infectious Disease	Human-Caused/Technological	

While the focus of this MHMP is on natural hazards, planning took place with the understanding that many non-natural hazards could occur as a result of natural disasters (i.e. disruption in electrical service due to freezing rain causing problems for both utility corporations and vulnerable populations dependent on electricity for heat).

This plan draws on a variety of data sources including the State of Minnesota and Homeland Security Emergency Management Critical Infrastructure Strategy for the State of Minnesota (2010), FEMA's Local Mitigation Planning How-to Guide Integrating Manmade Hazards into Mitigation Planning (2003), and the State of Minnesota Multi Hazards Identification Risk Assessment.

Hubbard County ranked hazards based on a Calculated Priority Risk index, or CPRI, for their 2014 Threat Hazard Identification and Risk Assessment (THIRA). These rankings were considered by the steering committee in the process of ranking hazards for the MHMP update. The methodology of the CPRI is outlined below.

4.1.3 Calculated Priority Risk Index

The vulnerability assessment builds upon the previously developed hazard information by identifying the community assets and development trends and intersecting them with the hazard profiles to assess the potential amount of damage that could be caused by each hazard event. A summary of Calculated Priority Risk Index (CPRI) Categories and Risk Levels is shown in Table 11.

Definitions of CPRI Categories

Probability – a guide to predict how often a random event will occur. Annual probabilities are expressed between 0.001 or less (low) up to 1 (high). An annual probability of 1 predicts that a natural hazard will occur at least once per year.

Magnitude/Severity – indicates the impact to a community through potential fatalities, injuries, property losses, and/or losses of services. The vulnerability assessment gives information that is helpful in making this determination for each community.

Warning Time – plays a factor in the ability to prepare for a potential disaster and to warn the public. The assumption is that more warning time allows for more emergency preparations and public information.

Duration – relates to the actual amount of time that an incident may take place over time.

Table 11. Summary of Calculated Priority Risk Index (CPRI) Categories and Risk Levels

CPRI Category	DEGREE OF RISK			Assigned Weighting Factor
	Level ID	Description	Index Value	
Probability	Unlikely	Extremely rare with no documented history of occurrences or events. Annual probability of less than 0.001	1	45%
	Possible	Rare occurrences with at least one documented or anecdotal historic event. Annual probability that is between 0.01 and 0.001.	2	
	Likely	Occasional occurrences with at least two or more documented historic events. Annual probability that is between 0.1 and 0.01.	3	
	Highly Likely	Frequent events with a well-documented history of occurrence. Annual probability that is greater than 0.1.	4	
Magnitude/Severity	Negligible	Negligible property damages (less than 5% of critical and non-critical facilities and infrastructure). Injuries or illnesses are treatable with first aid and there are no deaths. Negligible quality of life lost. Shutdown of critical facilities for less than 24 hours.	1	30%
	Limited	Slight property damages (greater than 5% and less than 25% of critical and non-critical facilities and infrastructure). Injuries or illnesses do not result in permanent disability and there are no deaths. Moderate quality of life lost. Shut down of critical facilities for more than 1 day and less than 1 week.	2	
	Critical	Moderate property damages (greater than 25% and less than 50% of critical and non-critical facilities and infrastructure). Injuries or illnesses result in permanent disability and at least one death. Shut down of critical facilities for more than 1 week and less than 1 month.	3	
	Catastrophic	Severe property damages (greater than 50% of critical and non-critical facilities and infrastructure). Injuries or illnesses result in permanent disability and multiple deaths. Shut down of critical facilities for more than 1 month.	4	
Warning Time	Less than 6 hours	Less than 6 hours	4	15%
	6 to 12 hours	6 to 12 hours	3	
	12 to 24 hours	12 to 24 hours	2	
	More than 24 hours	More than 24 hours	1	
Duration	Brief	Up to 6 hours	1	10%
	Intermediate	Up to 1 day	2	
	Extended	Up to 1 week	3	
	Prolonged	More than 1 week	4	

The hazard rankings for the Hubbard County MHMP update (Table 12) were based upon review of 1) hazard rankings in the past MHMP, 2) hazard rankings in the Calculated Priority Risk Index (CPRI) conducted by the county, and 3) group review and discussion during the MHMP steering committee meetings.

Table 12. Hazard Rankings for 2017 MHMP Update

Natural Hazards	County Ranking
Wildfire	High
Severe Summer Storms (Thunderstorms, Lightning, Hailstorms, Windstorms, Tornadoes)	High
Severe Winter Storms	Moderate
Flash Flood & Riverine Flood	Moderate
Extreme Heat	Moderate
Extreme Cold	Moderate
Erosion/Land Subsidence	Low
Drought	Low
Dam Failure	Low

4.1.4 Hazard Profiling Concept of Planning

The risk assessments identify the characteristics and potential consequences of a disaster, how much of the community could be affected by a disaster, and the impact on community assets. A risk assessment consists of 3 components—hazard identification, risk profile, and vulnerability profile. The last step is the risk ranking for each jurisdiction. Hubbard County jurisdictions all agreed to the same ranking of hazards in their communities as the County.

4.1.5 GIS and Risk Assessment

The risk analysis step in this assessment quantifies the risk to the population, infrastructure, and economy of the community. Hazards that can be geographically identified (wildfires, windstorms, tornadoes, hail, floods) were mapped.

Hazus-MH was used to estimate the damages incurred for a 100-year flood and for general asset assessment. Hazus-MH also generates aggregated loss estimates for the entire county due to a 100-year flood. Aggregate inventory loss estimates, which include building stock analysis, are based upon the assumption that building stock is evenly distributed across each census block. Therefore, it is possible that overestimates of damage will occur in some areas while underestimates will occur in other areas. With this in mind, total losses tend to be more reliable over larger geographic areas (groups of many blocks) than for individual census blocks. It is important to note that Hazus-MH is not intended to be a substitute for detailed engineering studies.

4.1.6 National Centers for Environmental Information (NCEI) Records

Historical storm event data was compiled from the National Centers for Environmental Information (NCEI). NCEI records are estimates of damage reported to the National Weather Service (NWS) from various local, state, and federal sources. However, these estimates are often preliminary in nature and may not match the final assessment of economic and property losses related to given weather events.

The NCEI data included 341 reported events in Hubbard County between 1950 and 2016. However, some weather event categories only had available data going back as recent as 1996. No records before

1950 were available. A summary table of events related to each hazard type is included in the hazard profile sections that follow. A full table listing all events, including additional details, is included in Appendix C. NCEI hazard categories used in this plan are listed in Table 13.

Table 13. National Centers for Environmental Information Historical Hazards

Hazard	
Tornado	Hail
Thunderstorm Wind	Flood/Flash Flood
Winter Weather/ Winter Storm/Blizzard	Cold/Wind Chill
Excessive Heat/Heat	Lightning

4.1.7 FEMA Declared Disasters

Another historical perspective is derived from FEMA-declared disasters. 6 major disaster and 2 emergency declarations in Hubbard County have been made between 1957 and 2016 (Figure 4).

Figure 4. FEMA-Declared Disasters and Emergencies in Minnesota, 1957-October 2016

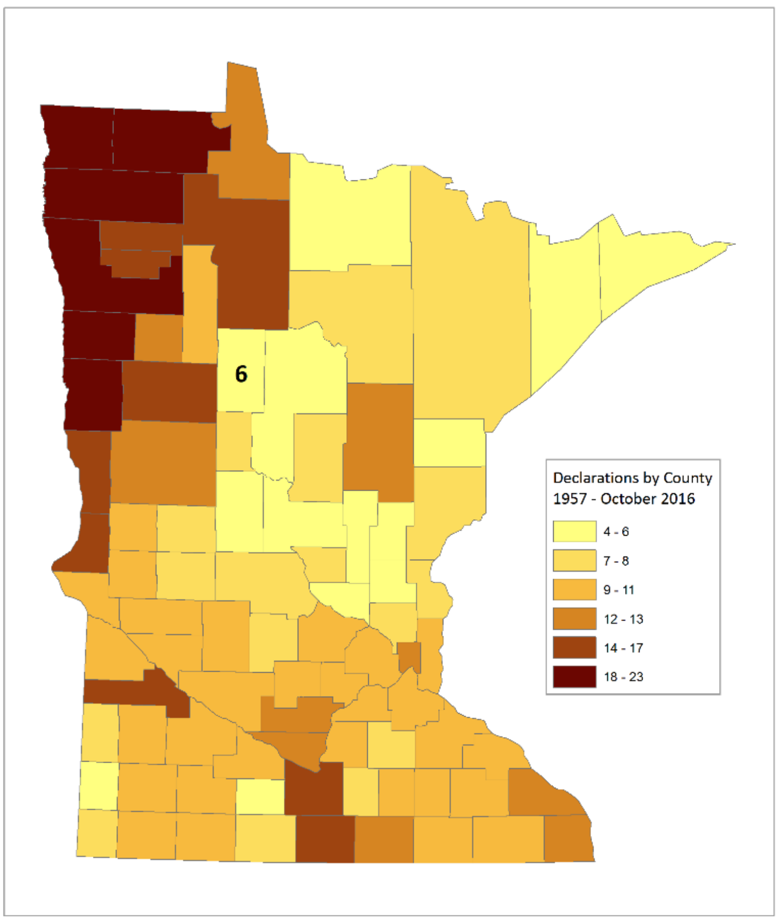


Table 14 and Table 15 show the details of the disasters including payments for Public Assistance (PA) and Individual Assistance (IA), listed under the flooding and severe storm profiles. No declarations were made for the other storms listed in the NCEI database. Reviewing the federal payments for damages from the declared disasters is a way of correlating the impact from the NCEI report.

Table 14. FEMA-Declared Major Disasters in Hubbard County (1953-2016)

Incident	Declaration Date and Disaster Number	Incident Period	Total PA Obligated by FEMA for Disaster in Minnesota	Total PA Obligated by FEMA for Disaster in Hubbard County	Individual Assistance in Minnesota	Individual Assistance in Hubbard County
Severe Storms, Flooding	4/9/2009 DR-1830	3/16/2009 – 5/22/2009	$38,074,443	$513,860	Yes, amount unknown	None
Severe Storms, Flooding, Tornadoes	6/14/2002 DR-1419	6/9/2002 – 6/28/2002	$33,202,868	$330,844	Yes, amount unknown	None
Severe Storms, Winds, Flooding	7/28/1999 DR-1283	7/4/1999 – 8/2/1999	$1,951,051	$4,799	Yes, amount unknown	None
Severe Storms, Flooding	4/8/1997 DR-1175	3/21/1997 – 5/24/1997	Yes, amount unknown	$6,789	Yes, amount unknown	None
Severe Winter Storms, Blizzards	1/16/1997 DR-1158	1/3/1997 – 2/3/1997	Yes, amount unknown	Yes, amount unknown	None	None
Severe Storm, Thunderstorm, High Winds, Flooding, Tornadoes, Heat	8/18/1995 DR-1064	7/9/1995 – 7/14/1995	Yes, amount unknown	Yes, amount unknown	None	None

** Data provided by MN HSEM in September 2016, and https://www.fema.gov/openfema-dataset-disaster-declarations-summaries-v1 accessed February 2017. Values are estimates collected at the time of the disaster.*

Table 15. FEMA-Declared Emergencies in Hubbard County (1974-2016)

Incident	Declaration Date and Disaster Number	Incident Period	Individual Assistance in Minnesota	Public Assistance (all affected areas)
Hurricane Katrina Evacuation	9/13/2005 EM-3242	8/29/2005 – 10/1/2005	$0	$2,470,003
Drought	6/17/1976 EM-3013	6/17/1976	Unknown	Unknown

** Data provided by MN HSEM in September 2016. Values are estimates collected at the time of the disaster.*

Table 16 depicts the historical projects in Hubbard County resulting from hazard mitigation funding.

Table 16. Historical Hazard Mitigation Funding (HMGP and PDM) in Hubbard County

Year	Project Description	Sub-Grantee	Federal Share
2014	Construction of 2 safe rooms at Camp Wilderness	Hubbard County	$1,428,790
2008	Bury 4.5 miles of overhead power lines	Itasca-Mantrap Co-Op Electrical Association	$161,209
2007	Local Multi-Hazard Mitigation Plan update	Hubbard County	$39,000
1998	Bury 6 miles of overhead power lines	Itasca-Mantrap Co-Op Electrical Association	$370,000
Total HMGP/PDM Funding – Hubbard County			**$1,998,999**

**Data downloaded from https://www.fema.gov/media-library/assets/documents/28323 and https://www.fema.gov/media-library/assets/documents/103341 on 2/20/2017.*

4.2 Vulnerability Assessment

4.2.1 Asset Inventory

A 2010 essential facility dataset (schools, medical facilities, fire stations, and police stations compiled from state and county sources) was used to override the default Hazus-MH input database. Other critical facilities identified by the county were geocoded and overlaid with the Hazus-MH flood model output.

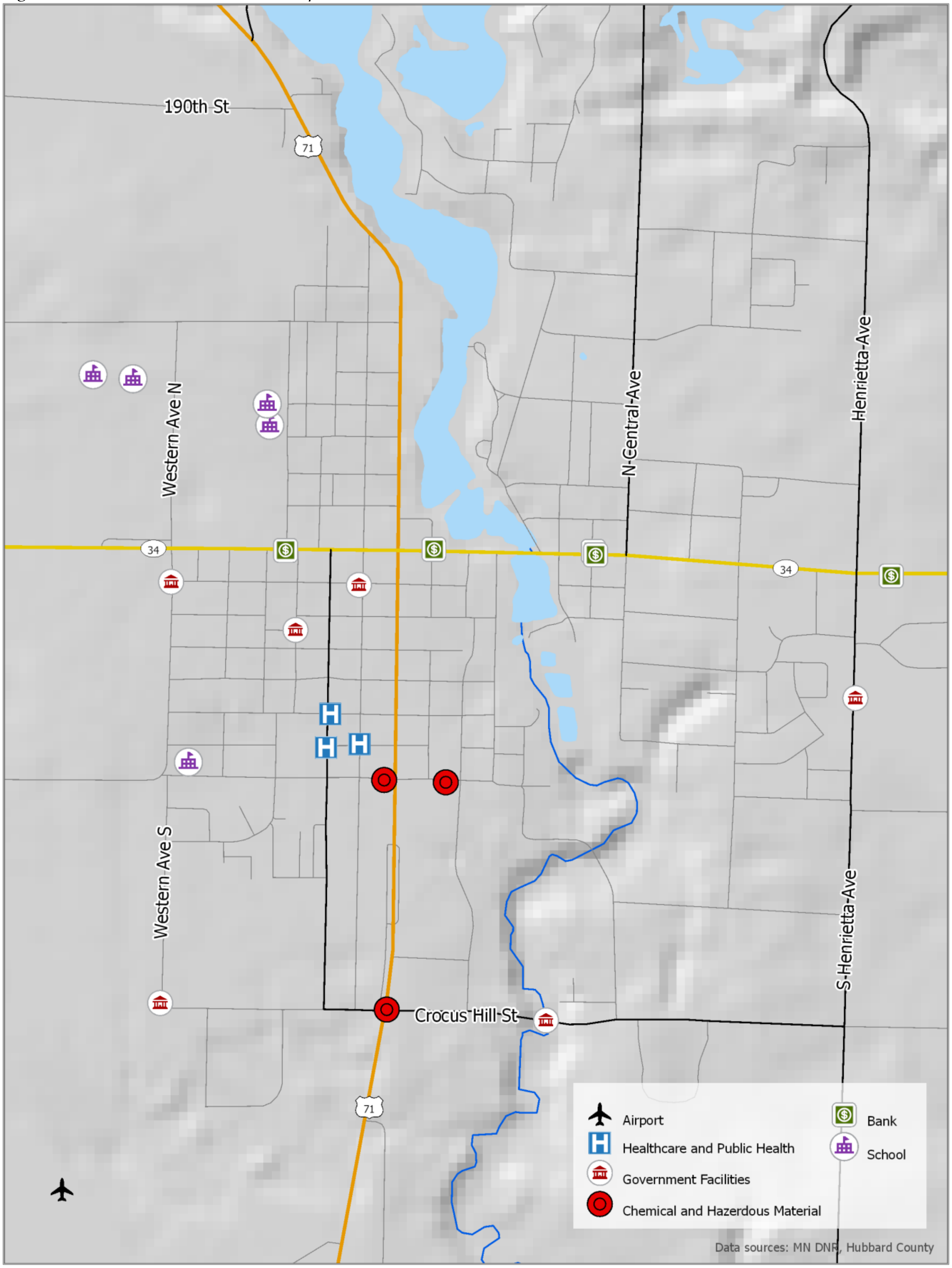
For the purposes of this plan, critical infrastructure and key resources were defined by Hubbard County. Table 17 below identifies the critical facilities that were included in the analysis. Essential facilities are a subset of critical facilities. Names and locations of all critical facilities are found in Appendix B. Figure 5 below maps the critical facilities in Park Rapids.

Table 17. Hubbard County Critical Infrastructure and Facilities

Infrastructure Type	Number of Facilities
Agriculture and Food	4
Banking and Finance	8
Chemical and Hazardous Materials	4
Commercial Facilities	2
Communications	2
Dams	6
Defense Industrial Base	0
Emergency Services	9
Energy	1

Infrastructure Type	Number of Facilities
Government Facilities	10
Healthcare and Public Health	4
Manufacturing	2
National Monuments and Icons	1
Nuclear	0
Postal and Shipping	6
Transportation	2
Water	3

Figure 5. Critical Facilities in Park Rapids



4.2.2 *Facility Replacement Costs*

Hubbard County specific building data was sourced from the parcel tax databases and parcel polygon data included building valuations and occupancy class. Structure values for each parcel were aggregated within each parcel and assigned to the parcel centroid point. Records were aggregated to the relevant census administrative boundaries for the flood hazard analysis.

Facility replacement costs and total building exposure by general occupancy class are identified in Table 18, as calculated by Hazus.

Table 18. Hubbard County Total Building Exposure

General Occupancy	Parcels Containing Structures	Total Building Exposure
Agriculture	641	$86,000,000
Commercial	574	$104,427,000
Education	10	$49,759,000
Government	78	$25,122,000
Industrial	19	$17,868,000
Religious/Non-Profit	93	$39,481,000
Residential	12,561	$1,394,656,000
Total:	**13,976**	**$1,717,313,000**

4.3 Future Development

Because Hubbard County is vulnerable to a variety of natural hazards, the county government—in partnership with the state government—must make a commitment to prepare for the management of these types of events. Hubbard County is committed to ensuring that county elected and appointed officials become informed leaders regarding community hazards so that they are better prepared to set and direct policies for emergency management and county response.

There have not been any changes in development, settlement patterns, and commercial land use patterns in Hubbard County since the last Multi-Hazard Mitigation Plan.

The Hubbard County Emergency Management Director will work to keep the jurisdictions covered by the Multi-Hazard Mitigation Plan engaged and informed during the plan's cycle. By keeping jurisdictional leaders actively involved in the monitoring, evaluation and update of the MHMP, they will keep their local governments aware of the hazards that face their communities and how to mitigate those hazards through planning and project implementation. Each jurisdiction has identified mitigation strategies they will seek to implement in their communities (see *Appendix G: Mitigation Actions by Jurisdiction*). Jurisdictions will include considerations for hazard mitigation in relation to future development when updating local comprehensive plans or other plans that may influence development.

4.4 Hazard Profiles

4.4.1 Tornadoes

Tornadoes are defined as violently-rotating columns of air extending from thunderstorms to the ground, with wind speeds between 40-300 mph. They develop under 3 scenarios: (1) along a squall line; (2) in connection with thunderstorm squall lines during hot, humid weather; and (3) in the outer portion of a tropical cyclone. Funnel clouds are rotating columns of air not in contact with the ground; however, the column of air can reach the ground very quickly and become a tornado.

Since 2007, tornado strength in the United States is ranked based on the Enhanced Fujita scale (EF scale), replacing the Fujita scale introduced in 1971. The EF scale uses similar principles to the Fujita scale, with 6 categories from 0-5, based on wind estimates and damage caused by the tornado. The EF Scale is used extensively by the NWS in investigating tornadoes (all tornadoes are now assigned an EF Scale number), and by engineers in correlating damage to buildings and techniques with different wind speeds caused by tornadoes. To see a comparative table of F and EF scales, see http://www.spc.noaa.gov/faq/tornado/ef-scale.html.

Figure 6. Damage from Tornado in Hubbard County, June 6, 2008 (NOAA, 2008)

In Minnesota, the peak months of tornado occurrence are June and July. The typical time of day for tornadoes in Minnesota ranges between 4:00 p.m. and 7:00 p.m. Most of these are minor tornadoes, with wind speeds under 125 miles per hour. A typical Minnesota tornado lasts approximately 10 minutes, has a path length of 5 to 6 miles, is nearly as wide as a football field, has a forward speed of about 35 miles an hour, and affects less than 0.1% of the county warned.

Tornado History in Hubbard County

According to the NCEI, 19 tornadoes were reported in Hubbard County between 1950 and 2016, causing no deaths, 2 injuries, and $7,152,530 dollars in property damage. Tornado classification ranged from F0/EF0 to EF3 on the Fujita Scale/Enhanced Fujita Scale. The most recent tornado occurred in May of 2011, causing $600,000 in property damage (NCEI). The DNR Forestry in Park Rapids lost 600 trees as a result of the tornado (Smith, 2011).

A tornado in June of 2008 caused over $5.5 million in damage in the county, according to NCEI records, and was ranked as high as an EF3 (Figure 6).

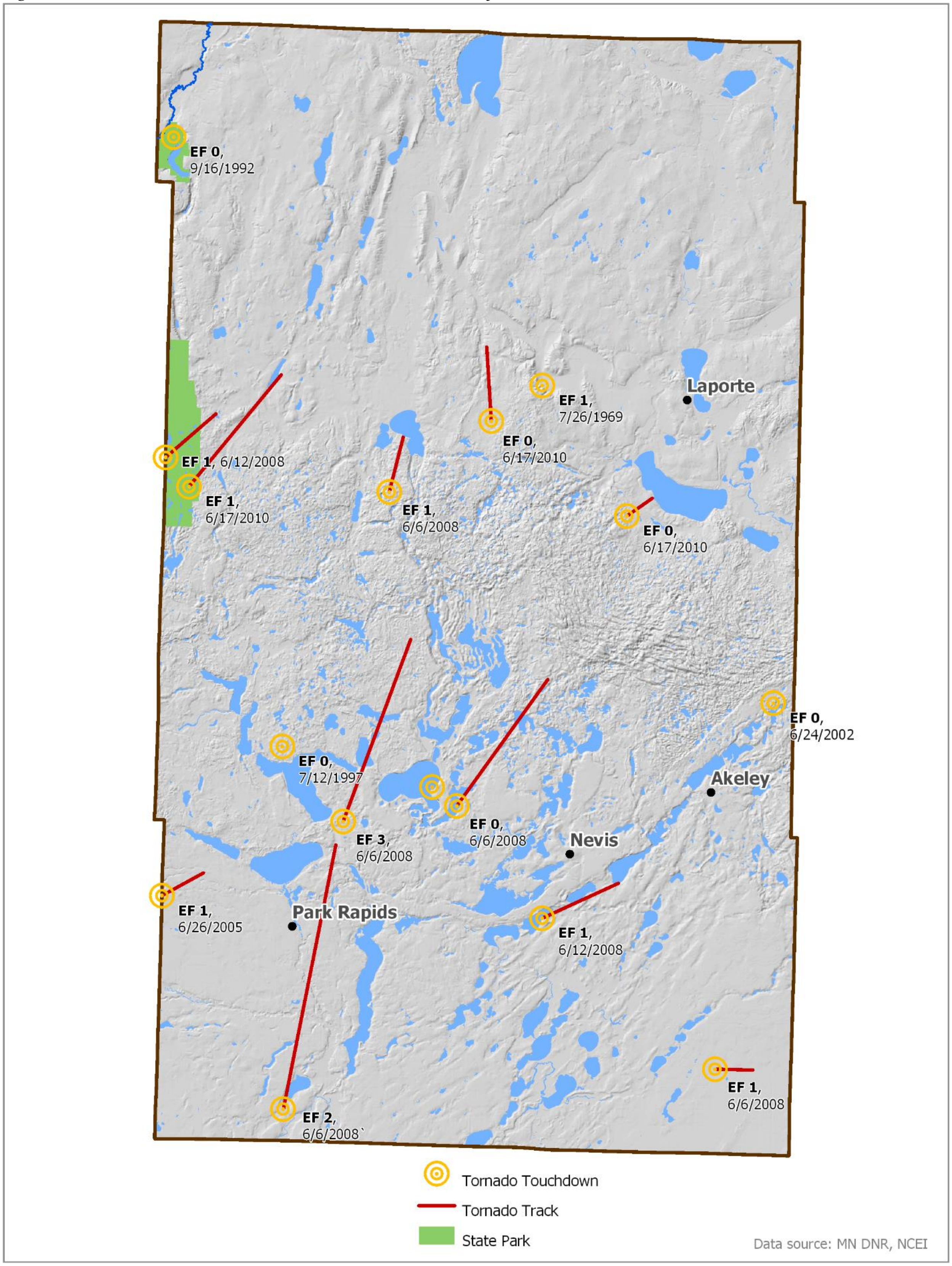
Figure 7 below shows tornado touchdown points and tracks in Hubbard County from 1950 to 2016. Historic tornado events in the county are listed in Table 19.

Table 19. Historic Tornado Events in Hubbard County, 1950-2016

Location or County	Date	Magnitude	Deaths	Injuries	Property Damage
Park Rapids	5/30/2011	EF1	0	0	$600,000
Lake George	6/17/2010	EF1	0	0	0
Kabekona Corner	6/17/2010	EF0	0	0	0
Benedict	6/17/2010	EF0	0	0	0
Nevis	6/12/2008	EF1	0	0	$300,000
Lake George	6/12/2008	EF1	0	0	$300,000
Hubbard	6/6/2008	EF2	0	1	$5,000,000
Dorset	6/6/2008	EF3	0	0	0
Dorset	6/6/2008	EF0	0	0	$100,000
Lake George	6/6/2008	EF1	0	0	$400,000
Badoura	6/6/2008	EF1	0	0	$200,000
Park Rapids	6/26/2005	F1	0	0	0
Akeley	6/24/2002	F0	0	0	0
Akeley	6/24/2002	F1	0	1	$250,000
Park Rapids	7/12/1997	F0	0	0	0
Dorset	10/26/1996	F0	0	0	0
Hubbard Co.	9/16/1992	F0	0	0	0
Hubbard Co.	7/20/1981	F0	0	0	$30
Hubbard Co.	7/26/1969	F1	0	0	$2,500
Highest Value Damage					**$5,000,000**

Source: National Centers for Environmental Information

Figure 7. Tornado Touchdowns and Paths, Hubbard County, 1950-2016



Tornadoes and Climate Change

Tornadoes and other severe thunderstorm phenomena frequently cause as much annual property damage in the U.S. as do hurricanes, and often cause more deaths. Although recent research has yielded insights into the connections between global warming and the factors that cause tornados and severe thunderstorms, such as atmospheric instability and increases in wind speed with altitude (Del Genio, Yao, & Jonas, 2007), these relationships remain mostly unexplored, largely because of the challenges in observing thunderstorms and tornadoes and simulating them with computer models (National Climate Assessment Development Advisory Committee, 2013).

According to Harold Brooks of NOAA's National Severe Weather Laboratory, there is increasing variability in the "start" of tornado season. The number of days with more than 30 EF1 or greater tornadoes is increasing, while the number of days with at least 1 EF1 or greater tornadoes is decreasing. Thus, tornadoes are occurring on fewer days, but *more* are occurring on outbreak days.

Tornadoes have not been recorded in Minnesota in the winter months of December, January and February (MN DNR, 2014). However, the state of Wisconsin has recorded 3 tornadoes in January and 6 in December during the period of 1844-2013 (National Weather Service Weather Forecast Office, 2014) including a recent January tornado in 2008.

Vulnerability

The county has experienced tornadoes in 10 of the last 66 years on record. According to these statistics, there is a 15% chance of a tornado affecting Hubbard County each year. The vulnerability of each jurisdiction to tornadoes has not changed due to any development in the last 5 years.

Plans and Programs in Place

Public Warning and Notification – In the event of emergencies or hazardous conditions that require timely and targeted communication to the public, Hubbard County utilizes the CodeRED Mass Notification System, Hubbard County Sheriff's Office Facebook page, and local news media. Hubbard County promotes the use of NOAA weather radios by critical facilities and the public to receive information broadcast from the National Weather Service. Local newspaper & radio stations assist with sharing public information.

SKYWARN Program – Hubbard County participates in SKYWARN. These volunteers help keep their local communities safe by providing timely and accurate reports of severe weather to their local National Weather Service office. New training sessions are offered every two years in Hubbard County.

Severe Weather Awareness Week – Hubbard County helps promote and participates in the National Weather Service's "Severe Weather Awareness Week" held in April each year. The event seeks to educate residents on the dangers of severe summer storms and highlights the importance of preparing for severe weather before it strikes.

Emergency Operations Plan – Hubbard County maintains an Emergency Operations Plan, which is designed as a guide for emergency operations. It is intended to assist key county/city officials and emergency organizations to carry out their responsibilities for the protection of life and property under a wide range of emergency conditions, including debris clearance.

Outdoor Warning Sirens – Outdoor warning sirens are in place throughout Hubbard County. Sirens are activated in the event of severe weather based on the indication of threats to public safety.

Storm Shelters – Mobile home parks are required to meet Minnesota Department of Health requirements for storm shelters based on number of manufactured homes and date of licensing. Camp Wilderness Boy Scout Camp was awarded a Tornado Safe Room grant in 2016 and construction on it will begin in 2017. There are no plans for construction of other safe rooms in the county at this time.

Program Gaps or Deficiencies

Backup Power – Not all county and city facilities have backup power in the event that a severe storm takes out power.

Power Lines – Aboveground power lines are susceptible to damage as a result of ice and windstorms. Locating lines underground where it is feasible and cost effective, as is occurring in some parts of Hubbard County, can reduce the damages and potential power outages.

Communications – Not all residents have the most up-to-date phone numbers to use the CodeRed system, nor do they follow the Hubbard County Sheriff's Office Facebook page to receive important messages.

4.4.2 Windstorms

FEMA defines winds in excess of 58 miles per hour, excluding tornadoes, as windstorms. Straight-line winds and windstorms are used interchangeably in the plan. This hazard is treated as a different category than tornadoes (which may also include high winds). Windstorms are among the nation's most severe natural hazards in terms of both lives lost and property damaged.

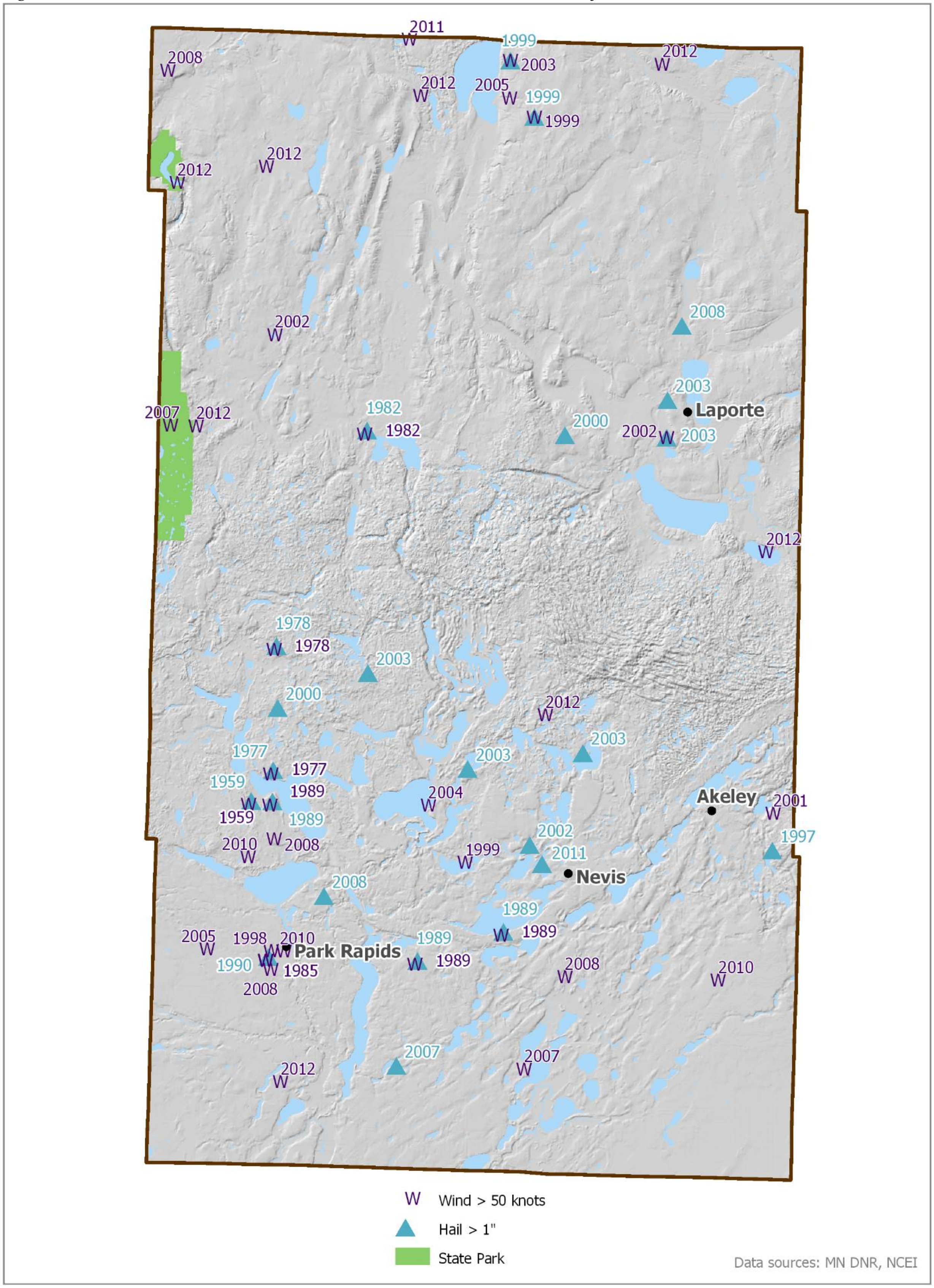
Severe winds can damage and destroy roofs, toss manufactured homes off their pier foundations, and tear light-framed homes apart. There are several different types of windstorms. A "downburst" is defined as a strong downdraft with an outrush of damaging winds on or near the earth's surface. Downbursts may have wind gusts up to 130 mph and are capable of the same damage as a medium-sized tornado. A "gust front" is the leading edge of the thunderstorm downdraft air. It is most prominent near the rain-free cloud base and on the leading edge of an approaching thunderstorm and is usually marked by gusty, cool winds and sometimes by blowing dust. The gust front often precedes the thunderstorm precipitation by several minutes. Straight-line winds, when associated with a thunderstorm, are most frequently found with the gust front. These winds originate as downdraft air reaches the ground and rapidly spreads out, becoming strong horizontal flow.

Windstorm History in Hubbard County

Hubbard County frequently experiences winds blowing at over 50 knots. According to NCEI records there have been 99 thunderstorm wind events reported between 1950 and 2016, with wind speeds of up to 87 knots. These winds can inflict damage to buildings and in some cases overturn high-profile vehicles.

The most recent severe wind and hail storms in Hubbard County are shown in Figure 8.

Figure 8. Most Recent Severe Wind and Hail Storms in Hubbard County



Windstorms and Climate Change

Lack of high-quality long-term data sets make assessment of changes in wind speeds very difficult (Kunkel, et al., 2013). One analysis generally found no evidence of significant changes in wind speed distribution. Other trends in severe storms, including the numbers of hurricanes and the intensity and frequency of tornadoes, hail, and damaging thunderstorm winds are uncertain. Since the impact of more frequent or intense storms can be larger than the impact of average temperature, climate scientists are actively researching the connections between climate change and severe storms (National Climate Assessment Development Advisory Committee, 2013).

Vulnerability

The magnitude of windstorms each year is unpredictable and within Hubbard County the vulnerability of jurisdictions to windstorms does not vary geographically. The vulnerability of each jurisdiction to severe windstorms has not changed due to any development in the last 5 years.

Plans and Programs in Place

Public Warning and Notification – In the event of emergencies or hazardous conditions that require timely and targeted communication to the public, Hubbard County utilizes the CodeRED Mass Notification System, Hubbard County Sheriff's Office Facebook page, and local news media. Hubbard County promotes the use of NOAA weather radios by critical facilities and the public to receive information broadcast from the National Weather Service. Local newspaper & radio stations assist with sharing public information.

SKYWARN Program – Hubbard County participates in SKYWARN. These volunteers help keep their local communities safe by providing timely and accurate reports of severe weather to their local National Weather Service office. New training sessions are offered every two years in Hubbard County.

Severe Weather Awareness Week – Hubbard County helps promote and participates in the National Weather Service's "Severe Weather Awareness Week" held in April each year. The event seeks to educate residents on the dangers of severe summer storms and highlights the importance of preparing for severe weather before it strikes.

Emergency Operations Plan – Hubbard County maintains an Emergency Operations Plan, which is designed as a guide for emergency operations. It is intended to assist key county/city officials and emergency organizations to carry out their responsibilities for the protection of life and property under a wide range of emergency conditions, including debris clearance.

Outdoor Warning Sirens – Outdoor warning sirens are in place throughout Hubbard County. Sirens are activated in the event of severe weather based on the indication of threats to public safety.

Storm Shelters – Mobile home parks are required to meet Minnesota Department of Health requirements for storm shelters based on number of manufactured homes and date of licensing. Camp Wilderness Boy Scout Camp was awarded a Tornado Safe Room grant in 2016 and construction on it will begin in 2017. There are no plans for construction of other safe rooms in the county at this time.

Program Gaps or Deficiencies

Backup Power – Not all county and city facilities have backup power in the event that a severe storm takes out power.

Power Lines – Aboveground power lines are susceptible to damage as a result of ice and windstorms. Locating lines underground where it is feasible and cost effective, as is occurring in some parts of Hubbard County, can reduce the damages and potential power outages.

Communications – Not all residents have the most up-to-date phone numbers to use the CodeRed system, nor do they follow the Hubbard County Sheriff's Office Facebook page to receive important messages.

4.4.3 Lightning

Lightning typically occurs as a by-product of a thunderstorm. In only a few millionths of a second, the air near a lightning strike is heated to 50,000° F, a temperature hotter than the surface of the sun.

The hazard posed by lightning is significant. High winds, rainfall, and a darkening cloud cover are the warning signs for possible cloud-to-ground lightning strikes. While many lightning casualties happen at the beginning of an approaching storm, more than half of lightning deaths occur after a thunderstorm has passed. Lightning has been known to strike more than 10 miles from the storm in an area with clear sky above.

Lightning strikes the ground approximately 25 million times each year in the U.S. According to the NWS, the chance of an individual in the U.S. being killed or injured by lightning during a given year is 1 in 240,000 (NOAA National Severe Storms Laboratory, n.d.).

Lightning is the most dangerous and frequently encountered weather hazard that most people in the United States experience annually. Lightning is the second most frequent killer in the U.S., behind floods and flash floods, with nearly 100 deaths and 500 injuries annually. The lightning current can branch off to strike a person from a tree, fence, pole, or other tall object. In addition, an electrical current may be conducted through the ground to a person after lightning strikes a nearby tree, antenna, or other tall object. The current may also travel through power lines, telephone lines, or plumbing pipes to damage property or cause fires.

Lightning History in Hubbard County

The NCEI has recorded 3 lightning events in Hubbard County. These events did not result in any deaths or injuries. However, lightning in 2014 ignited a fire that destroyed one restaurant and badly damaged a second neighboring restaurant, causing $300,000 in damage.

In June of 2016, a lightning strike started a fire at the Fern Township hall, causing $10,000 in damage.

Lightning and Climate Change

The projected possible intensity and frequency of tornadoes, hail, and damaging thunderstorm winds, the conditions associated with lightning, are uncertain (National Climate Assessment Development Advisory Committee, 2013). Severe rain events are becoming more common and may include an additional risk of lightning.

Vulnerability

The magnitude of summer storms each year is unpredictable and within Hubbard County the vulnerability of jurisdictions to windstorms does not vary geographically. The vulnerability of each jurisdiction to severe summer storms has not changed due to any development in the last 5 years.

Plans and Programs in Place

Public Warning and Notification – In the event of emergencies or hazardous conditions that require timely and targeted communication to the public, Hubbard County utilizes the CodeRED Mass Notification System, Hubbard County Sheriff's Office Facebook page, and local news media. Hubbard County promotes the use of NOAA weather radios by critical facilities and the public to receive information broadcast from the National Weather Service. Local newspaper & radio stations assist with sharing public information.

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4.4.4 Hail

Hailstorms are a product of severe thunderstorms. Hail is formed when strong updrafts within the storm carry water droplets above the freezing level, where they remain suspended and continue to grow larger, until their weight can no longer be supported by the winds. Hailstones can vary in size, depending on the strength of the updraft. The NWS uses the following descriptions when estimating hail sizes: pea size is ¼-inch, marble size is ½-inch, dime size is ¾-inch, quarter size is 1-inch, golf ball size is 1 ¾-inches, and baseball size is 2 ¾-inches. Individuals who serve as volunteer "storm spotters" for the NWS are located throughout the state, and are instructed to report hail dime size (¾-inch) or greater. Hailstorms can occur throughout the year; however, the months of maximum hailstorm frequency are typically between May and August. Although hailstorms rarely cause injury or loss of life, they can cause significant property damage.

Hail History in Hubbard County

The most recent significant hail storm occurred on June 17, 2016 when 1.25-inch hail was produced. No property damage was recorded by the NCEI from the storm. Residents of Hubbard County continued to experience effects from a major storm that developed only days later on the 20th. 55 mph winds were measured at the Park Rapids airport. Because of the strong winds, planes were flipped and roofs torn away in Bemidji, MN, which lies 10 miles north of the Hubbard County border.

Almost eight years prior to the June 17, 2016 storm, Hubbard County was hit with the most damaging storm in the past decade. On June 12, 2008, the county suffered an estimated $200,000 loss to crops. According to the NCEI, hail reached 1.75" in diameter. Table 20 shows storms producing hail greater than 1-inch diameter in Hubbard County.

Table 20. Storms producing hail of greater than 1 inch diameter in Hubbard County, 1950-2016

Date	Hail Size (inches)	Injuries		Date	Hail Size (inches)	Injuries		Date	Hail Size (inches)	Injuries
6/17/2016	1.25	0		5/22/2003	1.25	0		7/2/1989	1.75	0
9/6/2015	1.25	0		5/22/2003	1.75	0		7/2/1989	2.75	0
8/12/2015	1.25	0		5/22/2003	1.75	0		7/2/1989	3.5	0
6/6/2011	1.25	0		6/19/2002	1.75	0		5/10/1985	1.5	0
6/12/2008	1.75	0		7/17/2001	1.75	0		4/21/1985	1.75	0
5/25/2008	1.75	0		8/14/2000	1.5	0		8/21/1982	1.75	0
9/21/2007	1.75	0		8/14/2000	1.75	0		8/22/1978	1.75	0
7/30/2003	1.25	0		7/27/1999	1.75	0		9/8/1977	2.75	0
7/30/2003	1.75	0		6/4/1997	1.5	0		9/8/1977	2.75	0
7/19/2003	1.75	0		7/7/1990	1.75	0		8/16/1959	1.75	0

Source: National Centers for Environmental Information

Hail and Climate Change

According to the Federal Advisory Committee Draft National Climate Assessment (NCA), trends in severe storms, including the numbers of hurricanes and the intensity and frequency of tornadoes, hail, and damaging thunderstorm winds are uncertain. Since the impact of more frequent or intense storms can be larger than the impact of average temperature, climate scientists are actively researching the connections between climate change and severe storms (National Climate Assessment Development Advisory Committee, 2013).

The occurrence of very heavy precipitation has increased in Minnesota in recent decades and future projections also indicate this will continue (International Climate Adaptation Team, 2013). While it is unknown if this precipitation will occur during severe storms that produce hail, the possibility has not been ruled out.

Vulnerability

Summer storms affect Hubbard County each year, so there is a 100% probability that the county and its jurisdictions will be affected. According to the 66-year NCEI record, there is a 35% chance of a significant hailstorm any year in Hubbard County and a 27% chance in each year that there will be a hailstorm that produces hail greater than 1 inch in size.

Plans and Programs in Place

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Severe Summer Storms and Electrical Outages

According to NOAA data, the natural hazards that caused the greatest overall property loss in Minnesota between 1996 and 2014 were thunderstorms and lightning, at $86.3 million per year. The state also experienced 23 electric transmission outages from 1992 to 2009, 5 of which were due to heat waves and thunderstorms. On average, the number of people affected annually by all electric outages during 2008 to 2013 in Minnesota was 449,995, with a high of 1,460,810 in 2011 (U.S. Department of Energy, 2015). Figure 9 below shows the seasonality of electric outages by month for the years 2008-2013, and Figure 10 shows the causes of outages in the state between 2008 and 2013, with the largest cause being weather/falling trees.

Figure 9. Electric Utility Reported Power Outages by Month (2008-2013)

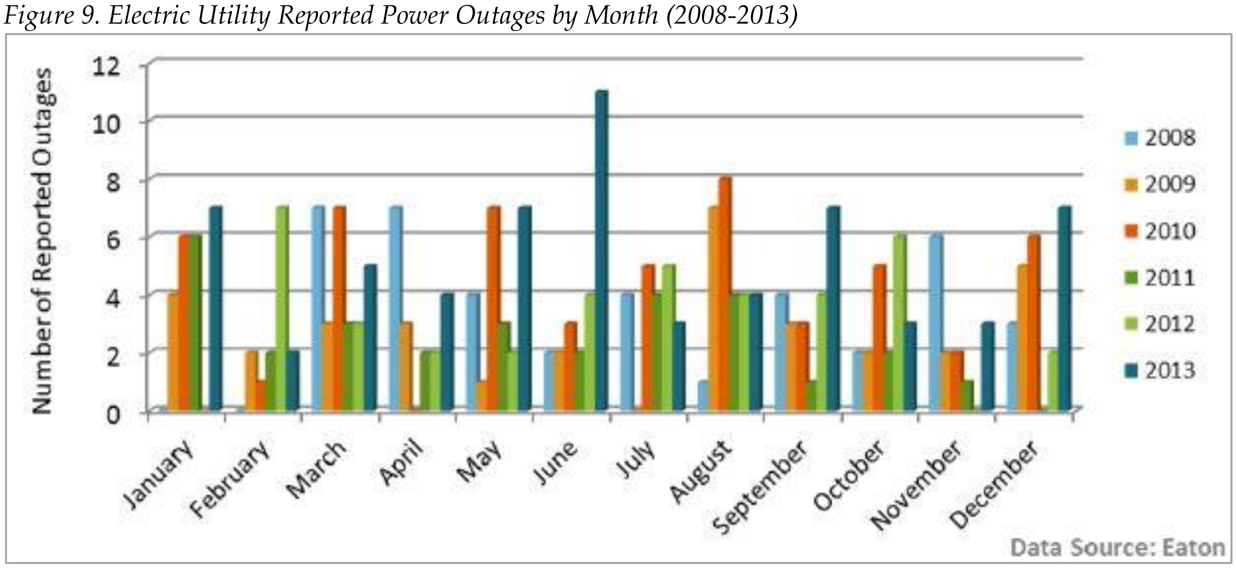
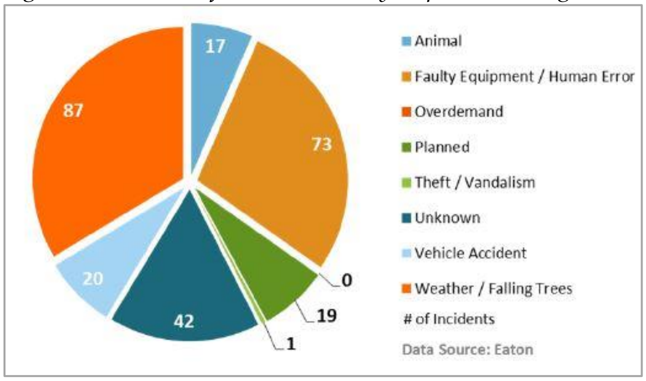


Figure 10. Causes of Electric-Utility Reported Outages (2008-2013)



4.4.5 Flash Flood and Riverine Flood

Flooding is a significant natural hazard throughout the United States. The type, magnitude, and severity of flooding are functions of the amount and distribution of precipitation over a given area, the rate at which precipitation infiltrates the ground, the geometry and hydrology of the catchment, and flow dynamics and conditions in and along the river channel. Upstream floods, also called flash floods, occur in the upper parts of drainage basins and are generally characterized by periods of intense rainfall over a short duration. These floods arise with very little warning and often result in locally intense damage, and sometimes loss of life, due to the high energy of the flowing water. Flood waters can snap trees, topple buildings, and easily move large boulders or other structures. Six inches of rushing water can upend a person; another 18 inches might carry off a car. Generally, upstream floods cause damage over relatively localized areas, but they can be quite severe. Urban flooding is a type of upstream flood, which involves the overflow of storm drain systems and can be the result of inadequate drainage combined with heavy rainfall or rapid snowmelt. Upstream or flash floods can occur at any time of the year in Minnesota, but they are most common in the spring and summer. Five flash floods have been recorded in Hubbard County since 1997.

Downstream floods, sometimes called riverine floods, refer to floods on large rivers at locations with large upstream catchments. Downstream floods are typically associated with precipitation events that are of relatively long duration and occur over large areas. Flooding on small tributary streams may be limited, but the contribution of increased runoff may result in a large flood downstream. The lag time between precipitation and the flood peak is much longer for downstream floods than for upstream floods, generally providing ample warning for people to move to safe locations and, to some extent, secure some property against damage.

Nationwide, floods caused 4,586 deaths from 1959 to 2005 while property and crop damage averaged nearly $8 billion per year (in 2011 dollars) from 1981-2011 (Georgakakos, et al., 2014).

During the past several decades, agencies have used the "100-year floodplain" as the design standard for projects funded by the federal government. However, today floods of that magnitude are occurring far more often than once per century (Natural Resources Defence Council, 2015). In recognition of increasing risks, in January of 2015 the President issued an executive order that updates flood protection standards that guide federally-funded projects in or near floodplains or along coastlines. These new standards require federally-funded projects to either build 2 feet above the 100-year flood elevation for standard projects and 3 feet above for critical buildings like hospitals and evacuation centers; or build to the 500-year flood elevation (The White House, 2015).

Flood History in Hubbard County

The majority of flooding in Hubbard County is from spring melt and only affects remote swamps.

Hubbard County experienced its most recent flood on July 11, 2016 after multiple thunderstorms across 3 days. The event caused fields and basements to flood across Park Rapids and other regions of the Straight River Township. A summary of the storm posted by the National Weather Service established that 4.82 inches of rain had fallen in a 3-day period measured in Park Rapids. The consequence of the heavy rains and flash flooding was $2,000 of property damage to the county.

On April 28, 2013, flooding originated in Becida, MN caused by melting snow. An increase in warm weather was the impetus for significant snowmelt that caused multiple road closures from the flooding. Additional runoff also created high waters and stronger river flow for proximal streams, rivers and other water bodies.

On July 3rd, 2010, severe thunderstorms brought heavy rains across Hubbard County. The highest rainfall total of 5.65 inches fell in Osage, MN, less than 10 miles west of Park Rapids. In Hubbard County, Park Rapids received 4.84 inches of rain. Flooding resulted from the saturated landscape after the storm, with water rising over State Highway 64 that was six inches deep in some areas. This major flooding event caused $100,000 of property damage across the county and was the most expensive recovery effort from a flood on record.

Table 21 below lists Hubbard County's historical floods from 1997-2016 as recorded by the NCEI. Although no deaths or injuries were recorded with these floods, property damage from 6 of the floods resulted in over $110,000 in losses.

Table 21. Hubbard County Historical Floods, 1997-2016

Location or County	Date	Type	Deaths	Injuries	Property Damage
Park Rapids Airport	7/11/2016	Flash Flood	0	0	$2,000
Becida	4/28/2013	Flood	0	0	$5,000
Lake George	7/4/2010	Flash Flood	0	0	$100,000
Becida	3/25/2009	Flood	0	0	$5,000
Park Rapids	6/26/2005	Flash Flood	0	0	0
Hubbard (Zone)	6/23/2002	Flood	0	0	0
Nary	6/22/2002	Flash Flood	0	0	0
Park Rapids	6/22/2002	Flash Flood	0	0	0
Hubbard (Zone)	9/1/1999	Flood	0	0	0

Source: National Centers for Environmental Information

The National Oceanic and Atmospheric Administration (NOAA) Advanced Hydrologic Prediction Service provides information from gauge locations at points along various rivers across the United States. One USGS gauging station is located in the county near Park Rapids on the Straight River. Its flood crest data for the top 10 gauge heights is recorded in Table 22 below.

Table 22. Historical Flood Crests for USGS gauging station on the Straight River near Park Rapids

Date	Gauge Height (feet)[2]	Stream flow (cfs)
2009	2.59	182
1997	2.33	149
1989	2.24	89.0
2002	2.17	108
2001	2.16	116
2014	2.15	143
2013	2.14	142
2010	2.05	125
1998	2.04	101
1999	2.04	113

Vulnerability and Hazus-MH Hazard Analysis

Hazus-MH was used to estimate the damages incurred for a 100-year flood in Hubbard County using a 10-meter DEM (digital elevation model) to create a flood boundary (no digital DFIRM was available).

This documentation does not provide full details on the processes and procedures completed in the flood risk analysis, it is only intended to highlight the major inputs that were used. The fields obtained from the Hubbard County tax assessor are noted in parentheses.

Hubbard County-specific building data was sourced from parcel tax databases and parcel polygon databases, including building valuations (EMV_BLDG in HAZUSPRCLDATA.xls) and occupancy class (CLSF in HAZUSPRCLDATA.xls). Hazus-MH analysis of structures takes into account the depth of water in relation to the structure using finished square footage (Heated SqFt in HAZUSPRCLDATA.xls and architectural style description for number of stories). The tool also considers the actual dollar exposure to the structure for the costs of building reconstruction (EMV_BLDG in HAZUSPRCLDATA.xls), and content (calculated based on EMV_BLDG and finished square footage). Damages are based upon the assumption that each structure will fall into a structural class (assumptions made based on year built), and structures in each class will respond in a similar fashion to a specific depth of flooding. Furthermore, the damage estimates assume an equal distribution of building classifications across the developed portion of a census block. These assumptions suggest that the loss estimates for aggregate structural losses need to be viewed as approximations of losses that are subject to considerable variability rather than as exact engineering estimates of losses to individual structures.

Building counts were aggregated from the individual parcel records to the relevant census administrative boundaries. There are an estimated 13,976 parcels with structures in the region with a total replacement value (excluding contents) of $1.7 billion (2010 dollars). Approximately 90% of the parcels (and 81% of the building value) are associated with residential housing. Using the Hubbard County updated general building stock, the Hazus model reported an estimated 61 parcels with buildings will be at least moderately damaged. There are an estimated 6 buildings that will be completely destroyed.

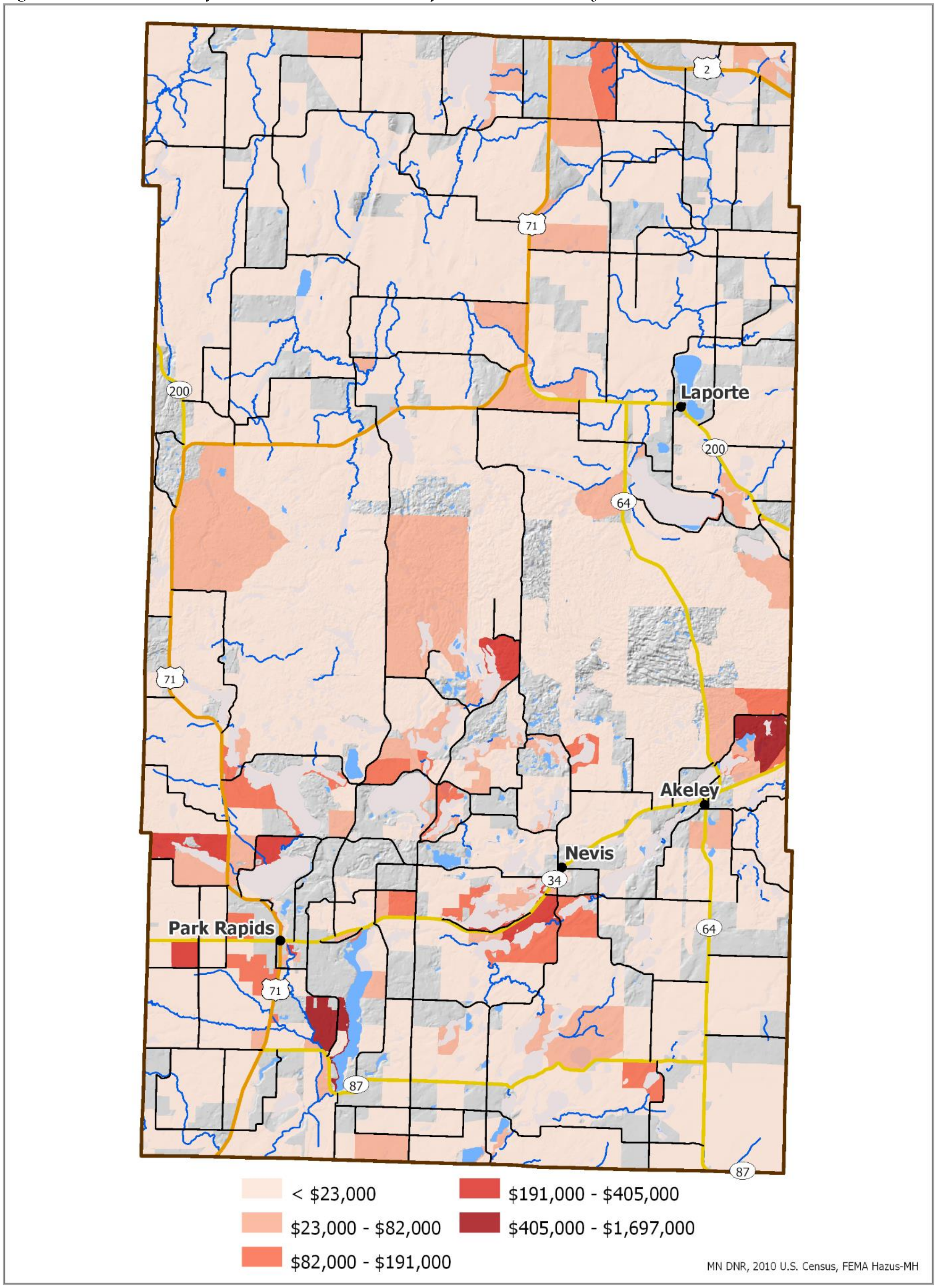
The total economic loss estimated for the flood is 15 million dollars, which represents 1.4% of the total replacement value of the parcels exposed. Building losses are broken into 2 categories: direct building losses and business interruption losses. Direct building losses are the estimated costs to repair or replace the damage caused to the building and its contents. Business interruption losses are associated with inability to operate a business because of the damage sustained during the flood. Business interruption losses also include the temporary living expenses for those people displaced from their homes because of the flood. The total building-related losses in the Hazus model was $14.6 million dollars. 1% of the estimated losses were related to business interruption in the region. Residential occupancies made up 80% of the total loss.

The reported building counts should be interpreted as degrees of loss rather than an exact number of buildings exposed to flooding. These numbers were derived from aggregate building inventories which are assumed to be dispersed evenly across census blocks. Hazus-MH requires that a predetermined amount of square footage of a typical building sustain damage in order to produce a damaged building count. If only a minimal amount of damage to buildings is predicted, it is possible to see zero damaged building counts while also seeing economic losses. The total estimated number of damaged buildings, total building losses, and estimated total economic losses are shown in Table 23. The distribution of economic losses for Hubbard County is depicted in Figure 11.

Table 23. Hubbard County Total Economic Loss from 100-Year Flood

General Occupancy	Total Parcels	Parcels with Damaged Buildings	Total Building Exposure (In $1000s)	Total Economic Loss (In $1000s)	Building Loss (In $1000s)
Agricultural	641	0	$86,000	$1,394	$225
Commercial	574	0	$104,427	$678	$133
Education	10	0	$49,759	$0	$0
Government	78	0	$25,122	$136	$14
Industrial	19	0	$17,868	$26	$4
Religious/Non-Profit	93	0	$39,481	$645	$88
Residential	12,561	80	$1,394,656	$11,871	$8,432
Total	**13,976**	**80**	**$1,717,313**	**$14,750**	**$8,896**

Figure 11. Distribution of Estimated Economic Loss for Hubbard County in 100-Year Flood



Census blocks of concern should be reviewed in more detail to determine the actual percentage of facilities that fall within the flood hazard areas. The aggregate losses reported in this study may be overstated because values are distributed evenly in a census block. The 5 census blocks showing the highest estimated loss values are shown in Table 24, with their spatial extents shown in Figures 12-16.

Table 24. Hubbard County Census Blocks with the Greatest Estimated Losses in the 100-Year Floodplain

Census Block Number	Total Estimated Loss	City
270570707002047	$1,697,000	Park Rapids
270570703002224	$1,265,000	Akeley
270570705001029	$405,000	Park Rapids
270570704001072	$386,000	Nevis
270570705001003	$333,000	Park Rapids

Figure 12. Census Block #270570707002047 and 100-Year Floodplain near Park Rapids

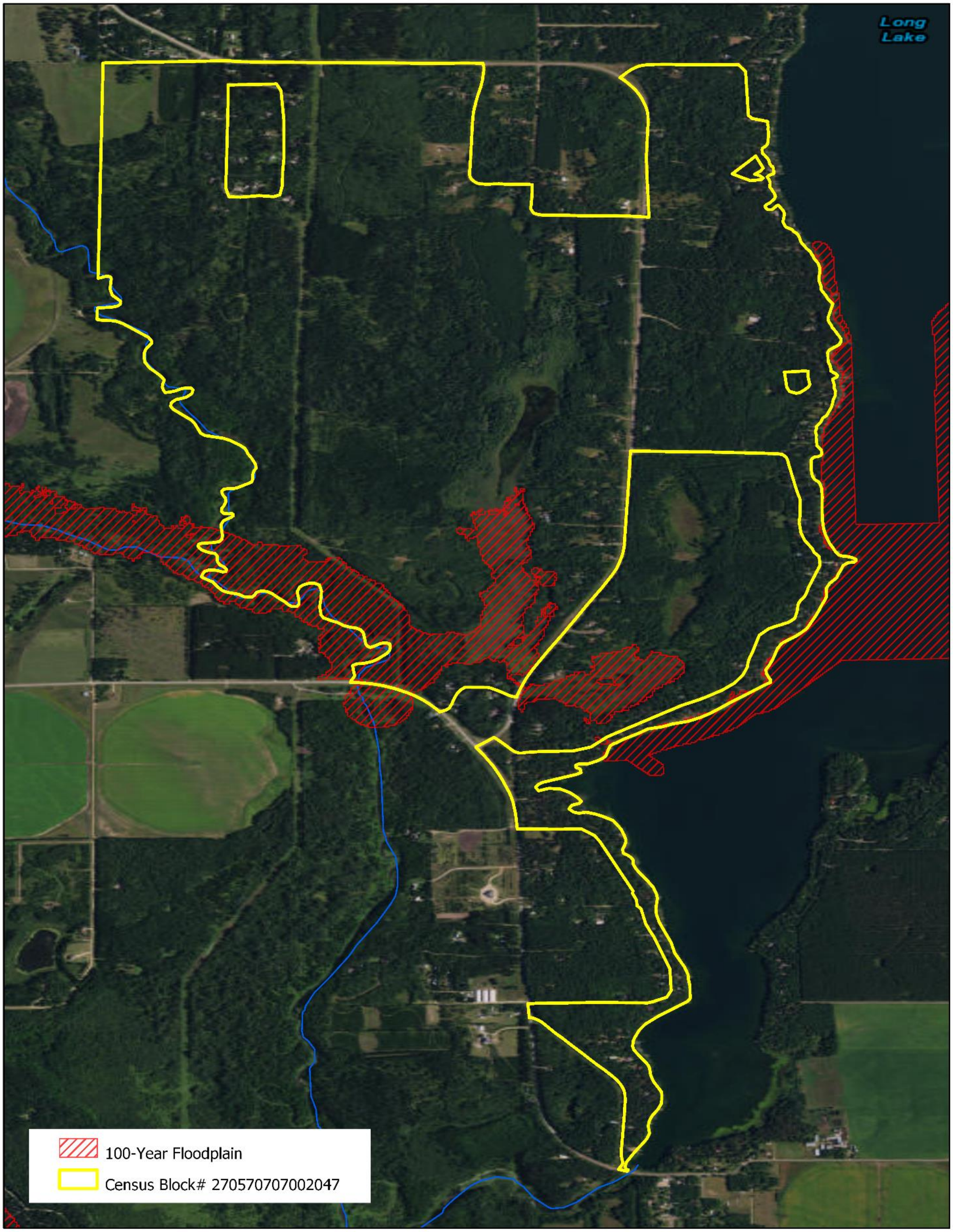


Figure 13. Census Block #270570703002224 and 100-Year Floodplain near Akeley

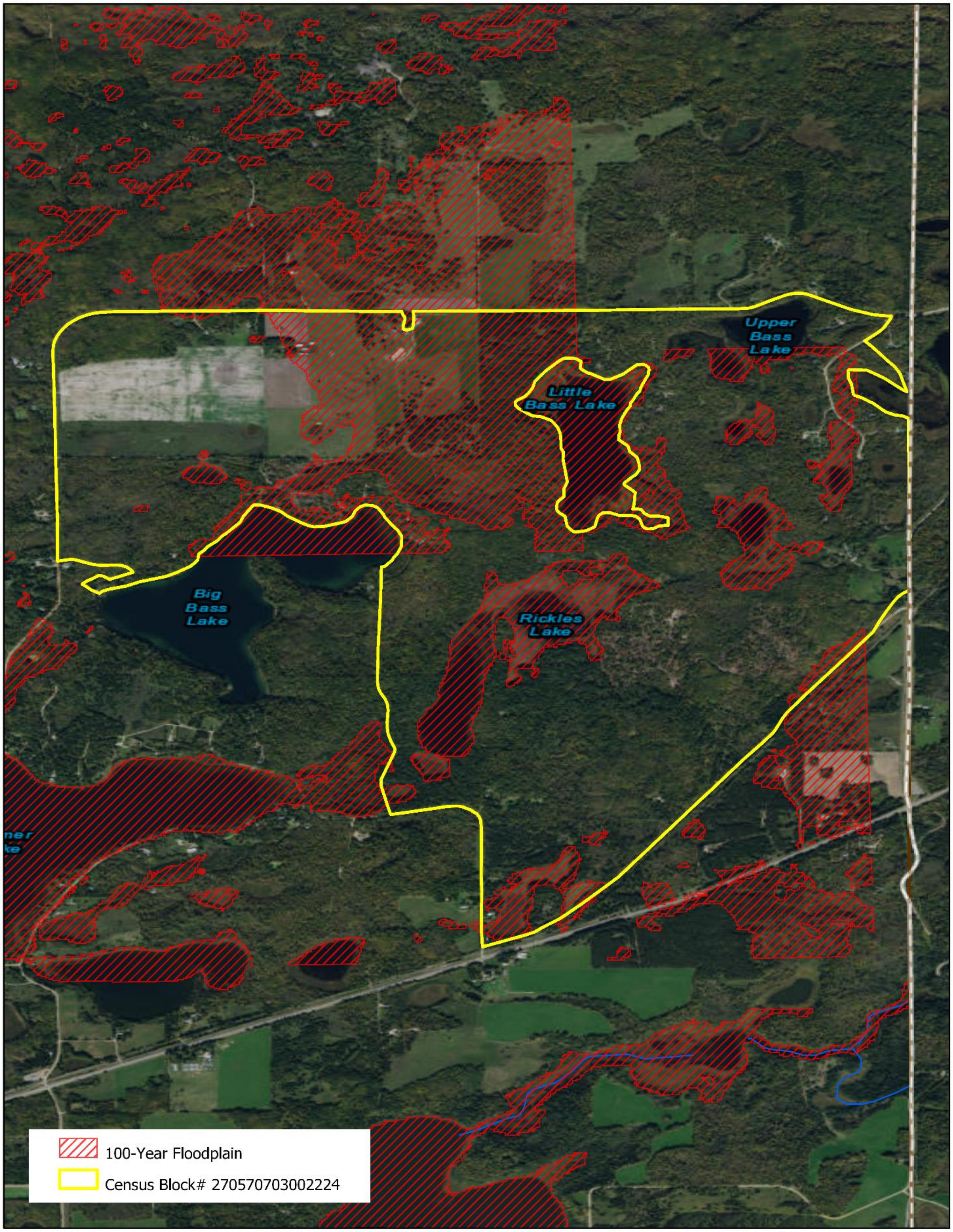


Figure 14. Census Block #270570705001029 and 100-Year Floodplain near Park Rapids

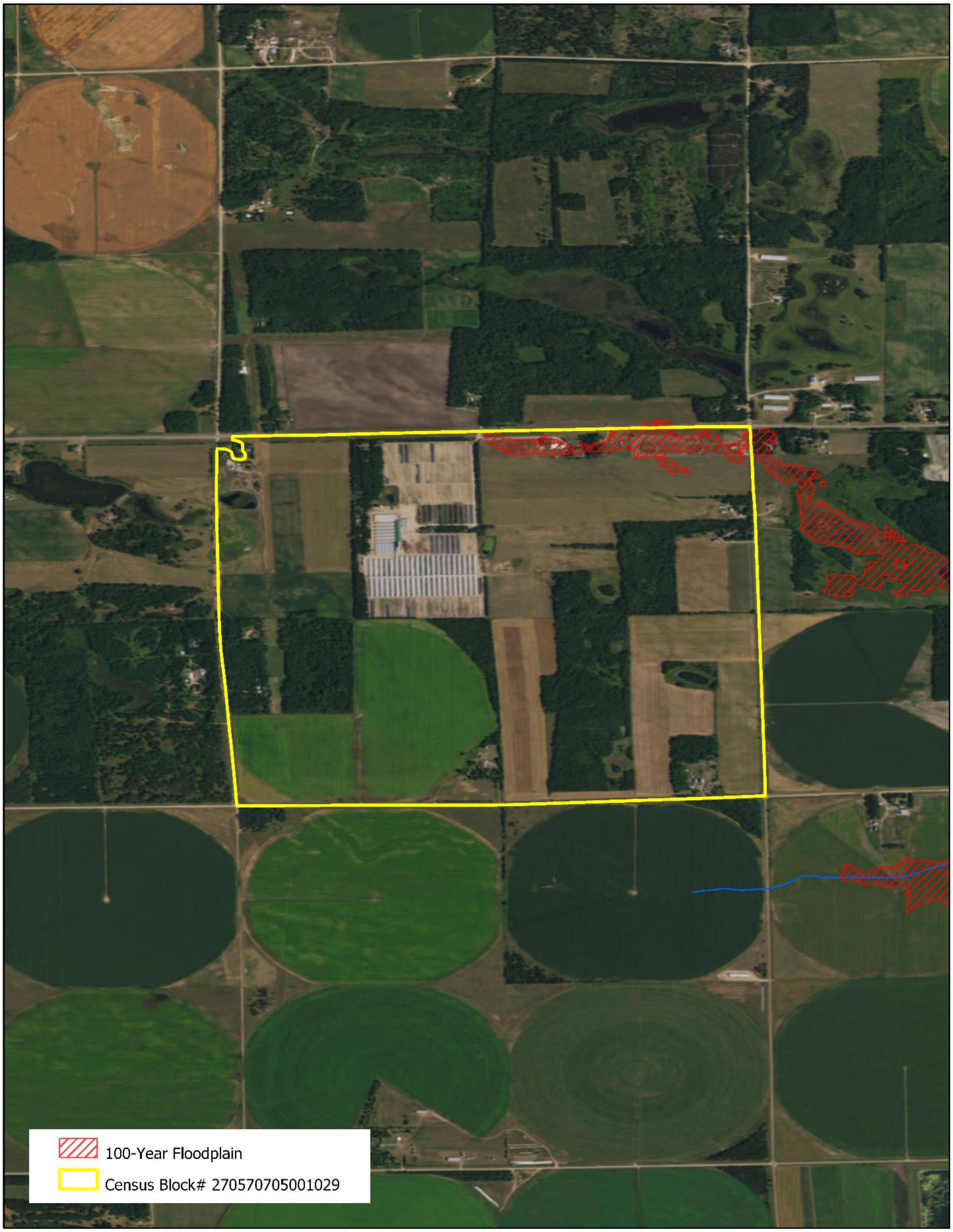


Figure 15. Census Block #270570704001072 and 100-Year Floodplain near Nevis

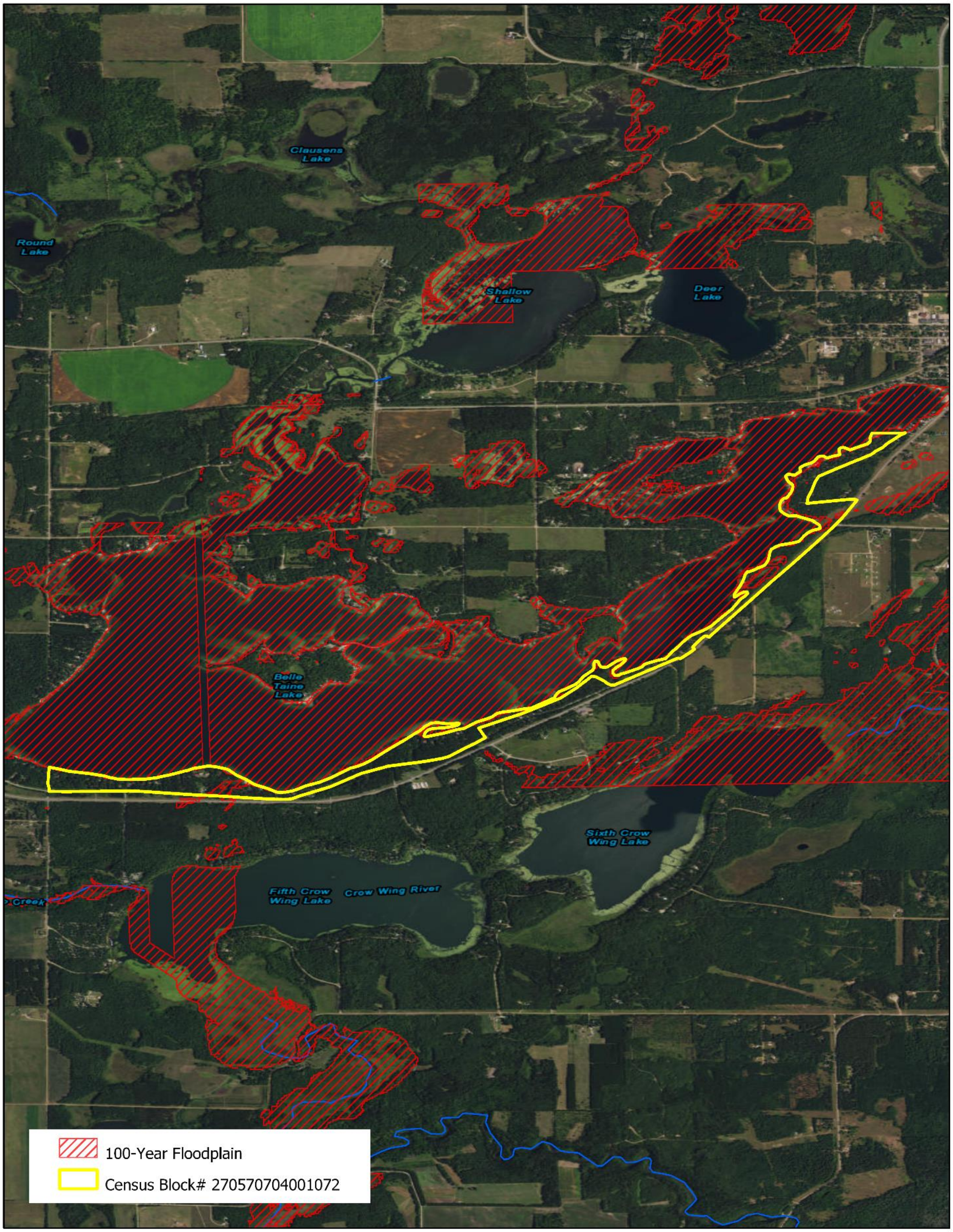
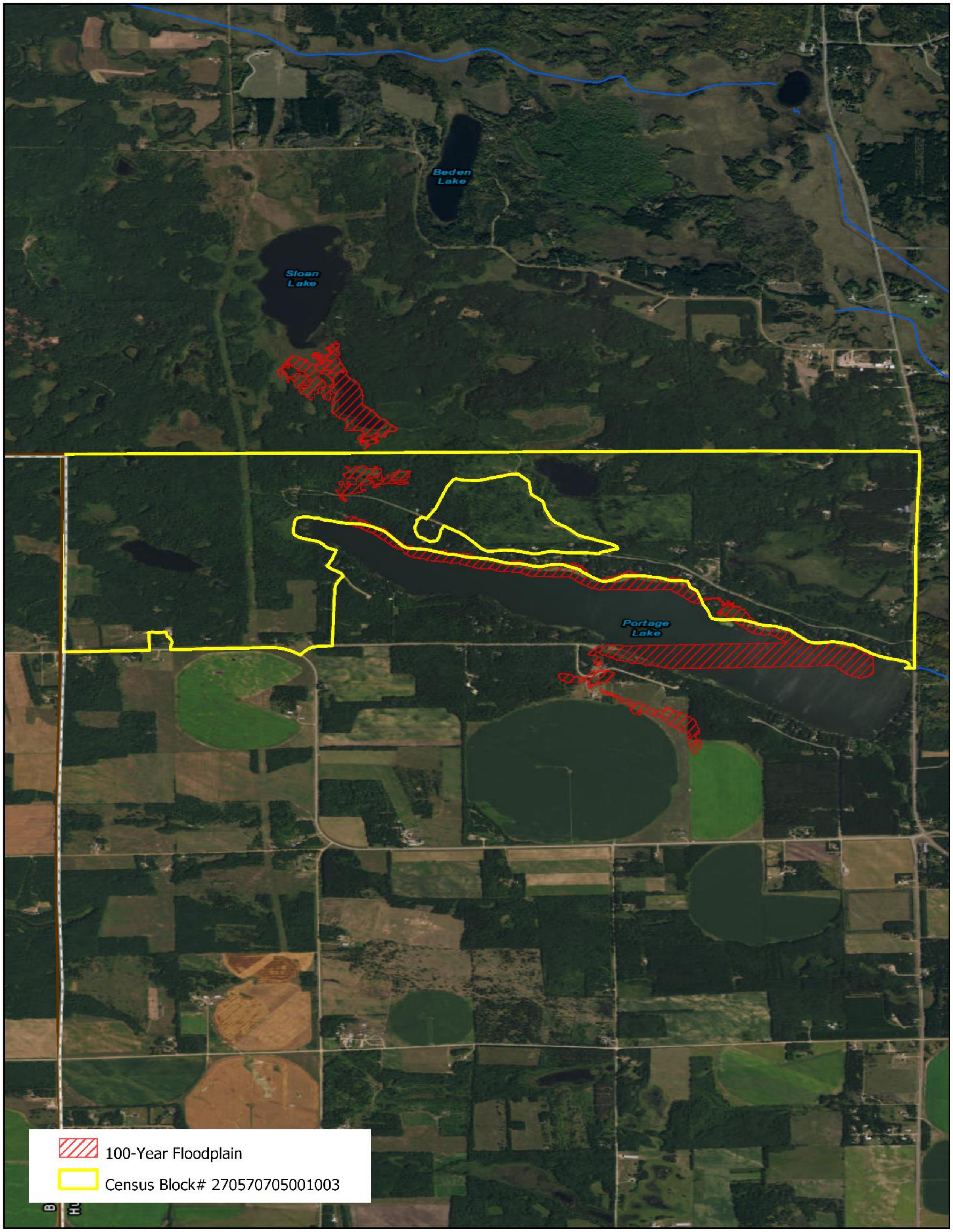


Figure 16. Census Block #270570705001003 and 100-Year Floodplain near Park Rapids



Hazus-MH Essential Facility Loss Analysis

Essential facilities encounter the same impacts as other buildings within the flood boundary: structural failure, extensive water damage to the facility, and loss of facility functionality (i.e. a damaged police station will no longer be able to serve the community). None of the essential facilities (care facilities, fire stations, police stations, and schools) included in the Hazus-MH analysis falls within the flood boundary.

Hazus-MH Shelter Requirement Analysis

Hazus-MH estimates the number of households that are expected to be displaced from their homes due to the flood and the associated potential evacuation. Hazus-MH also estimates those displaced people that may require accommodations in temporary public shelters. The model estimates 166 households may be displaced due to the flood. Displacement includes households evacuated from within or very near to the inundated area. Of these, the model estimates 71 people (out of a total population of 20,428) may seek temporary shelter in public shelters.

Hazus-MH Debris Generation Analysis

Hazus estimates the amount of debris that may be generated by the flood based on best practice assumptions made using year built and occupancy class. The model breaks debris into 3 general categories: 1) Finishes (dry wall, insulation, etc.), 2) Structural (wood, brick, etc.) and 3) Foundations (concrete slab, concrete block, rebar, etc.). This distinction is made because of the different types of material handling equipment required to handle the debris.

The model estimates that a total of 3,010 tons of debris would be generated. Of the total amount, Finishes composes 51% of the total and Structural composes 29% of the total. If the debris tonnage is converted into an estimated number of truckloads, it would require 120 truckloads (at 25 tons/truck) to remove the debris generated by the flood.

Flooding and Climate Change

As Minnesota's climate changes, the quantity and character of precipitation is changing. Average precipitation has increased in the Midwest since 1900, with more increases in recent years. The Midwest has seen a 45% increase in very heavy precipitation (defined as the heaviest 1% of all daily events) from 1958 to 2011 (National Climate Assessment Development Advisory Committee, 2013). This precipitation change has led to amplified magnitudes of flooding. Increased precipitation may also show seasonal changes, trending toward wetter springs and drier summers and falls. An example of a recent year with this character was 2012, when many MN counties were eligible for federal disaster assistance for drought, while others were eligible for flooding, and 7 were eligible for both in the same year (Seeley, 2013). In 2007, 24 Minnesota counties received drought designation, while 7 counties were declared flood disasters. In 2012, 55 Minnesota counties received federal drought designation at the same time 11 counties declared flood emergencies. In addition, the yearly frequency of the largest storms – those with 3 inches or more of rainfall in a single day – has more than doubled in just over 50 years. In the past decade, such dramatic rains have increased by more than 7% (MN Environmental Quality Board, 2014).

Southeastern Minnesota has experienced three 1000-year floods in the past decade: in September 2004, August 2007, and September 2010 (Meador, 2013). The 2004 flood occurred when parts of south-central Minnesota received over 8 inches of precipitation. Faribault and Freeborn counties received over

10 inches in 36 hours. The deluge led to numerous reports of stream flooding, urban flooding, mudslides, and road closures (MN DNR, 2004). During the 2007 event, 15.10 inches fell in 24 hours in Houston County, the largest 24-hour rainfall total ever recorded by an official National Weather Service reporting location. The previous Minnesota record was 10.84 inches in 1972. The resulting flooding from the 2007 rainfall caused 7 fatalities (MN DNR, 2007). In September 2010, a storm on the 22-23rd resulted in more than 6 inches of rain falling over 5,000 square miles in southern Minnesota. Rainfall totals of more than 8 inches were reported in portions of 10 counties. The heavy rain, falling on soils already sodden from a wet summer, led to numerous reports of major rural and urban flooding. For many monitoring locations in southern Minnesota, stream discharge resulting from the deluge was the highest ever seen during an autumn flood (Minnesota Climatology Working Group, 2010).

June 2014 was the wettest month on record in Minnesota, with a state-averaged rainfall of 8.03 inches. This broke the previous record of 7.32 inches, which occurred in both July 1897 and June 1914. Rainfall totals for much of the state ranked above the 95th percentile when compared with the historical record; in some cases the totals tripled that of the historical rainfall average for June. Scott County received between 10-12 inches of rain during June 2014 (MN DNR, 2014). A presidential disaster declaration was declared due to the severe storms, winds, flooding, landslides, and mudslides (DR-4182), which included 37 Minnesota counties and 3 Indian Reservations.

Plans and Programs in Place

Public Warning and Notification – In the event of emergencies or hazardous conditions that require timely and targeted communication to the public, Hubbard County utilizes the CodeRED Mass Notification System, Hubbard County Sheriff's Office Facebook page, and local news media. Hubbard County promotes the use of NOAA weather radios by critical facilities and the public to receive information broadcast from the National Weather Service. Local newspaper & radio stations assist with sharing public information.

National Flood Insurance Program (NFIP) – The NFIP is a federal program created by Congress to mitigate future flood losses nationwide through sound, community-enforced building and zoning ordinances and to provide access to affordable, federally-backed flood insurance protection for property owners. The NFIP is designed to provide an insurance alternative to disaster assistance to meet the escalating costs of repairing damage to buildings and their contents caused by floods. Participation in the NFIP is based on an agreement between local communities and the federal government that states that if a community will adopt and enforce a floodplain management ordinance to reduce future flood risks to new construction in Special Flood Hazard Areas (SFHAs), the federal government will make flood insurance available within the community as a financial protection against flood losses. None of Hubbard County has FEMA-mapped high risk areas, however, the county does participate in the NFIP, as well as the city of Park Rapids. The cities of Akeley, Laporte, and Nevis do not participate in the NFIP and do not have any FEMA mapped high risk areas.

Watershed Management Organizations – Each Watershed Management Organization in the county has some type of technical assistance and cost share/incentive program that provides assistance to landowners for managing conservation issues (including controlling or fixing erosion, practices that moderate runoff, or practices that build resiliency) on private lands. These programs provide ways to fix things and mitigate or increase resiliency on a small, individual landowner scale.

Removal of Beaver Dams – Each year Hubbard County Public Works and local townships work with local trappers to remove nuisance beavers whose dams cause blockage to culverts.

No-Wake Ordinance – Hubbard County has a no-wake ordinance for certain waters to keep waves/wakes from boats causing damage to the shorelines in shallow areas and higher-population lake shorelines.

Floodplain Ordinances – The Hubbard County Office of Zoning and Environmental Services, Soil & Water District, and cities within the county have floodplain ordinances in place, which regulate development and setbacks on shorelines and include the state floodplain and shoreland standards. These programs set minimum standards for local units of government that regulate development within shoreland and floodplain areas.

Shoreline Management Ordinance – Hubbard County enforces its shoreline ordinance, which regulates development and setbacks on shorelines within the county. This cuts down on development and keeps buildings out of floodplains.

School Closings – All school districts within Hubbard County have a school closing policy and communications plan in place if inclement weather or temperatures create a hazardous situation for students or staff.

Program Gaps or Deficiencies

Road and Culvert Improvements – Hubbard County strives to constantly improve its road and culvert infrastructure against flooding, but is limited by financial resources to go beyond maintenance on some projects.

Floodplain Mapping – The floodplain maps for Hubbard County need to be updated. Current maps are aged and more accurate maps are needed to reflect current flood elevation information.

4.4.6 Severe Winter Storms – Blizzards, Ice Storms

Blizzards are storms that contain heavy snowfall, strong winds, and cold temperatures. The combination of these elements creates blinding snow with near zero visibility, deep snowdrifts, and life-threatening wind chill temperatures. Blizzards are the most dramatic and destructive of all winter storms that occur within Hubbard County, and are generally characterized as storms bearing large amounts of snow accompanied by strong winds. They have the ability to completely immobilize travel in large areas and can be life-threatening to humans and animals in their path. According to the National Weather Service (NWS), there is no fixed temperature requirement for blizzard conditions, but the life-threatening nature of low temperatures in combination with blowing snow and poor visibility increases dramatically when temperatures fall below 20° F. Blizzards typically occur between October and April; however, they occur most frequently from early November to late March.

The greatest numbers of blizzards historically have occurred in the months of January, followed by March and November, respectively. Hubbard County, along with all areas of Minnesota, is susceptible to blizzards.

Damages from blizzards can range from human and livestock deaths to significant snow removal costs. Stranded drivers can make uninformed decisions, such as leaving the car to walk in conditions that put them at risk. Because of the blinding potential of heavy snowstorms, drivers are also at risk of collisions

Figure 17. Armistice Day Blizzard, 1940

with snowplows or other road traffic. Drivers and homeowners without emergency plans and kits are vulnerable to the life-threatening effects of heavy snowstorms such as power outages, cold weather, and inability to travel, communicate, obtain goods or reach their destinations. Heavy snow loads can cause structural damage, particularly in areas where there are no building codes or where residents live in manufactured home parks. The frequency of structural fires tends to increase during heavy snow events, primarily due to utility disruptions and the use of alternative heating methods by residents.

Between the years of 1975 and 1991, there were 49 deaths associated with blizzards statewide, or an average of 3 deaths per year. Deaths attributable to blizzards have dropped in recent years, primarily due to increased weather awareness and warning capabilities across the state. The economic costs of winter storms are generally not recorded by the NCEI; however, a winter storm in November 2001 resulted in property damage of $500,000.

Ice storms are described as occasions when damaging accumulations of ice occur due to freezing rain. The terms freezing rain and freezing drizzle warn the public that a coating of ice is expected on the ground and other exposed surfaces. Heavy accumulations of ice can bring down trees, electrical wires, telephone poles and lines, and communication towers.

Communications and power can be disrupted for days while utility companies work to repair extensive damage. Ice forming on exposed objects generally ranges from a thin glaze to coatings more than 1 inch thick. Even small accumulations of ice on sidewalks, streets, and highways may cause extreme hazards to Hubbard County motorists and pedestrians. Sleet does not stick to trees and wires, but sleet of sufficient thickness does cause hazardous driving conditions. Heavy sleet is a relatively rare occurrence, defined as an accumulation of ice pellets covering the ground to a depth of ½-inch or more.

Ice and sleet storms typically occur from October through April. The NWS notes that over 85% of ice storm-related deaths are the result of traffic accidents. According to the NCEI, 2 ice storms occurred in the county, in 2013 and 2009, but no deaths or injuries were reported.

Observing winter storm watches and warnings and adequate preparation can lessen the impact of blizzard events in Minnesota. Technical advances made in transportation, including safer vehicles and improved construction and maintenance of roads, have also contributed to the decline in deaths related to blizzards. Historical estimates of dollar losses associated with blizzards were not available for the purposes of this analysis. However, costs incurred by state and local government for snow removal associated with disaster declaration DR-1158 (January 1997) totaled over $27,300,000 dollars. Blizzards rank 9th out of the 10 natural hazards economically impacting Minnesota according to the statewide risk analysis. The chance that another winter storm affecting Hubbard County will occur is highly probable.

Severe Winter Storm History in Hubbard County

The total of notable events defined as heavy snows, blizzards, winter weather, ice storms and winter storms in Hubbard County recorded by the NCEI for the period from 1996 to 2016 is 66. An overview of some of the most notable winter storm events is located in Table 25 below.

Table 25. Notable Winter Weather Events in Hubbard County

Date	Type	Cost	Deaths	Injuries	Description
4/5/2016	Winter Storm	0	0	0	The first of two major winter storms dropped nearly 12" of snow on the region surrounding Hubbard County. The following day another 6-10" of snow was recorded bringing the total snowfall in Hubbard County to over two feet.
11/18/2016	Winter Storm	0	0	0	Hubbard County received the worst of an expected 6-15" of snow across the state of Minnesota. The event caused some vehicle accidents and several school closures.
2/10/2013	Winter Storm	0	0	0	The most significant snowfall from a storm that moved across northern and central Minnesota was reported nearly 50 miles north of Park Rapids. The winter storm produced 6-18" across the affected regions.
1/1997	Severe Winter Storms/ Blizzards	NA	NA	NA	Hubbard County was included in Presidential Disaster Declaration DR-1158 due to severe winter storms and blizzards.

Severe Winter Storms and Climate Change

Historically, winter storms have had a large impact on public safety in Minnesota. This will continue, with a possible increase in snowstorm frequency and annual total snowfall. Winter weather is often a cause of power outages. Pressures on energy use, reduced reliability of services, potential outages and the potential rise in household costs for energy are major climate change risks to public health.

According to the 2015 Minnesota Weather Almanac, a recent study of seasonal snowfall records across the state from 1890-2000 showed that 41 of 46 climate stations recorded an increase in average annual snowfall, by as much as 10 inches. Higher snowfall levels can result in greater runoff potential during spring snowmelt, and many watersheds in Minnesota have shown more consistent measures of high-volume flows during spring, often at or above flood stage (Seeley M. , 2015).

Vulnerability

The number of heavy snowfall years for the Midwest has fluctuated between 1900 and 2006. The periods of 1900-1920 and 1960-1985 had numerous years with snowfall totals over the 90th percentile. In the past 3 decades, the number of heavy seasonal snowfall totals has been much lower. Despite these generally lower seasonal snowfall totals, some areas of the Midwest have still experienced significant snow totals in the most recent decade. The 100-year linear trends based on decadal values show that the upper Midwest had statistically significant (1% level) upward linear trends in snowstorm frequency from 1901 to 2000 (Kunkel, et al., 2013).

Winter storms affect Hubbard County each year, so there is a 100% probability that the county and its jurisdictions will be affected annually. The amount of snow and ice, number of blizzard conditions, and days of sub-zero temperatures each year are unpredictable and within Hubbard County the vulnerability of jurisdictions to winter storms does not vary geographically. Citizens living in climates such as these must always be prepared for situations that put their lives or property at risk. It is not always the depth of the cold, but an unprepared individual with a vehicle breakdown or lack of a personal winter safety kit that are at risk. Rural citizens are more vulnerable to issues with deep snow. The vulnerability of each jurisdiction to severe winter storms has not changed due to any development in the last 5 years.

Severe Winter Storms and Electrical Outages

The leading cause of electric outages in Minnesota during 2008 to 2013 was Weather/Falling Trees. Between 2008 and 2013, the greatest number of electric outages in Minnesota occurred during the month of March (U.S. Department of Energy, 2015).

Plans and Programs in Place

Public Warning and Notification – In the event of emergencies or hazardous conditions that require timely and targeted communication to the public, Hubbard County utilizes the CodeRED Mass Notification System, Hubbard County Sheriff's Office Facebook page, and local news media. Hubbard County promotes the use of NOAA weather radios by critical facilities and the public to receive information broadcast from the National Weather Service. Local newspaper & radio stations assist with sharing public information.

Snow Removal – The Hubbard County Public Works Department has capabilities for snow removal and highway treatment in order to maintain safe winter driving conditions. The department carries out snow removal and ice control operations on county roads. MnDOT handles snow removal on trunk highways within Hubbard County. The county has agreements with several townships to do snow plowing. All other city and township jurisdictions either have their own equipment for snow removal or contract for services to do so.

Backup Power – Generator backup power is provided to the Hubbard County Sheriff's Office, LEC, courthouse & jail. All radio tower sites have backup generators.

Burying Power Lines – Burying power lines helps eliminate loss of power due to severe winter snow and ice storms. The public utilities that serve Hubbard County are working to install underground power lines to residents and businesses in areas where it is feasible.

School Closings – All school districts within Hubbard County have a school closing policy and communications plan in place if inclement weather or temperatures create a hazardous situation for students or staff. Schools have notification systems, which allow them to notify all families who are registered in the school system with up-to-date information.

Winter Hazard Awareness Week – Hubbard County helps promote and participates in the National Weather Service's "Winter Hazard Awareness Week" held in November each year. The event seeks to educate residents on the dangers of winter weather and how to properly deal with it.

Program Gaps or Deficiencies

Backup Power – Not all county and city facilities have backup power in the event that a severe storm takes out power.

Power Lines – Aboveground power lines are susceptible to damage as a result of ice and windstorms. Locating lines underground where it is feasible and cost effective, as is occurring in some parts of Hubbard County, can reduce the damages and potential power outages.

Communications – Not all residents have the most up-to-date phone numbers to use the CodeRed system, nor do they follow the Hubbard County Sheriff's Office Facebook page to receive important messages.

4.4.7 Extreme Cold

Winter in Hubbard County can be severe, and especially dangerous for disabled citizens and outdoor workers. Record temperature lows and arctic-like wind chills can cause cold-related illnesses such as frostbite and hypothermia, which can be deadly. Hypothermia is the greatest and most life-threatening cold weather danger.

In Hubbard County cold winter weather can have severe or fatal impacts. Hypothermia occurs when the core body temperature drops below 96° F. Anyone who is exposed to severe cold without enough protection can develop hypothermia. Frostbite occurs when skin tissue and blood vessels are damaged from exposure to temperatures below 32° F. It most commonly affects the toes, fingers, earlobes, chin, cheeks, nose, and other body parts that are often left uncovered in cold temperatures. The NWS issues "Extreme cold" warnings when it feels like -30° F or colder across a wide area for several hours. Extreme cold watches are issued a day or two before the conditions are expected.

Medical costs related to extreme heat and cold can be enormous: in 2005 the total was $1.5 billion nationwide, or more than $16,000 per patient (Union of Concerned Scientists, 2009).

Below zero temperatures occur almost every winter in Minnesota. January is the coldest month, with daytime highs averaging 20° F and nighttime lows averaging 2° F. However, these averages do not tell the whole story. Maximum temperatures in January have been as high as 61° F and minimums as low as 36° F below zero.

Extremely cold temperatures affect the county nearly every year. Cold air settled over Minnesota on January 31st of 1996, and remained entrenched through February 4th. A new record low temperature for Minnesota was set in the town of Tower on February 2, 1996, at -60° F. Numerous record low temperatures were set during the period at St. Cloud, Rochester and the Twin Cities. Minneapolis/St. Paul set 3 new record low temperatures as well as recording the 2nd coldest day on record on February 2, 1996. A mean temperature of -25° F was measured that day with a high of -17° F and a low of -32° F in the Twin Cities. This was within 2 degrees of tying the all-time record low temperature set in the Twin Cities and the coldest temperature recorded this century. Many central and southern Minnesota locations set new record low temperatures the morning of the 2nd. The Governor closed all schools that day.

In February of 2014, nearly all of Minnesota was between 10-15° F colder than normal (1981-2010 period) (High Plains Regional Climate Center, 2014). The winter of 2013-2014 was the sixth coldest on record in Minnesota (The Weather Channel, 2014), with schools in the Twin Cities canceling 5 times in January due to dangerous wind chills. It was the coldest winter in the Twin Cities in 35 years, with an average temperature for December-February of 9.7° F (MN DNR, 2014). Many areas in the state also experienced higher than average precipitation through the winter and spring months.

Extreme Cold History in Hubbard County

January is the coldest month on average in Park Rapids. The lowest temperature ever recorded there occurred in 1972, when it fell to -45°F (Intellicast, 2015). The average minimum temperature in Park Rapids for the month of January is -6°F, with an average annual snowfall of 12.1" (Intellicast, 2015).

The National Centers for Environmental Information (NCEI) recorded 32 extreme cold/wind chill events between 1996 and 2016. No deaths or injuries were reported.

Extreme Cold and Climate Change

There is not yet any observable trend related to extreme cold events and climate change in Minnesota. Cold temperatures have always been a part of Minnesota's climate and extreme cold events will continue. However, an increase in extreme precipitation or storm events such as ice storms as the climate changes could lead to a higher risk of residents being exposed to cold temperatures during power outages or other storm-related hazards during extreme cold.

Vulnerability

Extreme cold temperatures affect the county nearly every year. The amount of snow and ice, number of blizzard conditions, and days of sub-zero temperatures each year are unpredictable.

Within Hubbard County the risk of extreme cold does not vary geographically. Citizens living in climates such as these must always be prepared for situations that put their lives or property at risk. It is not always the depth of the cold, but an unprepared individual with a vehicle breakdown or lack of a personal winter safety kit that are at risk. Rural citizens not connected to city gas lines are more vulnerable to issues with extreme cold. The vulnerability of each jurisdiction to extreme cold has not changed due to any development in the last 5 years.

Plans and Programs in Place

Public Warning and Notification – In the event of emergencies or hazardous conditions that require timely and targeted communication to the public, Hubbard County utilizes the CodeRED Mass Notification System, Hubbard County Sheriff's Office Facebook page, and local news media. Hubbard County promotes the use of NOAA weather radios by critical facilities and the public to receive information broadcast from the National Weather Service. Local newspaper & radio stations assist with sharing public information.

School Closings – All school districts within Hubbard County have a school closing policy and communications plan in place if inclement weather or temperatures create a hazardous situation for students or staff.

Program Gaps or Deficiencies

No program gaps or deficiencies were identified.

4.4.8 Extreme Heat

Humans need to maintain a constant body temperature if they are to stay healthy. Working in high temperatures induces heat stress when more heat is absorbed into the body than can be dissipated out. Heat illness such as prickly heat, fainting from heat exhaustion, or heat cramps are visible signs that people are working in unbearable heat. In the most severe cases, the body temperature control system breaks down altogether and body temperature rises rapidly. This is a heat stroke, which can be fatal. The NWS issues a heat advisory when, during a 24-hour period, the temperature ranges from 105° F to 114° F during the day, and remains at or above 80° F at night.

Extreme heat events are linked to a range of illnesses, even death, and can exacerbate pre-existing chronic conditions such as cardiovascular, respiratory, liver, and neurological diseases, endocrine disorders, and renal disease or failure. Populations who are most vulnerable to extreme heat include persons over 65 or under 5 years old; living alone, without air-conditioning, or residing on the topmost floor of a building; and with an income at or below the poverty line. People who are exposed to heat because of recreational or job-related activities also are more vulnerable, including athletes, construction workers, and landscape/agricultural workers (Adapting to Climate Change in Minnesota: 2013 Report of the Interagency Climate Adaptation Team, 2013).

Medical costs related to extreme heat and cold can be enormous: in 2005 the total was $1.5 billion nationwide, or more than $16,000 per patient (Union of Concerned Scientists, 2009).

Extreme Heat History in Hubbard County

July is the hottest month on average in Park Rapids. The highest temperature ever recorded there occurred in August, 1976, when it rose to 101°F (Intellicast, 2016). The average July maximum temperature in Park Rapids is 80°F (Intellicast, 2016).

The National Centers for Environmental Information has no recorded instances of extreme heat in Hubbard County since 2011.

Extreme Heat and Climate Change

Minnesota's average temperature has increased more than 1.5°F since recordkeeping began in 1895, with increased warming happening in recent decades (International Climate Adaptation Team, 2013). Annual temperatures in the Midwest have generally been well above the 1901-1960 average since the late 1990s, with the decade of the 2000s being the warmest on record (Kunkel, et al., 2013). 7 of Minnesota's 10 warmest years occurred in the last 15 years. Projected increases are 2° F to 6° F more by 2050 and 5° F to 10° F by 2100 (MN Environmental Quality Board, 2014). The Midwest has experienced major heat waves and their frequency has increased over the last 6 decades (Perera, et al., 2012). For the U.S., mortality increases 4% during heat waves compared with non-heat wave days (Anderson & Bell, 2011). During July 2011, 132 million people across the U.S. were under a heat alert –

and on July 20 the majority of the Midwest experienced temperatures in excess of 100° F. Heat stress is projected to increase as a result of climbing summer temperatures and humidity (Schoof, 2012). On July 19, 2011, Moorhead Minnesota set a new state record for the hottest heat index ever, at 134° F. That same day, Moorhead also recorded a new state record for the highest dew point at 88. It was the hottest, most humid spot on the planet that day (Douglas, 2011).

Recent statistics from NOAA show that there are more human fatalities each year due to heat waves than from floods, lightning, tornadoes and winter storms. Many cities have responded by creating Heat Wave Response Plans to ensure that those in marginal health without air conditioning can obtain the relief and care they need, and the Minnesota Department of Health developed the Extreme Heat Toolkit to help educate at-risk populations on how to reduce risks associated with heat waves (Seeley M. , 2015).

Increasing temperatures influences Minnesota's agricultural industry. Agriculture is highly dependent on specific climate conditions. Because of increasing temperatures, crop production areas may shift to new regions of the state where the temperature range for growth and yield of those crops is optimal. According to the National Climate Assessment, the Midwest growing season has lengthened by almost 2 weeks since 1950 due in large part to earlier timing of the last spring freeze. This trend is expected to continue. While a longer growing season may increase total crop production, other climate changes, such as increased crop losses and soil erosion from more frequent and intense storms, and increases in pests and invasive species, could outweigh this benefit. There may also be higher livestock losses during periods of extreme heat and humidity. Losses of livestock from extreme heat lead to a challenge in the disposal of animal carcasses. Currently there are only 2 rendering facilities in Minnesota available for livestock disposal. If a rendering facility is not available, lost livestock must be composted on an impervious surface. If losses are high, finding an impervious surface large enough is a challenge. In an attempt to adapt to increased temperatures, livestock areas in Minnesota may shift farther north. As a result of new livestock areas and the resulting manure production, farmers may transition to manure-based fertilizer applications in areas where traditionally only commercial fertilizers have been used, with accompanying environmental advantages and disadvantages (Adapting to Climate Change in Minnesota: 2013 Report of the Interagency Climate Adaptation Team, 2013). In order to minimize the detrimental effects of heat stress on animal metabolism and weight gain, Minnesota farmers have also begun redesigning and retrofitting dairy, hog, and poultry barns with better watering, feeding, and ventilation systems (Seeley M. , 2015).

Vulnerability

Within Hubbard County the risk of extreme heat does not vary geographically. The vulnerability of each jurisdiction to extreme heat has not changed due to any development in the last 5 years.

Plans and Programs in Place

Public Warning and Notification – In the event of emergencies or hazardous conditions that require timely and targeted communication to the public, Hubbard County utilizes the CodeRED Mass Notification System, Hubbard County Sheriff's Office Facebook page, and local news media. Hubbard County promotes the use of NOAA weather radios by critical facilities and the public to receive information broadcast from the National Weather Service. Local newspaper & radio stations assist with sharing public information.

School Closings – All school districts within Hubbard County have a school closing policy and communications plan in place if inclement weather or temperatures create a hazardous situation for students or staff.

Program Gaps or Deficiencies

No program gaps or deficiencies were identified.

4.4.9 Drought

A drought refers to an extended period of deficient rainfall relative to the statistical mean for a region. Drought can be defined according to meteorological, hydrological, socioeconomic, and agricultural criteria. Meteorological drought is qualified by any significant deficit of precipitation. Hydrological drought is manifest in noticeably reduced river and stream flow and critically low groundwater tables. The term agricultural drought indicates an extended dry period that results in crop stress and harvest reduction. Socioeconomic drought refers to the situation that occurs when water shortages begin to affect people and their lives. It associates economic goods with the elements of meteorological, agricultural, and hydrological drought. Many supplies of economic goods (e.g., water, food grains, hydroelectric power) are greatly dependent on the weather. Due to natural variations in climate, water supplies are high in some years but low in others. Fluctuating long-term climate variations make drought difficult to predict.

Drought History in Hubbard County

National Centers for Environmental Information records show 12 droughts in Hubbard County. Most recently, the county experienced a D2 drought designated by the U.S. Drought Monitor. This event occurred in 2015 from the dry conditions between April and early May.

In March of 2007, Hubbard County began the month in a D3 drought stage. Without the late season snow the county received, the consequences of early dry conditions could have been significantly more devastating.

Six more drought events were recorded corresponding to the lack of precipitation in 2006. One designation for drought conditions was added to the National Centers for Environmental Information storm events database in each month from July-December. During this period, Hubbard County was kept between a D2 and D3 drought classification.

The hazard rank for drought in Hubbard County is low. A drought may not have a severe impact on human life due to decreased water access; however, the economic impact on farmers could be significant. Extended drought conditions may also make an area more prone to wildfire. Trees may be lost due to lack of moisture. In severe instances, a drought may cause wells to dry up entirely.

Drought and Climate Change

Droughts have been happening throughout Minnesota's history and it is not yet clear how climate change may impact this (International Climate Adaptation Team, 2013). While there was no apparent change in drought duration in the Midwest over the past century (Dai, 2011), the average number of days without precipitation is projected to increase in the future (National Climate Assessment Development Advisory Committee, 2013).

Even in areas where precipitation does not decrease, projected higher air temperatures will cause increased surface evaporation and plant water loss, leading to drier soils. As soil dries out, a larger proportion of the incoming heat from the sun goes into heating the soil and adjacent air rather than evaporating its moisture, resulting in hotter summers under drier climatic conditions (Mueller & Seneviratne, 2012).

Across the nation, drought is affecting water supplies, as ground and surface water levels are increasingly reduced due to growing consumption and withdrawal. These trends are expected to continue, with a higher likelihood of water shortages (Georgakakos, et al., 2014).

In 2007, 24 Minnesota counties received drought designation, while 7 counties were declared flood disasters. In 2012, 55 Minnesota counties received federal drought designation at the same time 11 counties declared flood emergencies (MN Environmental Quality Board, 2014).

In May of 2015, over 90% of Minnesota was undergoing severe or moderate drought, due to low snow levels during the 2014-2015 winter and dry spring weather, with precipitation deficits totaling 3-6 inches below average across much of the state since October 2014. Water levels on streams, lakes, and wetlands were below average, and wildfires were common during April of 2015. Blowing soil was also reported due to high winds and the dried-out landscape (MN DNR, 2015).

Vulnerability

Jurisdictions in Hubbard County do not vary in their vulnerability to drought. The vulnerability of each jurisdiction to drought has not changed due to any development in the last 5 years.

Plans and Programs in Place

Burning Permits and Restrictions – Hubbard County implements both burning permits and restrictions through the MN DNR.

Minnesota Drought Response Plan – The State of Minnesota has a statewide drought response plan in place. The plan was prepared by the Minnesota DNR.

Program Gaps or Deficiencies

No program gaps or deficiencies were identified.

4.4.10 Wildfire

A wildfire is an uncontrolled fire spreading through vegetative fuels, posing danger and destruction to property. Wildfires can occur in undeveloped areas and spread to urban areas where structures and other human developments are more concentrated. While some wildfires start by natural causes like lightning, humans cause 4 out of every 5 wildfires. Debris burns, arson or carelessness are the leading causes of wildfires. As a natural hazard, a wildfire is often the direct result of a lightning strike that may destroy personal property and public land areas, especially on national and state forest lands. The dangers from wildfire include the destruction of timber, property and wildlife, and injury or loss of life to people living in the affected area or using the area for recreational facilities.

While wildfires are often viewed in a negative light, they are a naturally occurring part of the environment. Wildfires are an important component of healthy forest and prairie ecology, and can be beneficial by reducing dangerously high fuel levels and putting nutrients into the ground that spur new growth. In addition, many flora species require fire for seed germination. However, as people settled this country and began clearing land and building homes, roads, railroads, and campgrounds, new artificial causes of wildfire emerged and their frequency and level of destruction increased.

Causes of wildfires vary from state to state. For example, in Florida, lightning ignites approximately half of all wildfires, while in Minnesota lightning causes less than 5% of all wildfires. These variations are due to climate, vegetation, topography, and weather. People burning debris cause most wildfires in Minnesota. However, wildfires are also caused by vehicle exhaust, sparks from trains and heavy equipment, camping, smoking, and lightning.

Topography affects the movement of air and fire over the ground surface. The slope and shape of terrain can change the rate of speed at which the fire travels. Weather affects the probability of wildfire and has a significant effect on its behavior. Temperature, humidity and wind affect the severity and duration of wildfires.

Homes threatened by wildfire are primarily those located in the “wildland-urban interface.” This is the zone where homes and subdivisions have been located in wildland areas where natural wildfires can have an impact. While wildfires are necessary for healthy ecosystems, they burn whatever fuel is in their path, whether vegetation or buildings.

One of the most common causes of a home being damaged or destroyed is due to radiant heat. In a wildfire, radiant heat is the heat given off by burning vegetation. The high temperatures of some wildfires can cause the deck, siding, or roof of a home to ignite, because the fire was too near the home. Studies in western wildfires have shown that approximately 85% of homes surviving a major wildfire had 30-50 feet of defensible space around them, coupled with fire-resistant roofing.

Approximately 1,600 wildfires occurred each year in Minnesota on average from 1976-2011 (MN DNR, 2011). Wildfires occur throughout the spring, summer and fall, however, most wildfires in Minnesota take place in March, April, and May. During this period, much of the existing vegetation has been killed due to winter temperatures and is dead, brown and combustible. Also, there is little green vegetation to serve as a barrier for a moving wildfire.

Wildfire History in Hubbard County

Wildfire has been ranked as a high risk by Hubbard County. Their occurrence is common in the county, and have been caused by a variety of factors from debris to smoking and lightning. The last wildfire in Hubbard County was in 2015.

The Minnesota DNR responded to 900 wildfires in Hubbard County between 1985 and April 2015, most of which were human-caused, burning a total of 3,248 acres. These include fires not only on state lands, but also rural private lands for which there is not another agency with primary responsibility. Wildfires that are not included in this data are those that occur on federal and Native American lands, and those that are responded to by local fire departments. The largest fire was caused by a campfire in 1992 and burned 178 acres. Another large wildfire occurred in April of 2000, when 95 acres burned due to debris burning. Since March 17 2010, there have been 111 recorded wildfires leading to the most recent event on April 5th, 2015. Over these past 5 years of recorded data, wildfires within Hubbard

County have covered a total of 424 acres. The sum value of acreage affected by wildfires has increased from 360 acres between March 15th 2005 and August 10th 2009 while the total wildfires has remained consistent during this period with 113 events recorded. The remaining data for wildfires within Hubbard County document 19 years, and during this period 676 wildfires occurred, covering 2,464 acres of land. This report concludes that during the first 19 years of recorded wildfire history an average of 129.7 acres were affected by an approximated 35.5 wildfires per year. From recorded dates between 2005-2009 average acres affected dropped to 72 acres per year along with the average of 22.6 annual wildfires. Most recently, occurrences between 2010 and 2015 have remained consistent with the previous 5-year trend by producing 18.5 wildfires affecting 70.6 acres each year over the 6-year study parameter.

These fires, along with areas of peat soil, are mapped in Figure 18. The DNR has not responded to any fires in Hubbard County since 2015.

According to MN DNR data, there are 16,384 acres of peat in Hubbard County. Peat is partially decayed plant matter found in ancient bogs and swamps. Minnesota has approximately 6 million acres of peatland, the highest total acreage in the contiguous United States. Peat fires are deep-rooted fires that burn underground, lasting for weeks, months, or even years. They can smolder during winter months beneath the snow, surfacing again in the spring to burn above ground. Peat ignites when its moisture content is low, and then it supports combustion rather than flame. Once started, combustion is persistent because peat contains oxygen and needs little or no outside oxygen to continue burning. Peat's insulating qualities mean the fire loses little heat. As the peat dries, it becomes water repellent. These factors result in long-lasting fires that require extensive operations to extinguish.

Wildfire and Climate Change

Temperatures are predicted to rise in the state, which could lead to more extreme heat events and associated wildfire risks. As Minnesota's climate changes, weather fluctuations between drought and extreme rain events and increasing temperatures will result in changes to forest composition and/or distribution. These fluctuations can lead to dry conditions that may cause increased fire risk in both grassland and forest environments.

Vulnerability

Figure 19 maps communities at risk for wildfire in Hubbard County. This data was developed by the MN DNR using statewide spatial data for fire occurrence, fire department response areas, and housing unit density by census block (2000). Census blocks with > 1 housing unit per forty acres were used to identify likely concentrations of structures in each fire department response area. Field experts further revised the data output by considering fire occurrence, values protected, hazard, and protection capabilities. Two types of communities were recognized: cities and townships, based on the 2000 Census. The entire township is listed as a community at risk if any portion of it was ranked as being at risk.

The vulnerability of each jurisdiction to wildfire has not changed due to any development in the last 5 years.

Figure 18. Wildfires by Acres Burned (1985-April 2015) and Peat Soil Areas in Hubbard County

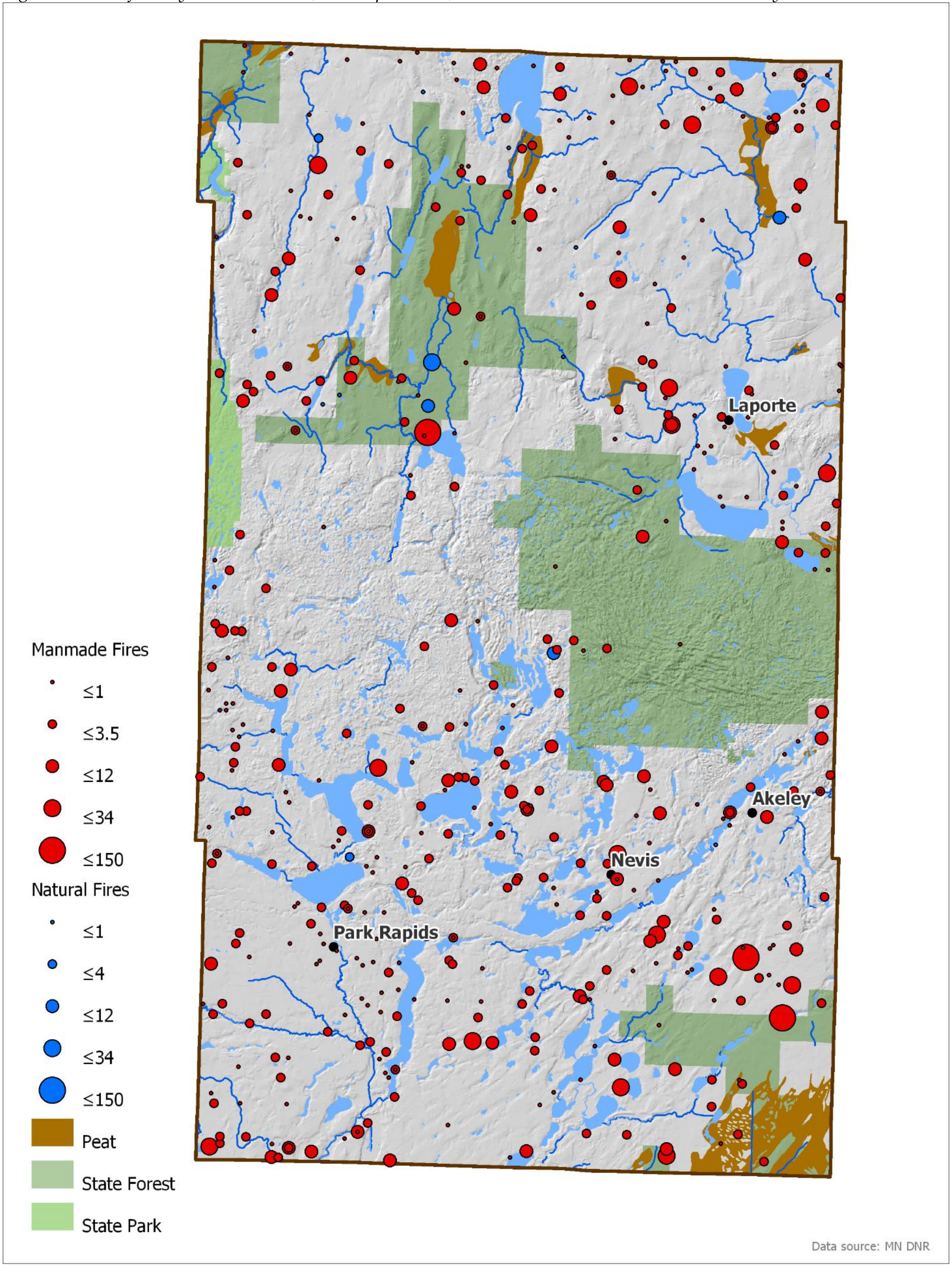
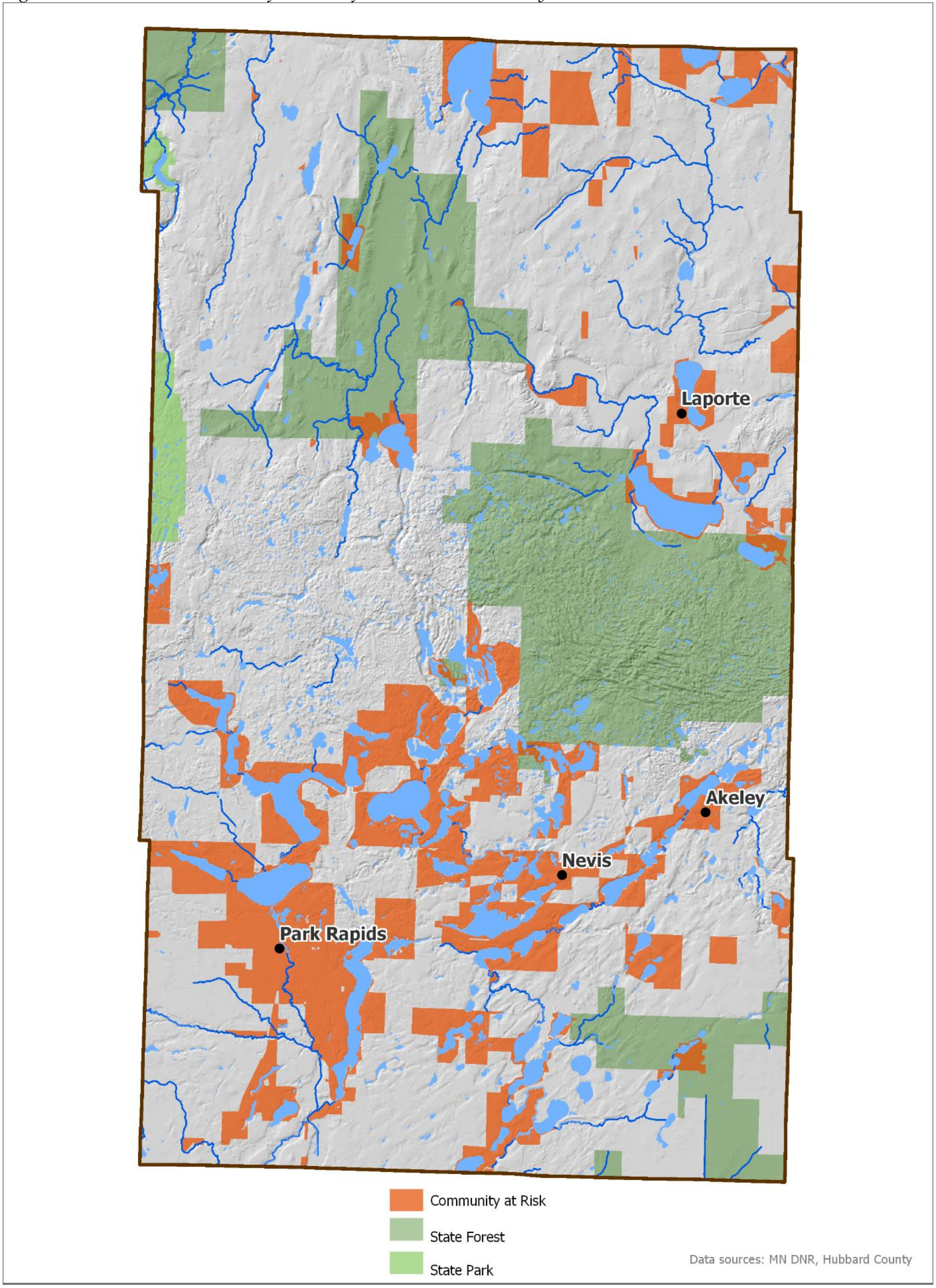


Figure 19. Communities at Risk from Wildfire in Hubbard County



Plans and Programs in Place

Public Warning and Notification – In the event of emergencies or hazardous conditions that require timely and targeted communication to the public, Hubbard County utilizes the CodeRED Mass Notification System, Hubbard County Sheriff's Office Facebook page, and local news media. Hubbard County promotes the use of NOAA weather radios by critical facilities and the public to receive information broadcast from the National Weather Service. Local newspaper & radio stations assist with sharing public information.

Burning Permits/Restrictions – Regulation of open burning and the use of burning permits has been an important tool in preventing wildfire in Minnesota. Burning permits are required by the MN DNR when the ground is not snow-covered. Permits can be obtained from MN DNR Forestry offices or fire wardens. When risk of wildfire is very high, burning is not permitted.

Mutual Aid Agreements – All of the municipal fire departments in Hubbard County have mutual aid agreements with each contiguous department that borders their respective fire district. Written mutual aid agreements are on file with each city.

Emergency Operations Plan – Hubbard County maintains an Emergency Operations Plan, which is designed as a guide for emergency operations. It is intended to assist key county/city officials and emergency organizations to carry out their responsibilities for the protection of life and property under a wide range of emergency conditions, including fires. The Hubbard County EOP refers to fire protection.

Program Gaps or Deficiencies

Dry Hydrants and Water Access – Not all areas of Hubbard County have good access to water resources for fighting fires. Fire districts need to continue addressing the need for dry hydrants and water access.

Firewise Program – Increasing participation in the MN DNR Firewise Program would help to advance planning, homeowner education, and local projects for mitigating against wildfire in Hubbard County.

4.4.11 Landslides and Soil Erosion

Erosion is the wearing away of land, such as the loss of a riverbank, beach, shoreline, or dune material. It is measured as the rate of change in the position or displacement of a riverbank or shoreline over a period of time. Short-term erosion typically results from periodic natural events, such as flooding, hurricanes, storm surges, and windstorms, but may be intensified by human activities. Long-term erosion is a result of multi-year impacts such as repetitive flooding, wave action, sea level rise, sediment loss, subsidence, and climate change. Death and injury are not typically associated with erosion; however, it can destroy buildings and infrastructure (FEMA, 2013).

The movement of a mass of rock, debris, or earth down a slope by the force of gravity is considered a landslide. They occur when the slope or soil stability changes from stable to unstable, which may be caused by earthquakes, storms, volcanic eruptions, erosion, fire, or additional human-induced activities. Slopes greater than 10 degrees are more likely to slide, as are slopes where the height from the top of the slope to its toe is greater than 40 feet. Slopes are also more likely to fail if vegetative cover is low and/or soil water content is high. Potential impacts include environmental disturbance, property and infrastructure damage, and injuries or fatalities (FEMA, 2013).

Soil Erosion/Landslides History in Hubbard County

According to the District Manager for the Hubbard County Soil and Water Conservation District, in 2016 Hubbard County saw multiple large storms that led to substantial erosion problems, both on private property and township roads. This area is glacial till and sand with some steep slopes. Hubbard County SWCD deals with the Soil Erosion Loss law, the new buffer law, and part of their mission is to help prevent erosion on the land to protect water quality in county lakes.

Soil Erosion/Landslides and Climate Change

The increased magnitude and frequency of flooding events and storm activity that may result from climate change may in turn increase the risk of soil erosion and landslides. According to University of Washington geologist Dave Montgomery, "If the climate changes in a way that we get a lot more rainfall you would expect to see a lot more landslides" (Phillips, 2014).

In Minnesota, the wettest days are getting wetter. This can contribute to increased erosion in many locations due to flooding and saturation of soils. Reduced ice cover on lakes and shorelines (due to warmer temperatures) could potentially expose shorelines to increased erosion or damage during weather events when they previously may have been covered with ice (National Climate Assessment Development Advisory Committee, 2013).

According to the 2014 National Climate Assessment, "Increased precipitation intensity also increases erosion, damaging ecosystems and increasing delivery of sediment and subsequent loss of reservoir storage capacity" (Pryor, et al., 2014).

Vulnerability

Figure A - 26 in Appendix A maps soil erodibility in Hubbard County using the Soil Erodibility Factor (K-Factor), which is a quantitative description of soil's inherent erodibility, by measuring the susceptibility of soil particles to shift due to rainfall and runoff. The Soil Erodibility Factor ranges in value from 0.02 to 0.69; however, all areas in Hubbard County are 0.37 or less.

Plans and Programs in Place

Hubbard County Local Water Management Plan – The Hubbard County Soil and Water Conservation District (SWCD) is responsible for the county's Local Water Management Plan (LWMP), which was updated in January of 2016. This is a 10-year plan with an update every 5 years. This plan was a collaborative effort with Hubbard County, Board of Water and Soil Resources (BWSR), MN Pollution Control Agency (MPCA), MN Dept. of Natural Resources (MN DNR), and MN Department of Health (MDA). There are 4 main priority concerns that were identified in the plan: aquatic invasive species, surface water quality and quantity, groundwater quality and quantity and land use and habitat protection for water quality. Included in this plan are the MPCA's Watershed Restoration and Protection Strategies (WRAPS) for the 3 major watersheds within Hubbard County – Crow Wing River, Leech Lake River and the Mississippi Headwaters. The WRAPS and LWMP set up strategies to prioritize, target and provide measurable results on any projects done. Being identified in the LWMP allows the county to seek funding from the Clean Water Fund and Lessard Sams monies from the state. These documents support hazard mitigation by prioritizing which minor watersheds are the most susceptible to degradation as to erosion, runoff, declining water quality, etc.

Hubbard County Soil and Water Conservation District Programs – The Hubbard County SWCD has cost-share programs to support the county in mitigating against erosion and has the capability to write larger grants for special projects dealing with erosion, soil loss and water quality concerns. The SWCD is the administrator for the Wetland Conservation Act, lead for the MN Buffer Law, lead for MN Erosion Soil Loss law, and sits on the City of Park Rapids, Nevis, Akeley and Laporte's Wellhead protection areas.

Program Gaps or Deficiencies

SWCD and Local Partnerships – There is not a strong connection with the SWCD and the cities in Hubbard County other than the wellhead protection plans. This can also be said about the connection with townships, the county engineer, and land management manager and the SWCD on programs that they are doing. Townships generally do not have an engineer available to help design corrections to rural road issues they are experiencing. The SWCD does have an engineer available. With heavier rain events many township roads do not have the correct drainage, have undersized or nonfunctioning culverts and are seeing more township road problems with erosion that generally goes into local lakes and wetlands.

Public Information & Education – The public lacks information and education on the topics of erosion, oil spills, and what they can do about these problems. There is also a lack of what plans are out there, what help is available and what they can do about problems.

4.4.12 Dam Failure

Dams are structures that retain or detain water behind a large barrier. When full or partially full, the difference in elevation between the water above the dam and below creates large amounts of potential energy, allowing the chance for failure. Dams can fail due to either 1) water heights or flows above the capacity for which the structure was designed; or 2) deficiencies in the structure such that it cannot hold back the potential energy of the water. If a dam fails, issues of primary concern include loss of human life/injury, downstream property damage, lifeline disruption (transportation routes and utility lines required to maintain or protect life), and environmental damage. Dams require constant monitoring and regular maintenance to insure their integrity.

Dam Failure History in Hubbard County

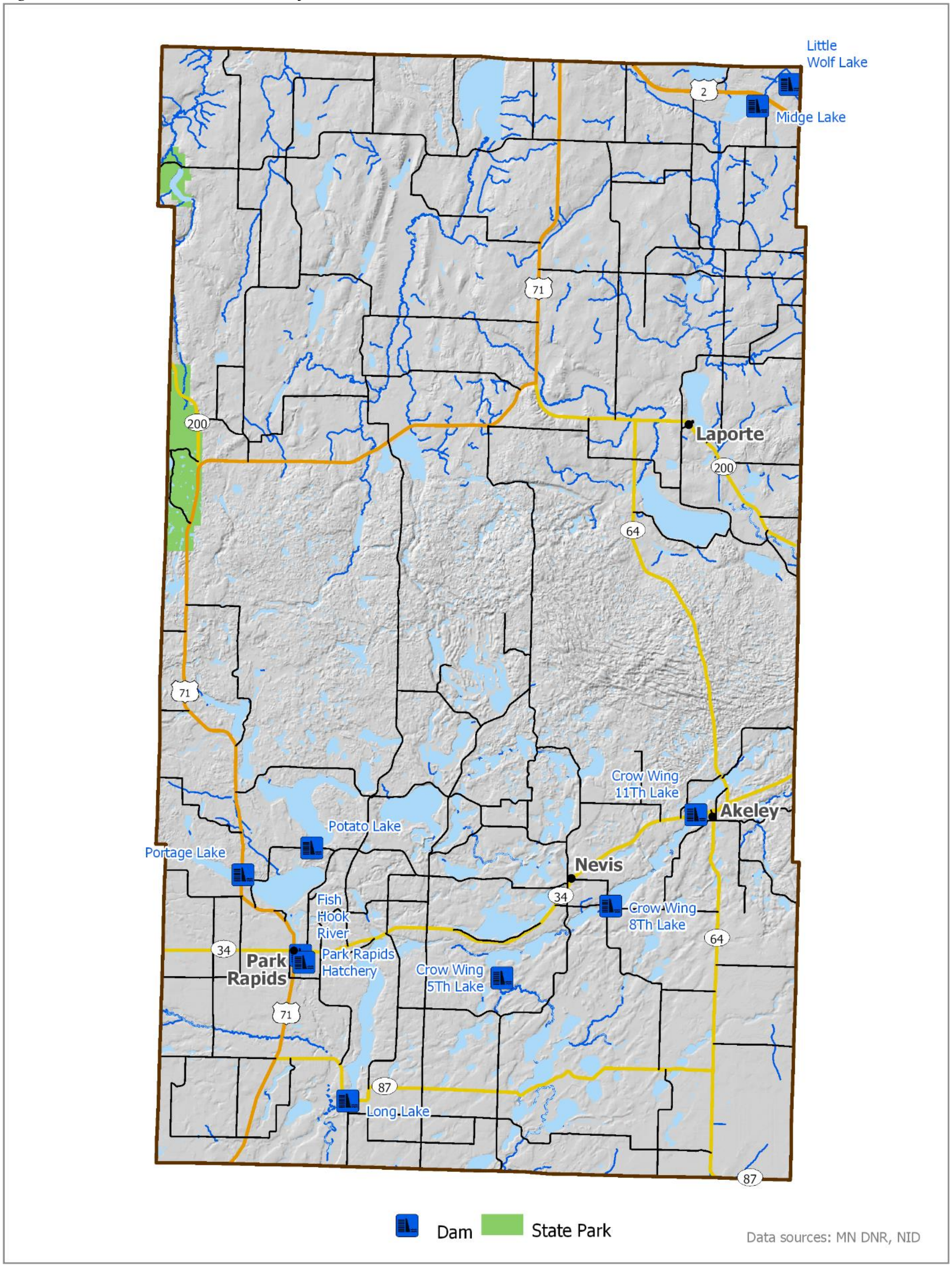
Table 26 below summarizes data on Hubbard County's 10 dams based on data from the National Inventory of Dams and the MN DNR. They are also mapped in Figure 20. There are no levees in Hubbard County.

Table 26. Dam Data for Hubbard County (National Inventory of Dams and MN DNR)

Name	Owner	River	Year Built	NID Height	Dam Type
Crow Wing 5th Lake	MN DNR Forestry	Crow Wing River	1938	10	Gravity
Crow Wing 8th Lake	MN DNR	Crow Wing River	1938	9	Gravity
Crow Wing 11th Lake	MN DNR Trails	Crow Wing 11th Lake	1939	N/A	N/A
Fish Hook River (Mill Pond Dam)	City of Park Rapids	Fish Hook River	1941	20	N/A
Little Wolf Lake	MN DNR	Mud Lake	N/A	N/A	N/A
Long Lake	MN DNR	Shell River	1949	25	N/A

Name	Owner	River	Year Built	NID Height	Dam Type
Midge Lake	MN DNR	Midge Lake	N/A	N/A	N/A
Park Rapids Hatchery	MN DNR Fisheries	Fish Hook River	N/A	N/A	N/A
Portage Lake	MN DNR	Portage River	1938	12	Gravity
Potato Lake	MN DNR	Fish Hook River	1939	9	Gravity

Figure 20. Dams in Hubbard County



Dam Failure and Climate Change

Dams are designed based on assumptions about a river's annual flow behavior that will determine the volume of water behind the dam and flowing through the dam at any one time. Changes in weather patterns due to climate change may change the expected flow pattern. It is conceivable that bigger rainfalls at earlier times in the year could threaten a dam's designed margin of safety, causing dam operators to release greater volumes of water earlier in a storm cycle in order to maintain the required margins of safety. Such early releases of increased volumes can increase flood potential downstream.

While climate change will not increase the probability of catastrophic dam failure, it may increase the probability of design failures. Minnesota had a dam failure due to a large storm event in June 2012. The Forebay canal in Carlton County had operated as designed for nearly 100 years. The intensity of the 2012 rain event caused a failure of the canal wall, which caused significant damage. Climate change is adding a new level of uncertainty that needs to be considered with respect to assumptions made during dam construction.

Vulnerability

Areas most susceptible to the effects of dam failure are the populated places downstream from a dam location. The vulnerability of each jurisdiction to dam failure has not changed due to any development in the last 5 years.

Plans and Programs in Place

Public Warning and Notification – In the event of emergencies or hazardous conditions that require timely and targeted communication to the public, Hubbard County utilizes the CodeRED Mass Notification System, Hubbard County Sheriff's Office Facebook page, and local news media. Hubbard County promotes the use of NOAA weather radios by critical facilities and the public to receive information broadcast from the National Weather Service. Local newspaper & radio stations assist with sharing public information.

Federal Emergency Management Agency (FEMA) National Dam Safety Program – For 30 years, the federal government has used the National Dam Safety Program (NDSP) to protect Americans from dam failure. The NDSP is a partnership of states, federal agencies, and other stakeholders that encourages individual and community responsibility for dam safety. The NDSP is intended to help states bring the necessary resources to bear on inspection, classification, and emergency planning for dam safety.

National Inventory of Dams (NID) – The NID is a database managed by the Army Corps of Engineers. The NID is used to track information on the nation's water control infrastructure. Information from the NID is used in the development of water resource management, land use management, floodplain management, risk management, and emergency action planning.

Minnesota Department of Natural Resources, Division of Waters – Dam Safety Program – The MN DNR Dam Safety Program and current dam safety regulations require the safe design, construction, operation, and maintenance of dams in Minnesota. The state program includes review of design plans and plans for proposed dams, safety inspections of existing dams, and repair of dams. The Dam Safety Program keeps a file on all dams that are subject to state dam safety regulations or have had information or reports generated on them for another purpose. A typical file contains construction plans, photos, inspection reports, and correspondence.

U.S. Army Corps of Engineers – The U.S. Army Corps of Engineers has plans in place for terroristic acts against the dams and flood control projects in the county.

Program Gaps or Deficiencies

No program gaps or deficiencies were identified.

Section 5 – Mitigation Strategy

The goal of mitigation is to protect lives and reduce the future impacts of hazards including property damage, disruption to local and regional economies, the amount of public and private funds spent to assist with recovery, and to build disaster-resistant communities. Mitigation actions and projects should be based on a well-constructed risk assessment, provided in Section 4 of this plan. Mitigation should be an ongoing process adapting over time to accommodate a community's needs.

5.1 Community Capability Assessments

The capability assessment identifies current activities used to mitigate hazards. The capability assessment identifies the policies, regulations, procedures, programs, and projects that contribute to the lessening of disaster damages. The assessment also provides an evaluation of these capabilities to determine whether the activities can be improved in order to more effectively reduce the impact of future hazards. The following sections identify existing plans and mitigation capabilities within all of the communities. Appendix J lists the plans and programs in place in Hubbard County as related to hazard mitigation. As part of the Hubbard County MHMP update, the county, its cities, and townships were asked to participate in filling out a "Local Mitigation Capabilities Assessment" (LMCA) form to report on their current mitigation capabilities and program gaps. Information gathered from the LMCA's were used to help inform the development of mitigation actions for each jurisdiction. Appendix K lists the LMCA reports gathered for Hubbard County.

5.1.1 National Flood Insurance Program (NFIP)

The NFIP is a federal program created by Congress to mitigate future flood losses nationwide through sound, community-enforced building and zoning ordinances and to provide access to affordable, federally-backed flood insurance protection for property owners. The NFIP is designed to provide an insurance alternative to disaster assistance to meet the escalating costs of repairing damage to buildings and their contents caused by floods. Participation in the NFIP is based on an agreement between local communities and the federal government that states that if a community will adopt and enforce a floodplain management ordinance to reduce future flood risks to new construction in Special Flood Hazard Areas (SFHAs), the federal government will make flood insurance available within the community as a financial protection against flood losses.

Table 27 below shows which jurisdictions in Hubbard County participate in the National Flood Insurance Program (NFIP).

Table 27. NFIP Participation in Hubbard County

Jurisdiction Name	NFIP y/n	FEMA Mapped High-Risk Areas
Akeley	No	No
Laporte	No	No
Nevis	No	No
Park Rapids	Yes	No
Hubbard County	Yes	No

Data current as of 2/8/2017 (FEMA, 2017)

Repetitive loss properties are defined as properties that have had 2 or more flood insurance claims of $1,000 or more in any rolling 10-year period. Property owners are asked to consider mitigation activities such as acquisition, relocation, or elevation, among other options. FEMA's Repetitive Loss (RL) properties strategy is to eliminate or reduce the damage to property and the disruption to life caused by repeated flooding of the same properties. Property owners are notified of their status by FEMA.

There are 2 repetitive loss properties in Hubbard County, both located in Nevis. Both properties are single-family residences.

For more on the areas that flood repeatedly in Hubbard County, see section 4.4.5 *Flash Flood and Riverine Flood.*

5.1.2 Plans and Ordinances

Hubbard County and its incorporated communities have a number of plans and ordinances in place to ensure the safety of residents and the effective operation of communities, including a Zoning Ordinance, Floodplain Ordinance, Emergency Operations Plan, Capital Improvements Plan, and Local Water Management Plan. In Section 4.4 of this plan (*Hazard Profiles),* a review of the plans and programs in place was included as related to each of the hazards addressed in the plan. See Appendix J for a list of all plans and programs in place in Hubbard County, and Appendix K for the local mitigation capabilities assessment reports.

5.2 Mitigation Goals

In Section 4.0 of this plan, the risk assessment identified Hubbard County as prone to a number of natural hazards. The steering committee members understand that although hazards cannot be eliminated altogether, Hubbard County can work toward building disaster-resistant communities.

The goals and strategies being developed for the 2019 Minnesota State Hazard Mitigation Plan for natural hazards were adopted for use in the Hubbard County Plan (Table 28). This framework will allow for integration of the mitigation actions that are listed by Hubbard County and its jurisdictions into the state plan. The state will then be able to develop a statewide strategy that will benefit all of Minnesota.

Table 28. Goals that will be used in the 2019 Minnesota State Hazard Mitigation Plan

Flooding Goal: Reduce deaths, injuries, property loss and economic disruption due to all types of flooding (riverine, flash flooding, dam/levee failure).
Wildfire Goal: Reduce deaths, injuries, property loss, natural resource and economic disruption due to wildfire (forest, prairie, grass, and peat bogs).
Windstorms Goal: Reduce deaths, injuries, property loss, and economic disruption due to windstorms.
Severe Winter Storms Goal: Reduce deaths, injuries, property loss, and economic disruption due to severe winter storms (blizzard, ice, and ice storm).
Lightning Goal: Reduce deaths, injuries, property losses, loss of services, and economic disruption due to lightning.
Tornado Goal: Reduce deaths, injuries, property loss, and economic disruption due to tornadoes.
Drought Goal: Reduce economic loss and environmental impacts due to drought
Extreme Heat Goal: Reduce deaths, injuries, and economic disruption due to extreme heat.
Extreme Cold Goal: Reduce deaths, injuries, property loss, and economic disruption due to extreme cold.
Landslide/Erosion Goal: Reduce deaths, injuries, property loss, and economic disruption due to extreme cold.

5.3 Mitigation Action and Project Strategies

The mitigation actions in this plan are summarized into 4 main strategy types, as described in the FEMA publications *Local Mitigation Planning Handbook* (2013) and *Mitigation Ideas: A Resource for Reducing Risk to Natural Hazards* (2013). Also included are the new FEMA Climate Resilient Mitigation Actions (CRMA) released in 2016. Minnesota HSEM recommends the use of these mitigation strategies to be in alignment with the state plan and those recommended by FEMA. A fifth strategy type was determined by Minnesota HSEM for use within the state. They are listed in Table 29 below:

Table 29. Mitigation Strategies and Action Types

Mitigation Strategy	Description	Example Mitigation Actions
Local Plans and Regulations	These actions include government authorities, policies, or codes, that influence the way land and buildings are developed and built.	• Comprehensive plans • Land use ordinances • Planning and Zoning • Building Codes and Enforcement • Floodplain ordinance • NFIP Community Rating System • Capital improvement programs • Open space preservation • Shoreline codes • Stormwater management regulations and master plans

Mitigation Strategy	Description	Example Mitigation Actions
Structure and Infrastructure Projects	These actions involve modifying existing structures and infrastructure to protect them from a hazard or remove them from a hazard area. This could apply to public or private structures as well as critical facilities and infrastructure. This type of action also involves projects to construct manmade structures to reduce the impact of hazards. Many of these types of actions are projects eligible for funding through the FEMA Hazard Mitigation Assistance program.	• Acquisitions and elevations of structures in flood prone areas • Utility undergrounding • Structural retrofits • Floodwalls and retaining walls • Detention and retention structures • Culverts • Safe rooms
Natural Systems Protection	These are actions that minimize damage and losses and also preserve or restore the functions of natural systems.	• Sediment and erosion control • Stream corridor restoration • Forest management • Conservation easements • Wetland restoration and preservation
Education and Awareness Programs	These are actions to inform and educate citizens, elected officials, and property owners about hazards and potential ways to mitigate them. These actions may also include participation in national programs, such as StormReady or Firewise Communities. Although this type of mitigation reduces risk less directly than structural projects or regulation, it is an important foundation. A greater understanding and awareness of hazards and risk among local officials, stakeholders, and the public is more likely to lead to direct actions.	• Radio or television spots • Websites with maps and information • Real estate disclosure • Presentations to school groups or neighborhood organizations • Mailings to residents in hazard-prone areas • StormReady • Firewise Communities
Mitigation Preparedness and Response	This is a State of Minnesota mitigation strategy with the intent of covering preparation and actions that protect life and property during a natural disaster.	• Emergency operations plan • Flood fight plans and preparedness • Dam emergency action plans • Warning • Backup power • Emergency capabilities

In the review and discussion of selected mitigation strategies and actions, steering committee members and the public were asked to consider the ranking of mitigation actions by priority for implementation. Guidance for ranking mitigation activities is drawn from FEMA evaluation criteria. The evaluation criteria (STAPLE+E) included the following categories and questions:

Social:

- Will the proposed action adversely affect one segment of the population?

- Will the action disrupt established neighborhoods, break up voting districts, or cause the relocation of lower income people?

Technical:
- How effective is the action in avoiding or reducing future losses?
- Will it create more problems than it solves?
- Does it solve the problem or only a symptom?
- Does the mitigation strategy address continued compliance with the NFIP?

Administrative:
- Does the jurisdiction have the capability (staff, technical experts, and/or funding) to implement the action, or can it be readily obtained?
- Can the community provide the necessary maintenance?
- Can it be accomplished in a timely manner?

Political:
- Is there political support to implement and maintain this action?
- Is there a local champion willing to help see the action to completion?
- Is there enough public support to ensure the success of the action?
- How can the mitigation objectives be accomplished at the lowest cost to the public?

Legal:
- Does the community have the authority to implement the proposed action?
- Are the proper laws, ordinances, and resolutions in place to implement the action?
- Are there any potential legal consequences?
- Is there any potential community liability?
- Is the action likely to be challenged by those who may be negatively affected?
- Does the mitigation strategy address continued compliance with the NFIP?

Economic:
- Are there currently sources of funds that can be used to implement the action?
- What benefits will the action provide?
- Does the cost seem reasonable for the size of the problem and likely benefits?
- What burden will be placed on the tax base or local economy to implement this action?
- Does the action contribute to other community economic goals such as capital improvements or economic development?
- What proposed actions should be considered but be "tabled" for implementation until outside sources of funding are available?

Environmental:
- How will this action affect the environment (land, water, endangered species)?
- Will this action comply with local, state, and federal environmental laws and regulations?

- Is the action consistent with community environmental goals?

5.3.1 Hazard Mitigation Actions

Hubbard County and its included jurisdictions share a common Multi-Hazard Mitigation Plan and worked closely to develop it. Local leaders work together with the Hubbard County Emergency Management Director to assure that the hazards and mitigation actions included in this plan are accurate and addressed in their jurisdictions. The jurisdictions responsible for each action are: Park Rapids, Nevis, Laporte, Akeley and Hubbard County.

Table 31 lists all mitigation actions for Hubbard County and its jurisdictions. Appendix G contains separate mitigation action tables for each jurisdiction. Each of these mitigation action charts detail the hazard, the mitigation strategy and action to address it, the priority ranking for implementation (1 = High Priority; 2 = Moderate Priority; 3 = Low Priority, see Table 30), its current stage of implementation, the timeframe for implementation going forward, the jurisdictions who have identified they will work to implement the action, the responsible parties to carry through with implementation, and comments on how the plan will be implemented through existing planning mechanisms and potential funding to make implementation happen.

Table 30. Criteria for Mitigation Action Priority Ranking

Ranking	Criteria
High Priority (1)	• Methods for reducing risk from the hazard are technically reliable. • The County has experience in implementing mitigation measures. • Mitigation measures are eligible under federal grant programs. • There are multiple mitigation measures for the hazard. • The mitigation measure(s) are known to be cost effective. • The mitigation measures protect lives and property for a long period, or are permanent risk reduction solutions.
Moderate Priority (2)	• Mitigation methods are established. • The County has limited experience with the kinds of measures that may be appropriate to mitigate the hazard. • Some mitigation measures are eligible for federal grants. • There is a limited range of effective mitigation measures for the hazard. • Mitigation measures are cost-effective only in limited circumstances. • Mitigation measures are effective for a reasonable period.
Low Priority (3)	• Methods for reducing risk from the hazard are not well established, are not proven reliable, or are experimental. • The State or Counties have little or no experience in implementing mitigation measures, and/or no technical knowledge of them. • Mitigation measures are ineligible under federal grant programs. • There is a very limited range of mitigation measures for the hazard, usually only one feasible alternative. • The mitigation measure(s) have not been proven cost effective and are likely to be very expensive compared to the magnitude of the hazard. • The long-term effectiveness of the measure is not known, or is known to be relatively poor.

Mitigation actions that have been completed or deleted from the 2010 Hubbard County Multi-Hazard Mitigation Plan are identified and reported on in Appendix H. Completed and deleted mitigation actions are not carried over into the updated mitigation action chart.

In addition to ranking the hazard mitigation actions using STAPLE+E, the steering committee also reports on the status of the mitigation action. Completed and deleted mitigation actions are denoted in Appendix H. Ongoing mitigation actions from the initial review were incorporated into annual reviews by the mitigation team. The status designations are:

- New – New actions that have been identified since the last plan
- Ongoing – Actions from the last plan that require continuing application
- In Progress – Actions from the last plan that are currently being acted upon

The mitigation types are defined as follows:

- Local Planning and Regulations
- Structure and Infrastructure Projects
- Natural Systems Protection
- Education and Awareness Programs
- Mitigation Preparedness and Response Support

Table 31. All Mitigation Actions for Hubbard County

#	Hazard	Mitigation Strategy	Mitigation Action	Status	Priority Ranking	Time-frame	Jurisdictions	Responsibility	County Comments on Planning Mechanisms for Implementation	Possible Funding
1	All-Hazards	Education & Awareness Programs	Work to ensure that all Hubbard County residents are aware of and sign-up for the CodeRed emergency notification system.	Ongoing	High	2017-2021	Hubbard County Akeley, Laporte, Nevis, Park Rapids	HC Emergency Management in coordination with local city and township government	This is a standing effort of the Hubbard County Emergency Management Program. Sign-up for CodeRed is available on the HC Emergency Management website and reminders are also put out via Facebook. Cities also work to promote sign-up by local residents by sharing information on city websites and announcements at public meetings.	County Budget
2	All-Hazards	Local Planning & Regulations	Form an Emergency Planning Committee, which will meet semi-annually to discuss emergency preparedness and response issues.	Ongoing	High	2017-2021	Hubbard County	HC Emergency Management	Development of an emergency preparedness group is an Ongoing planning effort of the HC Emergency Management Program. The group will include representation from the county, cities, townships, and other agencies such as the American Red Cross and MN DNR.	County Budget
3	All-Hazards	Mitigation Preparedness and Response Support	**(Schools)** Identify and purchase essential supplies and have them readily available in all schools.	Ongoing	High	2017-2021	Hubbard County ISD #306 (Laporte) ISD#308 (Nevis) ISD #309 Park Rapids	HC Emergency Management in coordination with School Districts	HC Emergency Management encourages all school districts to have essential supplies on-hand (i.e., NOAA weather radios, first aid kits, flashlights etc.) to provide for students and staff safety in the event of a hazard event.	School District Budgets
4	All-Hazards	Mitigation Preparedness and Response Support	**(Schools)** Install remote locking system for all main entrance points.	Ongoing	High	2017-2021	Hubbard County ISD#308 (Nevis) ISD #309 Park Rapids	HC Emergency Management in coordination with School Districts	HC Emergency Management will work in coordination with Hubbard Co. school districts to address as funding & budgets allow at each school district.	School District Budgets

#	Hazard	Mitigation Strategy	Mitigation Action	Status	Priority Ranking	Time-frame	Jurisdictions	Responsibility	County Comments on Planning Mechanisms for Implementation	Possible Funding
5	All-Hazards	Mitigation Preparedness and Response Support	**(Schools)** Install universal locks throughout the entire school so each room can easily be accessed with a master key.	Ongoing	High	2017-2021	Hubbard County ISD#308 (Nevis) ISD #309 Park Rapids	HC Emergency Management in coordination with School Districts	HC Emergency Management will work in coordination with Hubbard Co. school districts to address as funding & budgets allow at each school district.	School District Budgets
6	All-Hazards	Mitigation Preparedness and Response Support	**(Schools)** Implement measures to allow for remote accessibility of school warning systems.	Ongoing	High	2017-2021	Hubbard County ISD #306 (Laporte) ISD#308 (Nevis) ISD #309 Park Rapids	HC Emergency Management in coordination with School Districts	HC Emergency Management will work in coordination with Hubbard Co. school districts to address as funding & budgets allow at each school district.	School District Budgets
7	All-Hazards	Mitigation Preparedness and Response Support	**(Schools)** Practice remote access from Hubbard County Law Enforcement Center.	Ongoing	High	2017-2021	Hubbard County ISD #306 (Laporte) ISD#308 (Nevis) ISD #309 Park Rapids	HC Emergency Management in coordination with School Districts	The Hubbard County Sheriff's Office manages the remote access system for each school and practices with it regularly to ensure functionality.	County Budget
8	All-Hazards	Mitigation Preparedness and Response Support	**(Schools)** Purchase backup generators for all schools currently without a backup power source.	Ongoing	High	2017-2021	Hubbard County ISD #306 (Laporte) ISD#308 (Nevis) ISD #309 Park Rapids	HC Emergency Management in coordination with School Districts	HC Emergency Management will work in coordination with Hubbard Co. school districts to address as funding & budgets allow at each school district.	School District Budgets

#	Hazard	Mitigation Strategy	Mitigation Action	Status	Priority Ranking	Time-frame	Jurisdictions	Responsibility	County Comments on Planning Mechanisms for Implementation	Possible Funding
9	All-Hazards	Mitigation Preparedness and Response Support	**(Schools)** Plan and implement a mock disaster response in coordination with other agencies for a hazardous material spill.	Ongoing	High	2017-2021	Hubbard County ISD #306 (Laporte) ISD#308 (Nevis) ISD #309 Park Rapids	HC Emergency Management in coordination with School Districts	HC Emergency Management works to conduct drills & exercises at the school locations when feasible. The county with schools to address shelter-in-place or evacuation planning for any emergency event.	County Budget
10	All-Hazards	Mitigation Preparedness and Response Support	**(Schools)** Continue to practice various types of mock drills including fire and tornado drills.	Ongoing	High	2017-2021	Hubbard County ISD #306 (Laporte) ISD#308 (Nevis) ISD #309 Park Rapids	HC Emergency Management in coordination with School Districts	All Hubbard Co. schools are encouraged to practice & drill for tornados, and mock car crash drills are carried out at the high schools throughout the county.	School District Budgets
11	All-Hazards	Mitigation Preparedness and Response Support	**(Schools)** Update school Emergency Operations Plans regularly and ensure copies are available to Hubbard Co. EM and Law Enforcement.	Ongoing	High	2017-2021	Hubbard County ISD #306 (Laporte) ISD#308 (Nevis) ISD #309 Park Rapids	HC Emergency Management in coordination with School Districts	All schools are asked to provide an updated copy to the HCSO EM Office at the start of each school year.	School District Budgets
12	Severe Winter & Summer Storms	Education & Awareness Programs	Educate the public on the dangers of severe winter and summer storms to help protect life safety during severe storm events (i.e., stay away from downed power lines, winter driving hazards, etc.)	Ongoing	High	2017-2021	Hubbard County, Akeley, Laporte, Nevis, Park Rapids	HC Emergency Management in coordination with local cities	Hubbard County participates annually in the National Weather Service's Winter Hazard Awareness Week (November) and Severe Weather Awareness Week (April). Cities are encouraged to further share information within their jurisdictions (i.e., website, FB posting).	County/City Budgets

#	Hazard	Mitigation Strategy	Mitigation Action	Status	Priority Ranking	Time-frame	Jurisdictions	Responsibility	County Comments on Planning Mechanisms for Implementation	Possible Funding
13	Severe Winter & Summer Storms	Education & Awareness Programs	Promote individual and family emergency preparedness for safety and survival during periods of severe winter and spring/summer weather.	Ongoing	High	2017-2021	Hubbard County, Akeley, Laporte, Nevis, Park Rapids, and School Districts #306, #308, #309	HC Emergency Management in coordination with local cities	Hubbard County Emergency Management provides regular education and awareness information to the public through local newspapers, radio, and the Hubbard County Sheriff's Office FB page. Individuals and families are encouraged to prepare 3-days of food and water, to have a NOAA weather radio, to have generator power, to create a go-kit in the event of evacuation, and to be ready to care for pets.	County/City Budgets
14	Severe Winter & Summer Storms	Mitigation Preparedness and Response Support	Identify critical facilities or infrastructure that do not have backup power in the event of a major power outage resulting from severe winter or summer storms. *(Critical facilities may include: police/fire departments, EOC, health care facilities, water & sewer treatment facilities, and other facilities deemed as critical, i.e. public schools and sheltering facilities).*	New	High	2017-2021	Hubbard County, Akeley, Laporte, Nevis, Park Rapids, and School Districts #306, #308, #309	HC Emergency Management, City Admin & Public Works	Hubbard County, all cities, and school districts have identified a need for backup power to support continuity of operations in critical facilities and functioning of critical infrastructure. Hubbard County will identify where generators are needed throughout the campus of County facilities that are capable of supplying full electricity (shops, offices, fuel pumps, and internet) to power all operations. A high priority is installation of a permanent generator for the County's fuel facility, which supplies fuel for the HC Sheriff's Department, City of Park Rapids Police Department, DNR, and Park Rapids School.	County/City budgets

#	Hazard	Mitigation Strategy	Mitigation Action	Status	Priority Ranking	Time-frame	Jurisdictions	Responsibility	County Comments on Planning Mechanisms for Implementation	Possible Funding
15	Severe Winter & Summer Storms	Mitigation Preparedness and Response Support	Purchase and install generator hook-ups and encourage local generator purchases for identified critical facilities that require backup power.	New	High	2017-2021	Hubbard County, Akeley, Laporte, Nevis, Park Rapids and School Districts #306, #308, #309	HC Emergency Management, City Admin & Public Works	Hubbard County, local city governments, and schools will evaluate feasibility to purchase and install generators for key facilities. The county and cities will consider the availability of MN DNR generators that may be deployed if needed during power outages before making generator purchases.	County/City Budgets **Possible FEMA HMA 5% Initiative Funding for Generators**
16	Severe Winter & Summer Storms	Structure and Infrastructure Projects	Work with MN Power, Beltrami Electric Coop, and Itasca-Mantrap to identify and address mitigation measures for above ground power lines that are susceptible to damage from severe storms in order to reduce potential power outages.	New	High	2017-2021	Hubbard County, Akeley, Laporte, Nevis, Park Rapids	MN Power, Beltrami Electric Coop, and Itasca-Mantrap in cooperation with local cities	Hubbard County and local jurisdictions will be a planning partner to MN Power, Beltrami Electric, and Itasca-Mantrap for potential projects. MN Power has identified a need to conduct power pole & lines inspection and replacements in Park Rapids, Nevis, and Akeley. Beltrami Electric Coop has identified a need to convert overhead lines to underground that serve the City of Laporte (Laporte School, water & sewer, fire department, and other businesses).	Electric Coop Funding, **Possible FEMA HMA funding for Infrastructure Retrofit**
17	Severe Winter & Summer Storms	Education & Awareness Programs	Work with local utility companies to educate citizens on the importance of keeping trees and branches clear of power lines.	Ongoing	High	2017-2021	Hubbard County Akeley, Laporte, Nevis, Park Rapids	MN Power, Beltrami Electric Coop, and Itasca-Mantrap in cooperation with local cities	This is an ongoing effort of the utility companies and city public works departments as they seek to protect local power lines from failure from falling trees during storms.	City/Electric Coop funding

#	Hazard	Mitigation Strategy	Mitigation Action	Status	Priority Ranking	Time-frame	Jurisdictions	Responsibility	County Comments on Planning Mechanisms for Implementation	Possible Funding
18	Severe Winter & Summer Storms	Mitigation Preparedness & Response Support	Work with utility companies, St. Joseph Hospital, and private businesses to promote the high priority service list for people who rely on life saving medical devices in the event of a major power outage.	Ongoing	High	2017-2021	Hubbard County	HC Public Health in cooperation with MN Power, Beltrami Electric Coop, and Itasca-Mantrap	Hubbard Co. Public Health is tasked with maintaining this listing.	County Budget
19	Severe Summer Storms	Mitigation Preparedness and Response Support	Identify areas where warning sirens are needed or require upgrade throughout Hubbard County for severe wind storms and Civil Defense warning. Ensure sirens can be remotely activated by Hubbard County.	New	High	2017-2021	Hubbard County, City of Laporte, City of Park Rapids	HC Emergency Management in cooperation with City Admin & Public Works	Additional audible alarms are installed throughout Hubbard Co. to increase warning capacity when purchasing funds are available. All new installations are controlled by the Hubbard Co. Sheriff's Office Dispatch Center. HC Emergency Management will work with the City of Laporte to evaluate and upgrade the city's warning siren. The current siren is outdated is not tied to the county system. The City of Park Rapids also has identified a need to upgrade the city's warning siren.	County/City Budgets **Possible FEMA HMA 5% Initiative**

#	Hazard	Mitigation Strategy	Mitigation Action	Status	Priority Ranking	Time-frame	Jurisdictions	Responsibility	County Comments on Planning Mechanisms for Implementation	Possible Funding
20	Severe Summer Storms	Mitigation Preparedness & Response Support / Education & Awareness Programs	Test warning sirens throughout the County on a regular basis and educate local residents, schools, and businesses on what to do when they are activated for high winds or tornado.	Ongoing	High	2017-2021	Hubbard County, City of Laporte	HC Emergency Management, and City of Laporte	Hubbard County conducts remote testing of all warning sirens on the 1st Wednesday of each month, except for the siren in the City of Laporte, which is not currently tied to the County system. Each year HC Emergency Management works to engage local schools and businesses to participate in the Tornado Drill during Severe Weather Awareness Week.	County Budget
21	Severe Summer Storms	Mitigation Preparedness & Response Support	Provide/participate in the National Weather Service's SkyWarn "Storm Spotter" training in various parts of the County for first responders and community residents.	Ongoing	High	2017-2021	Hubbard County, Akeley, Laporte, Nevis, Park Rapids	HC Emergency Management in collaboration with local cities and NWS	Hubbard County Emergency Management coordinates with the National Weather Service to provide SkyWarn training every 2 years. (Annual training is not provided due to low participation). Handouts & information is available from the EM office upon request at any time of year.	County Budget and NWS funding to deliver program
22	Severe Summer Storms	Structure and Infrastructure Projects	Identify areas where vulnerable populations are susceptible to tornadoes or extreme wind events (i.e. schools, campgrounds, or mobile home parks) and evaluate for construction or retrofit of safe rooms or storm shelters.	Ongoing	High	2017-2021	Hubbard County Akeley, Laporte, Nevis, Park Rapids, All Townships and School Districts #306, #308, #309	HC Emergency Management, HC Public Health, in coordination with townships and local cities	Hubbard County Emergency Management will work with the cities, townships, and school districts to identify areas of concern and assess potential for construction or retrofit of community safe rooms. HC Emergency Management will work any school or jurisdiction seeking to develop a grant application to FEMA for a safe room project.	County/City budgets

#	Hazard	Mitigation Strategy	Mitigation Action	Status	Priority Ranking	Time-frame	Jurisdictions	Responsibility	County Comments on Planning Mechanisms for Implementation	Possible Funding
23	Severe Summer Storms	Structure and Infrastructure Projects	Implement construction or retrofit projects for safe rooms or storm shelters in identified vulnerable locations.	Ongoing	High	2017-2021	Hubbard County Akeley, Laporte, Nevis, Park Rapids, All Townships and School Districts #306, #308, #309	HC Emergency Management, HC Public Health, in coordination with townships and local cities	Any community safe room projects that the County is involved in will be part of the Hubbard County Emergency Management program. HC Emergency Management will work with any school or jurisdiction seeking to develop an application to FEMA for a safe room project.	County/City budgets **Possible FEMA HMA funding for Safe Room Construction**
24	Extreme Temps (Heat / Cold)	Education & Awareness Programs	Educate the public on the dangers of extreme heat or extreme cold and how to take personal safety measures during periods of extreme temperatures.	Ongoing	High	2017-2021	Hubbard County ISD #306 (Laporte) ISD#308 (Nevis) ISD #309 Park Rapids	HC Emergency Management, HC Public Health and School District Staff	Hubbard County Emergency Management regularly posts information on the FB page on public safety measures during periods of extreme heat and cold. Hubbard County Public Health also works to reach out to vulnerable populations, such as the elderly. Schools regularly provide education to students on measures to take to avoid heat stroke, hypothermia, or frostbite during extreme summer/winter weather.	County Budget

#	Hazard	Mitigation Strategy	Mitigation Action	Status	Priority Ranking	Time-frame	Jurisdictions	Responsibility	County Comments on Planning Mechanisms for Implementation	Possible Funding
25	Flooding	Local Planning & Regulations	Identify, map, and prioritize roads, bridges, and culverts in the County that are impacted by flood events, and prioritize required mitigation measures to reduce future flood damages.	Ongoing	High	2017-2021	Hubbard County Akeley, Laporte, Nevis, Park Rapids, and All Townships	HC Highway Dept, HC Public Works, HC GIS, HC SWCD, and local city and township public works	This is part of the Hubbard County Road Plan. Hubbard County Highway Dept. maintains an annual inventory of prioritized improvement projects for culverts, roads, and bridges throughout the county. Cities and townships also each work to identify and prioritize transportation improvement projects to address areas that suffer from flood damages. Hubbard County Highway Department provides engineering & construction to Townships for all roads projects.	County, and Township Budgets

#	Hazard	Mitigation Strategy	Mitigation Action	Status	Priority Ranking	Time-frame	Jurisdictions	Responsibility	County Comments on Planning Mechanisms for Implementation	Possible Funding
26	Flooding	Structure and Infrastructure Projects	Review the MN DNR Fisheries culvert inventory for the county and prioritize where improvements are needed to handle high water flow (such as modification of culverts or creation of retention areas).	New	High	2017-2021	Hubbard County and All Townships	HC Highway, HC Public Works, HC GIS, HC SWCD, in collaboration with MN DNR Fisheries, local city and township public works	Hubbard County SWCD notes that the MN DNR Fisheries has done a culvert inventory for the whole county and that it is available for the County to use. Hubbard County will coordinate with the MN DNR to obtain this information and apply it in their prioritization of improvement projects. Hubbard County Highway Department notes that over the last 5 plus years we have been working on and mitigating problem areas throughout the County which rate the culverts (as good or needs replacing). It has helped us to work on the worst and most important culverts throughout the county.	County/City budgets
27	Flooding	Structure and Infrastructure Projects	Implement prioritized flood mitigation measures for roads, bridges, culverts, and drainage systems.	New	High	2017-2021	Hubbard County, Akeley, Laporte, Nevis, Park Rapids and All Townships	HC Highway, HC Public Works, HC GIS, HC SWCD, and local city and township public works	Hubbard County notes that CSAH 49 Graceson Ave. S, has a storm drain that will need to be looked at and repaired. The City of Akeley will need help to mitigate this problem area before the street falls in. Costs to repair this may be some were in the $30,000-$50,000 bracket.	County/City Budgets **Possible FEMA HMA funding for Localized Flood Reduction Projects**

#	Hazard	Mitigation Strategy	Mitigation Action	Status	Priority Ranking	Time-frame	Jurisdictions	Responsibility	County Comments on Planning Mechanisms for Implementation	Possible Funding
28	Flooding	Local Planning & Regulations	Work with FEMA to update the County's digital floodplain insurance rate maps (DFIRM).	New	High	2017-2021	Hubbard County	HC Assessor, HC Envr. Services, MN DNR Floodplain Management Program, and FEMA	Hubbard County notes that the floodplain maps for Hubbard County need to be updated. Current maps are aged and more accurate maps are needed to reflect current flood elevation information. According to the MN DNR 2016 Estimated FEMA Map Modernization Status listing, Hubbard County is not scheduled for updated DFIRM modeling or mapping. Hubbard County will continue to work with cities to enforce current ordinances until new maps are completed.	MNDNR for future Floodplain Mapping
29	Flooding	Structure and Infrastructure Projects	Work with Henrietta Township to replace culvert on 209th Avenue in Hellkamp Creek due to potential failure and low efficiency ratings by MN DNR waters.	New	High	2017-2021	Hubbard County Henrietta Township and Nevis Township	HC Highway Dept and Henrietta and Nevis townships	Culvert on 209th Ave. at Helkamp Creek needs the 18in culvert replaced with a 30-36 inch.	County/Twp Budgets **Possible FEMA HMA funding for Localized Flood Reduction Projects**

#	Hazard	Mitigation Strategy	Mitigation Action	Status	Priority Ranking	Time-frame	Jurisdictions	Responsibility	County Comments on Planning Mechanisms for Implementation	Possible Funding
30	Flooding	Structure and Infrastructure Projects	Structurally improve and redesign roads, streets, culverts and bridges countywide to reduce and eliminate overland flooding and road washouts.	Ongoing	High	2017-2021	Hubbard County	HC Highway Dept. and HC Public Works in coordination with MnDOT	Hubbard Co. Highway Department and Public Works maintain an annual Road Plan, and work with MnDOT where needed for projects that involve state managed roads. Construction projects are posted for each year on the HC Highway Department webpage. Outside funding will be sought where projects may be eligible, such as from FHWA for mitigation activities regarding highways that include flashfloods, erosion, and more.	County Highway budget, other outside possible funding such as FHWA mitigation grants and **FEMA HMA Funding for Localized Flood Reduction Projects.**
31	Flooding	Structure and Infrastructure Projects	Identify locations of storm water mains throughout the county and assess the need to construct and replace existing storm water mains to handle high water rain events.	Ongoing	High	2017-2021	Hubbard County City of Akeley	HC Highway Dept., HC Public Works, HC GIS, HC SWCD and City of Akeley public works dept.	Throughout the County, this action is completed by Hubbard Co. Highway Department, Public Works & MN DOT. More will be completed as fund sources & bonding occur, and the problem areas are scheduled to be completed on the Hubbard Co. Road Plan.	County Budget, possible MPCA/PFA funding. Possible **FEMA HMA Funding for Localized Flood Reduction Projects.**

#	Hazard	Mitigation Strategy	Mitigation Action	Status	Priority Ranking	Time-frame	Jurisdictions	Responsibility	County Comments on Planning Mechanisms for Implementation	Possible Funding
32	Flooding	Local Planning & Regulations	Ensure that storm water management plans and improvement projects are identified and prioritized to address flood management for future high-impact rain events throughout the County (i.e., conduct hydro-modeling, GIS map of where culverts must be re-sized).	Ongoing	New	2017-2021	Hubbard County, Akeley, Laporte, Nevis, Park Rapids	HC Highway Dept., HC Public Works, HC GIS, HC SWCD and local city public works depts., MNDNR, MPCA	In the identification of projects, the County will evaluate what projects may be eligible to apply for the MPCA's annual Clean Water Project Priority List (PPL). Projects must be on the PPL to be eligible to apply for low interest CWRF loans and other state grants and loans from the Minnesota Public Facilities Authority (PFA). PFA financing is for investments in municipal infrastructure, which result in improvements in water quality. Funding is not available for privately owned infrastructure.	County/ SWCD budgets. Possible MPCA/PFA grant funding
33	Flooding	Structure and Infrastructure Projects	Implement storm water management structure and infrastructure projects to assist with flood management throughout the County.	Ongoing	New	2017-2021	Hubbard County, Akeley, Laporte, Nevis, Park Rapids	HC Highway Dept., HC Public Works, HC GIS, HC SWCD and local city public works depts., MNDNR, MPCA	Same as above. The County will seek outside grant funding where possible to fund eligible stormwater improvement projects, such as through MPCA and FEMA HMA funding for flood reduction projects.	County/ SWCD budgets. Possible MPCA/PFA grant funding. **Possible FEMA HMA funding for Localized Flood Reduction Projects**

#	Hazard	Mitigation Strategy	Mitigation Action	Status	Priority Ranking	Time-frame	Jurisdictions	Responsibility	County Comments on Planning Mechanisms for Implementation	Possible Funding
34	Flooding	Local Planning & Regulations	Ensure that wellhead protection plans are in place to address flooding that may lead to contaminated drinking water.	New	High	2017-2021	Hubbard County, Akeley, Laporte, Nevis, Park Rapids and All Townships	HC Public Works, HC SWCD, MN Dept of Health and local city and township public works depts.	Hubbard County SWCD is working with municipalities to develop strategies to protect drinking water supply management areas and implement practices with landowners in those areas that will protect and improve water quality. Cities work directly with the Minnesota Department of Health on the development or update of wellhead protection plans to ensure they meet State requirements. The SWCD is a partner that sits in on the meetings with MDH and cities and can offer suggestions.	MDH Source Water Protection grant funding for wellhead improvement projects
35	Wildfire	Local Planning & Regulations	Work with the MN DNR to develop a Community Wildfire Protection Plan (CWPP) for high-risk wildfire areas of Hubbard County.	Ongoing	High	2017-2018	Hubbard County	HC Emergency Management, HC Natural Resource Mgmt, HC Envr. Services, MN DNR Forestry, and local fire departments	Development of a CWPP will be explored and implemented as feasible with cooperation of Hubbard Co. Forestry & MN DNR Forestry Firewise Coordinator. Local fire departments will be engaged in the planning process. Local sponsorship by a local fire department will be necessary to obtain MNDNR Firewise funding to develop a CWPP.	Possible MN DNR Firewise Grant funding (50:50 cost share grant)

#	Hazard	Mitigation Strategy	Mitigation Action	Status	Priority Ranking	Time-frame	Jurisdictions	Responsibility	County Comments on Planning Mechanisms for Implementation	Possible Funding
36	Wildfire	Natural Systems Protection	Work with MN DNR to conduct Level-1 wildfire risk assessments in areas with significant wildfire potential in the county, specifically around communities at risk (Akeley, Park Rapids, and Nevis).	Ongoing	High	2017-2021	Hubbard County	HC Emergency Management, HC Envr. Services, MN DNR Forestry, and local fire departments	This project effort will be incorporated into the Firewise program for Hubbard County in cooperation with the MN DNR Forestry Firewise Coordinator.	Possible MN DNR Firewise Grant funding (50:50 cost share grant)
37	Wildfire	Education & Awareness Programs	Promote defensible space education and provide training for property owners that have properties at-risk for wildfire.	Ongoing	High	2017-2021	Hubbard County	HC Emergency Management, HC Natural Resource Mgmt. and MN DNR in collaboration with local fire departments	This project effort will be incorporated into the Firewise program for Hubbard County. It is especially important to encourage local elected officials to help promote the value of Firewise practices to local homeowners so that the MN DNR can more easily work with them.	Possible MN DNR Firewise Grant funding (50:50 cost share grant)
38	Wildfire	Education & Awareness Programs	Coordinate with MN DNR on providing wildfire education and awareness to the public promote wildfire risk reducing activities.	Ongoing	High	2017-2021	Hubbard County	HC Emergency Management, HC Natural Resource Mgmt, and MN DNR Forestry	Hubbard County Emergency Management will work in partnership with MN DNR to develop and disseminate key messages for wildfire safety. HC Emergency Management will use its Facebook Page, traditional media, and public events to provide outreach to the public during high-risk periods for wildfire.	Possible MN DNR Firewise Grant funding (50:50 cost share grant)

#	Hazard	Mitigation Strategy	Mitigation Action	Status	Priority Ranking	Time-frame	Jurisdictions	Responsibility	County Comments on Planning Mechanisms for Implementation	Possible Funding
39	Wildfire	Natural Systems Protection	Identify areas in the county where water resources are limited to support wildfire suppression. Evaluate if there are key water resources (lakes/rivers) that may support installation of a dry hydrant or where an underground water tank may be possible.	New	High	2017-2021	Hubbard County	HC Emergency Management in coordination with local fire chiefs and MN DNR Forestry	Hubbard County Emergency Management will work in coordination with local fire departments to review water access for fire suppression in rural areas. Where projects may be feasible we will seek to work in coordination with the MNDNR for dry hydrant or underground water storage tank projects.	Possible MN DNR Firewise Grant funding (50:50 cost share grant)
40	Wildfire	Natural Systems Protection	Work with Henrietta Township on constructing an access point on the northern most end of Deer Dr. on the east side of Long Lake that is large enough to fit a fire truck for pumping water from the lake.	New	High	2017-2021	Hubbard County Henrietta Twp.	HC Emergency Management, HC and HC Envr. Services in coordination with local fire department.	Hubbard County Emergency Management will work with local township officials and the local fire department to assess, plan for, and implement this project.	County Budget, **Possible FEMA HMA Funding for Wildfire Mitigation**
41	Landslides & Soil Erosion	Natural Systems Protection / Structure and Infrastructure Projects	Provide engineering support to Hubbard County townships to help identify and address design corrections to rural road issues due to erosion from rain events and flooding.	New	High	2017-2021	Hubbard County Township Governments, and Hubbard County Soil and Water Conservation District	HC SWCD, HC Natural Resource Mgmt, local Township governments	With heavier rain events many township roads do not have the correct drainage, have undersized or nonfunctioning culverts and are seeing more township road problems with erosion that generally goes into our lakes and wetland. HC SWCD works to address erosion issues throughout the County and will continue to provide engineering support to the townships.	County Highway Dept. Budget, SWCD Funding, MN Clean Water Fund

#	Hazard	Mitigation Strategy	Mitigation Action	Status	Priority Ranking	Time-frame	Jurisdictions	Responsibility	County Comments on Planning Mechanisms for Implementation	Possible Funding
42	Landslides & Soil Erosion	Natural Systems Protection	Work with community partners to identify and implement conservation practices to prevent or control soil erosion and sedimentation of waterways.	New	High	2017-2021	Hubbard County	Hubbard County SWCD	Every year the HC Soil and Water Conservation District offers technical assistance to private property owners and community partners as well as a Cost-Share Program to implement mitigation projects that support water quality and soil erosion measures. Some projects funded by the Cost-Share Program include Critical Area Stabilization, Diversions, Field Windbreaks, Grassed Waterway, Sediment Basins, Streambank, Shoreland, and Roadside Protection and Forestry Conservation Practices.	Hubbard County SWCD Cost-Share Program and **Possible FEMA HMA Funding for Soil Stabilization projects**
43	Landslides & Soil Erosion	Education & Awareness Programs	Work to increase public education and awareness of soil erosion and conservation issues and actions that can be taken.	New	High	2017-2021	Hubbard County	Hubbard County SWCD	Hubbard County SWCD provides several different programs for public education and awareness, including the annual Envirothon for junior and high school students, Freshwater Festival held at Camp Wilderness Boy Scout Camp and more. The SWCD maintains a website with educational resources.	HC SWCD Program funding

#	Hazard	Mitigation Strategy	Mitigation Action	Status	Priority Ranking	Time-frame	Jurisdictions	Responsibility	County Comments on Planning Mechanisms for Implementation	Possible Funding
44	Landslides & Soil Erosion	Natural Systems Protection	Work with Hubbard County SWCD, Henrietta Township and Thorpe Township to address high-priority erosion and sediment issues occurring as a result of storm events and which negatively impact local lakes.	New	High	2017-2021	Hubbard County SWCD, Henrietta Township Thorpe Township	Hubbard County SWCD in coordination with Henrietta and Thorpe townships	The Hubbard County SWCD has identified their top #1 and #2 erosion mitigation projects are located in Henrietta and Thorpe townships. Henrietta Twp has some major overland flooding, erosion and sediment issues on Deer View Rd. that goes directly into Long Lake. Long Lake has been identified in the Crow Wing River WRAP by the MPCA and the Hubbard County Local Water Management Plan as a lake that is very sensitive to phosphorous loading and is showing some declining water quality trends. In Thorpe Twp., Junco Road also has erosion, sediment and runoff issues into Big Mantrap Lake. Problems have been occurring in 1 – 1½ inch storm events for both sites.	HC SWCD Program funding
45	Drought	Natural Systems Protection	Monitor rainfall and wells throughout Hubbard County to track precipitation and water levels.	New	High	2017-2021	Hubbard County	Hubbard County SWCD in partnership with local volunteers; MN DNR	Hubbard County SWCD has a rural rainfall monitoring network that was begun in 1978. Each month volunteers record rainfall and snowfall daily and submit their reports to the SWCD who sends the compiled data to the SWCD.	HC SWCD Program funding

#	Hazard	Mitigation Strategy	Mitigation Action	Status	Priority Ranking	Time-frame	Jurisdictions	Responsibility	County Comments on Planning Mechanisms for Implementation	Possible Funding
46	Drought	Education & Awareness Programs	Educate the public on water conservation measures and fire safety awareness during periods of drought.	New	Moderate	2017-2021	Hubbard County	HC Emergency Management, HC SWCD, and MN DNR Forestry	This is a standing part of messaging to the public by HC Emergency Management, SWCD, and MN DNR Forestry during dry periods that affect Hubbard County.	HC SWCD Program funding

5.3.2 Mitigation Actions by Community

This is a multi-jurisdictional plan that covers the Hubbard County and the cities of Park Rapids, Nevis, Laporte and Akeley. The Hubbard County risks and mitigation activities identified in this plan incorporate the concerns and needs of townships, school districts, and other entities participating in this plan. Jurisdictional representatives participated in the identification of mitigation actions that would be implemented at the local level through steering committee meeting discussions, completing the Local Mitigation Capabilities Assessment (Appendix K), and conducting local-level review and approval of their jurisdictional mitigation action charts.

Mitigation actions are separated by jurisdiction in Appendix G.

Section 6 – Plan Maintenance

6.1 Monitoring, Evaluation, and Updating the Plan

The Hubbard County Multi-Hazard Mitigation Plan (MHMP) should be considered a living document. The plan should be updated and approved by FEMA at a minimum of every 5 years. The guidance in this section will function as the primary tool when reviewing progress on the implementation of the Hubbard County MHMP.

The Hubbard County Emergency Management Director is the individual responsible for leading all efforts to monitor, evaluate, and update the hazard mitigation plan within the 5-year window. Throughout the 5-year planning cycle, the Hubbard County Emergency Management Director will convene planning team members from the county and each jurisdiction on an annual basis to monitor, review, evaluate, and update the Multi-Hazard Mitigation Plan. Feedback will be gathered on actions that have been completed or ideas for future mitigation actions that should be incorporated into the next update of the plan. This will be done during the quarter of each year to coincide with annual update to Hubbard County's Emergency Operations Plan (EOP). Additional stakeholders will be added based on need. If needed, the Hubbard County Emergency Management Director will convene the group to meet on a more regular basis to monitor plan implementation progress and reassess needs and opportunities. If there is a need for a special meeting due to new developments or a declared disaster occurring in the county, the team will meet to update pertinent mitigation strategies. Depending on opportunities and fiscal resources, mitigation projects may be implemented independently by individual communities or through local partnerships.

The committee will review the MHMP goals and objectives to determine their relevance to changing situations in Hubbard County. In addition, state and federal policies will be reviewed to ensure they are addressing current and expected conditions. The committee will also review the risk assessment portion of the plan to determine if this information should be updated or modified. The parties responsible for the various implementation actions will report on the status of their projects, and will include which implementation processes worked well, any difficulties encountered, how coordination efforts are proceeding, and which strategies should be revised.

Updates or modifications to the MHMP during the 5-year planning process will require a public notice and a meeting prior to submitting revisions to the individual jurisdictions for approval. The plan will be updated via written changes, submissions as the committee deems appropriate and necessary, and as approved by county commissioners.

6.2 Implementation

Hubbard County and its included municipalities share a common Multi-Hazard Mitigation Plan and work together closely to develop, revise, and implement it. This MHMP provides a comprehensive chart of mitigation actions for Hubbard County and its jurisdictions (see Section 5.3.1, *Hazard Mitigation Actions*). Jurisdictions participated in the MHMP planning process and identified the specific mitigation strategies that they would seek to implement in their communities during the 5-year planning cycle. These mitigation actions are provided in *Appendix G: Mitigation Actions by Jurisdiction*.

A number of implementation tools are available to address hazards. Many of these tools are below, however, in some cases additional discussion is needed in order to identify what strategies are most appropriate to use. This will be part of an ongoing discussion as Hubbard County looks for opportunities for plan implementation. The following tools will be considered:

- **Education:** In many cases education of residents has been identified as one of the most effective mitigation strategies.
- **Capital Investments:** Capital investments such as fire and ambulance equipment, sprinkler systems and dry hydrants are tools that can limit risks and impacts of natural and man-made hazards.
- **Data Collection and Needs Assessments:** Data collection and needs assessments can aid in gaining a better understanding of threats and allow planning for mitigation strategies accordingly. As resources are limited for this part of the planning process, additional data collection is likely to be an ongoing activity as resources become available.
- **Coordination:** Responsibilities for mitigation strategies run across various county departments, local fire and ambulance departments, city and township governments, and a host of state and federal agencies. Ongoing coordination is an important tool to ensure resources are used efficiently. Coordination can also avoid duplication of efforts or prevent gaps that are created because of unclear roles and responsibilities. The mitigation plan review process can function as a tool to have an ongoing discussion of roles, responsibilities, and opportunities for coordination.
- **Regional Cooperation:** Counties and public safety services providers throughout the region often share similar challenges and concerns. In some cases a regional approach may be warranted as a mitigation strategy in order to save resources. Mutual aid agreements are a tool already in use for a number of services. Needs assessments for fire and ambulance services and development of assistance for volunteer recruiting, training, and retention could benefit from a regional approach. Cooperation among counties could also help in lobbying for certain funding priorities that address concerns relating to challenges in service delivery in rural areas. Organizations such as FEMA Region V and the MN Department of HSEM through the Regional Program Coordinator can offer tools and resources to assist in these cooperative efforts.
- **Regulation:** Regulation is an important mitigation tool for Hubbard County. Regulation plays a particularly important role for land use, access to structures and the protection of water resources and public health.

6.3 Continued Public Involvement

Continued public involvement is critical to the successful implementation of the Multi-Hazard Mitigation Plan (MHMP). The Hubbard County Emergency Management Director and the steering committee members from the participating jurisdictions of the cities of Akeley, Laporte, Nevis, and Park Rapids continue to engage new public stakeholders in planning discussions and project implementation during the 5-year cycle of this plan.

In order to seek continued public participation after the plan has been approved and during the 5-year window of implementation for this plan, the County will take the following measures:

- The plan will be posted on the Hubbard County website for the public to read and provide feedback. Collected feedback will be reviewed and the plan will be amended as necessary.
- Information will regularly be posted on the Hubbard County Emergency Management Facebook Page on current mitigation projects and topics and public feedback will be encouraged.
- Following major storms or natural disasters, Hubbard County Emergency Management will seek to gather concerns and new ideas for mitigation from local residents to include in the next update of the plan. This may be done through public meetings or news releases via local media (online, newspaper, radio).
- Each city participating in the plan will be responsible to keep their city councils, city departments, schools, and community members updated and engaged in the implementation of their respective mitigation action charts (see *Appendix G: Mitigation Actions by Jurisdiction*). Each respective jurisdiction will report their progress in this area to the Hubbard County Emergency Management Director.
- Jurisdictions will use numerous means of public outreach to engage new public stakeholders in providing input on mitigation efforts or concerns on hazards by sharing information at city council meetings and special events, working with local schools and partner organizations, and posting information on relevant local or social media that their communities use to inform and engage the public. As mitigation projects are implemented, jurisdictions will work to keep the public updated and engaged in those local efforts.
- The Hubbard County Emergency Management Director will provide updates when attending quarterly Hubbard County Township Association meetings in order to engage feedback and ideas from township local government.

APPENDICES

Appendix A
Hubbard County Maps

Figure A - 1. Hydrography of Hubbard County

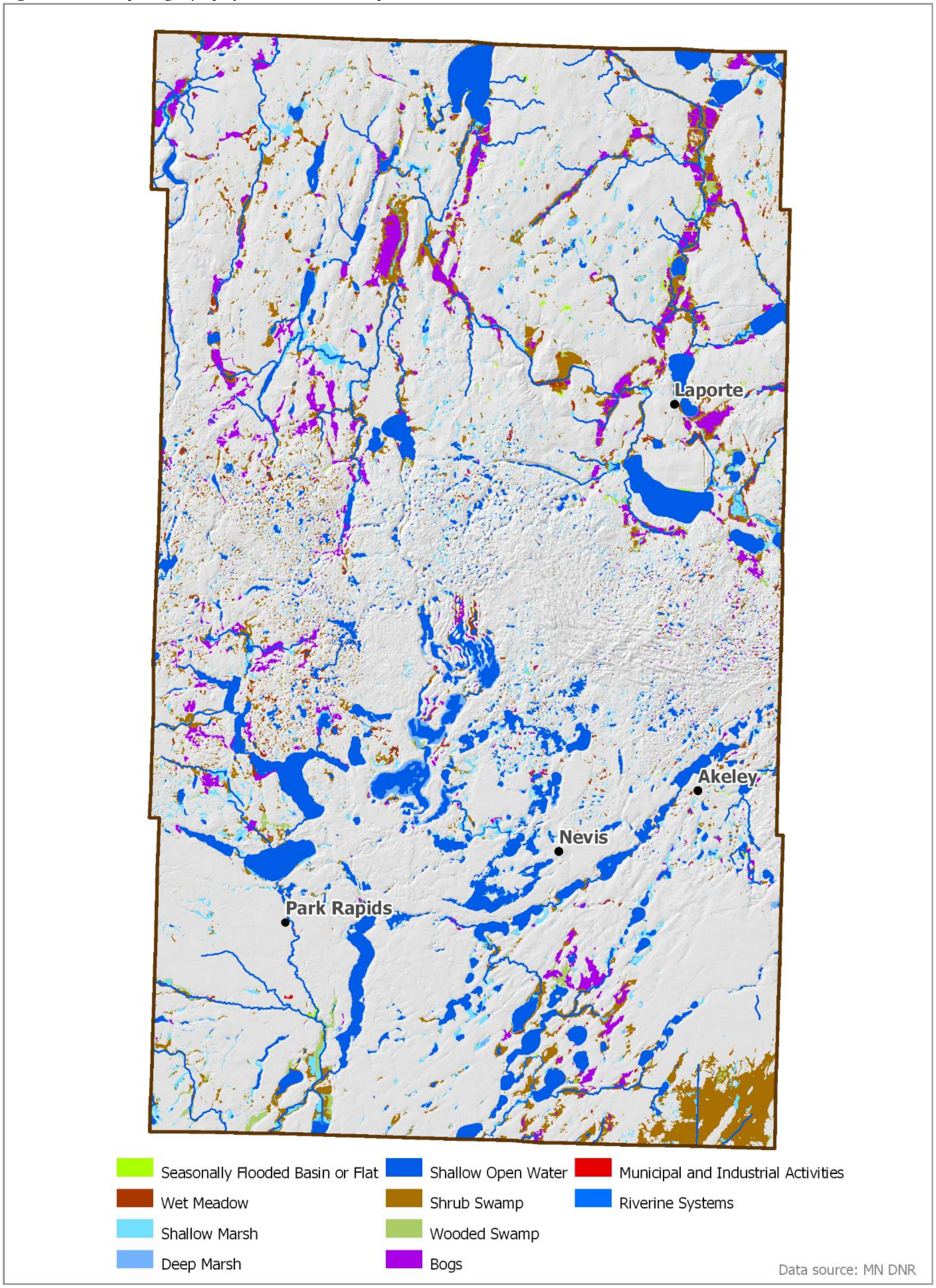


Figure A - 2. Hubbard County Population by Census Block, 2010

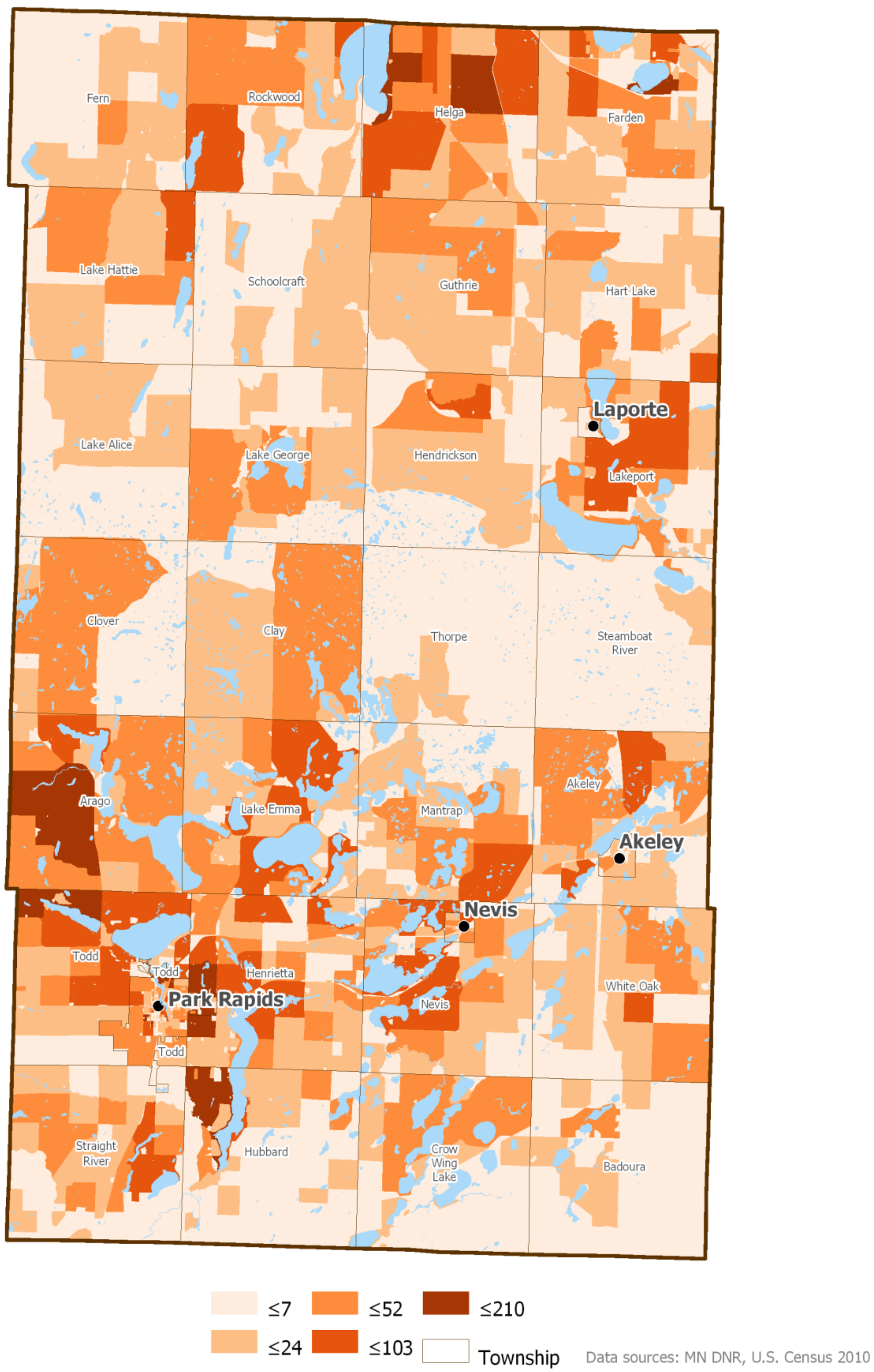


Figure A - 3. Fire Departments and Fire Response Times in Hubbard County

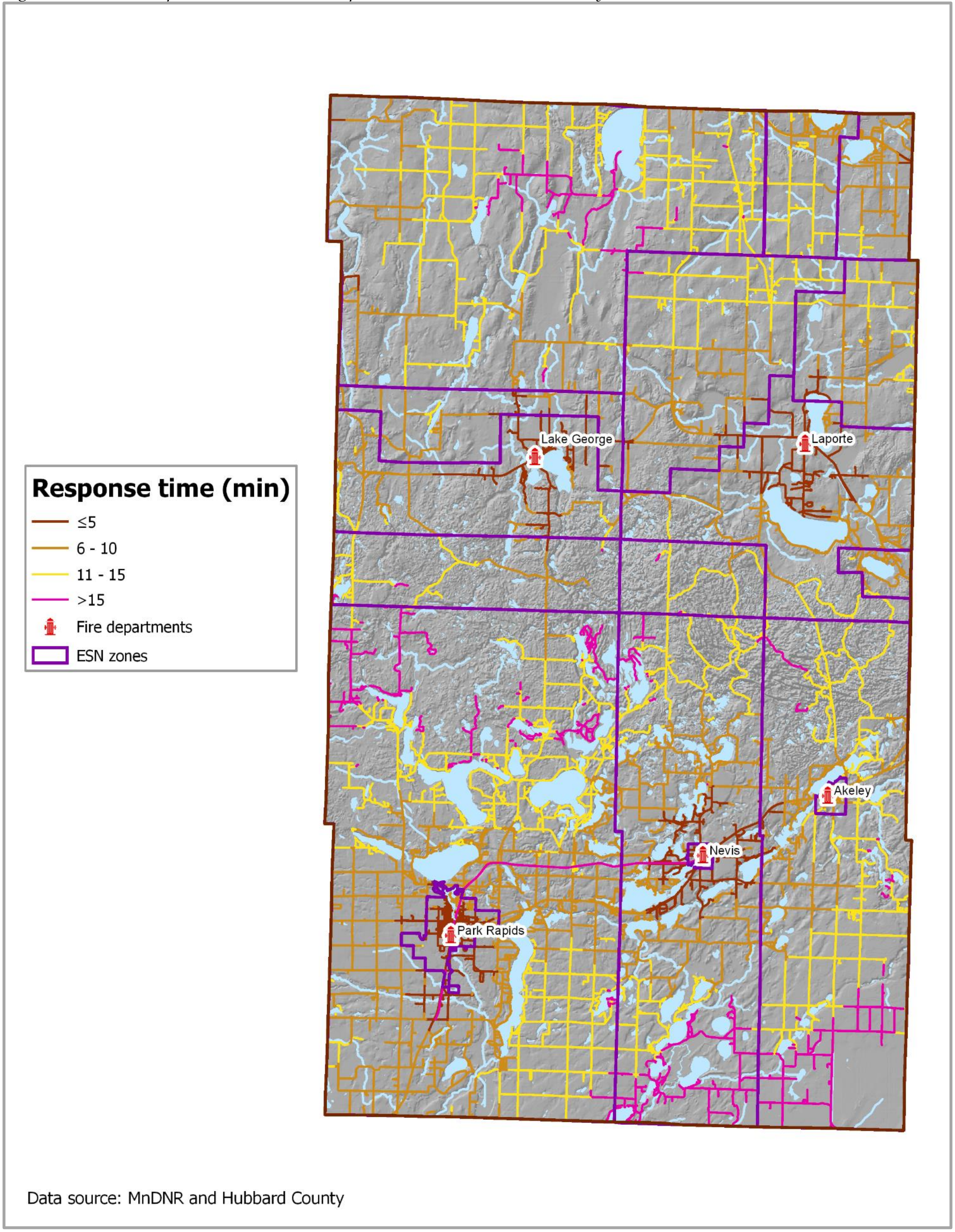


Figure A - 4. Hubbard County Public Safety and Government Services

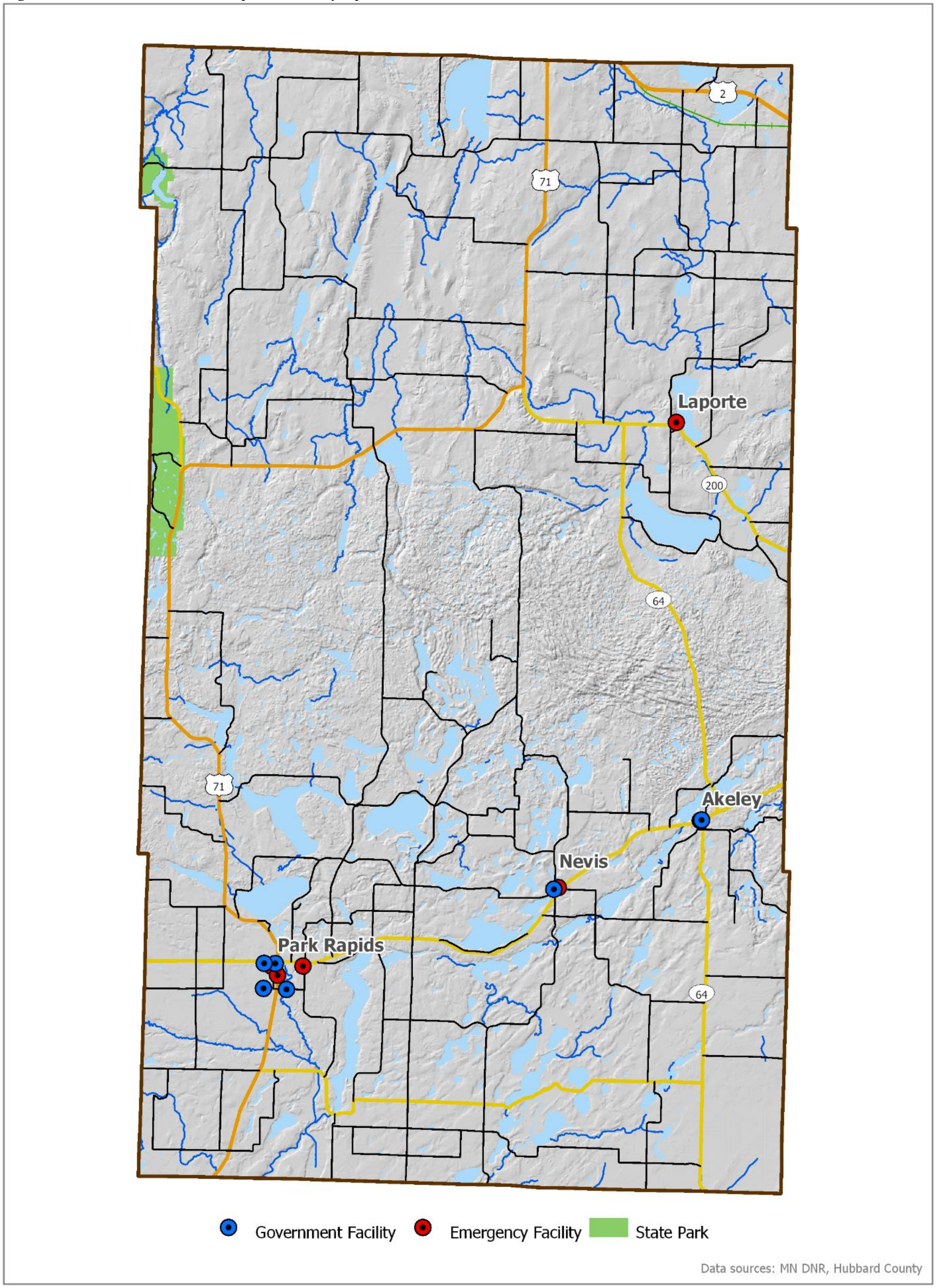


Figure A - 5. Hubbard County Utilities and Communication Infrastructure

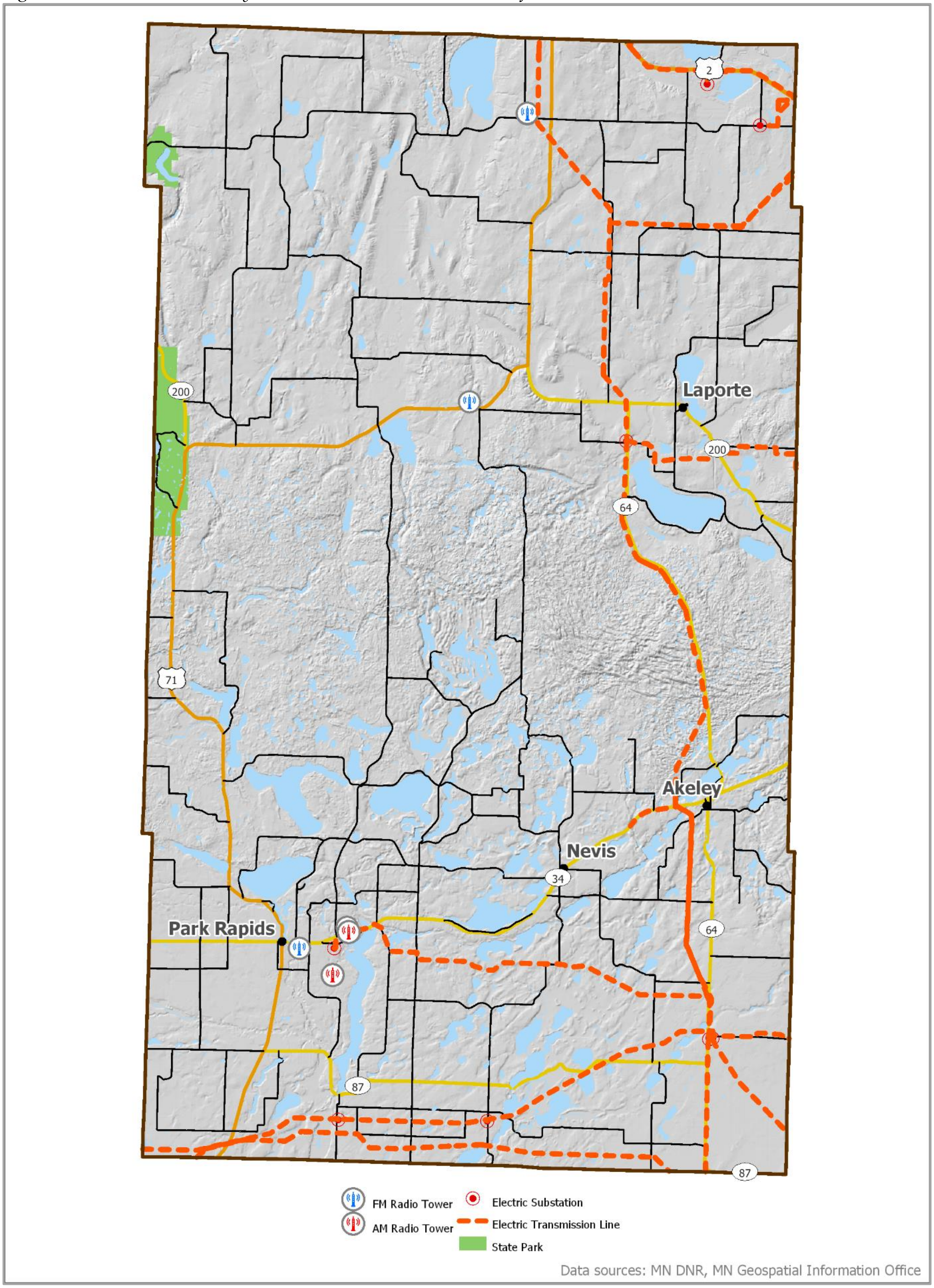


Figure A - 6. Hubbard County Transportation Infrastructure

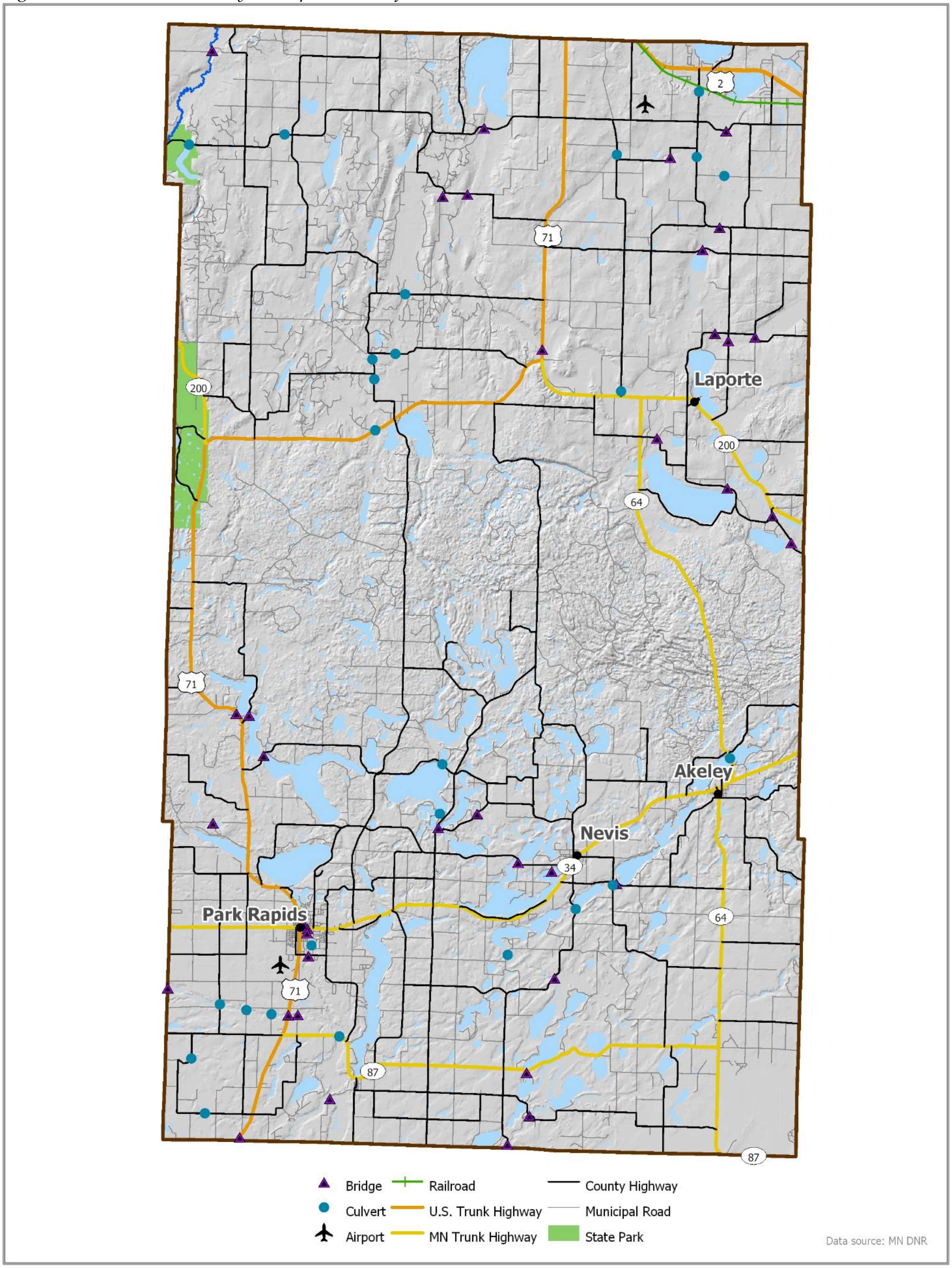


Figure A - 7. Hubbard County Land Cover, National Land Cover Database

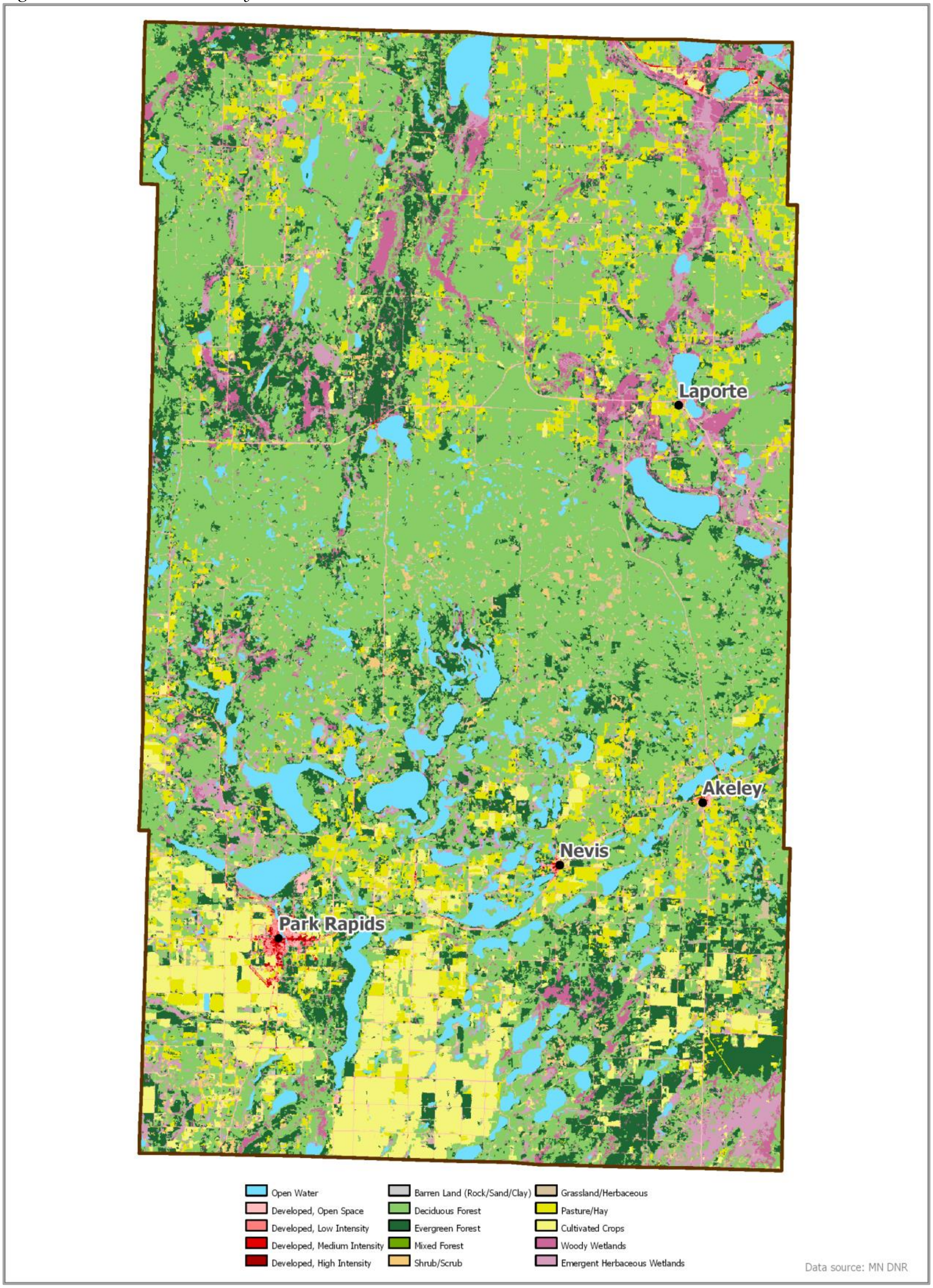


Figure A - 8. Hubbard County Land Ownership by Agency

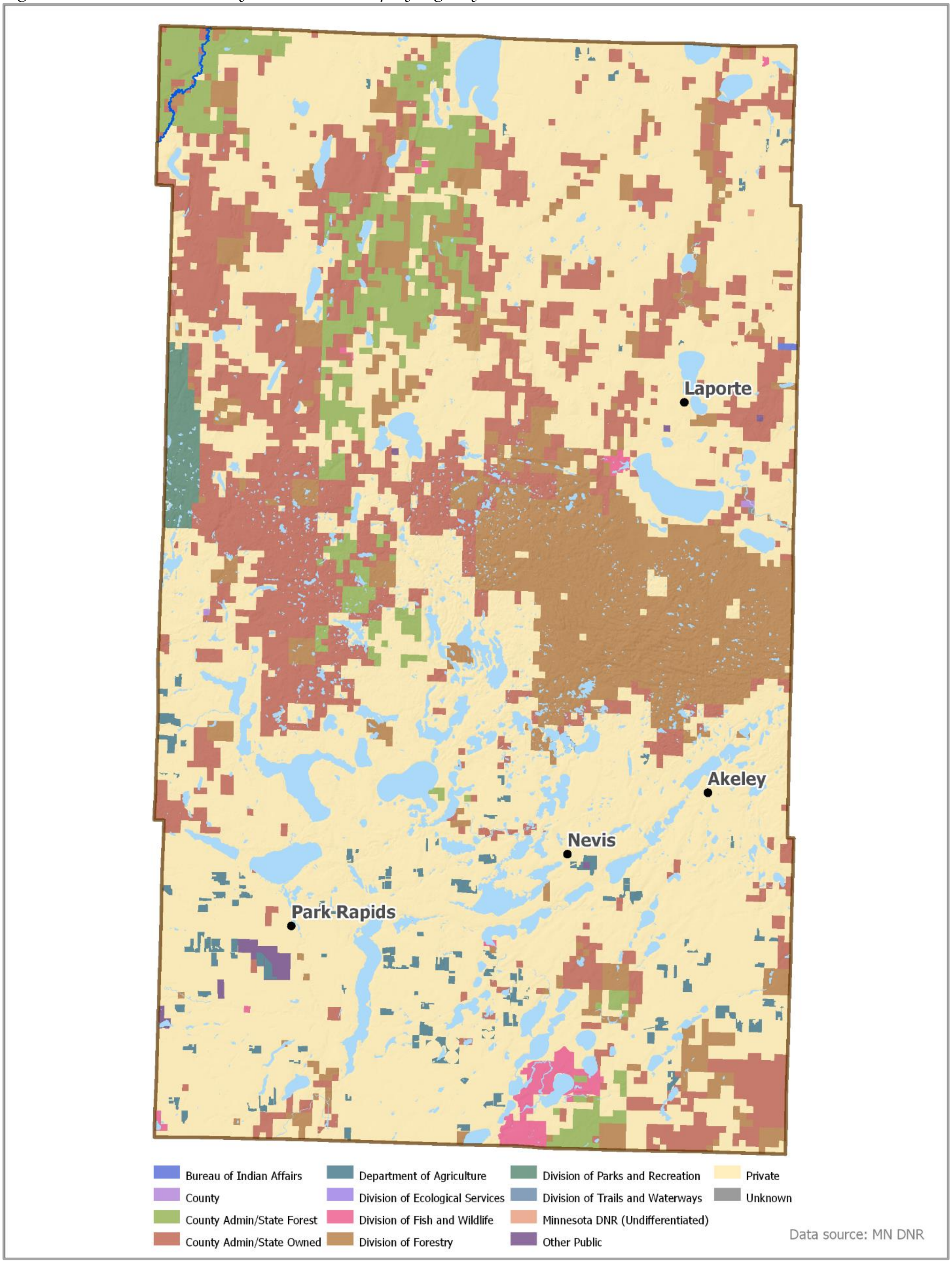


Figure A - 9. Severe Wind and Hail Storms in Hubbard County

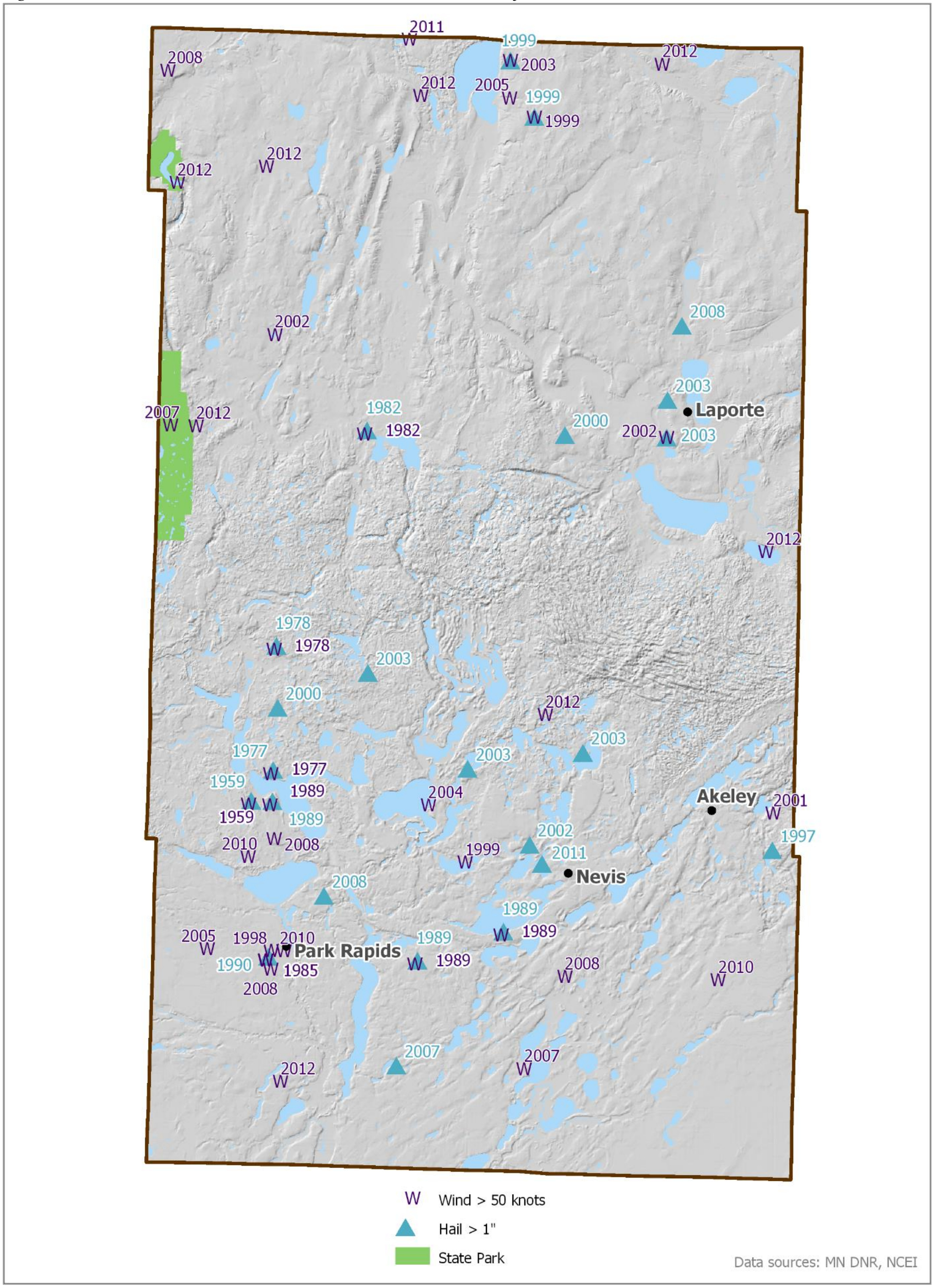


Figure A - 10. Tornado Touchdowns and Paths in Hubbard County, 1950-2016

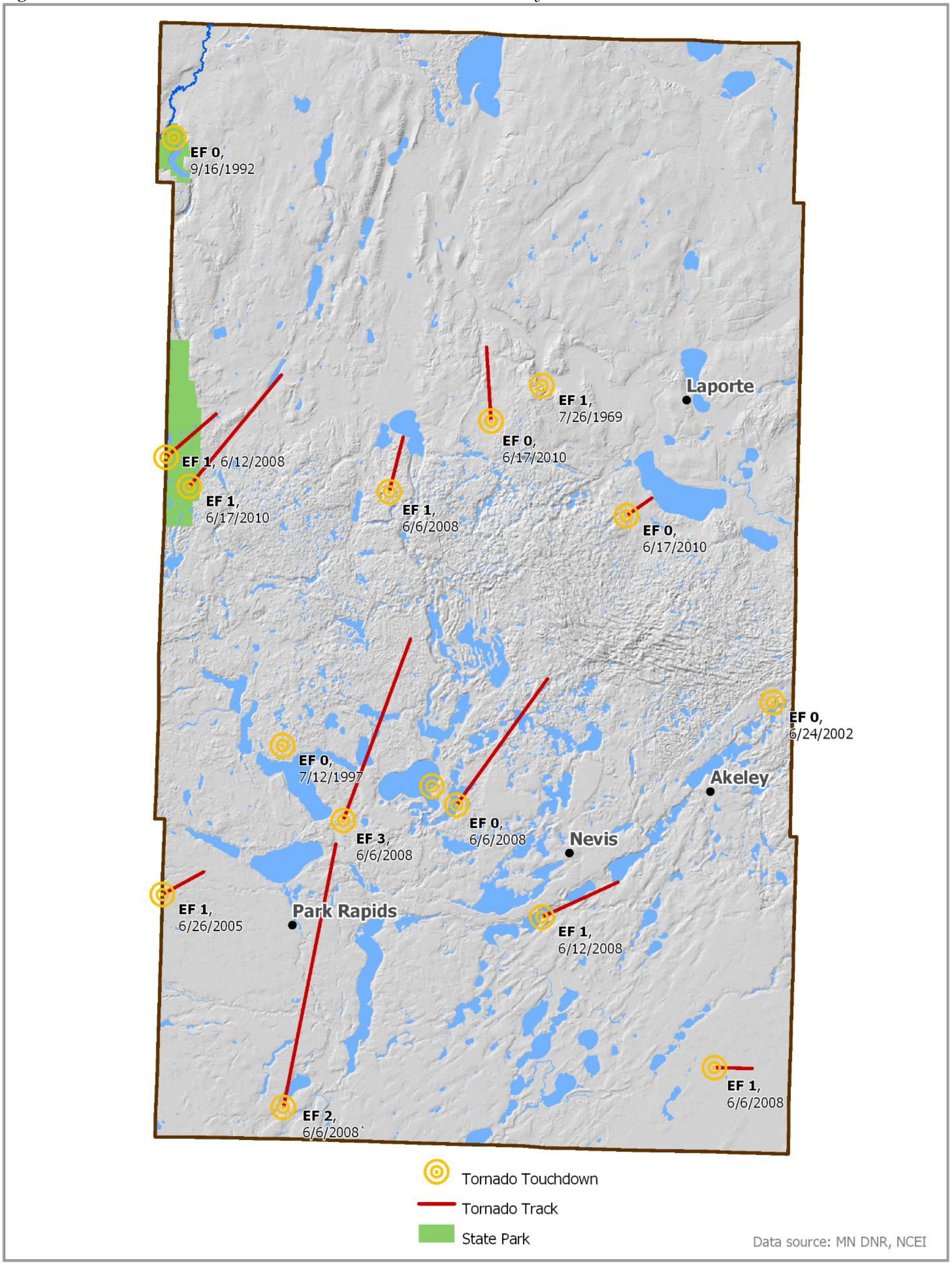


Figure A - 11. Dams in Hubbard County

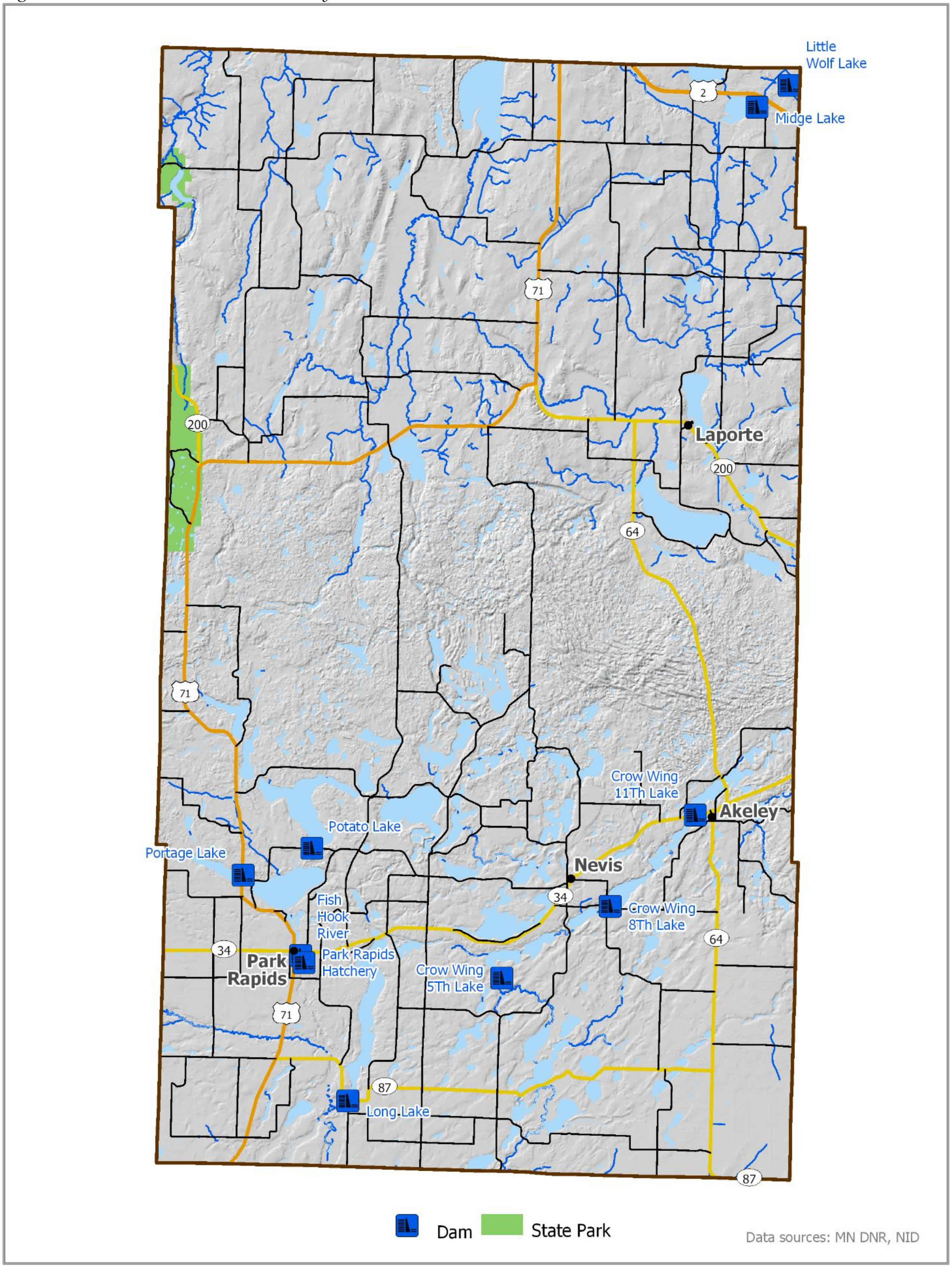


Figure A - 12. Sites with Hazardous or Chemical Waste in Hubbard County

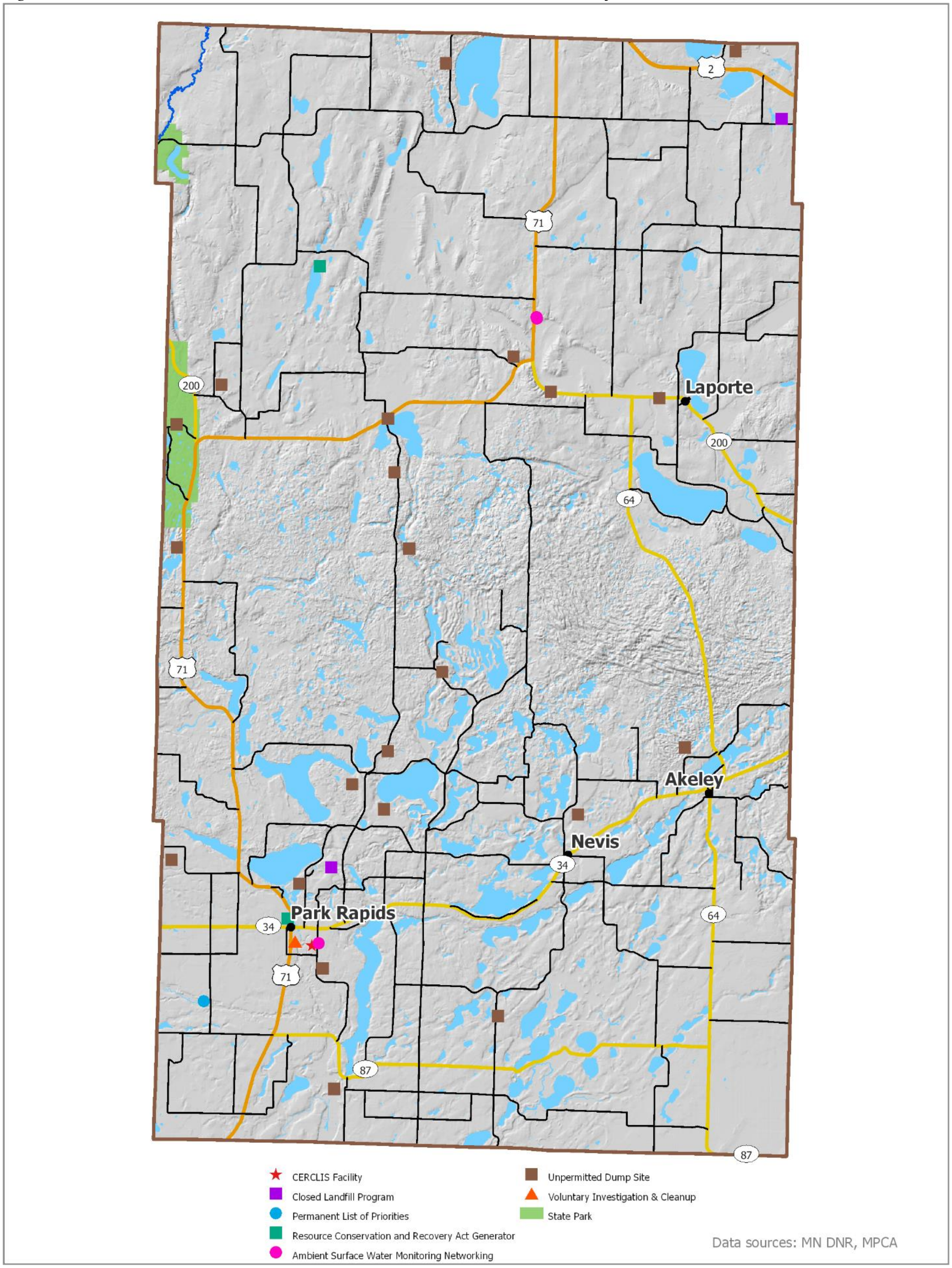


Figure A - 13. Health Care Providers in Hubbard County

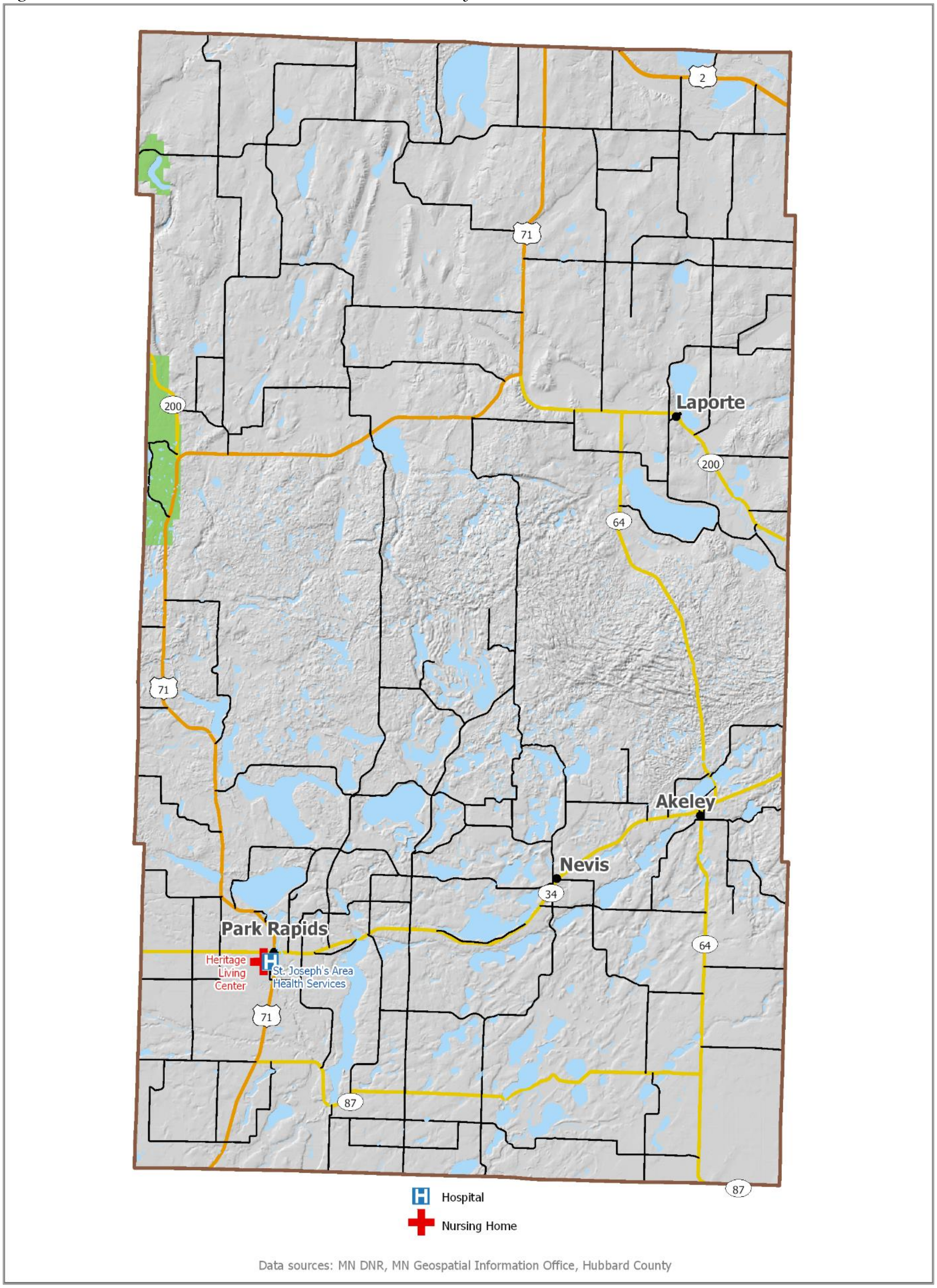


Figure A - 14. Hubbard County Aquifer Vulnerability and Public Wells

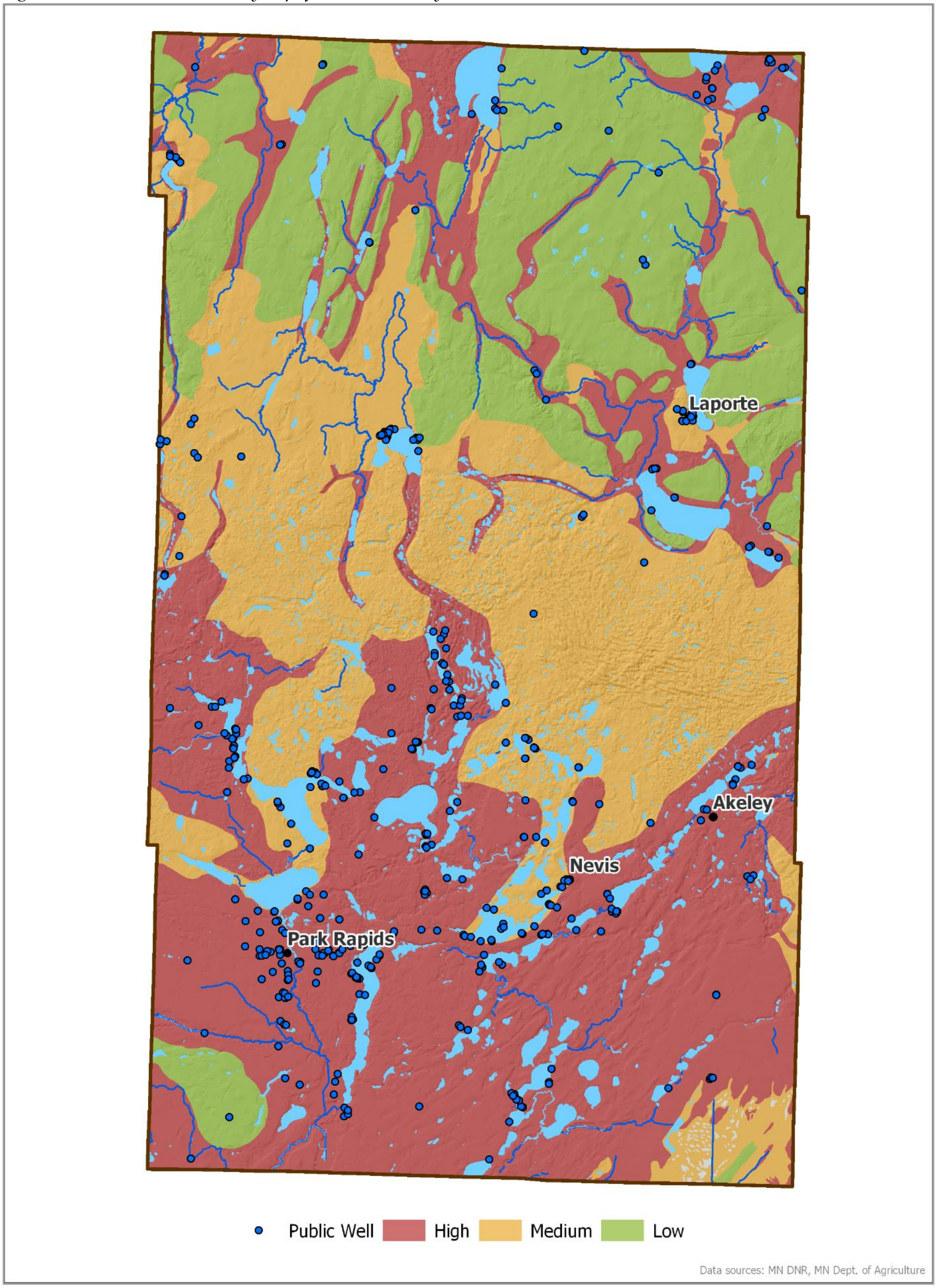


Figure A - 15. Critical Facilities in Hubbard County

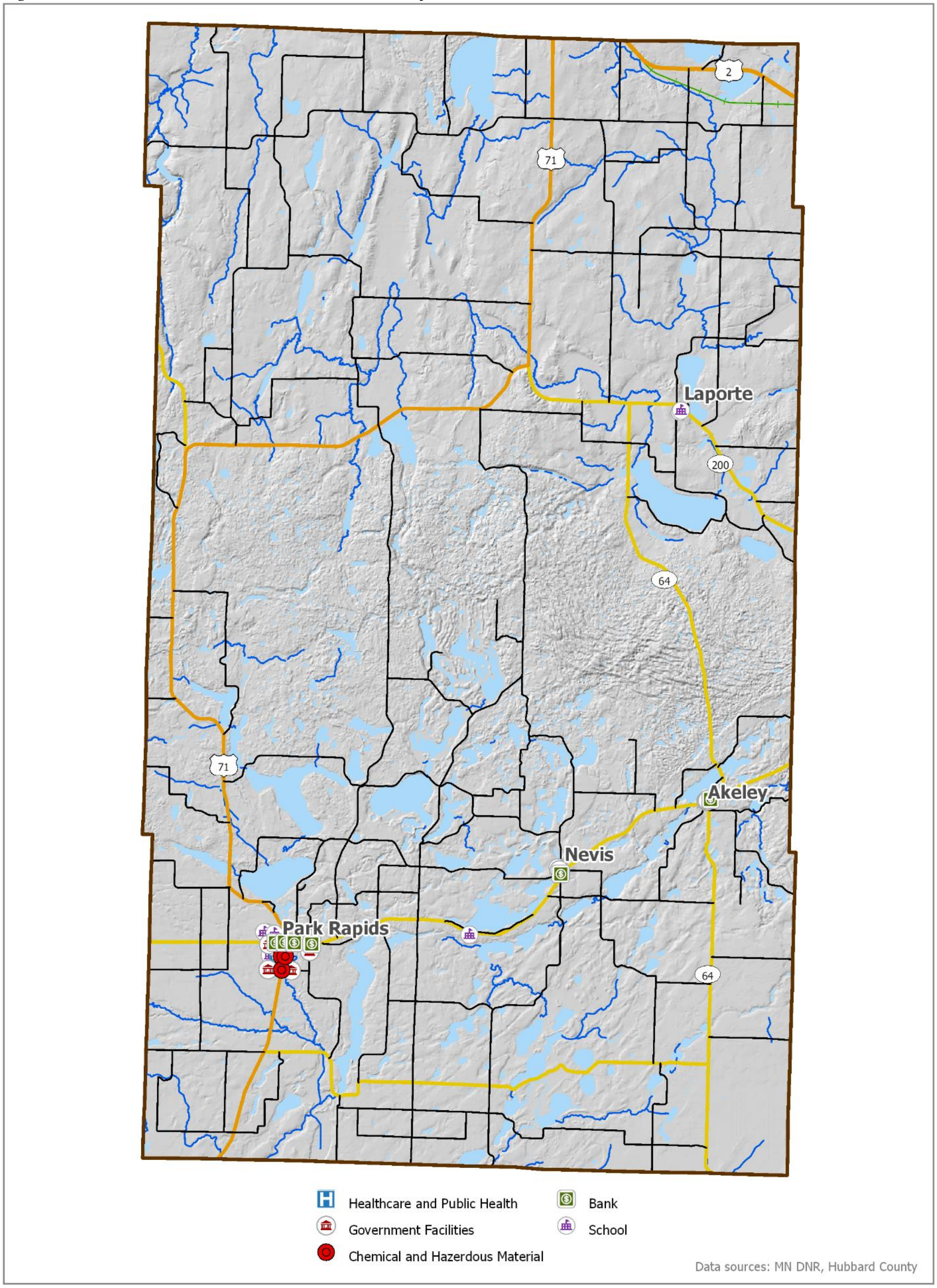


Figure A - 16. Critical Facilities in Park Rapids

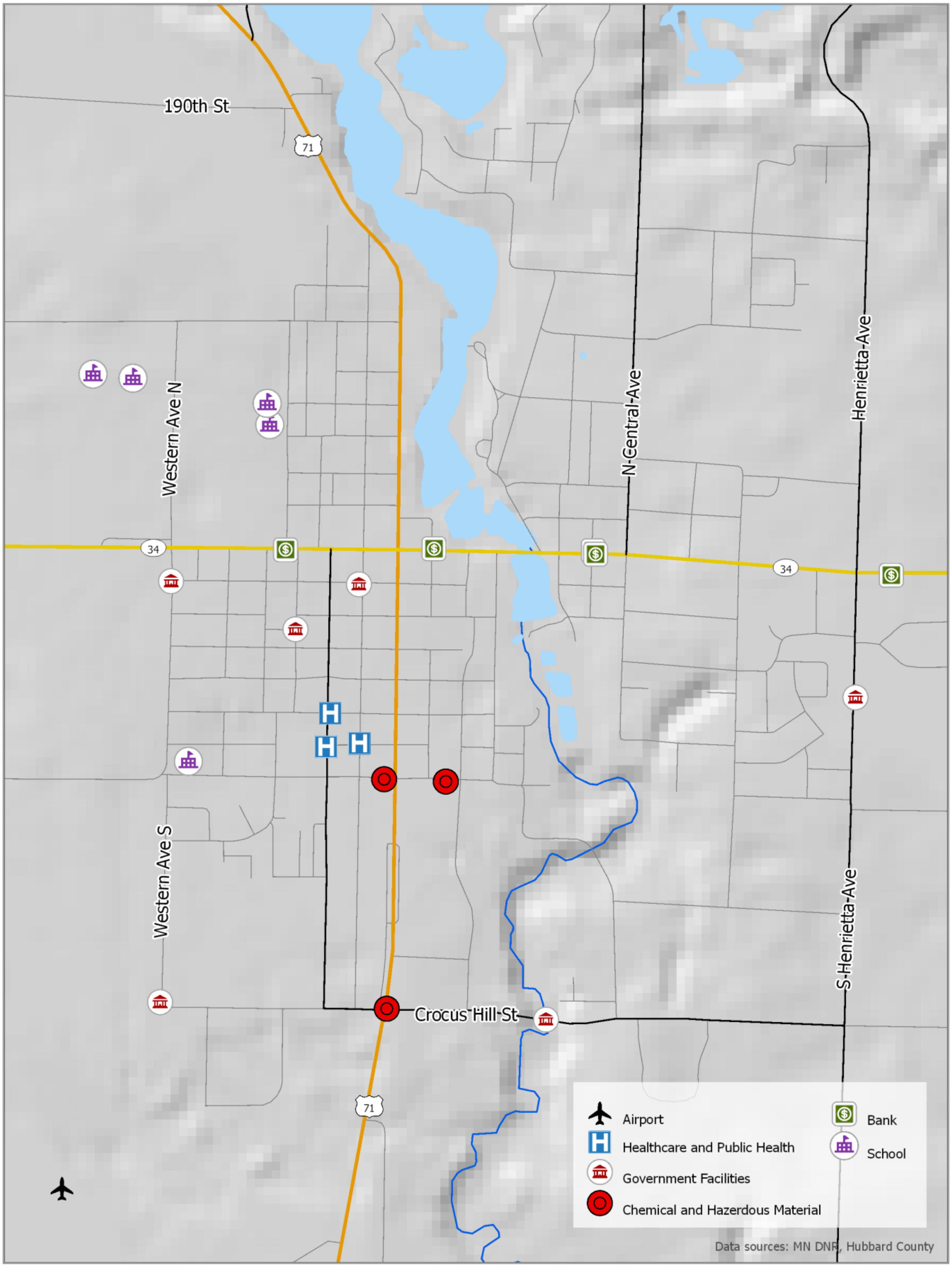


Figure A - 17. Wildfires by Acres Burned (1985-April 2015) and Peat Soil Areas in Hubbard County

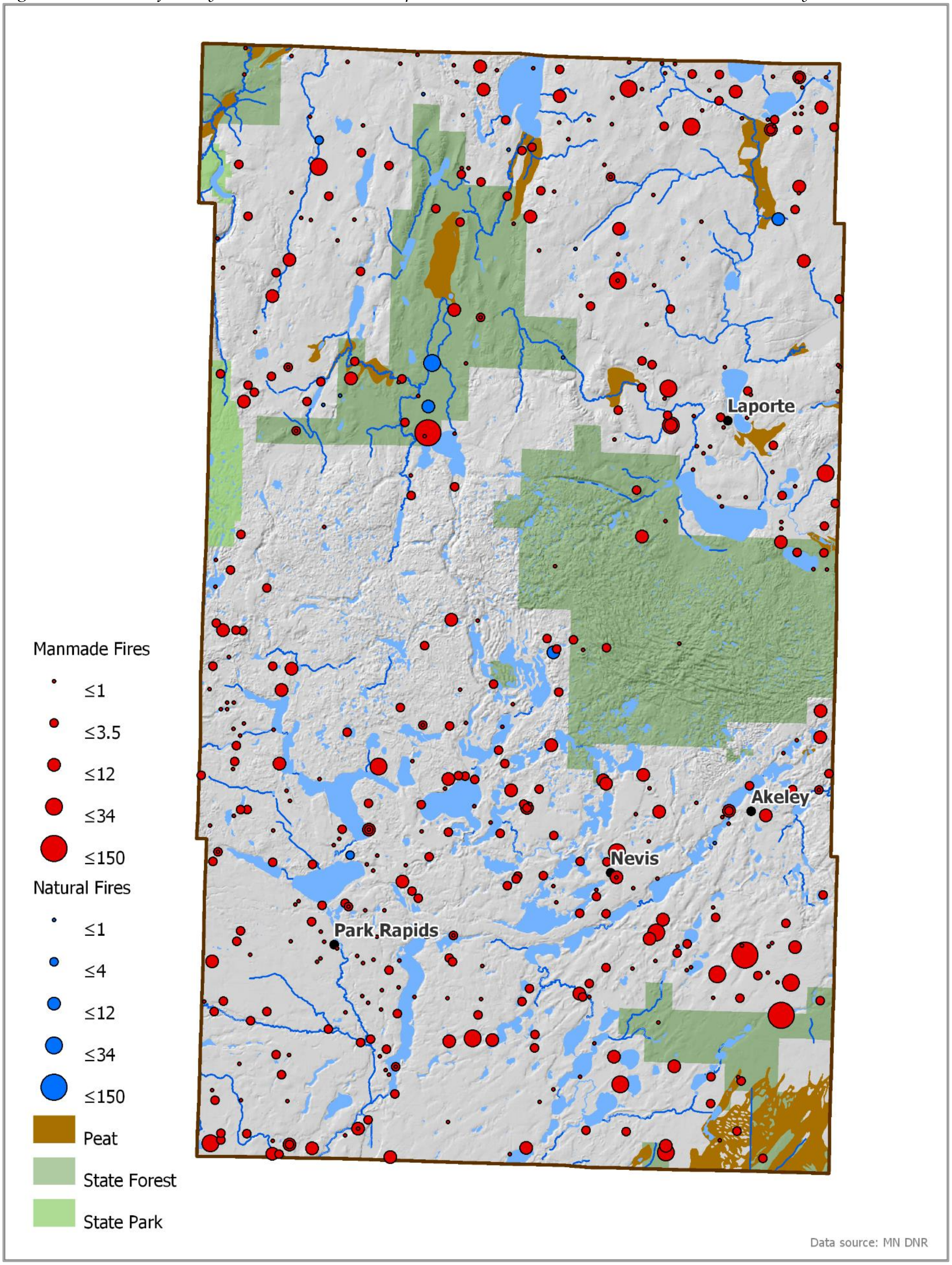


Figure A - 18. Distribution of Estimated Economic Loss for Hubbard County in 100-Year Flood

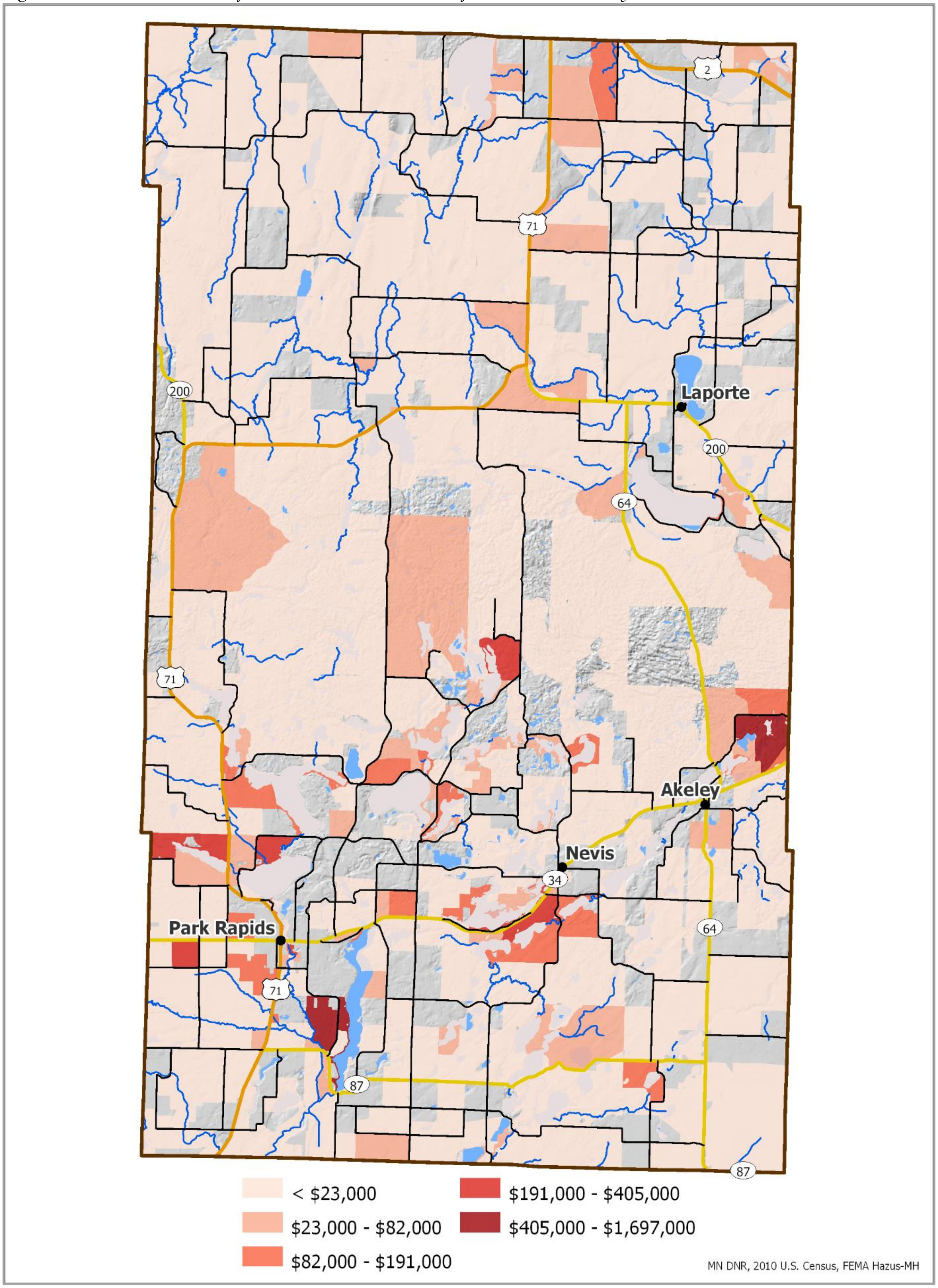


Figure A - 19. Census Block # 270570707002047 and 100-Year Floodplain near Park Rapids

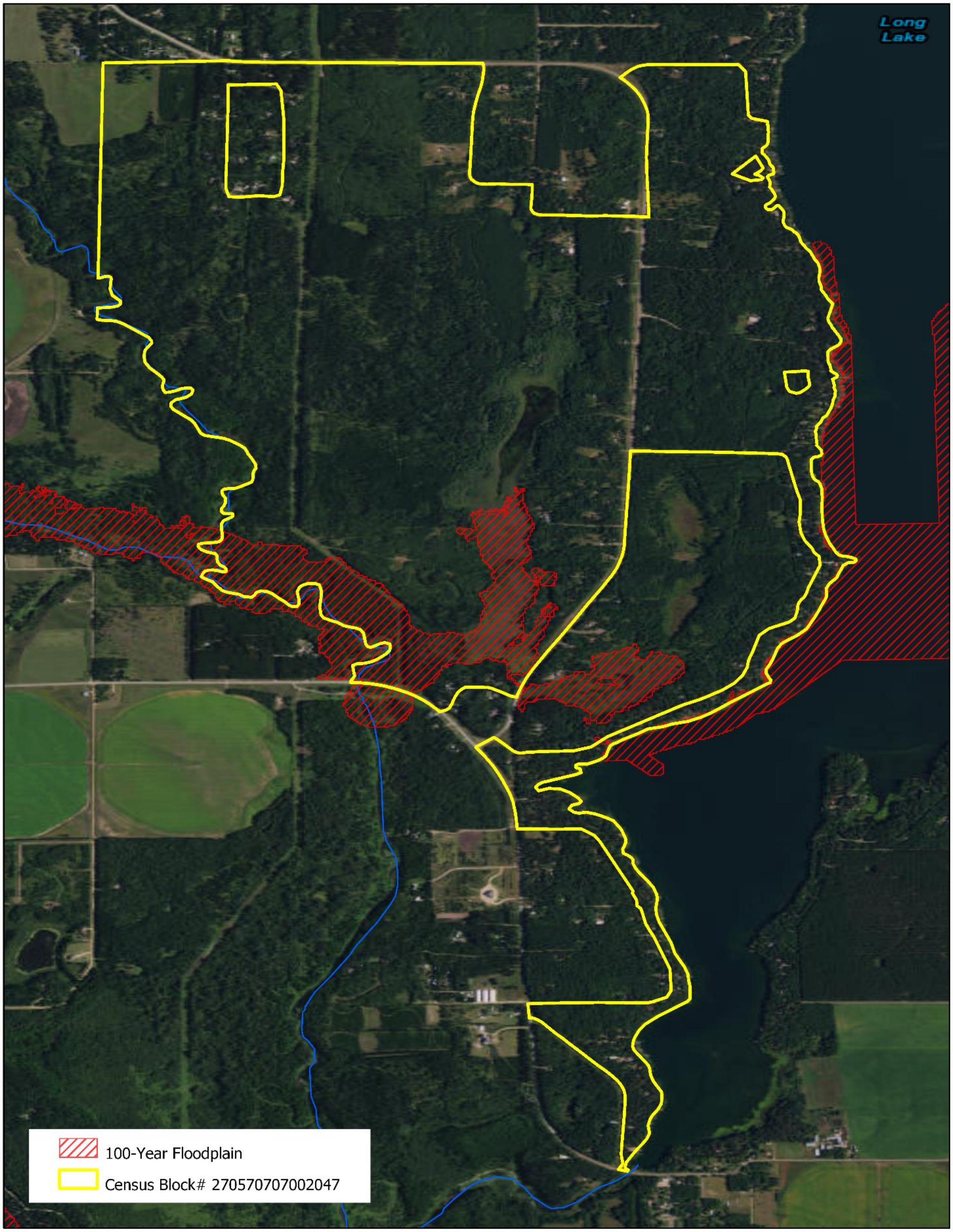


Figure A - 20. Census Block # 270570703002224 and 100-Year Floodplain near Akeley

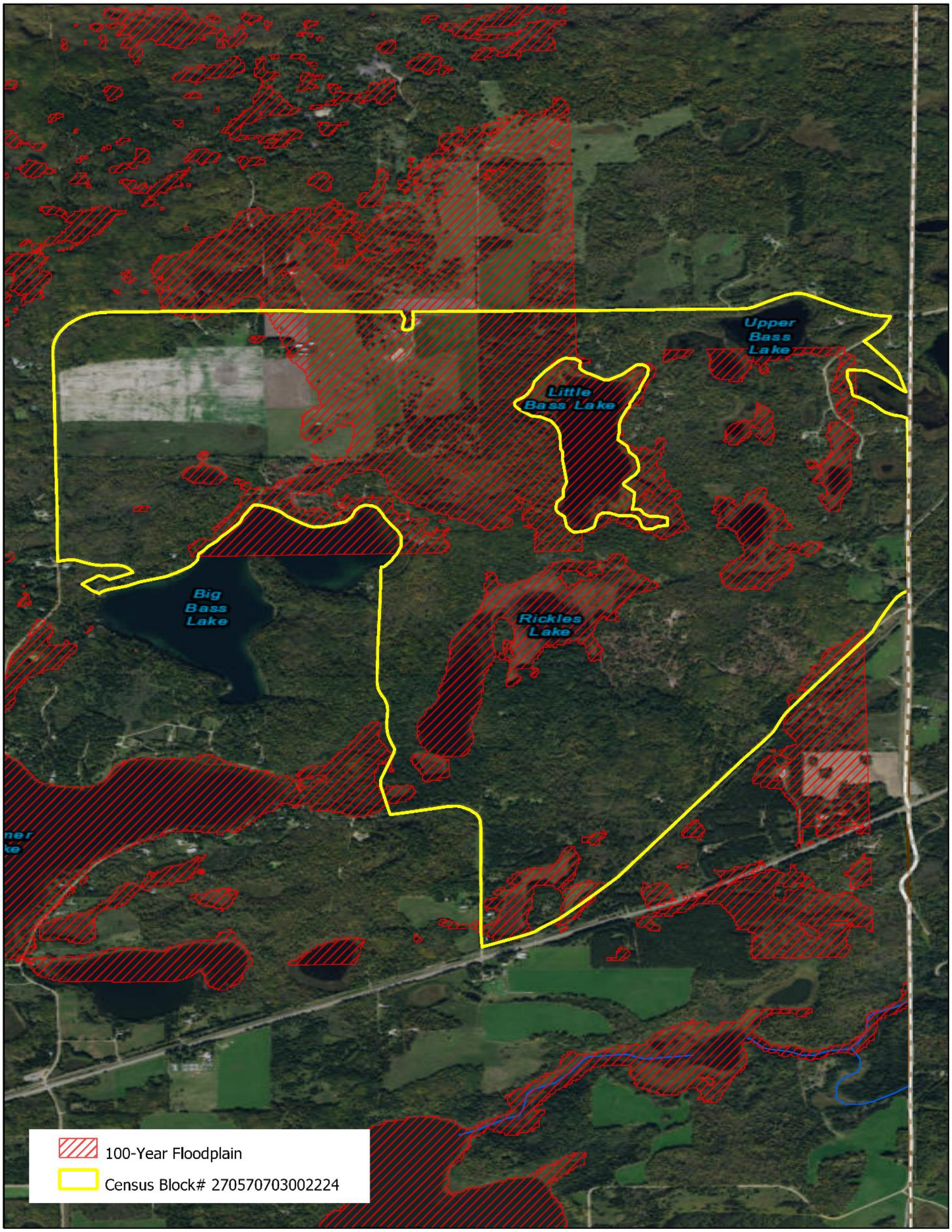


Figure A - 21. Census Block # 270570705001029 and 100-Year Floodplain near Park Rapids

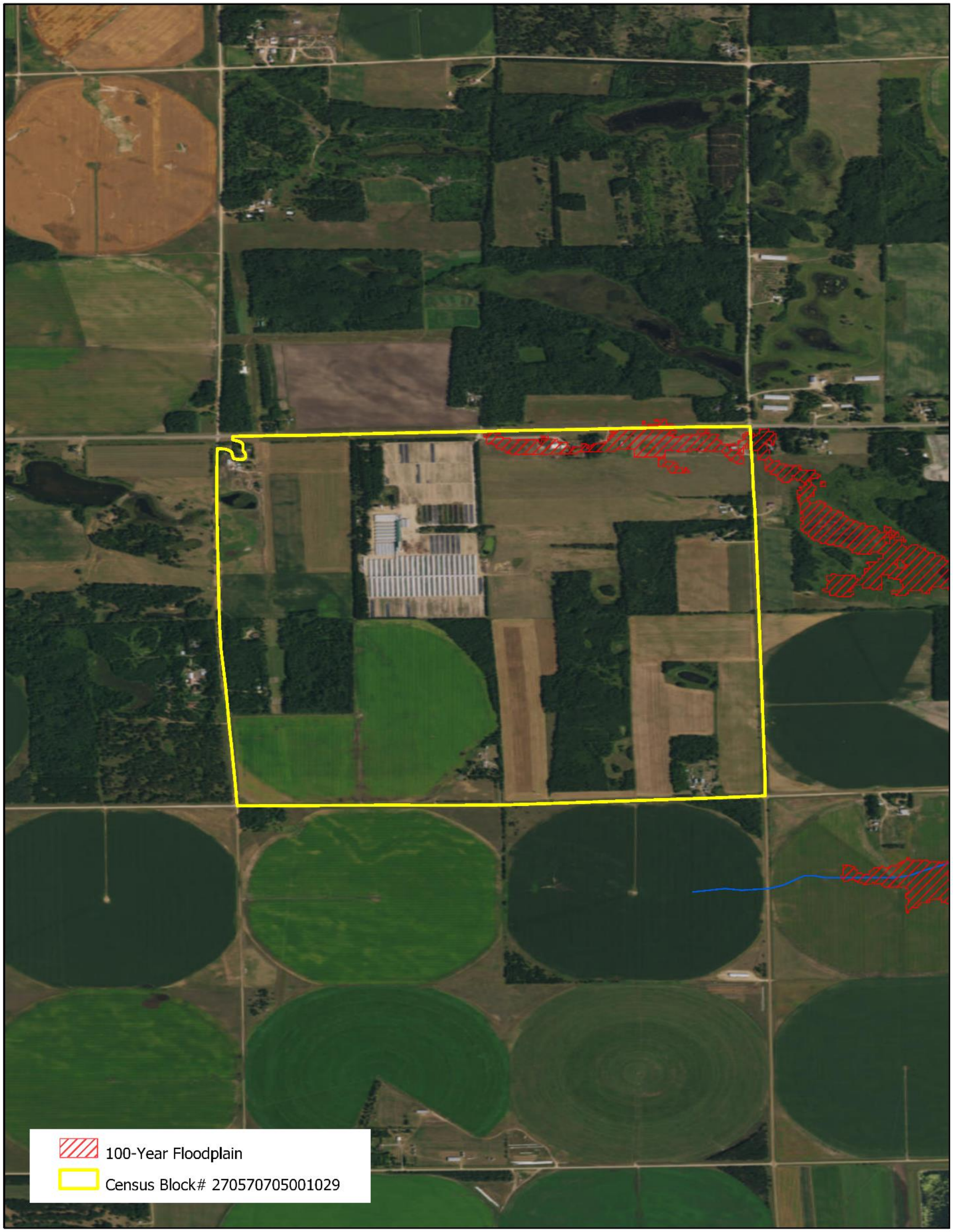


Figure A - 22. Census Block # 270570704001072 and 100-Year Floodplain near Nevis

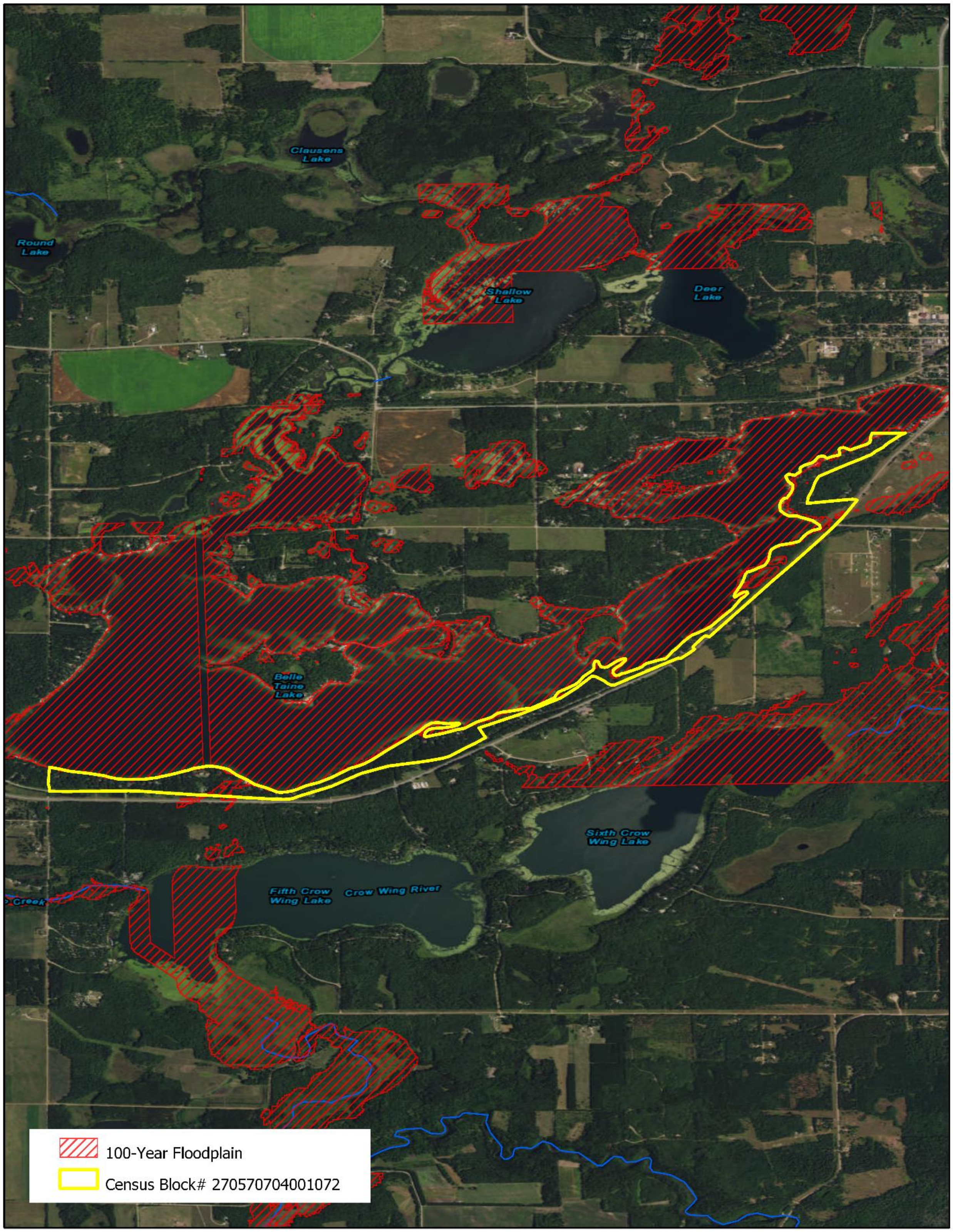


Figure A - 23. Census Block # 270570705001003 and 100-Year Floodplain near Park Rapids

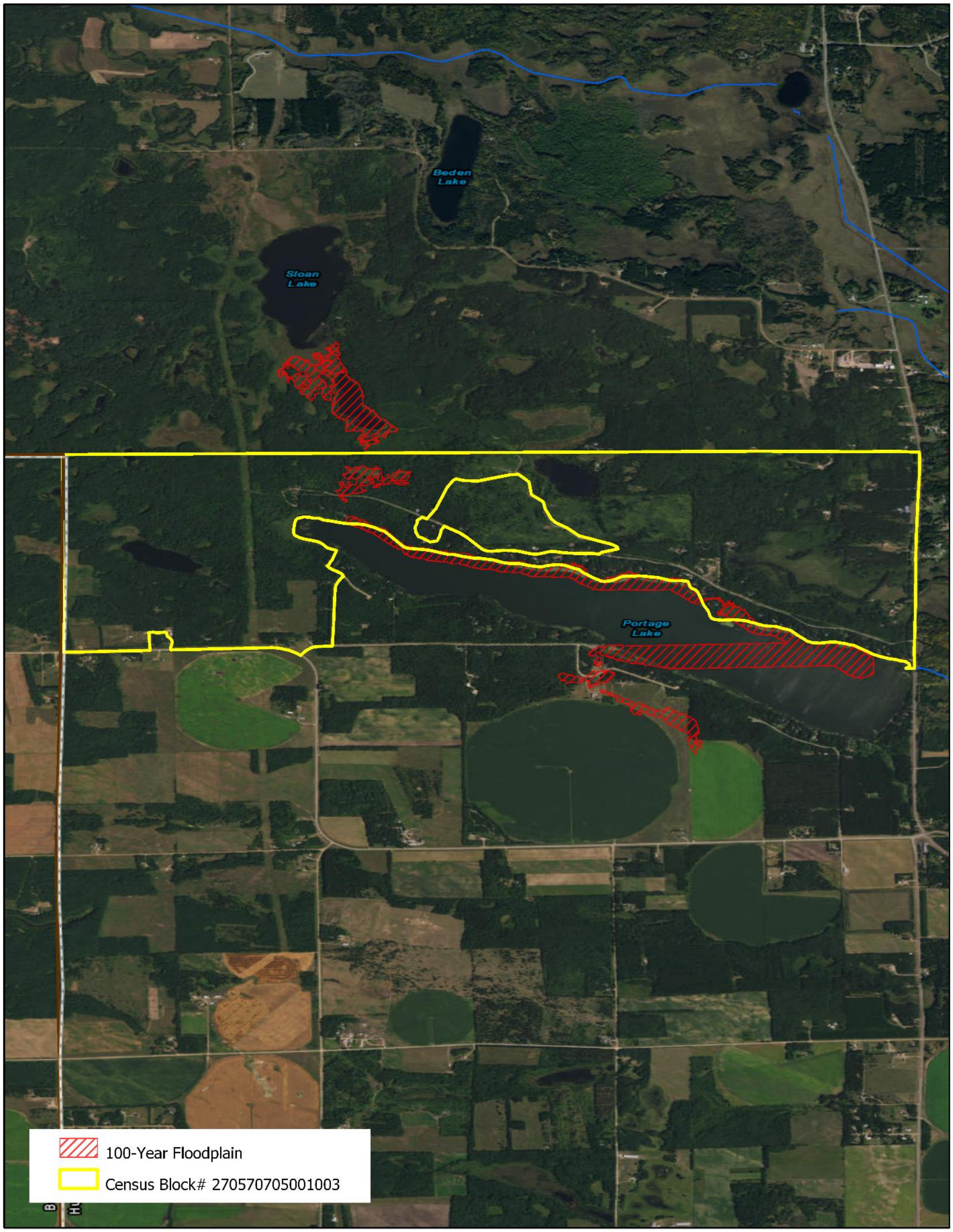


Figure A - 24. Feedlots in Hubbard County

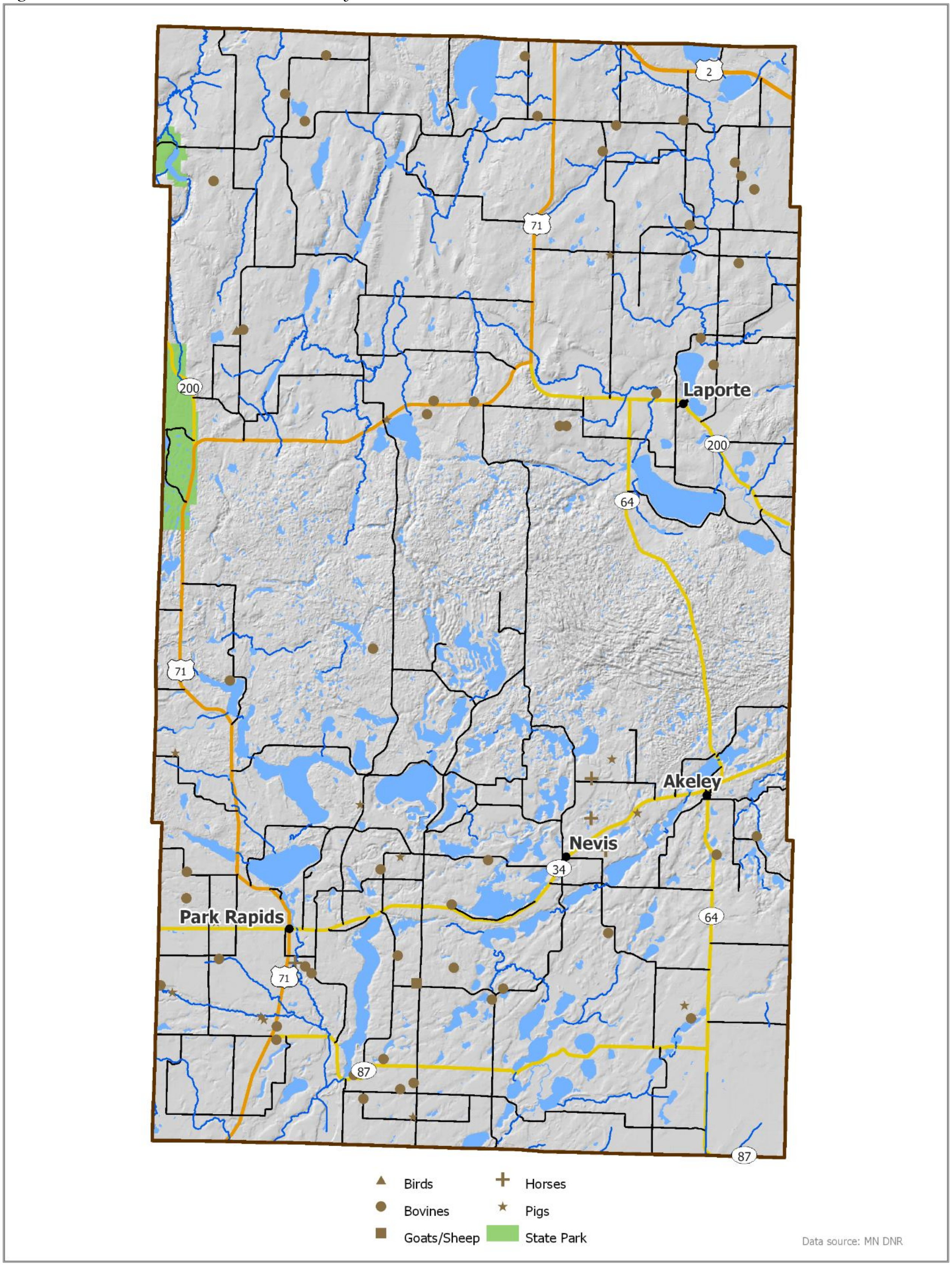


Figure A - 25. ARMER Towers in Hubbard County

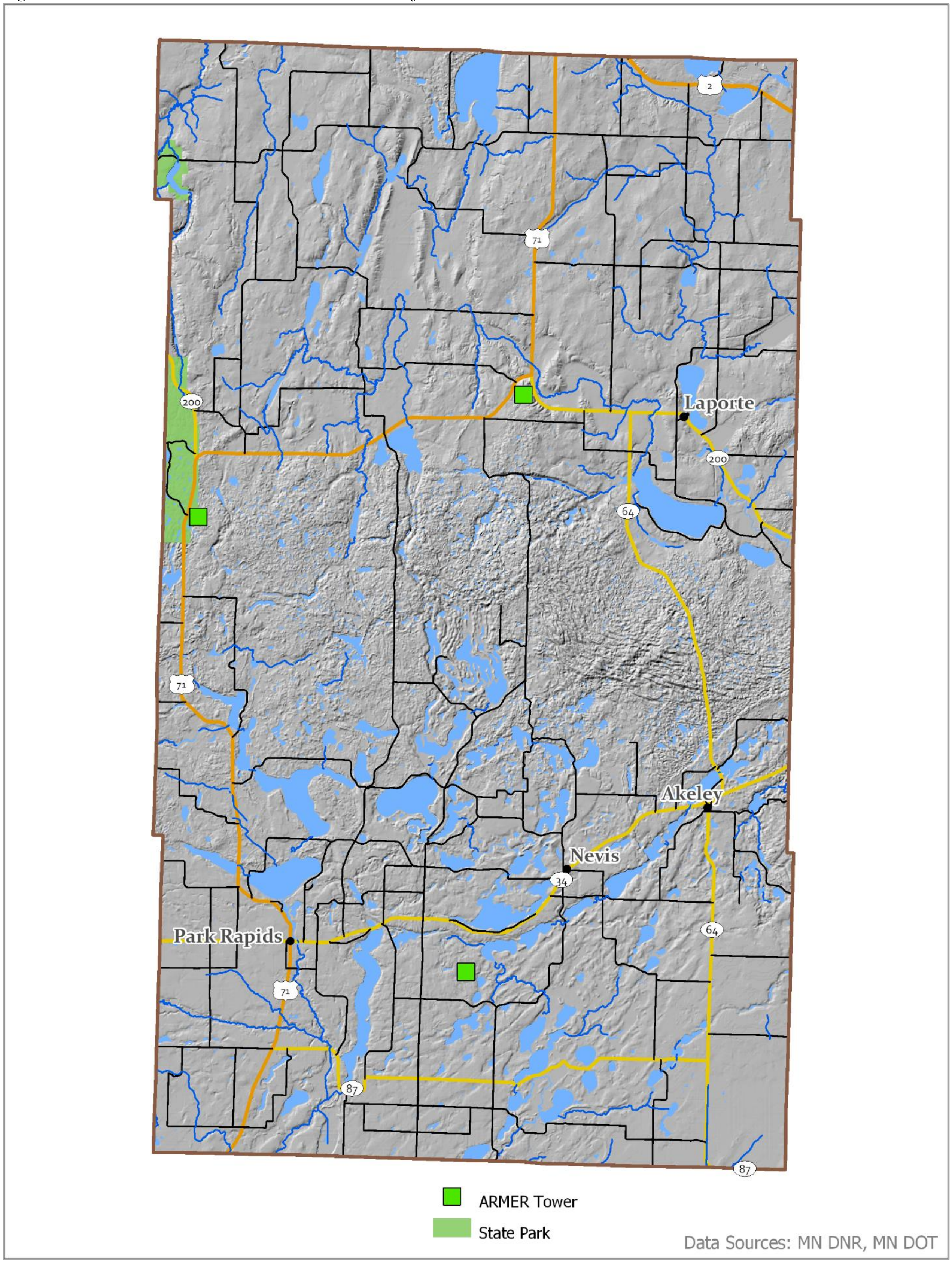


Figure A - 26. Soil Erodability (K Factor) as Percentage in Hubbard County

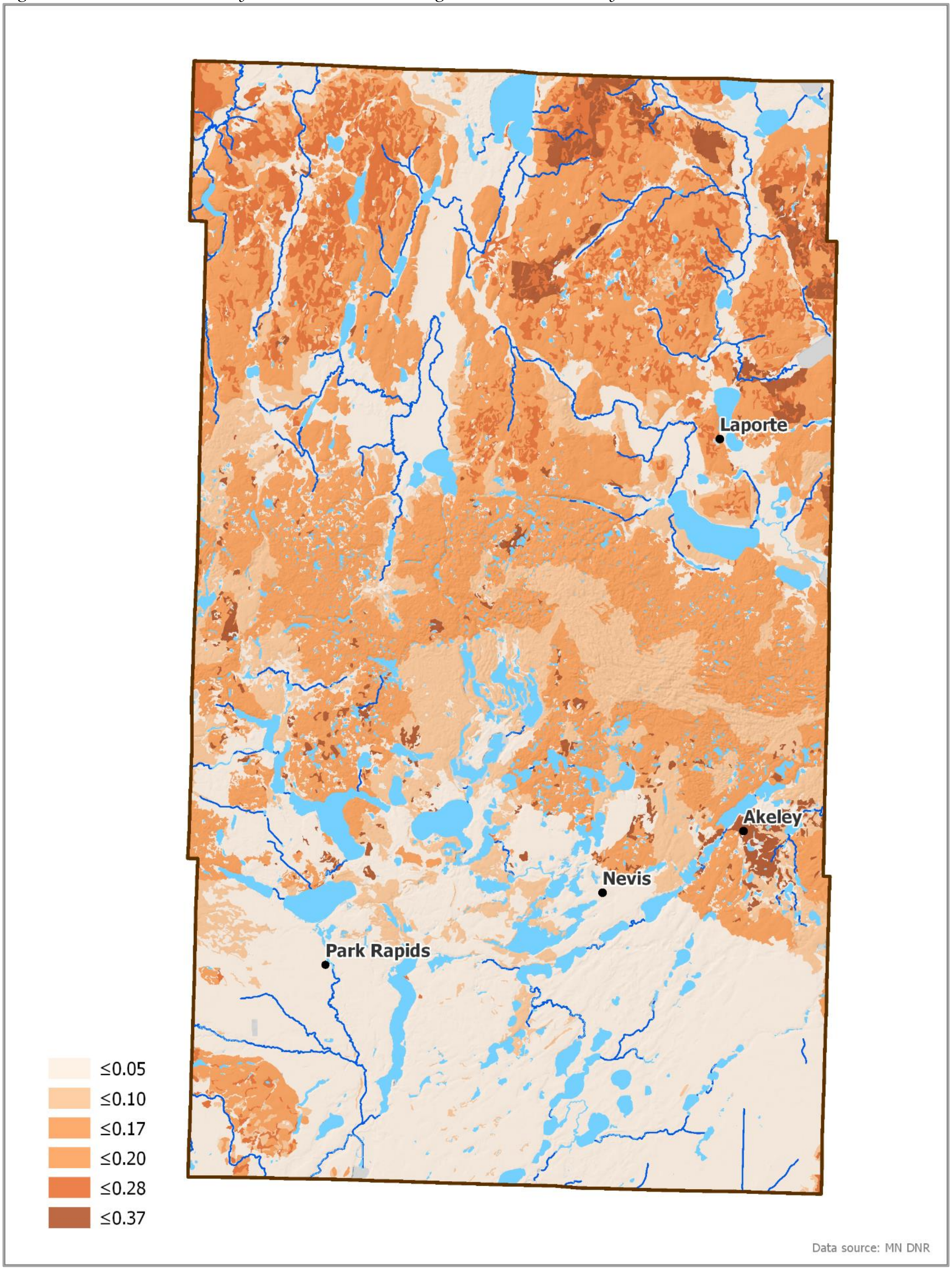
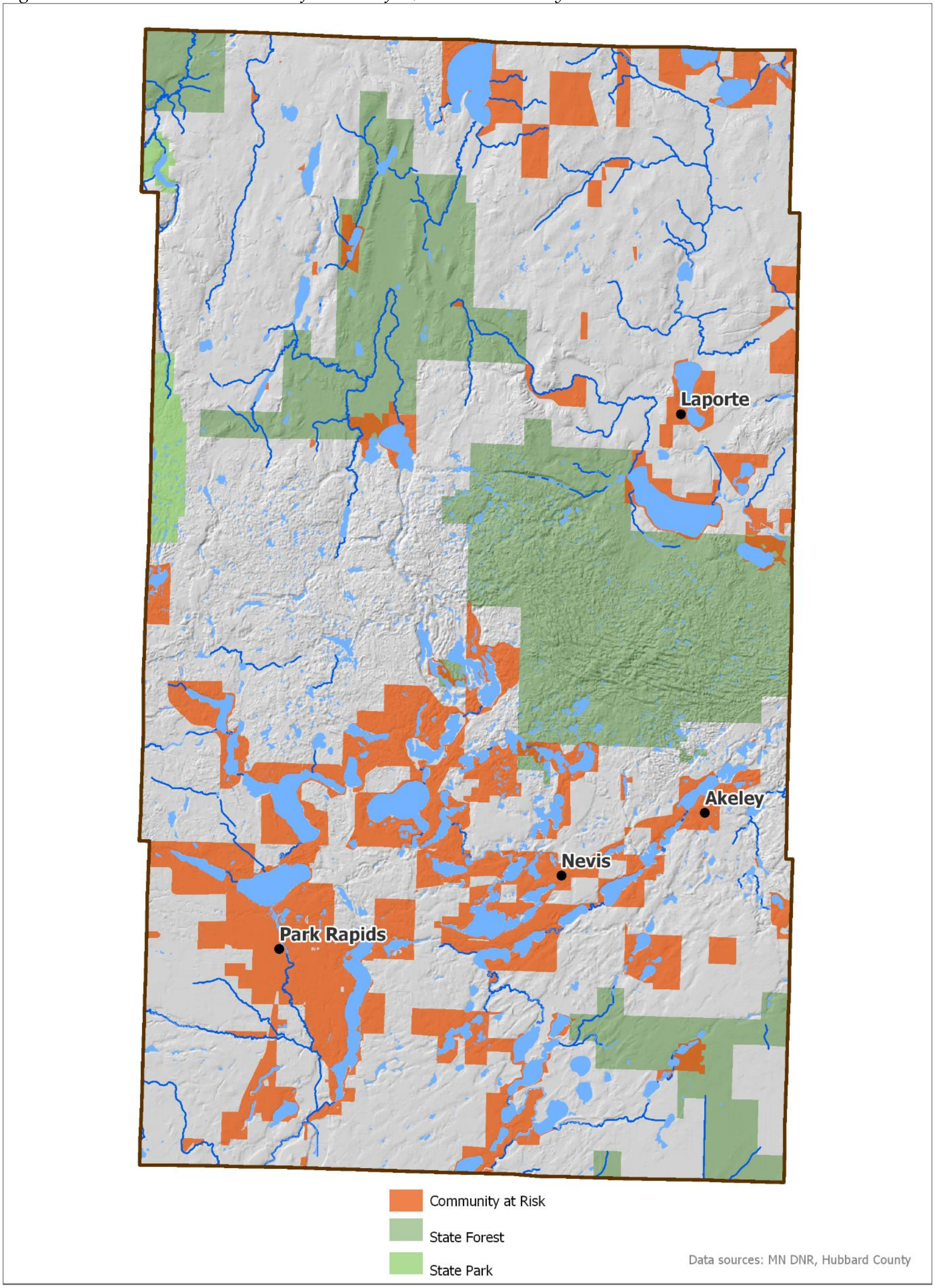


Figure A - 27. Communities at Risk from Wildfire, Hubbard County



Appendix B
Hubbard County Critical Facilities

Agriculture & Food					
Hugos Grocery Store	101 4th St E	Park Rapids	MN	56470	(218) 732-3368
Coborn's Grocery Store	209 1st St W	Park Rapids	MN	56470	(218) 732-0182
Walmart Supercenter	1303 Charles St	Park Rapids	MN	56470	(218) 732-0339
RDO/ Lamb Weston	3704 Park Ave S	Park Rapids	MN	56470	(218) 732-7252

Banking & Finance					
Citizens National Bank	300 1st St W	Park Rapids	MN	56470	(218) 732-3393
State Bank	200 1st St E	Park Rapids	MN	56470	(218) 732-3366
Northwoods Bank	1200 1st St E	Park Rapids	MN	56470	(218) 732-7221
Trustar Federal Credit Union	703 1st St E	Park Rapids	MN	56470	(218) 237-8000
Edward Jones (Jay Pike)	718 1st St E	Park Rapids	MN	56470	(218) 237-6735
Ameriprise Financial	1202 1st St E	Park Rapids	MN	56470	(218) 732-8861
Northwoods Bank	112 Bunyan Trails Rd	Nevis	MN	56467	(218) 652-2265
First National Bank North	110 Broadway St. E.	Akeley	MN	56433	(218) 652-3777

Chemical & Hazardous Materials					
RDO/ Lamb Weston	3704 Park Ave S	Park Rapids	MN	56470	(218) 732-7252
Gas Service Co.	110 E. 8th St.	Park Rapids	MN	56470	(218) 732-5297
Skelgas	2202 Park Ave S	Park Rapids	MN	56470	(218) 732-3512
CHS Prairie Lakes	210 8th St E	Park Rapids	MN	56470	(218) 732-4236

Commercial Facilities					
Team Industries Inc.	501 Industrial Park Rd	Park Rapids	MN	56470	(218) 237-4666
Wonewok Conference Center	21254 County 24	Park Rapids	MN	56470	(218) 732-7271

Communications					
Arvig Communications	105 3rd St W	Park Rapids	MN	56470	(218) 237-4227
KPRM	17340 MN-34	Park Rapids	MN	56470	(218) 732-3306

Dams	
Crow Wing 5th Lake	
Crow Wing 8th Lake	
Crow Wing 11th Lake	
Fish Hook River (Mill Pond Dam)	
Little Wolf Lake	
Long Lake	
Midge Lake	
Park Rapids Hatchery	
Portage Lake	
Potato Lake	

Emergency Services					
North Memorial EMS	503 Hatch Ave	Park Rapids	MN	56470	(218) 732-5255
Bemidji Ambulance Services	512 Kay Ave SE	Bemidji	MN	56601	(218) 444-3328
Hubbard Co. Sheriff's Office	301 Court Ave	Park Rapids	MN	56470	(888) 732-3332
Park Rapids Police Dept.	1425 Fair Ave	Park Rapids	MN	56470	(218) 237-2711
Akeley Police Dept.	25 Broadway St W	Akeley	MN	56433	(888) 732-3332
Park Rapids Fire Dept.	804 Park Avenue South	Park Rapids	MN	56470	
Nevis Fire Dept.	100 Main St	Nevis	MN	56467	
Akeley Fire Dept.	25 Broadway St	Akeley	MN	56433	
Laporte Fire Dept.	160 County RD 39 SW	Laporte	MN	56461	

Energy					
Itasca Mantrap Co-Op Elec Association	16930 County 6	Park Rapids	MN	56470	(218) 732-3377

Government Facilities					
Hubbard Co. Sheriff's Office	301 Court Ave	Park Rapids	MN	56470	(888) 732-3332
Park Rapids Police Dept.	1425 Fair Ave	Park Rapids	MN	56470	(218) 237-2711
Akeley Police Dept.	25 Broadway St W	Akeley	MN	56433	(888) 732-3332
City of Park Rapids	212 West Second Street	Park Rapids	MN	56470	(218) 732-3163

Government Facilities					
Park Rapids Public Works	1425 Fair Ave	Park Rapids	MN	56470	(218) 732-3163
City of Nevis	104 Main Street West	Nevis	MN	56467	(218) 652-3866
City of Akeley	25 Broadway St E	Akeley	MN	56433	(218) 652-2465
Hubbard Co.	201 Fair Ave.	Park Rapids	MN	56470	(218) 732-3561
Hubbard Co. Public Works	101 Crocus Hill St	Park Rapids	MN	56470	(218) 732-3302
Hubbard County Recycling	812 Henrietta Ave	Park Rapids	MN	56470	(218) 732-1468

Healthcare & Public Health					
Essentia Health-Park Rapids Clinic	705 Pleasant Ave	Park Rapids	MN	56470	(218) 732-2800
CHI St. Joseph's Health	600 Pleasant Ave	Park Rapids	MN	56470	(218) 732-3311
Erickson Medical Clinic	205 7th St W	Park Rapids	MN	56470	(218) 732-7760
CHI St. Joseph's Health – Hubbard Co. Public Health	600 Pleasant Avenue	Park Rapids	MN	56470	(218) 255-4833
Sanford Health Park Rapids Clinic	110 7th St. W	Park Rapids	MN	56470	(218) 699-3121

Manufacturing					
RDO/ Lamb Weston	3704 Park Ave S	Park Rapids	MN	56470	(218) 732-7252
Team Industries Inc.	501 Industrial Park Rd	Park Rapids	MN	56470	(218) 237-4666

National Monuments & Icons					
Itasca State Park	36750 Main Park Dr.	Park Rapids	MN	56470	(218) 699-7251

Postal & Shipping					
US Post Office	301 Park Ave S	Park Rapids	MN	56470	(218) 732-4477
US Post Office	107 Main St W	Nevis	MN	56467	(218) 652-3965
US Post Office	10 Broadway St W	Akeley	MN	56433	(218) 652-2295
US Post Office	80 Main St E	Laporte	MN	56461	(218) 224-2462

Postal & Shipping					
US Post Office	37307 County 4	Lake George	MN	56458	(218) 266-3389
The UPS Store	322 Main Avenue South	Park Rapids	MN	56470	(218) 732-4363

Transportation					
Nary National Airport – Shefland Field	27040 County 9	Bemidji	MN	56601	(218) 759-0457
Park Rapids Municipal Airport	301 Airport Road Hwy 71 S.	Park Rapids	MN	56470	(218) 237-8528

Water					
Park Rapids Public Works	1425 Fair Ave	Park Rapids	MN	56470	
City of Nevis	104 Main Street W.	Nevis	MN	56467	
City of Akeley	25 Broadway St E	Akeley	MN	56433	

Appendix C
Hubbard County Hazard Events

The National Centers for Environmental Information Storm Events Database was queried for all notable events since 1950. However, some categories of events do not have records prior to 1996. Data was available through December of 2016.

Table C - 1. All tornadoes recorded by NCEI, 1950-2016

Location or County	Date	Magnitude	Deaths	Injuries	Property Damage
Park Rapids	5/30/2011	EF1	0	0	$600,000
Lake George	6/17/2010	EF1	0	0	0
Kabekona Corner	6/17/2010	EF0	0	0	0
Benedict	6/17/2010	EF0	0	0	0
Nevis	6/12/2008	EF1	0	0	$300,000
Lake George	6/12/2008	EF1	0	0	$300,000
Hubbard	6/6/2008	EF2	0	1	$5,000,000
Dorset	6/6/2008	EF3	0	0	0
Dorset	6/6/2008	EF0	0	0	$100,000
Lake George	6/6/2008	EF1	0	0	$400,000
Badoura	6/6/2008	EF1	0	0	$200,000
Park Rapids	6/26/2005	F1	0	0	0
Akeley	6/24/2002	F0	0	0	0
Akeley	6/24/2002	F1	0	1	$250,000
Park Rapids	7/12/1997	F0	0	0	0
Dorset	10/26/1996	F0	0	0	0
Hubbard Co.	9/16/1992	F0	0	0	0
Hubbard Co.	7/20/1981	F0	0	0	$30
Hubbard Co.	7/26/1969	F1	0	0	$2,500
Highest Value Damage					**$5,000,000**

Table C - 2. All severe hail storm events recorded by NCEI, 1950-2016

Location or County	Date	Size in Inches	Deaths	Injuries	Property Damage
Laporte	8/27/2016	0.75	0	0	0
Nevis	6/17/2016	1.25	0	0	0
Lake George	6/17/2016	0.75	0	0	0
Nary	9/6/2015	1.25	0	0	0
Dorset	8/12/2015	1	0	0	0
Nevis	8/12/2015	1.25	0	0	0
Nevis	8/12/2015	1	0	0	0
Park Rapids	6/26/2015	0.75	0	0	0
Park Rapids	6/3/2015	0.75	0	0	0
Lake George	8/25/2013	1	0	0	0

Location or County	Date	Size in Inches	Deaths	Injuries	Property Damage
Becida	8/15/2012	1	0	0	0
Becida	8/15/2012	0.88	0	0	0
Nevis	6/6/2011	1.25	0	0	0
Lake George	4/10/2011	0.75	0	0	0
Park Rapids	7/17/2010	1	0	0	0
Dorset	7/17/2010	0.88	0	0	0
Becida	5/24/2010	1	0	0	0
Hubbard	9/26/2008	0.88	0	0	0
Badoura	9/26/2008	0.75	0	0	0
Park Rapids	7/20/2008	0.88	0	0	0
Hubbard	7/20/2008	0.88	0	0	0
Dorset	6/12/2008	0.88	0	0	0
Park Rapids	6/12/2008	1.75	0	0	0
Nevis	6/12/2008	1	0	0	$20,000
Laporte	6/12/2008	0.75	0	0	0
Park Rapids	5/31/2008	1	0	0	0
Laporte	5/25/2008	1.75	0	0	0
Farris	5/25/2008	1	0	0	0
Hubbard	9/21/2007	1.75	0	0	0
Dorset	8/27/2007	0.88	0	0	0
Park Rapids	6/29/2005	0.75	0	0	0
Park Rapids	6/23/2005	0.75	0	0	0
Akeley	6/20/2005	0.88	0	0	0
Nary	11/17/2003	0.88	0	0	0
Laporte	7/30/2003	1.25	0	0	0
Laporte	7/30/2003	1.75	0	0	0
Park Rapids	7/29/2003	1	0	0	0
Park Rapids	7/29/2003	0.75	0	0	0
Dorset	7/29/2003	0.88	0	0	0
Benedict	7/29/2003	1	0	0	0
Benedict	7/29/2003	0.75	0	0	0
Nevis	7/29/2003	0.88	0	0	0
Nevis	7/29/2003	1	0	0	0
Akeley	7/29/2003	1	0	0	0
Guthrie	7/19/2003	1	0	0	0
Park Rapids	7/19/2003	1.75	0	0	0
Park Rapids	7/19/2003	1	0	0	0
Nevis	7/19/2003	0.88	0	0	0
Nevis	7/19/2003	1	0	0	0
Nevis	7/19/2003	0.75	0	0	0

Location or County	Date	Size in Inches	Deaths	Injuries	Property Damage
Park Rapids	7/19/2003	1	0	0	0
Hubbard	7/19/2003	0.75	0	0	0
Nevis	7/6/2003	1	0	0	0
Hubbard	7/6/2003	0.75	0	0	0
Park Rapids	7/2/2003	0.75	0	0	0
Lake George	5/22/2003	1.25	0	0	0
Hubbard	5/22/2003	0.75	0	0	0
Laporte	5/22/2003	1.75	0	0	0
Nevis	5/22/2003	1.75	0	0	0
Nary	6/22/2002	1	0	0	0
Farris	6/22/2002	0.75	0	0	0
Park Rapids	6/19/2002	1	0	0	0
Dorset	6/19/2002	1	0	0	0
Nevis	6/19/2002	1.75	0	0	0
Nevis	6/19/2002	0.88	0	0	0
Laporte	6/19/2002	0.75	0	0	0
Akeley	5/22/2002	0.75	0	0	0
Laporte	4/16/2002	0.75	0	0	0
Lake George	8/17/2001	0.75	0	0	0
Park Rapids	8/17/2001	0.75	0	0	0
Park Rapids	8/17/2001	0.75	0	0	0
Park Rapids	7/17/2001	0.88	0	0	0
Park Rapids	7/17/2001	1.75	0	0	0
Kabekona Corner	5/19/2001	0.88	0	0	0
Hubbard	5/15/2001	0.75	0	0	0
Lake George	9/2/2000	0.75	0	0	0
Kabekona Corner	9/2/2000	0.75	0	0	0
Park Rapids	8/14/2000	1.5	0	0	0
Park Rapids	8/14/2000	0.75	0	0	0
Lake George	8/14/2000	1	0	0	0
Becida	8/14/2000	0.75	0	0	0
Laporte	8/14/2000	0.75	0	0	0
Lake George	8/14/2000	1.75	0	0	0
Guthrie	8/14/2000	1	0	0	0
Laporte	8/8/2000	0.88	0	0	0
Lake George	7/25/2000	0.88	0	0	0
Nary	7/27/1999	1.75	0	0	0
Park Rapids	7/4/1999	0.75	0	0	0
Becida	6/9/1999	1	0	0	0
Guthrie	6/9/1999	0.75	0	0	0

Location or County	Date	Size in Inches	Deaths	Injuries	Property Damage
Laporte	6/5/1999	0.75	0	0	0
Becida	6/4/1999	0.75	0	0	0
Park Rapids	7/20/1998	1	0	0	0
Park Rapids	7/14/1998	0.75	0	0	0
Akeley	6/1/1998	0.75	0	0	0
Park Rapids	8/3/1997	0.75	0	0	0
Park Rapids	6/27/1997	0.75	0	0	0
Laporte	6/4/1997	1	0	0	0
Akeley	6/4/1997	1.5	0	0	0
Akeley	6/4/1997	0.75	0	0	0
Hubbard Co.	7/7/1990	1.75	0	0	0
Hubbard Co.	7/2/1989	1.75	0	0	0
Hubbard Co.	7/2/1989	2.75	0	0	0
Hubbard Co.	7/2/1989	3.5	0	0	0
Hubbard Co.	5/10/1985	1.5	0	0	0
Hubbard Co.	4/21/1985	1.75	0	0	0
Hubbard Co.	8/21/1982	1.75	0	0	0
Hubbard Co.	8/22/1978	1.75	0	0	0
Hubbard Co.	9/8/1977	2.75	0	0	0
Hubbard Co.	9/8/1977	2.75	0	0	0
Hubbard Co.	8/16/1959	1.75	0	0	0
Highest Value Damage					**$20,000**

Table C - 3. All severe thunderstorm wind events recorded by NCEI, 1950-2016

Location or County	Date	Type	Magnitude (Knots)	Deaths	Injuries	Property Damage
Nevis Airport	9/7/2016	Thunderstorm Wind	52	0	0	0
Hubbard County	8/4/2016	Thunderstorm Wind	87	0	0	0
Park Rapids	8/4/2016	Thunderstorm Wind	50	0	0	0
Nevis Airport	7/21/2016	Thunderstorm Wind	56	0	0	0
Park Rapids	7/21/2016	Thunderstorm Wind	61	0	0	0
Laporte	7/19/2016	Thunderstorm Wind	56	0	0	0
Park Rapids	7/11/2016	Thunderstorm Wind	61	0	0	0
Park Rapids Airport	7/10/2016	Thunderstorm Wind	54	0	0	0
Hubbard County	7/7/2016	Thunderstorm Wind	56	0	0	0
Park Rapids Airport	7/7/2016	Thunderstorm Wind	60	0	0	0
Lake George	8/12/2015	Thunderstorm Wind	61	0	0	0

Location or County	Date	Type	Magnitude (Knots)	Deaths	Injuries	Property Damage
Dorset	8/12/2015	Thunderstorm Wind	56	0	0	0
Okeley	8/12/2015	Thunderstorm Wind	61	0	0	0
Hubbard	7/24/2015	Thunderstorm Wind	60	0	0	0
Akeley	7/24/2015	Thunderstorm Wind	55	0	0	0
Hubbard	6/7/2015	Thunderstorm Wind	60	0	0	0
Park Rapids	9/20/2014	Thunderstorm Wind	50	0	0	0
Lake George	7/21/2014	Thunderstorm Wind	65	0	0	0
Kabekona Corner	7/21/2014	Thunderstorm Wind	65	0	0	0
Badoura	7/6/2014	Thunderstorm Wind	60	0	0	0
Chamberlain	7/22/2013	Thunderstorm Wind	65	0	0	$100,000
Hubbard	7/25/2012	Thunderstorm Wind	60	0	0	0
Becida	7/2/2012	Thunderstorm Wind	65	0	0	0
Nary	7/2/2012	Thunderstorm Wind	61	0	0	0
Becida	7/2/2012	Thunderstorm Wind	65	0	0	0
Lake George	7/2/2012	Thunderstorm Wind	70	0	0	0
Nevis Arpt	7/2/2012	Thunderstorm Wind	61	0	0	0
Benedict Morrill Arp	7/2/2012	Thunderstorm Wind	70	0	0	0
Park Rapids	7/2/2012	Thunderstorm Wind	50	0	0	0
Rosby	5/18/2012	Thunderstorm Wind	60	0	0	$1,000
Park Rapids	5/23/2010	Thunderstorm Wind	65	0	0	0
Chamberlain	5/23/2010	Thunderstorm Wind	60	0	0	0
Hubbard (Zone)	5/22/2010	High Wind	50	0	0	0
Park Rapids	5/22/2010	Thunderstorm Wind	60	0	0	0
Park Rapids	7/29/2008	Thunderstorm Wind	70	0	0	$250,000
Nevis	7/29/2008	Thunderstorm Wind	70	0	0	$750,000
Park Rapids	6/14/2008	Thunderstorm Wind	52	0	0	0
Becida	6/14/2008	Thunderstorm Wind	55	0	0	$30,000
Park Rapids	6/14/2008	Thunderstorm Wind	50	0	0	0
Hubbard (Zone)	6/11/2008	High Wind	35	0	0	0
Hubbard (Zone)	6/11/2008	High Wind	40	0	0	0
Lake George	6/6/2008	Thunderstorm Wind	50	0	0	$20,000
Park Rapids	8/27/2007	Thunderstorm Wind	52	0	0	0
Hubbard	8/13/2007	Thunderstorm Wind	50	0	0	0
Badoura	7/13/2007	Thunderstorm Wind	55	0	0	0
Lake George	6/18/2007	Thunderstorm Wind	55	0	0	0
Hubbard (Zone)	11/8/2005	High Wind	40	0	0	0
Kabekona Corner	6/29/2005	Thunderstorm Wind	52	0	0	0
Park Rapids	6/26/2005	Thunderstorm Wind	60	0	0	0
Park Rapids	6/26/2005	Thunderstorm Wind	50	0	0	0

Location or County	Date	Type	Magnitude (Knots)	Deaths	Injuries	Property Damage
Hubbard (Zone)	12/11/2004	High Wind	40	0	0	0
Dorset	9/5/2004	Thunderstorm Wind	52	0	0	0
Nary	7/2/2003	Thunderstorm Wind	52	0	0	0
Lake George	6/19/2002	Thunderstorm Wind	78	0	0	$25,000
Becida	6/9/2002	Thunderstorm Wind		0	0	$100
Laporte	4/16/2002	Thunderstorm Wind	61	0	0	0
Hubbard (Zone)	2/11/2002	High Wind	56	0	0	0
Lake George	8/8/2001	Thunderstorm Wind		0	0	$2,000
Park Rapids Arpt	8/8/2001	Thunderstorm Wind	55	0	0	0
Akeley	8/8/2001	Thunderstorm Wind	54	0	0	0
Park Rapids	8/8/2001	Thunderstorm Wind		0	0	$2,000
Laporte	8/8/2001	Thunderstorm Wind		0	0	$1,000
Park Rapids	7/21/2001	Thunderstorm Wind		0	0	$500
Park Rapids Arpt	6/11/2001	Thunderstorm Wind	57	0	0	0
Akeley	8/14/2000	Thunderstorm Wind		0	0	$2,000
Hubbard (Zone)	12/25/1999	High Wind	75	0	0	0
Hubbard (Zone)	11/1/1999	High Wind	60	0	0	0
Nary	7/28/1999	Thunderstorm Wind	56	0	0	0
Park Rapids	7/15/1999	Thunderstorm Wind		0	0	$500
Park Rapids	7/15/1999	Thunderstorm Wind		0	0	$10,000
Nevis	7/15/1999	Thunderstorm Wind	52	0	0	0
Nevis	7/15/1999	Thunderstorm Wind		0	0	$500
Akeley	7/4/1999	Thunderstorm Wind		0	0	$25,000
Nevis	7/4/1999	Thunderstorm Wind		0	0	$15,000
Laporte	8/16/1998	Thunderstorm Wind		0	0	400
Park Rapids	7/20/1998	Thunderstorm Wind	52	0	0	0
Laporte	6/1/1998	Thunderstorm Wind		0	0	$500
Nevis	10/8/1997	Thunderstorm Wind		0	0	$50,000
Nevis	10/8/1997	Thunderstorm Wind		0	0	$30,000
Nevis	10/8/1997	Thunderstorm Wind		0	0	$5,000
Nevis	10/8/1997	Thunderstorm Wind		0	1	$70,000
Laporte	6/28/1997	Thunderstorm Wind		0	2	$10,000
Park Rapids	6/28/1997	Thunderstorm Wind		0	0	$2,000
Park Rapids	7/6/1996	Thunderstorm Wind	60	0	0	$80,000
Walker	5/17/1996	Thunderstorm Wind		0	0	$10,000
Laporte	5/23/1994	Thunderstorm Wind	0	0	0	0
Hubbard Co.	8/12/1989	Thunderstorm Wind	0	0	0	0
Hubbard Co.	7/6/1988	Thunderstorm Wind	0	0	0	0
Hubbard Co.	9/5/1985	Thunderstorm Wind	54	0	0	0
Hubbard Co.	9/5/1985	Thunderstorm Wind	0	0	0	0

Location or County	Date	Type	Magnitude (Knots)	Deaths	Injuries	Property Damage
Hubbard Co.	8/21/1982	Thunderstorm Wind	74	0	0	0
Hubbard Co.	8/21/1982	Thunderstorm Wind	78	0	0	0
Hubbard Co.	7/27/1980	Thunderstorm Wind	0	0	0	0
Hubbard Co.	9/8/1977	Thunderstorm Wind	56	0	0	0
Hubbard Co.	4/15/1976	Thunderstorm Wind	0	0	0	0
Hubbard Co.	8/9/1971	Thunderstorm Wind	70	0	0	0
Hubbard Co.	6/17/1971	Thunderstorm Wind	0	0	0	0
Hubbard Co.	9/20/1970	Thunderstorm Wind	0	0	0	0
Hubbard Co.	7/23/1964	Thunderstorm Wind	86	0	0	0
Highest Value Damage						**$750,000**

Table C - 4. All extreme flood events recorded by NCEI, 1997-2016

Location or County	Date	Type	Deaths	Injuries	Property Damage
Park Rapids Airport	7/11/2016	Flash Flood	0	0	$2,000
Becida	4/28/2013	Flood	0	0	$5,000
Lake George	7/4/2010	Flash Flood	0	0	$100,000
Becida	3/25/2009	Flood	0	0	$5,000
Park Rapids	6/26/2005	Flash Flood	0	0	0
Hubbard (Zone)	6/23/2002	Flood	0	0	0
Nary	6/22/2002	Flash Flood	0	0	0
Park Rapids	6/22/2002	Flash Flood	0	0	0
Hubbard (Zone)	9/1/1999	Flood	0	0	0
Highest Value Damage					**$100,000**

Table C - 5. All severe winter weather events recorded by NCEI, 1996-2016

Location or County	Date	Type	Deaths	Injuries	Property Damage
Hubbard (Zone)	12/25/2016	Ice Storm	0	0	0
Hubbard (Zone)	11/18/2016	Winter Storm	0	0	0
Hubbard (Zone)	4/1/2014	Winter Storm	0	0	0
Hubbard (Zone)	3/31/2014	Winter Storm	0	0	0
Hubbard (Zone)	12/3/2013	Winter Storm	0	0	0
Hubbard (Zone)	12/2/2013	Heavy Snow	0	0	0
Hubbard (Zone)	4/14/2013	Winter Storm	0	0	0
Hubbard (Zone)	3/17/2013	Winter Storm	0	0	0

Location or County	Date	Type	Deaths	Injuries	Property Damage
Hubbard (Zone)	3/9/2013	Winter Storm	0	0	0
Hubbard (Zone)	3/4/2013	Heavy Snow	0	0	0
Hubbard (Zone)	2/10/2013	Winter Storm	0	0	0
Hubbard (Zone)	1/28/2013	Heavy Snow	0	0	0
Hubbard (Zone)	1/11/2013	Ice Storm	0	0	0
Hubbard (Zone)	2/26/2012	Winter Storm	0	0	0
Hubbard (Zone)	3/22/2011	Winter Storm	0	0	0
Hubbard (Zone)	1/1/2011	Winter Storm	0	0	0
Hubbard (Zone)	12/31/2010	Winter Storm	0	0	0
Hubbard (Zone)	12/30/2010	Heavy Snow	0	0	0
Hubbard (Zone)	12/19/2010	Heavy Snow	0	0	0
Hubbard (Zone)	11/29/2010	Winter Storm	0	0	0
Hubbard (Zone)	1/22/2010	Winter Storm	0	0	0
Hubbard (Zone)	12/23/2009	Heavy Snow	0	0	0
Hubbard (Zone)	3/29/2009	Winter Storm	0	0	0
Hubbard (Zone)	3/24/2009	Winter Storm	0	0	0
Hubbard (Zone)	3/9/2009	Winter Storm	0	0	0
Hubbard (Zone)	2/26/2009	Winter Storm	0	0	0
Hubbard (Zone)	2/9/2009	Ice Storm	0	0	0
Hubbard (Zone)	1/2/2009	Heavy Snow	0	0	0
Hubbard (Zone)	12/19/2008	Winter Storm	0	0	0
Hubbard (Zone)	12/13/2008	Winter Storm	0	0	0
Hubbard (Zone)	4/25/2008	Winter Storm	0	0	0
Hubbard (Zone)	4/10/2008	Winter Storm	0	0	0
Hubbard (Zone)	4/5/2008	Winter Storm	0	0	0
Hubbard (Zone)	12/4/2007	Heavy Snow	0	0	0
Hubbard (Zone)	12/1/2007	Winter Storm	0	0	0
Hubbard (Zone)	11/30/2007	Heavy Snow	0	0	0
Hubbard (Zone)	4/3/2007	Winter Storm	0	0	0
Hubbard (Zone)	3/1/2007	Winter Storm	0	0	0
Hubbard (Zone)	2/27/2007	Winter Storm	0	0	0
Hubbard (Zone)	2/24/2007	Winter Storm	0	0	0
Hubbard (Zone)	2/24/2006	Winter Storm	0	0	0
Hubbard (Zone)	12/29/2005	Winter Storm	0	0	0
Hubbard (Zone)	11/28/2005	Blizzard	0	0	0
Hubbard (Zone)	11/27/2005	Winter Storm	0	0	0
Hubbard (Zone)	1/21/2005	Winter Storm	0	0	0
Hubbard (Zone)	1/1/2005	Winter Storm	0	0	0
Hubbard (Zone)	12/31/2004	Winter Storm	0	0	0
Hubbard (Zone)	12/30/2004	Winter Storm	0	0	0

Location or County	Date	Type	Deaths	Injuries	Property Damage
Hubbard (Zone)	1/24/2004	Winter Storm	0	0	0
Hubbard (Zone)	12/15/2003	Winter Storm	0	0	0
Hubbard (Zone)	11/23/2003	Winter Storm	0	0	0
Hubbard (Zone)	11/12/2003	Winter Storm	0	0	0
Hubbard (Zone)	3/8/2002	Winter Storm	0	0	0
Hubbard (Zone)	11/26/2001	Winter Storm	0	0	0
Hubbard (Zone)	11/24/2001	Winter Storm	0	0	0
Hubbard (Zone)	4/23/2001	Heavy Snow	0	0	0
Hubbard (Zone)	2/23/2001	Winter Storm	0	0	0
Hubbard (Zone)	12/27/2000	Winter Storm	0	0	0
Hubbard (Zone)	12/16/2000	Winter Storm	0	0	0
Hubbard (Zone)	3/14/2000	Heavy Snow	0	0	0
Hubbard (Zone)	1/13/1999	Winter Storm	0	0	0
Hubbard (Zone)	11/10/1998	Blizzard	0	0	0
Hubbard (Zone)	1/9/1997	Blizzard	0	0	0
Hubbard (Zone)	1/9/1997	Blizzard	0	0	0
Hubbard (Zone)	1/4/1997	Heavy Snow	0	0	0
Hubbard (Zone)	11/16/1996	Blizzard	0	0	0
Highest Value Property Damage					**0**

Table C - 6. All severe cold/wind chill events recorded by NCEI, 1996-2016

Location or County	Date	Type	Deaths	Injuries	Property Damage
Hubbard (Zone)	12/17/2016	Extreme Cold/Wind Chill	0	0	0
Hubbard (Zone)	1/16/2016	Extreme Cold/Wind Chill	0	0	0
Hubbard (Zone)	2/21/2015	Extreme Cold/Wind Chill	0	0	0
Hubbard (Zone)	1/6/2015	Extreme Cold/Wind Chill	0	0	0
Hubbard (Zone)	1/3/2015	Extreme Cold/Wind Chill	0	0	0
Hubbard (Zone)	3/1/2014	Extreme Cold/Wind Chill	0	0	0
Hubbard (Zone)	2/26/2014	Extreme Cold/Wind Chill	0	0	0
Hubbard (Zone)	1/26/2014	Extreme Cold/Wind Chill	0	0	0
Hubbard (Zone)	1/22/2014	Extreme Cold/Wind Chill	0	0	0
Hubbard (Zone)	1/4/2014	Extreme Cold/Wind Chill	0	0	0
Hubbard (Zone)	12/28/2013	Extreme Cold/Wind Chill	0	0	0
Hubbard (Zone)	1/20/2013	Extreme Cold/Wind Chill	0	0	0
Hubbard (Zone)	1/18/2012	Extreme Cold/Wind Chill	0	0	0
Hubbard (Zone)	1/21/2011	Extreme Cold/Wind Chill	0	0	0

Location or County	Date	Type	Deaths	Injuries	Property Damage
Hubbard (Zone)	1/16/2009	Cold/Wind Chill	0	0	0
Hubbard (Zone)	1/14/2009	Cold/Wind Chill	0	0	0
Hubbard (Zone)	1/14/2009	Cold/Wind Chill	0	0	0
Hubbard (Zone)	12/21/2008	Extreme Cold/Wind Chill	0	0	0
Hubbard (Zone)	12/15/2008	Extreme Cold/Wind Chill	0	0	0
Hubbard (Zone)	2/19/2008	Extreme Cold/Wind Chill	0	0	0
Hubbard (Zone)	2/9/2008	Extreme Cold/Wind Chill	0	0	0
Hubbard (Zone)	1/29/2008	Extreme Cold/Wind Chill	0	0	0
Hubbard (Zone)	1/17/2008	Extreme Cold/Wind Chill	0	0	0
Hubbard (Zone)	2/16/2006	Cold/Wind Chill	0	0	0
Hubbard (Zone)	1/13/2005	Cold/Wind Chill	0	0	0
Hubbard (Zone)	8/19/2004	Cold/Wind Chill	0	0	0
Hubbard (Zone)	6/23/2004	Cold/Wind Chill	0	0	0
Hubbard (Zone)	1/26/2004	Cold/Wind Chill	0	0	0
Hubbard (Zone)	3/8/2003	Cold/Wind Chill	0	0	$21,000
Hubbard (Zone)	12/21/1996	Cold/Wind Chill	0	0	0
Hubbard (Zone)	11/25/1996	Cold/Wind Chill	0	0	0
Hubbard (Zone)	2/1/1996	Cold/Wind Chill	0	0	0
Highest Value Property Damage					**$21,000**

Table C - 7. All extreme heat/heat events recorded by the NCEI, 1996-2016

Location or County	Date	Type	Deaths	Injuries	Property Damage
Hubbard (Zone)	7/16/2011	Excessive Heat	0	0	0
Hubbard (Zone)	8/4/2001	Heat	0	0	0
Highest Value Property Damage					**0**

Table C - 8. All lightning events recorded by the NCEI, 1996-2016

Location or County	Date	Deaths	Injuries	Property Damage
Becida	6/17/2016	0	0	$10,000
Dorset	9/4/2014	0	0	$300,000
Park Rapids	6/26/2003	0	0	$400
Highest Value Property Damage				**$300,000**

Appendix D
Adopting Resolutions

Resolutions to be added to Appendix D by Hubbard County following final approval of the plan by FEMA.

Appendix E
Steering Committee Meetings

Minnesota 10-County Multi-Hazard Mitigation Update Project
Kick-off Orientation Webinar

UNIVERSITY OF MINNESOTA GEOSPATIAL ANALYSIS CENTER

SWENSON COLLEGE OF SCIENCE & ENGINEERING
University of Minnesota Duluth
Driven to Discover

Webinar Purpose & Goals

Purpose:

The purpose of this webinar is provide an orientation kick-off meeting for the Emergency Managers participating in the Minnesota 10-County Multi-Hazard Mitigation Plan Update project.

Goals:

- Introduce the UMD Team and County contacts.
- Provide an overview of the project.
- Clarify roles and responsibilities.
- Outline the planning process, discuss key tasks and timelines.
- Discuss next steps and answer your questions.

Introductions

Who We Are (UMD Project Team)


Stacey Stark, Director, Geospatial Analysis Center (GAC)


Micaella Penning, Research Associate, GIS Specialist, Cartographer, and Editor (GAC)


Steve Graham, Research Associate and Flood Modeling Specialist (GAC)


Bonnie Hundrieser, Emergency Management Planning Consultant (Hundrieser Consulting LLC)

Who You Are (County Emergency Managers):

- Name, Title, and County
- Past Experience with MHMP?

Minnesota HSEM:

Jennifer Nelson, MN HSEM
State Hazard Mitigation Officer

Project Overview

- **10 Counties**

Jurisdiction	FEMA's Expiration Date
Benton	2/16/2017
Crow Wing	8/25/2016
Faribault	5/20/2013
Freeborn	5/18/2015
Grant	5/18/2015
Hubbard	3/23/2016
Olmsted	5/18/2015
Steele	12/5/2016
Wabasha	8/31/2015
Wilkin	8/30/2016

GEOSPATIAL ANALYSIS CENTER

Why UMD-GAC?

- **Proven experience**
GAC has extensive experience in the comprehensive review and update of county MHMPs, as well as update of the State MHMP.
- **Advanced Capabilities**
GAC has expertise in the application of GIS, HAZUS, and research to support MHMP development and meeting all FEMA requirements.
- **Ability to Expedite**
GAC has the ability to expedite the MHMP update process for multiple counties through a consistent approach and format, which also supports State and FEMA review of draft plans.
- **Planning Team**
GAC project team includes working with advanced GIS students and experienced consultants to effectively complete tasks.

EM Roles & Responsibilities

- Act as main Point of Contact.
- Coordinate communication and outreach to engage local planning team, additional key stakeholders, and the public.
- Review past mitigation actions and provide status update.
- Provide information for Capabilities Assessment (Plans & Programs in Place / Program Gaps or Deficiencies) for each hazard.
- Assist in development of new mitigation action chart (must be county and jurisdictionally specific) that includes projects for HMA eligibility.
- Provide information for Critical Facilities forms.
- Provide coordination with GIS and assessor's data managers in order to obtain GIS and parcel information for GIS analyses.
- Assist in timely review of material throughout the plan update process via phone, email, and in-person meetings.
- Track required local match and submit to HSEM.

MHMP Updates & Crosswalk Requirements

Key Considerations for Discussion

HM Plan Contents

- Hazard Mitigation Planning overview and process
- County physical and social profile
- Asset Inventory
- Hazard Profiles
- Hazard Assessment and Vulnerability Analysis
- Mitigation Actions and Strategy
- Plan Maintenance

Planning Process

Each Emergency Manager will play a critical role in identification and engagement of a planning team and the public throughout the update process. The MHMP must document who was involved & how, and include representation from the county, each jurisdiction, neighboring communities, local and regional agencies.

Key Considerations for MHMP Updates:

- **What tools do you use to communicate?** (i.e., Facebook, email, etc.)
- **What standing events or committees might you use in this process?** (local emergency preparedness committees, County/City board meetings, county fair, etc.)
- **How do you plan to address:**
  - Jurisdictional Engagement
  - Stakeholder Engagement (who are they?)
  - Public Engagement

Hazard Identification and Risk Assessment

All plans will address the **natural hazards** identified to pose risk to the county and its jurisdictions. Non-natural hazards (technological and human-caused will not be included in the risk and vulnerability assessment and development of mitigation strategies and actions.

Key Considerations for MHMP Updates:

- Identify specific impacts and vulnerabilities (at the county/jurisdiction level) due to natural hazards.
- Identify if and how any priorities changed since the last plan (i.e., financial, legal, political realities, and post-disaster conditions).
- Identify existing development or future development that may increase or decrease the community's vulnerability to natural hazard events.

Mitigation Strategy

Key activities to support the update of the Mitigation Strategy will include a capabilities assessment for mitigating against natural hazards, as well as a comprehensive review of the status of mitigation strategies and actions in the previously approved plan.

Key Considerations for MHMP Updates:

- Plans and Programs in Place that support mitigation.
- Program Gaps or Deficiencies that hinder mitigation.
- Identification of projects that may be eligible for HMA funding.
- Inclusion of other eligible agency or organizational stakeholders in development & implementation of mitigation actions (i.e., Public Utilities, MN DNR, School Districts, Boy Scouts of America).

Plan Adoption

After FEMA has provided "APA" status (Approval Pending Adoption), the county and all participating jurisdictions must formally adopt the plan.

Key Considerations for MHMP Updates:

- This step is often a difficult challenge for Emergency Managers after the plan is completed, and can bog down the process of final plan adoption and thus eligibility for applying for FEMA HMA funding.
- Are there communication measures to be used during the planning process to minimize this issue? What steps do you think can be taken to make this process easier for your current plan update?

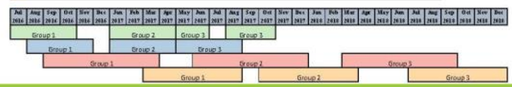
Project Timeline

- 36 - Month timeline
- Staggering of Counties will be required to complete UMD's update of risk assessments, research of hazard histories, etc. for each county.
- All county Emergency Managers will be provided with resources to work on independently. Customized worksheets and technical assistance will be provided to you to facilitate the process.
  - Capabilities Assessment by each Natural Hazard
  - Status Update on Prior Mitigation Actions
  - Compilation of Critical & Essential Facilities in each jurisdiction

Estimated Time-line

Group 1: Faribault, Freeborn, Olmsted, Grant
Group 2: Wabasha, Hubbard, Wilkin
Group 3: Crow Wing, Steele, Benton

	WHAT	CONSULTANT ROLES	COUNTY ROLES
A	**research, obtaining information, review previous mitigation actions**	student and GIS analyst work, dependent on student schedules	work can be done with minimal interaction with county
B	**flood data preparation and flood analysis**	GIS analyst work - done in immediate succession	
C	**planning meetings, develop mitigation actions**	planner work, groups need to be in succession, *stage C must be complete before stage D* in each county	frequent interaction with county necessary
D	**complete draft plan and public meetings**		



Questions?

What questions do you have for UMD or HSEM about the MHMP Update process?

Contact Information

Stacey Stark, MS, GISP
Geospatial Analysis Center
slstark@d.umn.edu
218-726-7438

Hubbard County
Multi-Hazard Mitigation Plan Update
November 30, 2016 MHMP Planning Team Meeting
Hubbard County Law Enforcement Center, Park Rapids, MN
10:00 a.m. – 12:00 p.m.

Meeting Summary:
On Wednesday, November 30, 2016, key county, city, and township representatives, as well as other stakeholders were convened to participate in a Planning Team Meeting for the update of the Hubbard County Multi-Hazard Mitigation Plan (MHMP). The meeting was facilitated by the University of Minnesota – Duluth Geospatial Analysis Center (GAC) staff and Bonnie Hundrieser who are leading the update of the Hubbard County MHMP. A total of 28 people attended the meeting.

The opening presentation covered:
- The purpose of hazard mitigation planning.
- The role & responsibilities of the Planning Team.
- An overview of content in the MHMP (County physical & social profile, Asset Inventory, Hazard Assessment and Vulnerability Analysis, Capability Assessment and Mitigation Actions).
- Group review and discussion of hazard rankings for Hubbard County. ***(No changes based on group discussion of proposed hazard rankings for 2016 plan.)***
- A review of mitigation strategies and considerations for developing local mitigation actions.
- An overview of the FEMA Hazard Mitigation Assistance (HMA) Grants program.

Following the presentation a facilitated Mitigation Action Working Session was held. Participants discussed the natural hazards of concern to their communities and filled out Mitigation Action Worksheets to identify new, jurisdictionally-specific mitigation actions to be included in the MHMP plan update. Mitigation actions were required to fall within one of the 5 mitigation action strategies:
1. Local Planning and Regulations
2. Structure and Infrastructure Projects
3. Natural Systems Protection
4. Education and Awareness Programs
5. Mitigation Preparedness and Response Support

Following the Mitigation Action Working Session, the group then discussed the upcoming process and anticipated timeline for engaging the public and other key stakeholders in an open plan review period and public meetings. Meeting attendees were told that they would be contacted for additional information as needed and kept informed on the upcoming steps in the planning process, including opportunities for draft plan review and final selection of mitigation actions for inclusion in the plan.

Attached to this meeting summary are the following documentation items:
- Hubbard County Meeting Email Invite
- 11-30-16 Meeting Agenda
- 11-30-16 Meeting Sign-in Sheets
- 11-30-16 Power Point Presentation Slides
- 11-30-16 Meeting Handouts (Mitigation Strategies & Mitigation Ideas Worksheet)
- 11-30-16 Mitigation Ideas Working Session (jurisdictional worksheets)

Meeting Summary Prepared By: Bonnie Hundrieser, UMD Project Team, (Hundrieser Consulting LLC)

From: Halbasch Brian [mailto:bhalbasch@co.hubbard.mn.us]
Sent: Wednesday, October 26, 2016 2:25 PM
To: Jeff Appels <prchief@co.hubbard.mn.us>; Don Hoffman <hoffmane@unitelc.com>; Terry Long <terryl@unitelc.com>; Troy Mayer <troy.mayer@northmemorial.com>; Bucky Johnson <Jason.Johnson@NorthMemorial.com>; 'Carlstrom, Mark A (DNR)' <mark.carlstrom@state.mn.us>; Lance Bagstad <Lbagstad@parkrapids.k12.mn.us>; 'pradministrator@arvig.net' <pradministrator@arvig.net>; 'pamikesh@hotmail.com' <pamikesh@hotmail.com>; 'pworks@unitelc.com' <pworks@unitelc.com>; 'neviscty@eot.com' <neviscty@eot.com>; 'akeleych@arvig.net' <akeleych@arvig.net>; Kerry Swenson <kerry.swenson@co.cass.mn.us>; 'daniel.pazdernik@mn.usda.gov' <daniel.pazdernik@mn.usda.gov>; Tom Vanderwal <tom.gnwems@midconetwork.com>; 'Esther Simon' <ESimon@itasca-mantrap.com>; 'Sletten, Sid R.' <SSletten@beltramielectric.com>; 'chamber@parkrapids.com' <chamber@parkrapids.com>; 'tschwartz@mnpower.com' <tschwartz@mnpower.com>; Scott Parks <sparks@co.hubbard.mn.us>; 'caukes@co.hubbard.mn.us' <caukes@co.hubbard.mn.us>; 'dolsonawski@co.hubbard.mn.us' <dolsonawski@co.hubbard.mn.us>; Jed Nordin <jnordin@co.hubbard.mn.us>; 'Herb McCormick' <hmccormick@co.hubbard.mn.us>; 'Bobby Wilkins' <bwilkins@co.hubbard.mn.us>; 'Cal Johannsen (cjohann@paulbunyan.net)' <cjohann@paulbunyan.net>; 'Camille Bessler' <Camille.Bessler@courts.state.mn.us>; 'Deb Thompson' <dthompson@co.hubbard.mn.us>; 'Deb Vizecky' <dvizecky@co.hubbard.mn.us>; 'Don Dearstyne' <ddearstyne@co.hubbard.mn.us>; 'Eric Buitenwerf' <ebuitenwerf@co.hubbard.mn.us>; 'Greg Hensel' <ghensel@co.hubbard.mn.us>; 'Greg Remus' <gremus@co.hubbard.mn.us>; 'Jill Christenson' <jchristenson@co.hubbard.mn.us>; 'Joe Henry' <jhenry@co.hubbard.mn.us>; 'Joe Peterson ' <joe.peterson@state.mn.us>; 'Jon Frieden' <jfrieden@co.hubbard.mn.us>; 'Kay Rave' <krave@co.hubbard.mn.us>; 'Kurt Hansen' <kurthansen@ecumen.org>; 'Linda Eischens' <leischens@co.hubbard.mn.us>; 'Lori Wiebolt' <lori.wiebolt@courts.state.mn.us>; 'mlohmeie@umn.edu' <mlohmeie@umn.edu>; 'Nicole Lueth' <nlueth@co.hubbard.mn.us>; 'Sandy Rittgers' <srittgers@co.hubbard.mn.us>; 'Woodrum Ginger' <glwoodrum@co.hubbard.mn.us>; 'Charlene Christenson' <christensonchar@gmail.com>; 'Dan Stacey' <dstacey.wss@gmail.com>; 'Ed Smith' <egsmith@yahoo.com>; 'Vern Massie' <vernmassie@gmail.com>
Subject: Planning Meeting - Hubbard County Multi-Hazard Mitigation Plan

I would like to extend an invitation to the Hubbard County Multi-Hazard Mitigation Plan Planning Meeting scheduled for Wednesday, November 30, 2016. The meeting will be from 10a.m. – 12:00 p.m. at the Hubbard County Emergency Operations Center - 301 Court Ave (Basement of the Law Enforcement Center) in Park Rapids, MN.

You are receiving this email as you hold an important position for your company, business, or agency, and we would like your input at the meeting. **More information can be found on the attached letter.** If you cannot attend, please forward this email to anyone you feel would benefit in the meeting. Please feel free to contact me, and share this information throughout your dept. & agency.

If you have any questions please contact me. **We request that you RSVP to this invitation by November 14th.**

Brian Halbasch
Deputy Sheriff & Emergency Manager

Hubbard Co. Sheriff's Office
301 Court Ave
Park Rapids, MN 56470

218.732.2588 - Direct Line
218.732.2550 - Fax

bhalbasch@co.hubbard.mn.us

Visit us on Facebook – Hubbard Co. Sheriffs Office & Emergency Management

HUBBARD COUNTY SHERIFF'S OFFICE-EMERGENCY MANAGEMENT

28-Oct-16

Your presence is requested at a Planning Team meeting for the update of the **Hubbard County Multi-Hazard Mitigation Plan** on:

Date: Wednesday, November 30, 2016 Time: 10:00 a.m. – 12:00 p.m.
Location: Hubbard County Emergency Operations Center - 301 Court Ave (Basement of the Law Enforcement Center), Park Rapids, MN 56470

The update of the County's hazard mitigation plan is a requirement by the State of Minnesota Department of Homeland Security & Emergency Management (HSEM) as well as the Federal Emergency Management Agency (FEMA) every 5 years. Our plan is due for an update and our planning is currently underway. The plan addresses the natural hazards that face Hubbard County and will result in mitigation actions for implementation that will reduce or eliminate loss of life or damage to property as a result of natural hazard events. Your input is needed as being part of a County department or city jurisdiction within the county. Additional key stakeholders have also been invited.

Your participation in this hazard mitigation plan is important for several reasons:

1. You will have input on projects we can implement at the county and local level that will help to eliminate or reduce the impacts of future natural disaster events.
2. Participating cities and the County may be eligible to apply for significant federal mitigation funding from FEMA to implement specific projects that meet eligibility requirements.
3. Mitigation planning is a fundamental element in emergency management and local planning that we all must address to keep our communities safe and resilient.
4. FEMA and the State of Minnesota require that local jurisdictions participate in the planning process. Your participation is important so that the County can ensure that we meet this requirement.

During this 2 hour meeting we will discuss the natural hazards that face our county, discuss mitigation actions to include in the plan, and the funding that is available from FEMA for eligible mitigation projects. The meeting will be facilitated by the University of Minnesota – Duluth Geospatial Analysis Center and Bonnie Hundrieser, an emergency management planning consultant working closely with us on this project.

We request that you RSVP to this invitation by November 14th. If you cannot attend, we do ask that you seek to send someone in your stead to represent your county department/city jurisdiction/or other organization.

301 COURT AVENUE PARK RAPIDS, MN 56470 (218) 732-2588 FAX (218) 732-2550
WWW.CO.HUBBARD.MN.US/EMERGENCYMGMT.HTM

HUBBARD COUNTY SHERIFF'S OFFICE-EMERGENCY MANAGEMENT

If you have any questions, please do not hesitate to contact me.

Thank you,

Brian Halbasch

Deputy Sheriff & Emergency Manager

Hubbard Co. Sheriff's Office
301 Court Ave
Park Rapids, MN 56470

218.732.2588 - Direct Line
218.732.2550 - Fax

bhalbasch@co.hubbard.mn.us

Visit us on Facebook – Hubbard Co. Sheriff's Office & Emergency Management

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WWW.CO.HUBBARD.MN.US/EMERGENCYMGMT.HTM

Hubbard County
Multi-Hazard Mitigation Plan Update

Planning Team Meeting

Wednesday, November 30, 2016, 10:00 a.m – 12:00 p.m.
Hubbard County Emergency Operations Center - Park Rapids, MN

Presenting:
- Micaella Penning, University of Minnesota –Duluth, Geospatial Analysis Center
- Bonnie Hundrieser, Hundrieser Consulting LLC (UMD MHMP Project Team)

Agenda:

1. Welcome and Introductions
2. Hubbard County MHMP Plan Update
   - *About the Plan*
   - *Planning Team*
   - *Plan Content*
3. Review of Mitigation Strategies and Developing Mitigation Actions
4. Hazard Mitigation Assistance (HMA) Grants
5. Mitigation Action Working Session

Contact:
For more information on the Hubbard County MHMP Update, please contact:
- Brian Halbasch, Hubbard County Deputy Sheriff & Emergency Manager
  218.732.2588 / bhalbasch@co.hubbard.mn.us
- Bonnie Hundrieser, UMD Project Team Member
  218-343-3468 / hundrieserconsulting@gmail.com

Hubbard County 11/30/16 Planning Team Meeting
Participant Sign-in List (*28 attendees*)

Hubbard County MHMP Update Wednesday November 30, 2016 Planning Team Meeting Participant Sign-in List			
Name	**Jurisdiction/Agency/Organization**	**Title**	**Email**
Billy Krotzer	City of Akeley	City Council	bill.krotzer@leechlakegaming.com
Brad Witkin	MN DNR	Fire Program Forester	brad.witkin@state.mn.us
Cammie Vogel	Beltrami Eclectic Coop	Plant Accountant	cvogel@beltramielectric.com
Dan Carroll	MN DNR	Firewise Specialist	dan.carroll@state.mn.us
Dawn Veit	City of Nevis	Adminstatior	neviscry@eot.com
Don Unthun	City of Nevis	Maint. Superintendent	cunthun@cityelectric.com
Greg Parks	School District 308	Superintendent	gparks@nevis308.org
Harvey Johnson	School District 306	Superintendent	harvey.johnson@laporte.k12.mn.us
Holly Solo	Beltrami Eclectic Coop	Engineering & Operations clerk	hsolo@beltramielectric.com
Jason Andersen	MN Power	DSR	janderson@mnpower.com
Jed Nordin	Hubbard Co. Hwy Dept & Solid Waste	Asst. Engineer	jnordin@co.hubbard.mn.us
Jeff Appel	City of Park Rapids	Police Chief	cappel@co.hubbard.mn.us
Kay Rave	Hubbard Co.	Auditor	krave@co.hubbard.mn.us
Kelly VandenEykel	City of Akeley	Maint. Superintendent	Akeleych1@arvig.com
Lance Bagstad	School District 309	Superintendent	lbagstad@parkrapids.k12.mn.us
Melody Boettcher	City of Akeley	Clerk/Treasurer	Akeleych@arvig.com
Nicole Lalum	PRLA Chamber	President	nicole@parkrapids.com
Nicole Lueth	Hubbard County	Hubbard County Recorder	nlueth@co.hubbard.mn.us
Patricia Gendron	City Of Laporte	Council Member	larrypat@paulbunyan.net
RaeAnn Mayer	Hubbard Co. Public Health	Director	raeannmayer@catholichealth.net
Rich Riewer	Beltrami Eclectic Coop	Engineering manager	rar@beltramielectric.com
Russ Johnsrud	Henreitta Twp.	Vice Chair	rejoh@unitelc.com
Ryan Matchisrud	City of Park Rapids	City Planner	ryan.mathisrud@gmail.com
Sandy Rittgers	Hubbard Co. Auditors Office	Deputy Auditor	srittgers@co.hubbard.mn.us
Tim Shwartz	MN Power	Lead Lineworker	tschwartz@mnpower.com
Tom Vanderwahl	Greater NWEMS	Director	tom.gnwems@midconetwork.com
Vern Massie	Hubbard Co. Commissioner	Board Chair	vernmassie@gmail.com
Brian Halbasch	Hubbard County	Emergency Manager	bhalbasch@co.hubbard.mn.us

Hubbard County – Multi Hazard Mitigation Plan Update
Planning Team Meeting – Wednesday, November 30, 2016

PARTICIPANT SIGN IN SHEET

Name	Agency/Organization	Title	Email
Russ Johnsrud	Henrietta Twp	Vice Chair	rejoh@unitelc.com
Patricia Gendron	City of Laporte	Council Member	larrypat@paulbunyan.net
Vern Massie	Hubbard County	Chair Board	vernmassie@gmail.com
Ryan Mathisrud	City of Park Rapids	City Planner	ryan.mathisrud@gmail.com
Brad Witkin	DNR Forestry	Fire Program Forester	brad.witkin@state.mn.us
Melody Boettcher	City of Akeley	Clerk Treasurer	akeleych@arvig.net
Kelly VandenEykel	City of Akeley	Maint. Supervisor	akeleych1@arvig.net
Tim Schwartz	Minnesota Power	Lead Lineworker	tschwartz@mnpower.com
Nicole Lueth	Hubbard County	County Recorder	nlueth@co.hubbard.mn.us
Jed Nordin	Hubbard County	Assistant Engineer	jnordin@co.hubbard.mn.us
[illegible signature]	Hubbard Co.	Deputy Auditor	srittgers@co.hubbard.mn.us

Hubbard County – Multi Hazard Mitigation Plan Update
Planning Team Meeting – Wednesday, November 30, 2016

PARTICIPANT SIGN IN SHEET

Name	Agency/Organization	Title	Email
Dan Carroll	MN DNR Forestry	Firewise Specialist	dan.carroll@state.mn.us
Billy Krotzer	Akeley City	Council Member	Bill.Krotzer@LeechLakegaming.com
Don Umthun	Nevis	Mayor	
Jason Andersen	MN Power	DSR	jandersen@mnpower.com
Harvey Johnson	Laporte Public School	Supt	harvey.johnson@laporte.k12.mn.us
Kay Rave	Hubbard Cty	A-T	Krave@co.hubbard.mn.us
Dawn Veit	City of Nevis	Administrator	neviscty@eot.com
Jeff Appel	Park Rapids P.D.	Chief of Police	jappel@co.hubbard.mn.us
ReeAnn Mayer	CHI St Joseph's Health	Public Health Director	reeannmayer@catholichealth.net
Rich Riewer	Beltrami Electric	Mgr. of Eng.	rar@beltramielectric.com
Holly Solo	Beltrami Electric	Eng./Operations Clerk	hsolo@beltramielectric.com

Hubbard County – Multi Hazard Mitigation Plan Update
Planning Team Meeting – Wednesday, November 30, 2016

PARTICIPANT SIGN IN SHEET

Name	Agency/Organization	Title	Email
Lance Bagstad	PR #309	Supt	lbagstad@parkrapids.k12.mn.us
Cammi Vogel	Beltrami Electric Coop	Plant Accountant	cvogel@beltramielectric.com
Nicole Lalum	PRLA Chamber	President	nicole@parkrapids.com
TOM VANDERWAL	GNWEMS	Executive Director	tom.gnwems@midconetwork.com
Gregg Parks	Nevis School	Superintendent	gparks@nevis308.org
Brian Halbasch	Hubbard County	Emergency Mgr.	bhalbasch@co.hubbard.mn.us

Hubbard County
Multi-Hazard Mitigation Plan Update

Agenda

1. Welcome and Introductions
2. MHMP Plan Update Overview
   - *About the Plan*
   - *Planning Team*
   - *Plan Content*
3. Review of Mitigation Strategies and Developing Mitigation Actions
4. Hazard Mitigation Assistance (HMA) Grants
5. Mitigation Action Working Session

About your UMD Project Team

SWENSON COLLEGE
OF SCIENCE & ENGINEERING
UNIVERSITY OF MINNESOTA DULUTH
Driven to Discover

- The **Geospatial Analysis Center (GAC) at the University of Minnesota Duluth** was contracted by Minnesota HSEM to facilitate the development of this plan and to conduct spatial analysis, mapping and research for the plan.
- The GAC has worked on 13 MHMP's (2011-2016) and is currently working on 10 county MHMP updates in Minnesota.
- Working with the GAC is **Bonnie Hundrieser**, who specializes in Emergency Management planning.

About the Plan

The Multi-Hazard Mitigation Plan (MHMP) is a requirement of the Federal Disaster Mitigation Act of 2000 (DMA 2000). **The development of a local government plan is required in order to maintain eligibility for certain federal disaster assistance and hazard mitigation funding programs.**

MHMP's must:
- Be updated every 5 years
- Identify hazards and conduct a risk assessment
- Include goals, strategies, and mitigation actions
- Address all jurisdictions (county/cities)
- Engage stakeholder and include public participation

What is Hazard Mitigation?

- HM is sustained action to reduce or eliminate long-term risk to people and their property from hazards.
- HM Planning is the process local government use to identify risks and vulnerabilities associated with natural disasters, and develop long-term strategies for protecting people and property from future hazard events.
- HM planning allows communities to strategically plan for and work together to implement activities that are cost effective, technically feasible and environmentally sound .... **BEFORE** a disaster strikes.
- A dollar spent on mitigation grants leads to an average of $3.65 in avoided post-disaster relief costs and increased federal tax revenues.

The MHMP Planning Team

An MHMP **must** be developed with the participation of jurisdictional (county/city) representatives and other key stakeholders. This group is referred to as the "Planning Team".

The role of the Planning Team is to help:

1. Rank hazards, prioritize mitigation strategies and identify specific projects for implementation.
2. Assist with public outreach and participate in public meetings.
3. Review the draft plan and provide feedback.
4. Facilitate final adoption of the MHMP by local government.

11/29/2016

Content of the MHMP

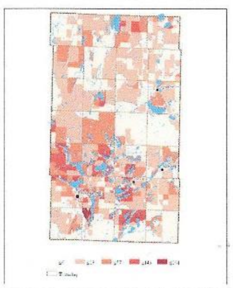
- County physical and social profile
- Asset Inventory
- Hazard Assessment and Vulnerability Analysis
- Capability Assessment
- Mitigation Actions

Hubbard County

This is a multi-jurisdictional plan that covers Hubbard County, including the cities of Akeley, Laporte, Nevis, and Park Rapids.

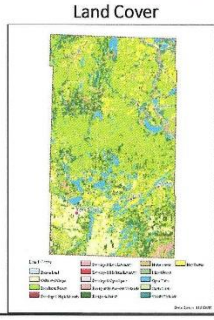
The County and Cities are required to adopt the final plan. Townships are covered under the umbrella of the County.

Hubbard County, 2010 pop.

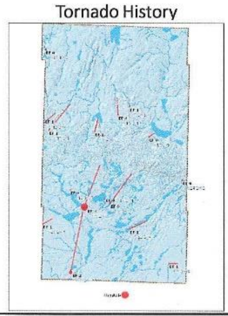


Land Ownership by Agency

Land Cover



Tornado History



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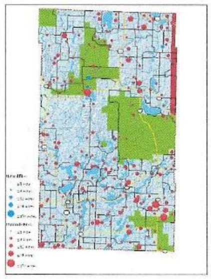
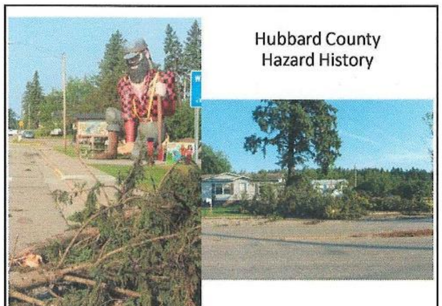
11/29/2016

Wildfire History



Hubbard County Hazard History

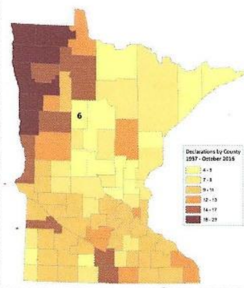


Storm Damage, August 2015

Hubbard County Hazard History

Tornado damage in Hubbard County, June 2008

FEMA-Declared Disasters in Hubbard County



Hubbard County has been part of 6 Disaster Declarations and 2 Emergency Declarations since 1957.

Last Declaration was in 2009 (DR-1830) due to severe storms and flooding.

What Hazards are Addressed?

A Multi-Hazard Mitigation Plan looks primarily at natural disasters, including:

Flooding	Hail	Drought
Dam/Levee Failure	Lightning	Extreme Heat
Wildfire	Winter Storms	Extreme Cold
Windstorms	Erosion	Earthquakes
Tornadoes	Land Subsidence (Sinkholes & Karst)	

Hazard Categories from the Minnesota State Plan

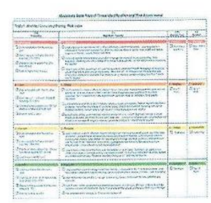
Manmade hazards are not required by the DMA 2000 to be addressed in the MHMP.

How are Hazards Identified & Ranked for a Community?

- Previous Hazard Events
- Historical Data (National Climatic Data Center)
- Previous MHMP's
- Calculated Priority Risk Index (CPRI)

CPRI Risk Factors

PROBABILITY
MAGNITUDE/SEVERITY
WARNING TIME
DURATION



CPRI Assessment for Hazard Risk Ranking

3

11/29/2016

Priorities of Risks Faced by Hubbard County (2016)

The following hazards rankings for Hubbard County are based on the on the past MHMP and THIRA.

They are provided for discussion for inclusion in the 2016 MHMP Update.

Natural Hazards	
Type	Risk Severity
Wildfire	High
Severe Summer Storms (Thunderstorms, Lightning, Hailstorms, Windstorms, Tornadoes)	High
Severe Winter Storms	Moderate
Flash Flood & Riverine Flood	Moderate
Extreme Heat & Extreme Cold	Moderate
Erosion / Land Subsidence (Sinkholes & Karst)	Low
Drought	Low
Dam Failure	Low

Review of Mitigation Capabilities

Multi-Hazard Mitigation Plans require that each jurisdiction **must** document the existing authorities, policies, programs, and resources in place for mitigation.

- What **plans and programs** are in place to support mitigation against that hazard?
- What **program gaps or deficiencies** exist to support mitigation against that hazard?

Mitigation Strategy #1: Local Planning and Regulations

Government, administrative, or regulatory actions or processes that influence the way land and buildings are developed and built. These actions also include public activities to reduce hazard losses.

Examples include planning and zoning, building codes, capital improvement programs, open space preservation, and stormwater management regulations.

Mitigation Strategy #2: Structure and Infrastructure Projects

Actions that involve the construction of structures to reduce the impact of a hazard, such as dams, levees, floodwalls, seawalls, retaining walls, and safe rooms; and actions that involve the modification of existing buildings or structures to protect them from a hazard or remove them from the hazard area.

Examples include acquisition, elevation, structural retrofits, storm shutters, and shatter-resistant glass. Climate Resilient Mitigation Actions include flood diversion and storage and green infrastructure. This mitigation strategy includes road/bridge/culvert projects for local flood mitigation.

Mitigation Strategy #3: Natural Systems Protection

Actions that, in addition to minimizing hazard losses, preserve or restore the functions of natural systems.

These actions include sediment and erosion control, stream corridor restoration, watershed management, forest and vegetation management, wetland restoration and preservation, aquifer storage and recovery and floodplain and stream restoration.

Mitigation Strategy #4: Education and Awareness Programs

Actions to inform and educate citizens, elected officials, and property owners about the hazards and potential ways to mitigate them.

Such actions include outreach projects, real estate disclosure, hazard information centers, and school-age and adult education programs.

4

11/29/2016

Mitigation Strategy #5: Mitigation Preparedness & Response Support

(HSEM added strategy for use in the state)

Actions that protect people and property prior to, during and immediately after a disaster or hazard event. Services include warning systems and emergency response services.

These activities are not typically considered mitigation, but support reduction of the effects of damaging events.

Mitigation Actions Update

So far, the following has been completed in the review of mitigation actions in the last MHMP:

1. What mitigation actions **have been completed** since the last plan was adopted.
2. What mitigation actions **should be deleted**.
3. What mitigation actions **have not been completed or may be an on-going action** to roll-over into the new plan.

Next Steps in Developing Actions

1. Identify specific mitigation strategies and actions at the jurisdictional level based on the community's risk and vulnerabilities.
2. Consider priority, timeframe, who's responsible, and what is in place to support implementation.
3. Consider potential funding and cost/benefit.
4. Engage key partners and stakeholders in providing local expertise and feedback.
5. Provide opportunities for public involvement and feedback in the planning process.

FEMA's Hazard Mitigation Assistance (HMA) Grant Program

The Federal Emergency Management Agency (FEMA) provides grant funding to help communities to implement eligible mitigation projects that will help to reduce or eliminate the impact of future hazard or disaster events.

Not all mitigation actions are eligible for federal HMA funding. Identification of eligible projects for potential HMA funding is a critical part of the MHMP planning process!

Mitigation Grant Eligibility

- Local Units of Government
- All jurisdictions in State
  - City, County, Tribal, private non-profit
- Cost Share - 75%/25%
- **Project must be identified in local HM plan**

Application Process

- Notice of Available Funds
- Application
- Benefit Cost Analysis
- Environmental Historic Preservation
- State and FEMA review
- Award ~ 3 year period of performance
- Closeout

5

11/29/2016

Eligible project types

- **Acquisition/Elevation/Relocation**
  - Substantially or repetitively damaged (flood or erosion)
  - Threat of imminent danger (slope failure)
- **Tornado Safe Rooms** (severe storms/tornadoes)
- **Powerline retrofit/strengthening** (severe storms/ice)
- **Wildfire sprinklers/defensible space/resistant materials**
- **Slope stabilization**
- **Flood risk reduction activities**

New! Climate Resilient Mitigation Actions (CRMA)

FEMA encourages communities to incorporate **climate resilience** in all mitigation actions through use of green infrastructure methods and designing projects to increase ecosystem service benefits

1. Aquifer Storage and Recovery (ASR)
2. Floodwater Diversion, Storage, and Recovery
3. Floodplain and Stream Restoration

6

Mitigation Strategies

For every community, there are a range of mitigation actions that can be taken to work to reduce or eliminate the impacts of future natural hazard and disaster events. Following are the four types of mitigation strategies recommended by the Federal Emergency Management Agency (FEMA) for the organization of mitigation actions:

1) **Local Planning and Regulations:** Government, administrative, or regulatory actions or processes that influence the way land and buildings are developed and built. These actions also include public activities to reduce hazard losses. Examples include planning and zoning, building codes, capital improvement programs, open space preservation, and stormwater management regulations.

2) **Structure and Infrastructure Projects:** Actions that involve the construction of structures to reduce the impact of a hazard, such as dams, levees, floodwalls, seawalls, retaining walls, and safe rooms; and actions that involve the modification of existing buildings or structures to protect them from a hazard or remove them from the hazard area. Examples include acquisition, elevation, structural retrofits, storm shutters, and shatter-resistant glass. CRMA include flood diversion and storage (FDS) and green infrastructure.

3) **Natural Systems Protection:** Actions that, in addition to minimizing hazard losses, preserve or restore the functions of natural systems. These actions include sediment and erosion control, stream corridor restoration, watershed management, forest and vegetation management, and wetland restoration and preservation. Aquifer storage and recovery (ASR) and floodplain and stream restoration (FSR).

4) **Education and Awareness Programs:** Actions to inform and educate citizens, elected officials, and property owners about the hazards and potential ways to mitigate them. Such actions include outreach projects, real estate disclosure, hazard information centers, and school-age and adult education programs.

A fifth strategy was added by Minnesota HSEM for use in the state:

5) **Mitigation Preparedness and Response Support:** Actions that protect people and property prior to, during and immediately after a disaster or hazard event. Services include warning systems and emergency response services.. These activities are typically not considered mitigation, but support reduction of the effects of damaging events.

MITIGATION ACTIONS WORKSHEET

HAZARD: ______________________________ / **JURISDICTION**: ______________________________

Mitigation Strategy:

- ☐ Local Planning & Regulations
- ☐ Structure and Infrastructure Projects
- ☐ Natural Systems Protection
- ☐ Education and Awareness
- ☐ Mitigation Preparedness and Response Support

Mitigation Action:

HAZARD: ______________________________ / **JURISDICTION**: ______________________________

Mitigation Strategy:

- ☐ Local Planning & Regulations
- ☐ Structure and Infrastructure Projects
- ☐ Natural Systems Protection
- ☐ Education and Awareness
- ☐ Mitigation Preparedness and Response Support

Mitigation Action:

HAZARD: ______________________________ / **JURISDICTION**: ______________________________

Mitigation Strategy:

- ☐ Local Planning & Regulations
- ☐ Structure and Infrastructure Projects
- ☐ Natural Systems Protection
- ☐ Education and Awareness
- ☐ Mitigation Preparedness and Response Support

Mitigation Action:

HAZARD: ______________________________ / **JURISDICTION**: ______________________________

Mitigation Strategy:

- ☐ Local Planning & Regulations
- ☐ Structure and Infrastructure Projects
- ☐ Natural Systems Protection
- ☐ Education and Awareness
- ☐ Mitigation Preparedness and Response Support

Mitigation Action:

HAZARD: ______________________________ / **JURISDICTION**: ______________________________

Mitigation Strategy:

- ☐ Local Planning & Regulations
- ☐ Structure and Infrastructure Projects
- ☐ Natural Systems Protection
- ☐ Education and Awareness
- ☐ Mitigation Preparedness and Response Support

Mitigation Action:

HAZARD: ______________________________ / **JURISDICTION**: ______________________________

Mitigation Strategy:

- ☐ Local Planning & Regulations
- ☐ Structure and Infrastructure Projects
- ☐ Natural Systems Protection
- ☐ Education and Awareness
- ☐ Mitigation Preparedness and Response Support

Mitigation Action:

Hubbard County

11-30-16 MHMP Planning Meeting

Mitigation Ideas Worksheet Notes




Following are notes from the Hubbard County 11-30-16 MHMP Planning Team Meeting "Mitigation Action Working Session" part of the meeting. Participants broke into discussion groups and used Mitigation Action Worksheets to brainstorm new mitigation ideas for their jurisdiction.
Participants used the worksheets to develop mitigation action ideas, identifying:

- Hazard – what natural hazard does the action focus on?
- Jurisdiction – what jurisdiction is for? (City/Township/County)
- Strategy –which mitigation strategy does this action relate to?
- Action – what is a description of the mitigation action?

The mitigation actions identified during this session will be used to support development of new mitigation actions to include in the Hubbard County MHMP 2016 Update.

Hubbard County

Hazard:	All Hazards
Strategy:	Education and Awareness
Action:	Increase public and media (TV/Radio/Newspaper) awareness of where to go in an emergency and what they would need to bring; how to care for pets. Post emergency preparedness information on main page of County website.

Hazard:	Extreme Heat
Strategy:	Education and Awareness
Action:	Educate public on increasing heat and how to provide cooling and/or health mitigation techniques.

Hazard:	Severe Winter/Summer Storms (Power Outage)
Strategy:	Mitigation Preparedness and Response Support
Action:	Install generators throughout the campus of Hubbard County facilities that are capable of supplying full electricity (shops, offices, fuel pumps, internet) to power all operations.

Hazard:	Flooding (Hubbard County Highway Dept)
Strategy:	Structure and Infrastructure Projects
Action:	Conduct full county culvert/drainage review including townships and cities.

City of Laporte

Contact: Patricia Gendron, Council Member

Hazard: Severe Winter/Summer Storms
Strategy: Mitigation Preparedness and Response Support
Action: Upgrade the city's warning siren. The current siren is ancient, and the system is not tied to the county system.

Hazard: Severe Winter/Summer Storms
Strategy: Mitigation Preparedness and Response Support
Action: Investigate obtaining a generator to provide power for our municipal water system. This is a critical water system for our school and resident population.

Hazard: Severe Winter/Summer Storms
Strategy: Mitigation Preparedness and Response Support
Action: Investigate burying of powerlines with Beltrami Electric.

Hazard: Severe Summer Storms (Tornado/High Winds)
Strategy: Structure and Infrastructure Projects
Action: Construct a community safe room for area residents. 40% of current housing does not have access to basements – older homes are from the 1900's – 1940's. Also evaluate the school for gym retrofit for saferoom for student population.

City of Nevis

Contact: Dawn Veit, City Administrator

Hazard: Severe Winter/Summer Storms (Back-up power)
Strategy: Mitigation Preparedness & Emergency Response
Action: The City is in need of generator back-up power in the event of a power outage to be able to continue government operations at City Hall.

Hazard: Flooding
Strategy: Structure and Infrastructure Projects
Action: The City currently has no storm sewer and run-off. We have one home that has had flooding because of the run off. Evaluate property acquisition (buy-out and removal of the home).

Hazard: Severe Summer Storms (Tornado/High Winds)
Strategy: Structure and Infrastructure Projects
Action: Evaluate construction of a safe room at the school that can be used for students as well as the community in the event of severe wind events where students/staff/residents can take shelter.

City of Park Rapids
Contact: Ryan Matchisrud, City Planner

Hazard: Flooding
Strategy: Structure and Infrastructure Projects
Action: To mitigate against heavy rain events, replace culverts and develop stormwater infiltration basins in the east side of Park Rapids.

Hazard: Dam Failure
Strategy: Structure and Infrastructure Projects
Action: Study dam condition and repair/replace as needed.

Hazard: Severe Winter/Summer Storms
Strategy: Structure and Infrastructure Projects
Action: Bury overhead powerlines.

Hazard: Severe Summer Storms (Tornado/High Winds)
Strategy: Structure and Infrastructure Projects
Action: Construct a safe room for downtown residents.

Hazard: All-Hazards (Power Failure)
Strategy: Structure and Infrastructure Projects
Action: Dams around lift stations (main lift). Lifts near river.

Hazard: All-Hazards (Power Failure)
Strategy: Mitigation Preparedness and Response Support
Action: Vulnerable population – back up power

City of Akeley
Contact: Melody Boettcher - Clerk/Treasurer; Billy Krotzer – City Council, and Kelly VandenEykel - Maint. Superintendent

Hazard: Wildfire
Strategy: Structure and Infrastructure Projects
Action: Install dry hydrants or underground tanks to serve the East Hubbard County Fire District.

Hazard: Wildfire
Strategy: Structure and Infrastructure Projects
Action: Create defensible space on the south side of the City (create break on city property) to assist with preventing wildfires coming into the city.

Hazard: Severe Summer Storms (Tornado/High Winds)
Strategy: Mitigation Preparedness and Response / Structure and Infrastructure Projects
Action: Construct a community safe room for high wind events, or evaluate retrofit of existing community center or school. Put an evacuation plan in place for the campground and homes without basements.

Hazard: Severe Winter/Summer Storms (No Radio Service)
Strategy: Mitigation Preparedness and Response Support
Action: Install a radio repeater on the water tower to serve all emergency services in the East Hubbard County Fire District.

Hazard: All Hazards
Strategy: Local Planning & Regulations
Action: Address hazard mitigation in the comprehensive plan for the city.

Hazard: Severe Summer/Winter Storms
Strategy: Structure and Infrastructure Projects
Action: Install a generator to protect water source for the city.

Hazard: All Hazards
Strategy: Education & Awareness
Action: Increase public awareness of what to do in case of emergencies and provide lists for personal preparedness.

Henreitta Township
Contact: Russ Johnsrud, Vice Chair

Hazard: Flooding
Strategy: Structure and Infrastructure Projects
Action: Replace culverts on 209th and 219th Avenues in Hellcamp Creek due to potential failure and low ratings as to efficiency by DNR waters.

Hazard: Wildfire
Strategy: Mitigation Preparedness and Response Support
Action: Do some landscaping on the township access at the end of Deer Drive to allow for a pumper to locate at or near Long Lake to provide a water sources for fire suppression on the east slide of the lake

School District 308 (Nevis Public School)
Contact: Greg Parks, Superintendent

Hazard: Severe Winter/Summer Storm
Strategy: Mitigation Preparedness and Response Support
Action: Install generator to support 24/7 electrical service to provide sheltering for students, staff and community.

School District 306 (Laporte Public School)
Contact: Harvey Johnson, Superintendent

Hazard: Severe Summer Storm (Tornado/High Winds)
Strategy: Structure and Infrastructure

Action: Retrofit the current school gym to be a community safe room for students, staff, and the community.

Hazard: Severe Winter/Summer Storm
Strategy: Mitigation Preparedness and Response Support
Action: Install a generator to provide back-up power for school use as Red Cross sheltering site.

Hazard: All Hazards / Severe Summer Storm (Tornado/High Winds)
Strategy: Mitigation Preparedness and Response Support
Action: Install a new warning siren in the City of Laporte.

Hazard: Wildfire
Strategy: Education & Awareness
Action: Teach homeowners about creation of defensible space to assist with fire suppression near homes.

School District 309 (Park Rapids Public School)
Contact: Lance Bagstad, Superintendent

Hazard: Severe Winter/Summer Storms (back up power)
Strategy: Mitigation Preparedness and Response Support
Action: Install generators back-up power for the Park Rapids Area Schools (High School and Frank White Education Center/District Office).

Hazard: All Hazards
Strategy: Education & Awareness
Action: Use Community Education to provide personal preparedness education programming and provide preparedness materials/packages.

Hazard: Severe Summer Storms (Tornado/High Winds)
Strategy: Structure and Infrastructure Projects
Action: Construct safe rooms to be attached to the schools to provide for students, staff, and community members during tornado or high wind events.

Minnesota Power
Contact: Tim Schwartz, Lead Electrical Line Worker

Hazard: Severe Summer/Winter Storms
Strategy: Structure and Infrastructure Projects
Action: Conduct power pole & lines inspection and replacements in Park Rapids, Nevis, and Akeley.

Beltrami Electric Coop
Contact: Rich Riewer, Engineering Manager

Hazard:	Loss of Power to the City of Laporte
Strategy:	Structure and Infrastructure Projects
Action:	Convert overhead lines to underground that serve the City of Laporte. We serve the Laporte School, water & sewer, fire department, and other businesses.

Hubbard County Multi-Hazard Mitigation Plan Update
MHMP Planning Team Meeting #2
3/23/17 Hubbard County EOC, 10:00 a.m. – 12:00 p.m.

Meeting Summary:

On Thursday, March 23, 2017 members of the Hubbard County Multi-Hazard Mitigation (MHMP) Planning Team convened to conduct a review and discussion of the draft mitigation action charts developed for Hubbard County and the city jurisdictions participating in the plan. The meeting was facilitated by Bonnie Hundrieser, a member of the University of Minnesota – Duluth Geospatial Analysis Center (GAC) planning team that is leading the update of the Hubbard County MHMP. A total of 29 people attended the meeting, representing Hubbard County departments, city / township personnel and other key stakeholders (schools and electric coops).

The opening Power Point presentation covered a re-cap of key points regarding the MHMP plan update (purpose of the plan, who the plan covers, who needs to participate, what hazards are addressed and how they are ranked, mitigation strategies to be used, and what projects may be eligible for FEMA HMA funding). The presentation also provided a detailed breakdown of the Mitigation Action Chart to explain the relevance of each column to be addressed in the chart.

Following the presentation, the planning team participated in a facilitated discussion of the County's draft master Mitigation Action Chart which included mitigation actions for the county as well as for the cities participating in the plan. Mitigation actions included in the chart were identified through the County's review of past mitigation actions (actions to continue), as well as new mitigation actions that were identified during the first planning team meeting "Mitigation Actions Ideas Working Session." County and city representatives discussed each of the mitigation actions, adding comments, corrections, and identifying where cities would be listed to implement particular items in their respective jurisdictions.

Following the Mitigation Action Chart review, the group was informed that they would be emailed drafts of the mitigation action charts for county and city level review and input. The group also discussed the upcoming process of posting the final draft of the plan for the public to review and comment on, and then submission of the draft plan to HSEM and FEMA for final review and approval.

Attached to this meeting summary are the following documentation items:

- Hubbard County HMP Mtg. #2 Email Invite
- 3-23-17 Meeting Agenda
- 3-23-17 Meeting Sign-in Sheets
- 3-23-17 Power Point Presentation Slides

Meeting Summary Prepared By:
Bonnie Hundrieser, UMD Project Team, (Hundrieser Consulting LLC)

From: Halbasch Brian
To: mvik@unitelc.com; pworks@unitelc.com; pamikesh@hotmail.com; neviscty@eot.com; akeleymn1@arvig.net; akeleych@arvig.net; laportecitytreasurer@hotmail.com; laportecityclerk@yahoo.com; dolsonawski@co.hubbard.mn.us; "Herb McCormick"; "Jed Nordin"; "Carlstrom, Mark A (DNR)"; Mike.Lichter@state.mn.us; "Carroll, Dan (DNR)"
Cc: "Bonnie Hundrieser"
Subject: 2nd Planning Meeting - Hubbard County Multi-Hazard Mitigation Plan
Date: Monday, February 6, 2017 9:26:48 AM
Attachments: 23Mar17 Meeting.docx

Greetings all,

As our planning & teamwork continues, we are looking at hold our 2nd meeting to keep the process going. If you were at the 1st meeting, & found it informational & you have needs that could be covered finanincally later in time, we request you you or someone from your dept., agency, or organization attends the meeting.

Your presence is requested at the **2nd Planning Team meeting** for the update of the **Hubbard County Multi-Hazard Mitigation Plan** on:

Date: **Thursday, March 23rd**

Time: **10:00 a.m. – 12:00 p.m.**

Location: **Hubbard County Emergency Operations Center - 301 Court Ave (Basement of the Law Enforcement Center) in Park Rapids, MN 56470)**

During this meeting we will be reviewing the draft mitigation action chart to be included in the plan. Your feedback will be needed to identify & discuss the mitigation actions that will be listed for your city/county department/agency/or organization. This is a State and Federal requirement we must cover for the plan to be approved.

The meeting will be facilitated by Bonnie Hundrieser, an emergency management planning consultant working closely with us on this project. Bonnie will send me the draft mitigation chart(s) to email out for your review prior to the meeting.

Please RSVP your attendance to me via reply to this email. If you cannot attend, please seek to send someone else in your stead as your representation at this meeting is important.

If you have any questions, please do not hesitate to contact me.

Thank you,

Brian Halbasch
Deputy Sheriff & Emergency Manager

Hubbard Co. Sheriff's Office
301 Court Ave
Park Rapids, MN 56470

218.732.2588 - Direct Line
218.732.2550 - Fax

bhalbasch@co.hubbard.mn.us

Visit us on Facebook – Hubbard Co. Sheriff's Office & Emergency Management

Hubbard County

Multi-Hazard Mitigation Plan (MHMP) Update

Planning Team Meeting #2

Thursday, March 23rd, 10:00 a.m – 12:00 p.m.

Hubbard County Emergency Operations Center - Park Rapids, MN

Presenting:
Bonnie Hundrieser, UMD MHMP Project Team Member

Agenda:

1. **Welcome & Introductions**

2. **MHMP - Recap of Key Points**

3. **Mitigation Action Chart (MAC) Presentation**
   Explanation of all columns of the MAC and content to be identified.

4. **MAC Working Session: Group Review & Feedback**
   Group review and feedback of the Hubbard County Master Mitigation Action Chart. This will include identification of specific mitigation actions for jurisdictions / review and feedback of jurisdictional MAC's.

5. **Discussion of Next Steps**
   - Completion of all Mitigation Action Charts
   - Planning Team review of draft MHMP
   - Public news release, posting draft MHMP, and public meetings

Contact:
For more information on the Hubbard County MHMP Update, please contact:

- Brian Halbasch, Hubbard County Deputy Sheriff & Emergency Manager
  218.732.2588 / bhalbasch@co.hubbard.mn.us
- Bonnie Hundrieser, UMD Project Team Member
  218-343-3468 / hundrieserconsulting@gmail.com

Hubbard County 3/23/17 Planning Team Meeting
Participant Sign-in List (*29 attendees*)

Hubbard County MHMP Update Planning Team Meeting #2, Thursday, March 23, 2017, 10:00 a.m. - 12:00 p.m. Participant Sign-in List			
Name	**Agency/Organization**	**Title**	**Email**
Cammie Vogel	Beltrami Eclectic Coop	Maintenance Superintendent	cvogel@beltramielectric.com
Carl Ghesing	MN Power	Supervisor	cthesing@mnpower.com
Corey Neitzert	MN Power	EM/Security Specialist	cneitzert@allete.com
Dan Carroll	MN DNR	Firewise Coordinator	dan.carroll@state.mn.us
Dan Edstrom	Nevis Township	Supervisor	None
Dennis Bergeron	Farden Twp.	Supervisor	None
Harvey Johnson	Laporte Schools	Superintendent	harvey.johnson@laporte.k12.mn.us
Heather Winkleblack	MN HSEM	Regional Program Coordinator	Heather.Winkleblack@state.mn.us
Herb McCormick	Hubbard Co. Hwy	Maintenance Superintendent	hmccormick@co.hubbard.mn.us
Holly Solo	Beltrami Electric Coop	Engineering/Operations Clerk	hsolo@beltramielectric.com
Irene Weis	Lake Emma Twp.	Supervisor	None
Jeff Appel	City of Park Rapids	Police Chief	cappel@co.hubbard.mn.us
Jimmy Hansen	City of Akeley - PD	Police Chief	jimmyz802@yahoo.com
Kay Rave	Hubbard Co. Auditor	County Auditor/Treasurer	krave@co.hubbard.mn.us
Kelly VandenEykel	City of Akeley	Superintendent	Akeleych1@arvig.com
Kerry Swenson	City of Nevis	Resident	Unknown
Lance Bagstad	School District 309	Superintendent	lbagstad@parkrapids.k12.mn.us
Mark "Chip" Lohmeier	Hubbard County NR Management	Land Commissioner	mlohmeier@co.hubbard.mn.us
Marlee Morrison	Park Rapids Public Health	Public Health Director	MarleeMorrison@catholichealth.net
Norm Leistikow	Clay Township	Supervisor	None
Pat Gendron	City of Laporte	City Councilor	larrypat@paulbunyan.net
Randy Jansen	Nevis School ISD 308	Facilities Manager	rjansen@nevis308.org
Russ Johnsrud	Henrietta Twp.	Vice Chairman	rejoh@unitelc.com
Ryan Matchisrud	City of Park Rapids	City Planner	ryan.mathisrud@gmail.com
Scott Parks	Hubbard Co. Sheriff	Chief Deputy	sparks@co.hubbard.mn.us
Spring Bungert	City of Akeley	Deputy Clerk	akeleymn@arvig.net
Tim Schwartz	MN Power	Line Worker	tschwartz@mnpower.com
Tom Walz	Nevis Township	Supervisor	nwstwalz@arvig.net
Vern Massie	Hubbard County Board	Co. Commissioner, Chair	vernmassie@gmail.com
Brian Halbasch	Hubbard County Sheriff's Office	EM Director	bhalbasch@co.hubbard.mn.us

Hubbard County – Multi Hazard Mitigation Plan Update
Planning Team Meeting #2
Thursday, March 23, 2017, 10:00 a.m. – 12:00 p.m.

PARTICIPANT SIGN IN SHEET

Name	Agency/Organization	Title	Email
1. Herb McCormick	Highway Dept	Maintenance	HMcCormick@co.hubbard.mn.us
2. Randy Jansen	Nevis ISD 308	Facilities Manager	~~rjansen~~ rjansen@nevis.k12.mn.us
3. Corey Neitzert	Allete / MN Power	EM/Security Specialist	cneitzert@allete.com
4. Russell Johnsrud	Henrietta Township	Vice chairman	rejoh@unitelc.com
5. Heather Winkelblack	HSEM	RPC	heather.winkelblack@state.mn.us
6. Norm Leistikow	Clay Township		norm.leistikow@gmail.com
7. Vern Massie	Hubbard Cty Board	Chair	
8. Tim Schwartz	MN Power	Line worker	TSchwartz@mnpower.com
9. Carl Thesing	MN Power	Supervisor	CThesing@MNPower.com
10. Dan Carroll	MN DNR	Firewise	dan.carroll@state.mn.us
11. Jeff Appel	Park Rapids P.D.	Chief	jappel@co.hubbard.mn.us

Name	Agency/Organization	Title	Email
12. DENNIS Bergeron	GARDEN TOWNSHIP	Sup	
13. Patricia Gendron	City of Laporte	Council Person	larrypate paulbunyan.net
14. Kelly Vande Erd	City of Akeley	SUP	
~~15.~~ Tom Walz	Nevis Twnship	Sup.	
16. DAN EDSTROM	NEVIS TWSP	SUP.	
17. Mark Lohmeier	Hubbard Co NRM	Land Comm.	
18. Scott Parks	HCSO	CHIEF DEPUTY	
19. Kay Rave	HCo. Aud-Treas	HC-Aud-Treas.	
20. Spring Bangert	City of Akeley	Deputy Clerk	
21. Jimmy Hansen	City of Akeley	Police Chief	
22. Marlee Morris	St Josephs/Hubbard County	Public Health Director	[illegible] catholichealth.net
23. Harvey Johnson	Laporte Public School	Supt.	
24. Fran Weis	Lake Emma Twp.	Supervisor	[illegible] Arvig.net
25. James Bryant	PR Schools	Supt.	
26. Cammie Voge	Beltrami Electric	Plant Accountant	[illegible] beltramielectric.com

Name	Agency/Organization	Title	Email
27. Holly Solo	Beltrami Electric Co-Op	Engineering / Operations Clerk	hsolo@beltramielectric.com
28. Kerry Swenson	City of Nevis Nevis Township	Resident	kjswenson60@Hotmail.com
29. RYAN MATHISRUD	CITY OF PARK RAPIDS	CITY PLANNER	RMATHISRUD@ARVIG.NET
30.			
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4/5/2017

Hubbard County
Multi-Hazard Mitigation Plan Update

Agenda

1. Welcome and Introductions
2. MHMP – Recap of Key Points
3. Mitigation Action Chart (MAC) Overview
4. MAC Working Session
5. Overview of Next Steps

MHMP - Recap of Key Points

- Hubbard County is updating its **Multi-Hazard Mitigation Plan (MHMP)** to fulfill a state & federal requirement. The plan must be updated every 5 years.
- The purpose of the plan is to identify & assess natural hazards that pose risk to the County and it's jurisdictions and **develop long-term strategies and mitigation actions** that will help to reduce or eliminate the impact of future hazard or disaster events.

Who the Plan Covers

This is a multi-jurisdictional plan that covers Hubbard County, including the cities of Akeley, Laporte, Nevis, and Park Rapids.

The County and Cities are required to adopt the final plan. Townships are covered under the umbrella of the County.

Who Needs to Participate

Participation of **key county/city stakeholders** is **required**:

- County departments
- City Governments
- Townships
- Schools
- Electric Coops

Opportunities for **public participation** is also **required**:

- News Releases
- Facebook, Twitter, Web
- Draft Plan Review
- 2 Public Meetings

What Hazards are Addressed

The MHMP addresses the prioritized natural hazards that pose risk to Hubbard County.

Priorities of Risks faced by Hubbard County	
Type	Risk Severity
Wildfire	High
Severe Summer Storms (Thunderstorms, Lightning, Hailstorms, Windstorms, Tornadoes)	High
Severe Winter Storms	Moderate
Flash Flood & Riverine Flood	Moderate
Extreme Heat & Extreme Cold	Moderate
Erosion / Land Subsidence (Sinkholes & Karst)	Low
Drought	Low
Dam Failure	Low

1

4/5/2017

What Mitigation Strategies Will Be Used to Develop Mitigation Actions

1. Local Planning & Regulations
2. Structure and Infrastructure Projects
3. Natural Systems Protection
4. Education and Awareness Programs
5. Mitigation Preparedness and Response Support

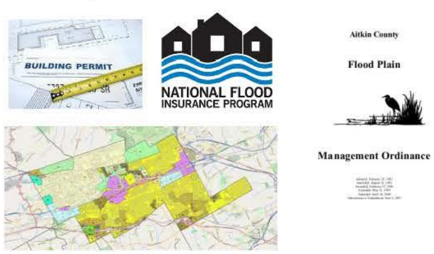
These strategies help communities to identify and implement <u>long-term risk-reduction activities</u> that will protect people and property from future hazard events.

Mitigation Strategy #1: Local Planning and Regulations

Government, administrative, or regulatory actions or processes that influence the way land and buildings are developed and built. These actions also include public activities to reduce hazard losses.

Examples include planning and zoning, building codes, capital improvement programs, open space preservation, and stormwater management regulations.

Local Planning & Regulations Examples



Acquisition of Flood Prone Properties and Conversion to Open Space

Mitigation Strategy #2: Structure and Infrastructure Projects

Actions that involve the construction of structures to reduce the impact of a hazard, such as dams, levees, floodwalls, seawalls, retaining walls, and safe rooms; and actions that involve the modification of existing buildings or structures to protect them from a hazard or remove them from the hazard area.

Examples include acquisition, elevation, structural retrofits, storm shutters, and shatter-resistant glass. Climate Resilient Mitigation Actions include flood diversion and storage and green infrastructure. This mitigation strategy includes road/bridge/culvert projects for local flood mitigation.

Community Safe Rooms

Wadena-Deer Creek School, June 17 2010

2

4/5/2017

August, 2012 – 1st school based tornado safe room (Wadena)

Green Infrastructure Projects

Power Line retrofit/burial

Mitigation Strategy #3:
Natural Systems Protection

Actions that, in addition to minimizing hazard losses, preserve or restore the functions of natural systems.

These actions include sediment and erosion control, stream corridor restoration, watershed management, forest and vegetation management, wetland restoration and preservation, aquifer storage and recovery and floodplain and stream restoration.

Natural Systems Protection examples

Mitigation Strategy #4:
Education and Awareness Programs

Actions to inform and educate citizens, elected officials, and property owners about the hazards and potential ways to mitigate them.

Such actions include outreach projects, real estate disclosure, hazard information centers, and school-age and adult education programs.

3

Education & Awareness Program Examples

Mitigation Strategy #5:
Mitigation Preparedness & Response Support

(HSEM added strategy for use in the state)

Actions that protect people and property prior to, during and immediately after a disaster or hazard event. Services include warning systems and emergency response services.

These activities are not typically considered mitigation, but support reduction of the effects of damaging events.

Mitigation Preparedness & Response Support examples

What Projects May be Eligible for FEMA HMA Funding

- Acquisition/Elevation/Relocation
  - Substantially or repetitively damaged (flood or erosion)
  - Threat of imminent danger (slope failure)
- Safe Room Construction/Retrofit
- Powerline strengthening/burying
- Wildfire Mitigation Activities
- Slope stabilization
- Flood risk reduction activities
- Additional Projects difficult to conduct a standard BCA

The Federal Emergency Management Agency (FEMA) provides grant funding to help communities to implement eligible mitigation projects that will help to reduce or eliminate the impact of future hazard or disaster events.

Projects must be indicated in the local mitigation plan.

Mitigation Action Chart Overview

- The MHMP results in a "Mitigation Action Chart" that outlines the specific mitigation measures that the County and each jurisdiction will seek to implement over the course of the next 5 years.
- Mitigation actions are drawn from the previous plan, identified capability gaps and feedback from jurisdictions on mitigation measures important to their community.
- **Every city will have it's own separate mitigation action chart.** School districts and townships (as a group) may also have separate charts.

"Hazard" column

#	Hazard	Mitigation Strategy	Mitigation Action	Status	Priority Ranking	Time-frame	Jurisdictions	Responsibility	County Comments on Planning Mechanisms for Implementation	Possible Funding

Each mitigation action **must** address a particular natural hazard.

"All-Hazard" mitigation actions relate to more than one type of natural hazard or may relate to other categories of technological and man-made threats/hazards.

4/5/2017

"Mitigation Strategy" column

Each mitigation action **must** identify which type(s) of mitigation strategies relate to the mitigation measure:

1. Local Planning & Regulations
2. Structure and Infrastructure Projects
3. Natural Systems Protection
4. Education and Awareness Programs
5. Mitigation Preparedness and Response Support

"Mitigation Action" column

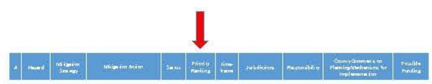
Each mitigation action **must** include a description of what effort is to be implemented. Mitigation actions should be written to be clear, concise, and action-oriented (start with a verb). The action should seek to help reduce or eliminate long-term risk to life safety and property damage from future natural hazard events.

"Status" column

Each mitigation action **must** include an indication of current status. They are:

- *"In-Progress"* – a defined mitigation project or effort that is currently underway.
- *"On-going"* – a mitigation project or effort that continues without end.
- *"New"* – a new mitigation project or effort identified to include in the new plan.

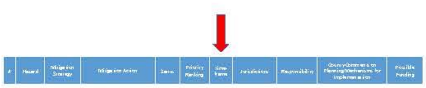
"Priority Ranking" column



Each mitigation action **must** be ranked as being of High, Moderate, or Low priority to help provide guidance in implementation. Priority rankings should be based on key considerations, such as:

- Known effectiveness of the mitigation measure.
- Local capability to implement the mitigation measure.
- Cost effectiveness of the mitigation measure. (Benefit vs. Cost)
- Longevity of the mitigation measure.
- Community support for the mitigation measure.
- Eligibility for federal grants (FEMA HMA Grant Program).

"Timeline" column



Each mitigation action **must** indicate a timeframe for implementation.

- For mitigation actions that are "In-Progress" or "New" a known timeframe may be identified (i.e., 2017-2018).
- Some mitigation actions may be identified to be implemented within the 5 year period of the MHMP (2017-2021).

"Jurisdictions" column

Important: During the MAC working session you will be asked to indicate where your jurisdiction should be included.

Each mitigation action **must** identify what jurisdictions will seek to implement that action.

- Some mitigation actions will be specific to only the County for implementation.
- Other mitigation actions are those that all cities (or only some cities) would agree are important to include in their own jurisdictions.
- Schools and townships may be identified as well.

5

4/5/2017

"Responsibility" column

#	Hazard	Mitigation Strategy	Mitigation Action	Status	Priority Ranking	Time-frame	Jurisdictions	Responsibility	County Comments on Planning Mechanisms for Implementation	Possible Funding

Each mitigation action **must** include a brief identification of what agency or department or specific personnel has lead responsibility to implement that project or effort, such as:

- "County/City Emergency Management"
- "Planning and Zoning Department"
- "County Highway Department"
- "SWCD in collaboration with MN DNR"
- "Public Works Department"

"Comments on Planning Mechanisms for Implementation" column

#	Hazard	Mitigation Strategy	Mitigation Action	Status	Priority Ranking	Time-frame	Jurisdictions	Responsibility	County Comments on Planning Mechanisms for Implementation	Possible Funding

Each mitigation action **must** include a description of how the mitigation measure will be incorporated into existing or future planning or project efforts by the jurisdiction provided. For example:

- Reference related plans or programs that relate to the mitigation measure (such as comprehensive land use plans, Capital Improvement Programs, public outreach and education programs)
- Reference existing partnerships that relate to the mitigation measure (such as "This is a standing effort of the County/City emergency management program in partnership with Public Health."

"Possible Funding" column

#	Hazard	Mitigation Strategy	Mitigation Action	Status	Priority Ranking	Time-frame	Jurisdictions	Responsibility	County Comments on Planning Mechanisms for Implementation	Possible Funding

Each mitigation action **must** include identification of what possible funding will be used to implement the mitigation action:

- In most cases, "County/City" budget generally implies staff time to work on the mitigation measure or internal funding to purchase equipment, etc.
- When applicable, other funding such as outside grants, state or federal funding that may support the mitigation measure should be identified.
- It is particularly important to identify mitigation measures that may be eligible for FEMA HMA grant funding.

MAC Working Session

- We will go through the Master "MAC" together.
- We will discuss any changes or additions.
- Jurisdictions will confirm where they want to be listed for local implementation efforts.
- Cities without a draft MAC still have the opportunity to identify mitigation measures specific to their community.

Following this meeting I will send out the new draft jurisdictional mitigation charts for review and completion.

Overview of Next Steps

- Draft MACs will be submitted to UMD.
- The draft MHMP will be completed.
- The draft plan will be posted for planning team and public review & comment. (News Release)
- We will hold 2 public meetings in different parts of the county (on the same day).
- Any resulting revisions will be made, and the plan will be submitted to HSEM and FEMA for review and approval.

6

Appendix F
Public Outreach &
Engagement Documentation

HUBBARD COUNTY SHERIFF'S OFFICE-EMERGENCY MANAGEMENT

HUBBARD COUNTY NEWS RELEASE

February 10, 2017

Public Feedback and Participation Invited for Hubbard County 2017 Multi-Hazard Mitigation Plan Update

The Hubbard County Office of Emergency Management is currently working with the University of Minnesota Duluth – Geospatial Analysis Center (GAC) to prepare an update of the County's "Multi-Hazard Mitigation Plan" (MHMP). The plan is a requirement of the Federal Disaster Mitigation Act of 2000 (DMA 2000) and must be updated every five years in order to maintain eligibility for certain federal disaster assistance and hazard mitigation funding programs.

Development of the plan is under direction of the County's Emergency Manager in cooperation with a planning team of representatives from County departments, local municipalities (city and township), school districts, and other key stakeholders such as utility providers. The planning team is responsible to provide feedback required for the plan update, including the ranking of hazards and identification of strategic, cost-effective mitigation activities that may reduce future losses for the County and individual jurisdictions. Some mitigation activities may be eligible for future FEMA Hazard Mitigation Assistance (HMA) grant funding, such as: localized flood reduction measures, property acquisition and relocation/conversion to open space, infrastructure retrofits, wildfire mitigation, and safe room construction or retrofits to provide immediate life-safety protection for people vulnerable to tornado and severe wind events.

About the Plan

The Hubbard County MHMP is a multi-jurisdictional plan that covers Hubbard County, including the cities of Akeley, Laporte, Nevis, and Park Rapids. The Hubbard County MHMP also incorporates the concerns and needs of townships, school districts, and other stakeholders participating in the plan.

Hubbard County is vulnerable to a variety of potential natural disasters, which threaten the loss of life and property in the county. Hazards such as tornadoes, flooding, wildfires, blizzards, straight-line winds, ice storms, and droughts have the potential for inflicting vast economic loss and personal hardship.

According to Hubbard County Emergency Management Director, Brian Halbasch, "Hazard mitigation planning is a central part of our emergency management program. Understanding the natural hazards that can cause serious impact to our communities and taking action to reduce or eliminate the impact of future disasters makes us more resilient. Hazard mitigation helps us to break the cycle of damage and repair caused by

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HUBBARD COUNTY SHERIFF'S OFFICE-EMERGENCY MANAGEMENT

things like flooding, ice storms, and severe wind events that can damage property, stress economies, and threaten life safety in our county."

Examples of hazard mitigation include actions such as improvement of roads and culverts that experience repetitive flooding; construction of safe rooms at campgrounds, parks, trailer parks or schools to protect lives in the event of tornados or severe wind events; burying powerlines that may fail due to heavy snow, ice or wind storms; ensuring timely emergency communication to the public through warning sirens and mass notification systems, and conducting public awareness and education campaigns to help people to be prepared to take safe action before, during, or following a hazard event.

Public Feedback and Participation is Encouraged
As part of the planning process, gathering input from the public is an important and required step. Hubbard County seeks to gather feedback from residents and businesses from across the County to incorporate into the plan:

- What are the natural hazards you feel pose the greatest risk to your community?
- Have you experienced a previous disaster event?
- What concerns do you have, and what sorts of mitigation actions or projects do you feel would help to reduce the damages of potential future events for your personal property, your community, or the County as a whole?

The public is strongly encouraged to submit your comments, concerns, or questions regarding natural disasters and potential mitigation actions to be included into the plan update process. Please submit your feedback to Hubbard County Emergency Manager, Brian Halbasch: (218) 732-2588 or bhalbasch@co.hubbard.mn.us. Comments may also be submitted via the Hubbard County Sheriff's Facebook page where this article is posted.

The public will have a continued opportunity to participate in the MHMP update in the coming months. A draft of the plan will be posted on the County website for public review, which will be followed by two public meetings held within different parts of the county. Future news releases will be shared with the media to notify the public of these opportunities.

Contact
Brian Halbasch
Hubbard County Emergency Management Director
Phone: (218) 732-2588
Email: bhalbasch@co.hubbard.mn.us

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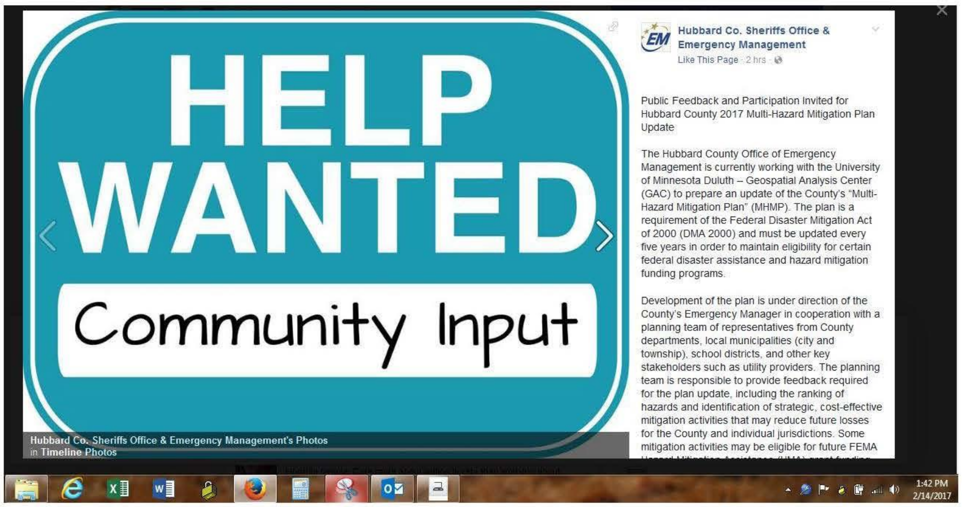
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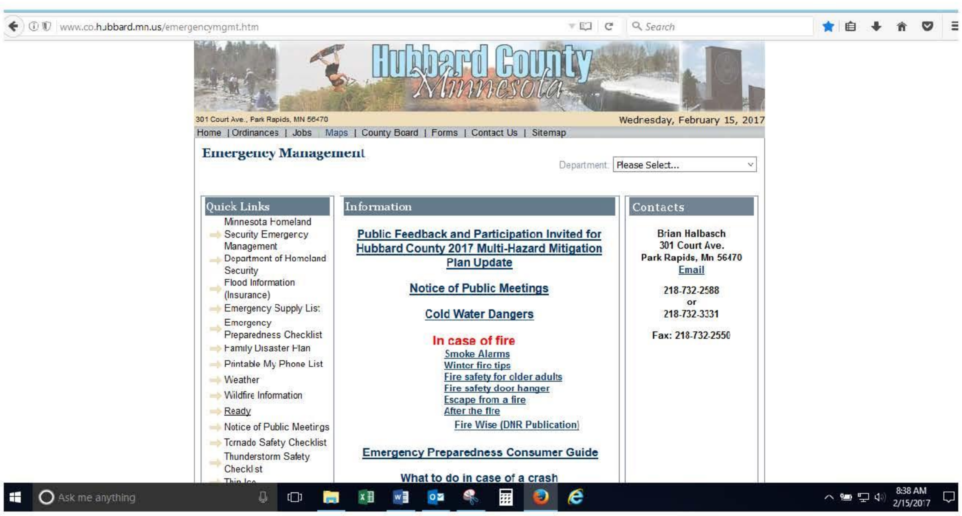
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Weather
Wildfire Information
Ready
Notice of Public Meetings
Tornado Safety Checklist
Thunderstorm Safety Checklist
Information
Public Feedback and Participation Invited for Hubbard County 2017 Multi-Hazard Mitigation Plan Update
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Cold Water Dangers
In case of fire
Smoke Alarms
Winter fire tips
Fire safety for older adults
Fire safety door hanger
Escape from a fire
After the fire
Fire Wise (DNR Publication)
Emergency Preparedness Consumer Guide
What to do in case of a crash
Contacts
Brian Halbasch
301 Court Ave.
Park Rapids, Mn 56470
Email
218-732-2588
or
218-732-3331
Fax: 218-732-2550
Ask me anything
8:38 AM
2/15/2017

Emergency Management update is provided to county board

By Nicole Vik
nvik@parkrapidsenterprise.com

Editor's note: A portion of this story was inadvertently omitted from the Saturday, Feb. 25 edition of the Enterprise and we are running the full story here in its entirety.

Deputy Brian Halbasch provided the Hubbard County Commissioners with an Emergency Management update at the regular board meeting last week.

He explained that he had attended the 2017 Governor's Conference, which is a requirement to receive grants.

Halbasch added that he had just submitted all of the paperwork for the 2016 Emergency Management Performance Grant (EMPG) and that the county will be getting a full reimbursement in the amount of $21,555.

Halbasch requested that the commissioners encourage their township supervisors to attend the upcoming Hazard Mitigation Plan meeting on March 23, which will also be attended by several other county department heads.

"It's a good idea to speak to your township supervisors and get them involved with it or to send somebody," he said. "If they've got a township road, as an example, that has a bad culvert on it that floods every year, this is a good time to get the plan on paper so that if FEMA funding does become available we can apply for it."

According to Halbasch, Camp Wilderness is in the process of constructing two safe rooms.

The camp received a $1 million grant from the Federal Emergency Management Agency, which will cover 75 percent of the costs. The Boy Scouts and Camp Wilderness will cover the rest.

Hubbard County is acting as a fiscal agent for the camp which is necessary in order for them to receive the grant.

"Come spring thaw, we'll be working with Camp Wilderness on getting their safe rooms up to speed. They've got everything logged off. They're just waiting to break ground now after the frost is out. They're right on track," Halbasch said. "We're still acting as a fiscal agent for them and the grant and everything is going smoothly."

In conclusion, Halbasch discussed some spring flooding information with the commissioners.

"I'm not expecting any major flooding for our county," he said. "I know with the amount of snow they have further north they've started to put some feelers out there to see if any EM will be available to come help out other counties in need if they get flooding."

Halbasch told the commissioners he would bring them further information if he received any calls requesting additional help from Hubbard County.

In other business County Commissioners:

- ► Approved final payment for paving on County Roads 81, 109 and 111 to Tri-City Paving, Inc. out of Little Falls in the amount of $21,258.99.
- ► Approved a quote in the amount of $17,500 from Swanston Equipment Co. from Fargo for a WRT Model PT13 Pull-Type Pneumatic Tire Roller.
- ► Adopted a resolution granting the authority to the county engineer to post signage for 2017 spring road restrictions when needed to prevent damage to roadways.
- ► Approved a quote from Frontier Precision Inc. out of Maple Grove in the amount of $6,134 for two Trimble Juno 5B Enhanced GPS units with Terrasync Professional Software for the Natural Resources Management (NRM) Office.
- ► Approved the low quote of $2,656 from Jerry Eischens Cabinetry Inc. from Park Rapids for the construction of office furniture to be used by a new hire in the NRM Office.
- ► Granted permission to advertise for seasonal help as needed for two positions in the NRM Office and one position in the Land Survey Office.
- ► Approved the contract for on-call solid waste engineering services with Terracon Consultants Inc.
- ► Accepted the retirement of Judy Johnson, effective March 31, and approved the Social Services Director to fill that vacant position.
- ► Approved a five-year audit agreement with Hoffman, Philipp & Knutson, PLLC.
- ► Approved the GIS Supervisor position description, which will be sent to the Classification Committee for grading.
- ► Approved the Mantrap Township AIS 2017 watercraft inspection hours agreement.

The next regular Hubbard County Board meeting is scheduled for 9 a.m. at the Hubbard County Government Center on Tuesday, March 7.

Hubbard County seeks public participation for Multi-Hazard Mitigation Plan Update

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Public feedback and participation is encouraged

As part of the planning process, gathering input from the public is an important and required step. Hubbard County seeks to gather feedback from residents and businesses from across the county to incorporate into the plan:

- ▶ What are the natural hazards you feel pose the greatest risk to your community?
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Park Rapids Enterprise Newspaper Article, February 25, 2017

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• What are the natural hazards you feel pose the greatest risk to your community?
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• What concerns do you have, and what sorts of mitigation actions or projects do you feel would help to reduce the damages of potential future events for your personal property, your community, or the County as a whole?

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Contact
Deputy Halbasch
Hubbard County Emergency Management Director
Phone: (218) 732-2588
Email: bhalbasch@co.hubbard.mn.us

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Appendix G
Mitigation Actions by Jurisdiction

Table G - 1. Mitigation Actions Identified for Implementation by the City of Akeley (2017-2021) (from Hubbard County Master Mitigation Action Chart)

#	Hazard	Mitigation Strategy	City of Akeley Mitigation Action	Status	Priority Ranking	Time-frame	Jurisdictions	Responsibility	County Comments on Planning Mechanisms for Implementation	Possible Funding
1	All-Hazards	Education & Awareness Programs	Work to ensure that all Hubbard County residents are aware of and sign-up for the CodeRed emergency notification system.	Ongoing	High	2017-2021	Hubbard County **Akeley**, Laporte, Nevis, Park Rapids	HC Emergency Management in coordination with local city and township government	This is a standing effort of the Hubbard County Emergency Management Program. Sign-up for CodeRed is available on the HC Emergency Management website and reminders are also put out via Facebook. Cities also work to promote sign-up by local residents by sharing information on city websites and announcements at public meetings.	County Budget
12	Severe Winter & Summer Storms	Education & Awareness Programs	Educate the public on the dangers of severe winter and summer storms to help protect life safety during severe storm events (i.e., stay away from downed power lines, winter driving hazards, etc.)	Ongoing	High	2017-2021	Hubbard County, **Akeley**, Laporte, Nevis, Park Rapids	HC Emergency Management in coordination with local cities	Hubbard County participates annually in the National Weather Service's Winter Hazard Awareness Week (November) and Severe Weather Awareness Week (April). Cities are encouraged to further share information within their jurisdictions (i.e., website, FB posting).	County/City Budgets

#	Hazard	Mitigation Strategy	City of Akeley Mitigation Action	Status	Priority Ranking	Time-frame	Jurisdictions	Responsibility	County Comments on Planning Mechanisms for Implementation	Possible Funding
13	Severe Winter & Summer Storms	Education & Awareness Programs	Promote individual and family emergency preparedness for safety and survival during periods of severe winter and spring/summer weather.	Ongoing	High	2017-2021	Hubbard County, **Akeley**, Laporte, Nevis, Park Rapids, and School Districts #306, #308, #309	HC Emergency Management in coordination with local cities	Hubbard County Emergency Management provides regular education and awareness information to the public through local newspapers, radio, and the Hubbard County Sheriff's Office FB page. Individuals and families are encouraged to prepare 3-days of food and water, to have a NOAA weather radio, to have generator power, to create a go-kit in the event of evacuation, and to be ready to care for pets.	County/City Budgets
14	Severe Winter & Summer Storms	Mitigation Preparedness and Response Support	Identify critical facilities or infrastructure that do not have backup power in the event of a major power outage resulting from severe winter or summer storms. *(Critical facilities may include: police/fire departments, EOC, health care facilities, water & sewer treatment facilities, and other facilities deemed as critical, i.e. public schools and sheltering facilities).*	New	High	2017-2021	Hubbard County, **Akeley**, Laporte, Nevis, Park Rapids, and School Districts #306, #308, #309	HC Emergency Management, City Admin & Public Works	Hubbard County, all cities, and school districts have identified a need for backup power to support continuity of operations in critical facilities and functioning of critical infrastructure. Hubbard County will identify where generators are needed throughout the campus of County facilities that are capable of supplying full electricity (shops, offices, fuel pumps, internet) to power all operations.	County/City budgets

#	Hazard	Mitigation Strategy	City of Akeley Mitigation Action	Status	Priority Ranking	Time-frame	Jurisdictions	Responsibility	County Comments on Planning Mechanisms for Implementation	Possible Funding
15	Severe Winter & Summer Storms	Mitigation Preparedness and Response Support	Purchase and install generator hook-ups and encourage local generator purchases for identified critical facilities that require backup power.	New	High	2017-2021	Hubbard County, **Akeley**, Laporte, Nevis, Park Rapids and School Districts #306, #308, #309	HC Emergency Management, City Admin & Public Works	Hubbard County, local city governments, and schools will evaluate feasibility to purchase and install generators for key facilities. The county and cities will consider the availability of MN DNR generators that may be deployed if needed during power outages before making generator purchases.	County/City Budgets **Possible FEMA HMA 5% Initiative Funding for Generators**
16	Severe Winter & Summer Storms	Structure and Infrastructure Projects	Work with MN Power, Beltrami Electric Coop, and Itasca-Mantrap to identify and address mitigation measures for above ground power lines that are susceptible to damage from severe storms in order to reduce potential power outages.	New	High	2017-2021	Hubbard County, **Akeley**, Laporte, Nevis, Park Rapids	MN Power, Beltrami Electric Coop, and Itasca-Mantrap in cooperation with local cities	Hubbard County and local jurisdictions will be a planning partner to MN Power, Beltrami Electric, and Itasca-Mantrap for potential projects. MN Power has identified a need to conduct power pole & lines inspection and replacements in Park Rapids, Nevis, and Akeley. Beltrami Electric Coop has identified a need to convert overhead lines to underground that serve the City of Laporte (Laporte School, water & sewer, fire department, and other businesses).	Electric Coop Funding, **Possible FEMA HMA funding for Infrastructure Retrofit**
17	Severe Winter & Summer Storms	Education & Awareness Programs	Work with local utility companies to educate citizens on the importance of keeping trees and branches clear of power lines.	Ongoing	High	2017-2021	Hubbard County **Akeley**, Laporte, Nevis, Park Rapids	MN Power, Beltrami Electric Coop, and Itasca-Mantrap in cooperation with local cities	This is an Ongoing effort of the utility companies and city public works departments as they seek to protect local power lines from failure from falling trees during storms.	City/Electric Coop funding

#	Hazard	Mitigation Strategy	City of Akeley Mitigation Action	Status	Priority Ranking	Time-frame	Jurisdictions	Responsibility	County Comments on Planning Mechanisms for Implementation	Possible Funding
21	Severe Summer Storms	Mitigation Preparedness & Response Support	Provide/participate in the National Weather Service's SkyWarn "Storm Spotter" training in various parts of the County for first responders and community residents.	Ongoing	High	2017-2021	Hubbard County, **Akeley**, Laporte, Nevis, Park Rapids	HC Emergency Management in collaboration with local cities and NWS	Hubbard County Emergency Management coordinates with the National Weather Service to provide SkyWarn training every 2 years. (Annual training is not provided due to low participation). Handouts & information is available from the EM office upon request at any time of year.	County Budget and NWS funding to deliver program
22	Severe Summer Storms	Structure and Infrastructure Projects	Identify areas where vulnerable populations are susceptible to tornadoes or extreme wind events (i.e. schools, campgrounds, or mobile home parks) and evaluate for construction or retrofit of safe rooms or storm shelters.	Ongoing	High	2017-2021	Hubbard County **Akeley**, Laporte, Nevis, Park Rapids, All Townships and School Districts #306, #308, #309	HC Emergency Management, HC Public Health, in coordination with local cities	Hubbard County Emergency Management will work with the cities, townships, and school districts to identify areas of concern and assess potential for construction or retrofit of community safe rooms. HC Emergency Management will work any school or jurisdiction seeking to develop a grant application to FEMA for a safe room project.	County/City budgets
23	Severe Summer Storms	Structure and Infrastructure Projects	Implement construction or retrofit projects for safe rooms or storm shelters in identified vulnerable locations.	Ongoing	High	2017-2021	Hubbard County **Akeley**, Laporte, Nevis, Park Rapids, All Townships and School Districts #306, #308, #309	HC Emergency Management, HC Public Health, in coordination with local cities	Any community safe room projects that the County is involved in will be part of the Hubbard County Emergency Management program. HC Emergency Management will work with any school or jurisdiction seeking to develop an application to FEMA for a safe room project.	County/City budgets **Possible FEMA HMA funding for Safe Room Construction**

#	Hazard	Mitigation Strategy	City of Akeley Mitigation Action	Status	Priority Ranking	Time-frame	Jurisdictions	Responsibility	County Comments on Planning Mechanisms for Implementation	Possible Funding
25	Flooding	Local Planning & Regulations	Identify, map, and prioritize roads, bridges, and culverts in the County that are impacted by flood events, and prioritize required mitigation measures to reduce future flood damages.	Ongoing	High	2017-2021	Hubbard County **Akeley**, Laporte, Nevis, Park Rapids, and All Townships	HC Highway Dept, HC Public Works, HC GIS, HC SWCD, and local city and township public works	This is part of the Hubbard County Road Plan. Hubbard County Highway Dept. maintains an annual inventory of prioritized improvement projects for culverts, roads, and bridges throughout the county. Cities and townships also each work to identify and prioritize transportation improvement projects to address areas that suffer from flood damages. Hubbard County Highway Department provides engineering & construction to Townships for all roads projects.	County, and Township Budgets
27	Flooding	Structure and Infrastructure Projects	Implement prioritized flood mitigation measures for roads, bridges, culverts, and drainage systems.	New	High	2017-2021	Hubbard County, **Akeley**, Laporte, Nevis, Park Rapids and All Townships	HC Highway, HC Public Works, HC GIS, HC SWCD, and local city and township public works	Hubbard County notes that CSAH 49 Graceson Ave. S, has a storm drain that will need to be looked at and repaired. The City of Akeley will need help to mitigate this problem area before the street falls in. Costs to repair this may be some were in the $30,000-$50,000 bracket.	County/City Budgets **Possible FEMA HMA funding for Localized Flood Reduction Projects**
31	Flooding	Structure and Infrastructure Projects	Identify locations of storm water mains throughout the county and assess the need to construct and replace existing storm water mains to handle high water rain events.	Ongoing	High	2017-2021	Hubbard County **City of Akeley**	HC Highway Dept., HC Public Works, HC GIS, HC SWCD and City of Akeley public works dept.	Throughout the County this action is completed by Hubbard Co. Highway Department, Public Works & MN DOT. More will be completed as fund sources & bonding occur, and the problem areas are scheduled to be completed on the Hubbard Co. Road Plan.	County Budget, possible MPCA/PFA funding. Possible **FEMA HMA Funding for Localized Flood Reduction Projects.**

#	Hazard	Mitigation Strategy	City of Akeley Mitigation Action	Status	Priority Ranking	Time-frame	Jurisdictions	Responsibility	County Comments on Planning Mechanisms for Implementation	Possible Funding
32	Flooding	Local Planning & Regulations	Ensure that storm water management plans and improvement projects are identified and prioritized to address flood management for future high-impact rain events throughout the County. (i.e., conduct hydro-modeling, GIS map of where culverts must be re-sized).	Ongoing	New	2017-2021	Hubbard County, **Akeley**, Laporte, Nevis, Park Rapids	HC Highway Dept., HC Public Works, HC GIS, HC SWCD and local city public works depts., MNDNR, MPCA	In the identification of projects, the County will evaluate what projects may be eligible to apply for the MPCA's annual Clean Water Project Priority List (PPL). Projects must be on the PPL to be eligible to apply for low interest CWRF loans and other state grants and loans from the Minnesota Public Facilities Authority (PFA). PFA financing is for investments in municipal infrastructure which result in improvements in water quality. Funding is not available for privately owned infrastructure.	County/ SWCD budgets. Possible MPCA/PFA grant funding
33	Flooding	Structure and Infrastructure Projects	Implement storm water management structure and infrastructure projects to assist with flood management throughout the County.	Ongoing	New	2017-2021	Hubbard County, **Akeley**, Laporte, Nevis, Park Rapids	HC Highway Dept., HC Public Works, HC GIS, HC SWCD and local city public works depts., MNDNR, MPCA	Same as above. The County will seek outside grant funding where possible to fund eligible stormwater improvement projects, such as through MPCA and FEMA HMA funding for flood reduction projects.	County/ SWCD budgets. Possible MPCA/PFA grant funding. **Possible FEMA HMA funding for Localized Flood Reduction Projects**

#	Hazard	Mitigation Strategy	City of Akeley Mitigation Action	Status	Priority Ranking	Time-frame	Jurisdictions	Responsibility	County Comments on Planning Mechanisms for Implementation	Possible Funding
34	Flooding	Local Planning & Regulations	Ensure that wellhead protection plans are in place to address flooding that may lead to contaminated drinking water.	New	High	2017-2021	Hubbard County, **Akeley**, Laporte, Nevis, Park Rapids and All Townships	HC Public Works, HC SWCD, MN Dept of Health and local city public works depts.	Hubbard County SWCD is working with municipalities to develop strategies to protect drinking water supply management areas and implement practices with landowners in those areas that will protect and improve water quality. Cities work directly with the Minnesota Department of Health on the development or update of wellhead protection plans to ensure they meet State requirements. The SWCD is a partner that sits in on the meetings with MDH and cities and can offer suggestions.	MDH grant funding for wellhead improvement projects

Table G - 2. Additional Mitigation Actions Identified for the City of Akeley for Specific Implementation by the City

#	Hazard	Mitigation Strategy	City of Akeley Mitigation Action	Status	Priority Ranking	Time-frame	Jurisdictions	Responsibility	City Comments on Planning Mechanisms for Implementation	Possible Funding
1	All Hazards	Local Planning & Regulations	Address hazard mitigation in the comprehensive plan for the city.	New	High	2017-2021	City of Akeley	City Clerk & City Council	The City maintains a local comprehensive plan. The City will work to incorporate local mitigation measures into future comp plan updates.	
2	All Hazards	Education & Awareness Programs	Increase public awareness of what to do in case of emergencies and provide lists for personal preparedness.	Ongoing	High	2017-2021	City of Akeley	City Emergency Manager in coordination with HC EM	The City of Akeley will use the City website to promote information that Hubbard County Emergency Management posts on emergency preparedness in order to pass this information along to our residents.	County/City Budget
3	Wildfire	Structure and Infrastructure Projects	Install dry hydrants or underground tanks to serve the East Hubbard County Fire District.	New	High	2017-2021	City of Akeley	City Public Works in cooperation with MNDNR	The City of Akeley will coordinate with HC Emergency Management and MN DNR.	Possible MN DNR Firewise grant
4	Wildfire	Natural Systems Protection	Create defensible space on the south side of the City (create break on city property) to assist with preventing wildfires coming into the city.	New	High	2017-2021	City of Akeley	City Public Works in cooperation with MNDNR	The City of Akeley will coordinate with HC Emergency Management and MN DNR.	Possible MN DNR Firewise grant
5	Severe Winter & Summer Storms	Mitigation Preparedness & Response Support	Install a radio repeater on the water tower to serve all emergency services in the East Hubbard County Fire District.	New	High	2017-2021	City of Akeley	City Public Works in cooperation with HC Emergency Management	The City of Akeley will coordinate with HC Emergency Management.	County Budget
6	Severe Winter & Summer Storms	Mitigation Preparedness & Response Support	Install a generator to protect water source for the city.	New	High	2017-2021	City of Akeley	City Public Works	City of Akeley Admin and public works will seek to obtain funding to install this generator.	City Budget
7	Severe Winter & Summer Storms	Structure and Infrastructure Projects	Work with MN Power to conduct power pole & lines inspection and replacements in the City of Akeley.	New	High	2017-2021	City of Akeley	City Public Works in cooperation with MN Power	The City of Akeley will coordinate with MN Power on this effort. MN Power is the utility provider for the City.	MN Power, Possible FEMA HMA funding for Structural Retrofit (Powerlines)

#	Hazard	Mitigation Strategy	City of Akeley Mitigation Action	Status	Priority Ranking	Time-frame	Jurisdictions	Responsibility	City Comments on Planning Mechanisms for Implementation	Possible Funding
8	Severe Summer Storms	Local Planning & Regulations	Put an evacuation plan in place for the campground and homes without basements.	New	High	2017-2021	City of Akeley	City Admin in coordination with HC Emergency Management	The City of Akeley will work with the Hubbard County Emergency Management Director to determine how to best plan for evacuation and temporary sheltering of campers and vulnerable residents during tornadoes or high wind events.	City/County Budget
9	Severe Summer Storms	Mitigation Preparedness & Response / Structure and Infrastructure Projects	Construct a community safe room for high wind events, or evaluate retrofit of existing community center or school.	New	High	2017-2021	City of Akeley	City Admin in coordination with HC Emergency Management	The City of Akeley will work with the Hubbard County Emergency Management Director to evaluate the potential for a safe room project, as well as application to FEMA for a safe room project if deemed feasible.	Possible FEMA HMA Funding for Safe Room Construction
10	Flooding	Local Planning & Regulations	Develop a prioritized stormwater management plan that evaluates the City's stormwater management system for integrity, connectivity, and size.	New	High	2017-2021	City of Akeley	City Public Works	This will be planning effort of City Public Works. The City will confer with Hubbard County on development of the plan to address stormwater management issues in the City.	City Budget

Table G - 3. Mitigation Actions Identified for Implementation for the City of Laporte (2017-2021) (From Hubbard County Master Mitigation Action Chart)

#	Hazard	Mitigation Strategy	City of Laporte Mitigation Action	Status	Priority Ranking	Time-frame	Jurisdictions	Responsibility	County/City Comments on Planning Mechanisms for Implementation	Possible Funding
1	All-Hazards	Education & Awareness Programs	Work to ensure that all Hubbard County residents are aware of and sign-up for the CodeRed emergency notification system.	Ongoing	High	2017-2021	Hubbard County Akeley, **Laporte**, Nevis, Park Rapids	HC Emergency Management in coordination with local city and township government	This is a standing effort of the Hubbard County Emergency Management Program. Sign-up for CodeRed is available on the HC Emergency Management website and reminders are also put out via Facebook. Cities also work to promote sign-up by local residents by sharing information on city websites and announcements at public meetings.	County Budget
12	Severe Winter & Summer Storms	Education & Awareness Programs	Educate the public on the dangers of severe winter and summer storms to help protect life safety during severe storm events (i.e., stay away from downed power lines, winter driving hazards, etc.)	Ongoing	High	2017-2021	Hubbard County, Akeley, **Laporte**, Nevis, Park Rapids	HC Emergency Management in coordination with local cities	Hubbard County participates annually in the National Weather Service's Winter Hazard Awareness Week (November) and Severe Weather Awareness Week (April). Cities are encouraged to further share information within their jurisdictions (i.e., website, FB posting).	County/City Budgets
13	Severe Winter & Summer Storms	Education & Awareness Programs	Promote individual and family emergency preparedness for safety and survival during periods of severe winter and spring/summer weather.	Ongoing	High	2017-2021	Hubbard County, Akeley, **Laporte**, Nevis, Park Rapids, and School Districts #306, #308, #309	HC Emergency Management in coordination with local cities	Hubbard County Emergency Management provides regular education and awareness information to the public through local newspapers, radio, and the Hubbard County Sheriff's Office FB page. Individuals and families are encouraged to prepare 3-days of food and water, to have a NOAA weather radio, to have generator power, to create a go-kit in the event of evacuation, and to be ready to care for pets.	County/City Budgets

#	Hazard	Mitigation Strategy	City of Laporte Mitigation Action	Status	Priority Ranking	Time-frame	Jurisdictions	Responsibility	County/City Comments on Planning Mechanisms for Implementation	Possible Funding
14	Severe Winter & Summer Storms	Mitigation Preparedness and Response Support	Identify critical facilities or infrastructure that do not have backup power in the event of a major power outage resulting from severe winter or summer storms. *(Critical facilities may include: police/fire departments, EOC, health care facilities, water & sewer treatment facilities, and other facilities deemed as critical, i.e. public schools and sheltering facilities).*	New	High	2017-2021	Hubbard County, Akeley, **Laporte**, Nevis, Park Rapids, and School Districts #306, #308, #309	HC Emergency Management, City Admin & Public Works	Hubbard County, all cities, and school districts have identified a need for backup power to support continuity of operations in critical facilities and functioning of critical infrastructure. Hubbard County will identify where generators are needed throughout the campus of County facilities that are capable of supplying full electricity (shops, offices, fuel pumps, internet) to power all operations.	County/City budgets
15	Severe Winter & Summer Storms	Mitigation Preparedness and Response Support	Purchase and install generator hook-ups and encourage local generator purchases for identified critical facilities that require backup power.	New	High	2017-2021	Hubbard County, Akeley, **Laporte**, Nevis, Park Rapids and School Districts #306, #308, #309	HC Emergency Management, City Admin & Public Works	Hubbard County, local city governments, and schools will evaluate feasibility to purchase and install generators for key facilities. The county and cities will consider the availability of MN DNR generators that may be deployed if needed during power outages before making generator purchases.	County/City Budgets **Possible FEMA HMA 5% Initiative Funding for Generators**

#	Hazard	Mitigation Strategy	City of Laporte Mitigation Action	Status	Priority Ranking	Time-frame	Jurisdictions	Responsibility	County/City Comments on Planning Mechanisms for Implementation	Possible Funding
16	Severe Winter & Summer Storms	Structure and Infrastructure Projects	Work with MN Power, Beltrami Electric Coop, and Itasca-Mantrap to identify and address mitigation measures for above ground power lines that are susceptible to damage from severe storms in order to reduce potential power outages.	New	High	2017-2021	Hubbard County, Akeley, **Laporte**, Nevis, Park Rapids	MN Power, Beltrami Electric Coop, and Itasca-Mantrap in cooperation with local cities	Hubbard County and local jurisdictions will be a planning partner to MN Power, Beltrami Electric, and Itasca-Mantrap for potential projects. MN Power has identified a need to conduct power pole & lines inspection and replacements in Park Rapids, Nevis, and Akeley. Beltrami Electric Coop has identified a need to convert overhead lines to underground that serve the City of Laporte (Laporte School, water & sewer, fire department, and other businesses).	Electric Coop Funding, **Possible FEMA HMA funding for Infrastructure Retrofit**
17	Severe Winter & Summer Storms	Education & Awareness Programs	Work with local utility companies to educate citizens on the importance of keeping trees and branches clear of power lines.	Ongoing	High	2017-2021	Hubbard County Akeley, **Laporte**, Nevis, Park Rapids	MN Power, Beltrami Electric Coop, and Itasca-Mantrap in cooperation with local cities	This is an Ongoing effort of the utility companies and city public works departments as they seek to protect local power lines from failure from falling trees during storms.	City/Electric Coop funding
19	Severe Summer Storms	Mitigation Preparedness and Response Support	Identify areas where warning sirens are needed or require upgrade throughout Hubbard County for severe wind storms and Civil Defense warning. Ensure sirens can be remotely activated by Hubbard County.	New	High	2017-2021	Hubbard County, **City of Laporte**	HC Emergency Management in cooperation with the City of Laporte	Additional audible alarms are installed throughout Hubbard Co. to increase warning capacity when purchasing funds are available. All new installations are controlled by the Hubbard Co. Sheriff's Office Dispatch Center. HC Emergency Management will work with the City of Laporte to evaluate and upgrade the city's warning siren. The current siren is outdated is not tied to the county system.	County/City Budgets **Possible FEMA HMA 5% Initiative**

#	Hazard	Mitigation Strategy	City of Laporte Mitigation Action	Status	Priority Ranking	Time-frame	Jurisdictions	Responsibility	County/City Comments on Planning Mechanisms for Implementation	Possible Funding
20	Severe Summer Storms	Mitigation Preparedness & Response Support / Education & Awareness Programs	Test warning sirens throughout the County on a regular basis and educate local residents, schools, and businesses on what to do when they are activated for high winds or tornado.	Ongoing	High	2017-2021	Hubbard County, **City of Laporte**	HC Emergency Management, and City of Laporte	Hubbard County conducts remote testing of all warning sirens on the 1st Wednesday of each month, except for the siren in the City of Laporte, which is not currently tied to the County system. Each year HC Emergency Management works to engage local schools and businesses to participate in the Tornado Drill during Severe Weather Awareness Week.	County Budget
21	Severe Summer Storms	Mitigation Preparedness & Response Support	Provide/participate in the National Weather Service's SkyWarn "Storm Spotter" training in various parts of the County for first responders and community residents.	Ongoing	High	2017-2021	Hubbard County, Akeley, **Laporte**, Nevis, Park Rapids	HC Emergency Management in collaboration with local cities and NWS	Management coordinates with the National Weather Service to provide SkyWarn training every 2 years. (Annual training is not provided due to low participation). Handouts & information is available from the EM office upon request at any time of year.	County Budget and NWS funding to deliver program
22	Severe Summer Storms	Structure and Infrastructure Projects	Identify areas where vulnerable populations are susceptible to tornadoes or extreme wind events (i.e. schools, campgrounds, or mobile home parks) and evaluate for construction or retrofit of safe rooms or storm shelters.	Ongoing	High	2017-2021	Hubbard County Akeley, **Laporte**, Nevis, Park Rapids, All Townships and School Districts #306, #308, #309	HC Emergency Management, HC Public Health, in coordination with local cities	Management will work with the cities, townships, and school districts to identify areas of concern and assess potential for construction or retrofit of community safe rooms. HC Emergency Management will work any school or jurisdiction seeking to develop a grant application to FEMA for a safe room project.	County/City budgets

#	Hazard	Mitigation Strategy	City of Laporte Mitigation Action	Status	Priority Ranking	Time-frame	Jurisdictions	Responsibility	County/City Comments on Planning Mechanisms for Implementation	Possible Funding
23	Severe Summer Storms	Structure and Infrastructure Projects	Implement construction or retrofit projects for safe rooms or storm shelters in identified vulnerable locations.	Ongoing	High	2017-2021	Hubbard County Akeley, **Laporte**, Nevis, Park Rapids, All Townships and School Districts #306, #308, #309	HC Emergency Management, HC Public Health, in coordination with local cities	Any community safe room projects that the County is involved in will be part of the Hubbard County Emergency Management program. HC Emergency Management will work with any school or jurisdiction seeking to develop an application to FEMA for a safe room project.	County/City budgets **Possible FEMA HMA funding for Safe Room Construction**
25	Flooding	Local Planning & Regulations	Identify, map, and prioritize roads, bridges, and culverts in the County that are impacted by flood events, and prioritize required mitigation measures to reduce future flood damages.	Ongoing	High	2017-2021	Hubbard County Akeley, **Laporte**, Nevis, Park Rapids, and All Townships	HC Highway Dept, HC Public Works, HC GIS, HC SWCD, and local city and township public works	This is part of the Hubbard County Road Plan. Hubbard County Highway Dept. maintains an annual inventory of prioritized improvement projects for culverts, roads, and bridges throughout the county. Cities and townships also each work to identify and prioritize transportation improvement projects to address areas that suffer from flood damages. Hubbard County Highway Department provides engineering & construction to Townships for all roads projects.	County, and Township Budgets
27	Flooding	Structure and Infrastructure Projects	Implement prioritized flood mitigation measures for roads, bridges, culverts, and drainage systems.	New	High	2017-2021	Hubbard County, Akeley, **Laporte**, Nevis, Park Rapids and All Townships	HC Highway, HC Public Works, HC GIS, HC SWCD, and local city and township public works	The City of Laporte has no bridges within city limits, but will work with other entities to implement prioritized flood mitigations for roads, culverts & drainage systems.	County/City Budgets **Possible FEMA HMA funding for Localized Flood Reduction Projects**

#	Hazard	Mitigation Strategy	City of Laporte Mitigation Action	Status	Priority Ranking	Time-frame	Jurisdictions	Responsibility	County/City Comments on Planning Mechanisms for Implementation	Possible Funding
32	Flooding	Local Planning & Regulations	Ensure that storm water management plans and improvement projects are identified and prioritized to address flood management for future high-impact rain events throughout the County. (i.e., conduct hydro-modeling, GIS map of where culverts must be re-sized).	Ongoing	New	2017-2021	Hubbard County, Akeley, **Laporte**, Nevis, Park Rapids	HC Highway Dept., HC Public Works, HC GIS, HC SWCD and local city public works depts., MNDNR, MPCA	In the identification of projects, the County will evaluate what projects may be eligible to apply for the MPCA's annual Clean Water Project Priority List (PPL). Projects must be on the PPL to be eligible to apply for low interest CWRF loans and other state grants and loans from the Minnesota Public Facilities Authority (PFA). PFA financing is for investments in municipal infrastructure which result in improvements in water quality. Funding is not available for privately owned infrastructure.	County/ SWCD budgets. Possible MPCA/PFA grant funding
33	Flooding	Structure and Infrastructure Projects	Implement storm water management structure and infrastructure projects to assist with flood management throughout the County.	Ongoing	New	2017-2021	Hubbard County, Akeley, **Laporte**, Nevis, Park Rapids	HC Highway Dept., HC Public Works, HC GIS, HC SWCD and local city public works depts., MNDNR, MPCA	Same as above. The County will seek outside grant funding where possible to fund eligible stormwater improvement projects, such as through MPCA and FEMA HMA funding for flood reduction projects.	County/ SWCD budgets. Possible MPCA/PFA grant funding. **Possible FEMA HMA funding for Localized Flood Reduction Projects**
34	Flooding	Local Planning & Regulations	Ensure that wellhead protection plans are in place to address flooding that may lead to contaminated drinking water.	New	High	2017-2021	Hubbard County, Akeley, **Laporte**, Nevis, Park Rapids and All Townships	HC Public Works, HC SWCD, MN Dept of Health and local city public works depts.	The City of Laporte is currently working with MN Dept of Health to update WHP, which should be done in May 2017. After completion, there will be public meetings and the City Council will need to adopt the plan.	MDH grant funding for wellhead improvement projects

Table G - 4. Additional Mitigation Actions for the City of Laporte for Specific Implementation by the City

#	Hazard	Mitigation Strategy	City of Laporte Mitigation Action	Status	Priority Ranking	Time - frame	Jurisdictions	Responsibility	City Comments on Planning Mechanisms for Implementation	Possible Funding
1	Severe Winter & Summer Storms	Mitigation Preparedness & Response Support	Upgrade the city's warning siren.	New	High	2017-2021	City of Laporte	City Admin in coordination with HC Emergency Management	The City of Laporte will work with Hubbard County Emergency Management to address upgrade of the warning siren and that it is tied to the county system for remote activation.	City/County funding
2	Severe Winter & Summer Storms	Mitigation Preparedness & Response Support	Investigate obtaining a generator to provide power for our municipal water system.	New	High	2017-2021	City of Laporte	City public works	The City is exploring funds that may be available via the State of MN health system to purchase a backup generator for our public water system. This is a critical water system for our school and resident population. Planning for this project will be implemented by working with Public Works.	City funding, State funding
3	Severe Winter & Summer Storms	Mitigation Preparedness & Response Support	Work with Beltrami Electric to convert overhead lines to underground that serve the City of Laporte (approximately 2 miles along Hwy 39, and approximately 2 miles along Cty Rd 93).	New	High	2020 – 2022	City of Laporte	Beltrami Electric Cooperative, Inc., along with cooperation from property owners and the City of Laporte	Beltrami Electric has identified the need to replace existing three-phase overhead electric lines to underground lines and facilities, involving the City of Laporte, approximately 2 miles along Hwy 39, and approximately 2 miles along Cty Rd 93, all in Hubbard County, Minnesota, to reduce potential power outages due to severe Winter and Summer storms.	Beltrami Electric Cooperative funding and possible FEMA HMA funding for Infrastructure Retrofit (power lines)
4	Severe Summer Storms	Structure and Infrastructure Projects	Construct a community safe room for area residents. Also evaluate the school for gym retrofit for safe room for the student population. Assess and implement the best possible shelter solution for the Industrial Arts Building for Laporte School.	New	High	2017-2021	City of Laporte	City Admin, School Staff in coordination with HC Emergency Management	40% of current housing does not have access to basements (older homes are from the 1900's – 1940's). The City of Laporte will work with the Laporte Public School District 306 to discuss designated facility and possible funding.	Possible FEMA HMA Grant funding for Safe Room Construction

#	Hazard	Mitigation Strategy	City of Laporte Mitigation Action	Status	Priority Ranking	Time - frame	Jurisdictions	Responsibility	City Comments on Planning Mechanisms for Implementation	Possible Funding
5	Flooding	Local Planning & Regulations	Develop a prioritized stormwater management plan that evaluates the City's stormwater management system for integrity, connectivity, and size.	New	High	2017-2021	City of Laporte	City Public Works	The City of Laporte is currently working with MN Dept of Health to update our Wellhead Protection Plan.	City Budget

Table G - 5. Mitigation Actions Identified for Implementation by the City of Nevis (2017-2021) (from Hubbard County Master Mitigation Action Chart)

#	Hazard	Mitigation Strategy	City of Nevis Mitigation Action	Status	Priority Ranking	Time-frame	Jurisdictions	Responsibility	County/City Comments on Planning Mechanisms for Implementation	Possible Funding
1	All-Hazards	Education & Awareness Programs	Work to ensure that all Hubbard County residents are aware of and sign-up for the CodeRed emergency notification system.	Ongoing	High	2017-2021	Hubbard County Akeley, Laporte, **Nevis**, Park Rapids	HC Emergency Management in coordination with local city and township government	This is a standing effort of the Hubbard County Emergency Management Program. Sign-up for CodeRed is available on the HC Emergency Management website and reminders are also put out via Facebook. Cities also work to promote sign-up by local residents by sharing information on city websites and announcements at public meetings.	County Budget
12	Severe Winter & Summer Storms	Education & Awareness Programs	Educate the public on the dangers of severe winter and summer storms to help protect life safety during severe storm events (i.e., stay away from downed power lines, winter driving hazards, etc.)	Ongoing	High	2017-2021	Hubbard County, Akeley, Laporte, **Nevis**, Park Rapids	HC Emergency Management in coordination with local cities	Hubbard County participates annually in the National Weather Service's Winter Hazard Awareness Week (November) and Severe Weather Awareness Week (April). Cities are encouraged to further share information within their jurisdictions (i.e., website, FB posting).	County/City Budgets

#	Hazard	Mitigation Strategy	City of Nevis Mitigation Action	Status	Priority Ranking	Time-frame	Jurisdictions	Responsibility	County/City Comments on Planning Mechanisms for Implementation	Possible Funding
13	Severe Winter & Summer Storms	Education & Awareness Programs	Promote individual and family emergency preparedness for safety and survival during periods of severe winter and spring/summer weather.	Ongoing	High	2017-2021	Hubbard County, Akeley, Laporte, **Nevis**, Park Rapids, and School Districts #306, #308, #309	HC Emergency Management in coordination with local cities	Hubbard County Emergency Management provides regular education and awareness information to the public through local newspapers, radio, and the Hubbard County Sheriff's Office FB page. Individuals and families are encouraged to prepare 3-days of food and water, to have a NOAA weather radio, to have generator power, to create a go-kit in the event of evacuation, and to be ready to care for pets.	County/City Budgets
14	Severe Winter & Summer Storms	Mitigation Preparedness and Response Support	Identify critical facilities or infrastructure that do not have backup power in the event of a major power outage resulting from severe winter or summer storms. *(Critical facilities may include: police/fire departments, EOC, health care facilities, water & sewer treatment facilities, and other facilities deemed as critical, i.e. public schools and sheltering facilities).*	New	High	2017-2021	Hubbard County, Akeley, Laporte, **Nevis**, Park Rapids, and School Districts #306, #308, #309	HC Emergency Management, City Admin & Public Works	Hubbard County, all cities, and school districts have identified a need for backup power to support continuity of operations in critical facilities and functioning of critical infrastructure. Hubbard County will identify where generators are needed throughout the campus of County facilities that are capable of supplying full electricity (shops, offices, fuel pumps, and internet) to power all operations.	County/City budgets

#	Hazard	Mitigation Strategy	City of Nevis Mitigation Action	Status	Priority Ranking	Time-frame	Jurisdictions	Responsibility	County/City Comments on Planning Mechanisms for Implementation	Possible Funding
15	Severe Winter & Summer Storms	Mitigation Preparedness and Response Support	Purchase and install generator hook-ups and encourage local generator purchases for identified critical facilities that require backup power.	New	High	2017-2021	Hubbard County, Akeley, Laporte, **Nevis**, Park Rapids and School Districts #306, #308, #309	HC Emergency Management, City Admin & Public Works	Hubbard County, local city governments, and schools will evaluate feasibility to purchase and install generators for key facilities. The county and cities will consider the availability of MN DNR generators that may be deployed if needed during power outages before making generator purchases.	County/City Budgets **Possible FEMA HMA 5% Initiative Funding for Generators**
16	Severe Winter & Summer Storms	Structure and Infrastructure Projects	Work with MN Power, Beltrami Electric Coop, and Itasca-Mantrap to identify and address mitigation measures for above ground power lines that are susceptible to damage from severe storms in order to reduce potential power outages.	New	High	2017-2021	Hubbard County, Akeley, Laporte, **Nevis**, Park Rapids	MN Power, Beltrami Electric Coop, and Itasca-Mantrap in cooperation with local cities	Hubbard County and local jurisdictions will be a planning partner to MN Power, Beltrami Electric, and Itasca-Mantrap for potential projects. MN Power has identified a need to conduct power pole & lines inspection and replacements in Park Rapids, Nevis, and Akeley. Beltrami Electric Coop has identified a need to convert overhead lines to underground that serve the City of Laporte (Laporte School, water & sewer, fire department, and other businesses).	Electric Coop Funding, **Possible FEMA HMA funding for Infrastructure Retrofit**
17	Severe Winter & Summer Storms	Education & Awareness Programs	Work with local utility companies to educate citizens on the importance of keeping trees and branches clear of power lines.	Ongoing	High	2017-2021	Hubbard County Akeley, Laporte, **Nevis**, Park Rapids	MN Power, Beltrami Electric Coop, and Itasca-Mantrap in cooperation with local cities	This is an Ongoing effort of the utility companies and city public works departments as they seek to protect local power lines from failure from falling trees during storms.	City/Electric Coop funding

#	Hazard	Mitigation Strategy	City of Nevis Mitigation Action	Status	Priority Ranking	Time-frame	Jurisdictions	Responsibility	County/City Comments on Planning Mechanisms for Implementation	Possible Funding
21	Severe Summer Storms	Mitigation Preparedness & Response Support	Provide/participate in the National Weather Service's SkyWarn "Storm Spotter" training in various parts of the County for first responders and community residents.	Ongoing	High	2017-2021	Hubbard County, Akeley, Laporte, **Nevis**, Park Rapids	HC Emergency Management in collaboration with local cities and NWS	Hubbard County Emergency Management coordinates with the National Weather Service to provide SkyWarn training every 2 years. (Annual training is not provided due to low participation). Handouts & information is available from the EM office upon request at any time of year.	County Budget and NWS funding to deliver program
22	Severe Summer Storms	Structure and Infrastructure Projects	Identify areas where vulnerable populations are susceptible to tornadoes or extreme wind events (i.e. schools, campgrounds, or mobile home parks) and evaluate for construction or retrofit of safe rooms or storm shelters.	Ongoing	High	2017-2021	Hubbard County Akeley, Laporte, **Nevis**, Park Rapids, All Townships and School Districts #306, #308, #309	HC Emergency Management, HC Public Health, in coordination with local cities	Hubbard County Emergency Management will work with the cities, townships, and school districts to identify areas of concern and assess potential for construction or retrofit of community safe rooms. HC Emergency Management will work any school or jurisdiction seeking to develop a grant application to FEMA for a safe room project.	County/City budgets
23	Severe Summer Storms	Structure and Infrastructure Projects	Implement construction or retrofit projects for safe rooms or storm shelters in identified vulnerable locations.	Ongoing	High	2017-2021	Hubbard County Akeley, Laporte, **Nevis**, Park Rapids, All Townships and School Districts #306, #308, #309	HC Emergency Management, HC Public Health, in coordination with local cities	Any community safe room projects that the County is involved in will be part of the Hubbard County Emergency Management program. HC Emergency Management will work with any school or jurisdiction seeking to develop an application to FEMA for a safe room project.	County/City budgets **Possible FEMA HMA funding for Safe Room Construction**

#	Hazard	Mitigation Strategy	City of Nevis Mitigation Action	Status	Priority Ranking	Time-frame	Jurisdictions	Responsibility	County/City Comments on Planning Mechanisms for Implementation	Possible Funding
25	Flooding	Local Planning & Regulations	Identify, map, and prioritize roads, bridges, and culverts in the County that are impacted by flood events, and prioritize required mitigation measures to reduce future flood damages.	Ongoing	High	2017-2021	Hubbard County Akeley, Laporte, **Nevis**, Park Rapids, and All Townships	HC Highway Dept, HC Public Works, HC GIS, HC SWCD, and local city and township public works	This is part of the Hubbard County Road Plan. Hubbard County Highway Dept. maintains an annual inventory of prioritized improvement projects for culverts, roads, and bridges throughout the county. Cities and townships also each work to identify and prioritize transportation improvement projects to address areas that suffer from flood damages. Hubbard County Highway Department provides engineering & construction to Townships for all roads projects.	County, and Township Budgets

#	Hazard	Mitigation Strategy	City of Nevis Mitigation Action	Status	Priority Ranking	Time-frame	Jurisdictions	Responsibility	County/City Comments on Planning Mechanisms for Implementation	Possible Funding
26	Flooding	Structure and Infrastructure Projects	Conduct full county culvert/drainage review including townships and cities and identify where improvements are needed to handle high water flow (such as modification of culverts or creation of retention areas).	New	High	2017-2021	Hubbard County and All Townships	HC Highway, HC Public Works, HC GIS, HC SWCD, in collaboration with local city and township public works	Hubbard County SWCD notes that the MN DNR Fisheries has done a culvert inventory for the whole county and that it is available for the County to use. Hubbard County will coordinate with the MN DNR to obtain this information and apply it in their prioritization of improvement projects. Hubbard County Highway Department notes that over the last 5 plus years we have been working on and mitigating problem areas throughout the County which rate the culverts (as good or needs replacing). It has helped us to work on the worst and most important culverts throughout the county.	County/City budgets
27	Flooding	Structure and Infrastructure Projects	Implement prioritized flood mitigation measures for roads, bridges, culverts, and drainage systems.	New	High	2017-2021	Hubbard County, Akeley, Laporte, **Nevis**, Park Rapids and All Townships	HC Highway, HC Public Works, HC GIS, HC SWCD, and local city and township public works	Hubbard County notes that CSAH 49 Graceson Ave. S, has a storm drain that will need to be looked at and repaired. The City of Akeley will need help to mitigate this problem area before the street falls in. Costs to repair this may be some were in the $30,000-$50,000 bracket.	County/City Budgets **Possible FEMA HMA funding for Localized Flood Reduction Projects**

#	Hazard	Mitigation Strategy	City of Nevis Mitigation Action	Status	Priority Ranking	Time-frame	Jurisdictions	Responsibility	County/City Comments on Planning Mechanisms for Implementation	Possible Funding
32	Flooding	Local Planning & Regulations	Ensure that storm water management plans and improvement projects are identified and prioritized to address flood management for future high-impact rain events throughout the County. (i.e., conduct hydro-modeling, GIS map of where culverts must be re-sized).	Ongoing	New	2017-2021	Hubbard County, Akeley, Laporte, **Nevis**, Park Rapids	HC Highway Dept., HC Public Works, HC GIS, HC SWCD and local city public works depts., MNDNR, MPCA	In the identification of projects, the County will evaluate what projects may be eligible to apply for the MPCA's annual Clean Water Project Priority List (PPL). Projects must be on the PPL to be eligible to apply for low interest CWRF loans and other state grants and loans from the Minnesota Public Facilities Authority (PFA). PFA financing is for investments in municipal infrastructure which result in improvements in water quality. Funding is not available for privately owned infrastructure.	County/ SWCD budgets. Possible MPCA/PFA grant funding
33	Flooding	Structure and Infrastructure Projects	Implement storm water management structure and infrastructure projects to assist with flood management throughout the County.	Ongoing	New	2017-2021	Hubbard County, Akeley, Laporte, **Nevis**, Park Rapids	HC Highway Dept., HC Public Works, HC GIS, HC SWCD and local city public works depts., MNDNR, MPCA	Same as above. The County will seek outside grant funding where possible to fund eligible stormwater improvement projects, such as through MPCA and FEMA HMA funding for flood reduction projects.	County/ SWCD budgets. Possible MPCA/PFA grant funding. **Possible FEMA HMA funding for Localized Flood Reduction Projects**

#	Hazard	Mitigation Strategy	City of Nevis Mitigation Action	Status	Priority Ranking	Time-frame	Jurisdictions	Responsibility	County/City Comments on Planning Mechanisms for Implementation	Possible Funding
34	Flooding	Local Planning & Regulations	Ensure that wellhead protection plans are in place to address flooding that may lead to contaminated drinking water.	New	High	2017-2021	Hubbard County, Akeley, Laporte, **Nevis**, Park Rapids and All Townships	HC Public Works, HC SWCD, MN Dept of Health and local city public works depts.	Hubbard County SWCD is working with municipalities to develop strategies to protect drinking water supply management areas and implement practices with landowners in those areas that will protect and improve water quality. Cities work directly with the Minnesota Department of Health on the development or update of wellhead protection plans to ensure they meet State requirements. The SWCD is a partner that sits in on the meetings with MDH and cities and can offer suggestions.	MDH grant funding for wellhead improvement projects

Table G - 6. Additional Mitigation Actions Identified for the City of Nevis for Specific Implementation by the City

#	Hazard	Mitigation Strategy	City of Nevis Mitigation Action	Status	Priority Ranking	Time-frame	Jurisdictions	Responsibility	City Comments on Planning Mechanisms for Implementation	Possible Funding
1	Flooding	Local Planning & Regulations / Structure and Infrastructure Projects	Plan for and implement storm sewer and run-off for the City.	New	High	2017-2021	City of Nevis	City planning department	The City will work to address its storm water management issues as part of the City's comprehensive plan and capital improvement plan. We have one home that has had flooding because of the run off.	City budget
2	Flooding	Local Planning & Regulations	Evaluate property acquisition (buy-out and removal) of the one home in the city that repetitively floods.	New	High	2017-2021	City of Nevis	City planning department	The City will evaluate if property acquisition is feasible for this home based on a BCA. If the project is feasible the City will evaluate application to FEMA for project implementation.	Possible FEMA HMA funding for Property Acquisition
3	Severe Winter & Summer Storms	Mitigation Preparedness & Emergency Response	Obtain a generator for City Hall to provide backup power in the event of a power outage to be able to continue government operations.	New	High	2017-2021	City of Nevis	City planning department and Public Works	The City of Nevis will work to obtain funding to install this generator.	City budget
4	Severe Winter & Summer Storms	Structure and Infrastructure Projects	Work with MN Power to conduct power pole & lines inspection and replacements in the City of Nevis.	New	High	2017-2021	City of Nevis	City Public Works in coordination with MN Power	The City of Nevis will coordinate with MN Power on this effort. MN Power is the utility provider for the City.	MN Power, Possible FEMA HMA funding for Structural Retrofit (Power lines)
5	Severe Summer Storms	Structure and Infrastructure Projects	Evaluate construction of a safe room at the school that can be used for students as well as the community in the event of severe wind events where students/staff/residents can take shelter.	New	High	2017-2021	City of Nevis	City planning dept in coordination with HC Emergency Management	If the City determines to proceed with a safe room construction project, we will work with the HC Emergency Management Director for guidance and assistance in submitting a grant to FEMA for funding.	City budget. Possible FEMA HMA Funding available for construction/retro fit project
6	Flooding	Local Planning & Regulations	Develop a prioritized stormwater management plan that evaluates the City's stormwater management system for integrity, connectivity, and size.	New	High	2017-2021	City of Nevis	City Planning, Public Works in coordination with HC Highway Dept.	This will be planning effort of City Public Works. The City will confer with Hubbard County on development of the plan to address stormwater management issues in the City.	City Budget

Table G - 7. Mitigation Actions Identified for Implementation by the City of Park Rapids (2017-2021) (From Hubbard County Master Mitigation Action Chart)

#	Hazard	Mitigation Strategy	City of Park Rapids Mitigation Action	Status	Priority Ranking	Time-frame	Jurisdictions	Responsibility	County/City Comments on Planning Mechanisms for Implementation	Possible Funding
1	All-Hazards	Education & Awareness Programs	Work to ensure that all Hubbard County residents are aware of and sign-up for the CodeRed emergency notification system.	Ongoing	High	2017-2021	Hubbard County Akeley, Laporte, Nevis, **Park Rapids**	HC Emergency Management in coordination with local city and township government	This is a standing effort of the Hubbard County Emergency Management Program. Sign-up for CodeRed is available on the HC Emergency Management website and reminders are also put out via Facebook. Cities also work to promote sign-up by local residents by sharing information on city websites and announcements at public meetings.	County Budget
12	Severe Winter & Summer Storms	Education & Awareness Programs	Educate the public on the dangers of severe winter and summer storms to help protect life safety during severe storm events (i.e., stay away from downed power lines, winter driving hazards, etc.)	Ongoing	High	2017-2021	Hubbard County, Akeley, Laporte, Nevis, **Park Rapids**	HC Emergency Management in coordination with local cities	Hubbard County participates annually in the National Weather Service's Winter Hazard Awareness Week (November) and Severe Weather Awareness Week (April). Cities are encouraged to further share information within their jurisdictions (i.e., website, FB posting).	County/City Budgets
13	Severe Winter & Summer Storms	Education & Awareness Programs	Promote individual and family emergency preparedness for safety and survival during periods of severe winter and spring/summer weather.	Ongoing	High	2017-2021	Hubbard County, Akeley, Laporte, Nevis, **Park Rapids**, and School Districts #306, #308, #309	HC Emergency Management in coordination with local cities	Hubbard County Emergency Management provides regular education and awareness information to the public through local newspapers, radio, and the Hubbard County Sheriff's Office FB page. Individuals and families are encouraged to prepare 3-days of food and water, to have a NOAA weather radio, to have generator power, to create a go-kit in the event of evacuation, and to be ready to care for pets.	County/City Budgets

#	Hazard	Mitigation Strategy	City of Park Rapids Mitigation Action	Status	Priority Ranking	Time-frame	Jurisdictions	Responsibility	County/City Comments on Planning Mechanisms for Implementation	Possible Funding
14	Severe Winter & Summer Storms	Mitigation Preparedness and Response Support	Identify critical facilities or infrastructure that do not have backup power in the event of a major power outage resulting from severe winter or summer storms. *(Critical facilities may include: police/fire departments, EOC, health care facilities, water & sewer treatment facilities, and other facilities deemed as critical, i.e. public schools and sheltering facilities).*	New	High	2017-2021	Hubbard County, Akeley, Laporte, Nevis, **Park Rapids**, and School Districts #306, #308, #309	HC Emergency Management, City Admin & Public Works	Hubbard County, all cities, and school districts have identified a need for backup power to support continuity of operations in critical facilities and functioning of critical infrastructure. Hubbard County will identify where generators are needed throughout the campus of County facilities that are capable of supplying full electricity (shops, offices, fuel pumps, and internet) to power all operations.	County/City budgets
15	Severe Winter & Summer Storms	Mitigation Preparedness and Response Support	Purchase and install generator hook-ups and encourage local generator purchases for identified critical facilities that require backup power.	New	High	2017-2021	Hubbard County, Akeley, Laporte, Nevis, **Park Rapids** and School Districts #306, #308, #309	HC Emergency Management, City Admin & Public Works	Hubbard County, local city governments, and schools will evaluate feasibility to purchase and install generators for key facilities. The county and cities will consider the availability of MN DNR generators that may be deployed if needed during power outages before making generator purchases.	County/City Budgets **Possible FEMA HMA 5% Initiative Funding for Generators**

#	Hazard	Mitigation Strategy	City of Park Rapids Mitigation Action	Status	Priority Ranking	Time-frame	Jurisdictions	Responsibility	County/City Comments on Planning Mechanisms for Implementation	Possible Funding
16	Severe Winter & Summer Storms	Structure and Infrastructure Projects	Work with MN Power, Beltrami Electric Coop, and Itasca-Mantrap to identify and address mitigation measures for above ground power lines that are susceptible to damage from severe storms in order to reduce potential power outages.	New	High	2017-2021	Hubbard County, Akeley, Laporte, Nevis, **Park Rapids**	MN Power, Beltrami Electric Coop, and Itasca-Mantrap in cooperation with local cities	Hubbard County and local jurisdictions will be a planning partner to MN Power, Beltrami Electric, and Itasca-Mantrap for potential projects. MN Power has identified a need to conduct power pole & lines inspection and replacements in Park Rapids, Nevis, and Akeley. Beltrami Electric Coop has identified a need to convert overhead lines to underground that serve the City of Laporte (Laporte School, water & sewer, fire department, and other businesses).	Electric Coop Funding, **Possible FEMA HMA funding for Infrastructure Retrofit**
17	Severe Winter & Summer Storms	Education & Awareness Programs	Work with local utility companies to educate citizens on the importance of keeping trees and branches clear of power lines.	Ongoing	High	2017-2021	Hubbard County Akeley, Laporte, Nevis, **Park Rapids**	MN Power, Beltrami Electric Coop, and Itasca-Mantrap in cooperation with local cities	This is an ongoing effort of the utility companies and city public works departments as they seek to protect local power lines from failure from falling trees during storms.	City/Electric Coop funding

#	Hazard	Mitigation Strategy	City of Park Rapids Mitigation Action	Status	Priority Ranking	Time-frame	Jurisdictions	Responsibility	County/City Comments on Planning Mechanisms for Implementation	Possible Funding
19	Severe Summer Storms	Mitigation Preparedness and Response Support	Identify areas where warning sirens are needed or require upgrade throughout Hubbard County for severe wind storms and Civil Defense warning. Ensure sirens can be remotely activated by Hubbard County.	New	High	2017-2021	Hubbard County, City of Laporte **City of Park Rapids**	HC Emergency Management in cooperation with City Admin & Public Works	Additional audible alarms are installed throughout Hubbard Co. to increase warning capacity when purchasing funds are available. All new installations are controlled by the Hubbard Co. Sheriff's Office Dispatch Center. HC Emergency Management will work with the City of Laporte to evaluate and upgrade the city's warning siren. The current siren is outdated is not tied to the county system. *The City of Park Rapids has identified a need to upgrade the city's warning siren. The system at Heartland Park is at least as old as 1973, and the decibel output may be out of spec. So we are looking at repairing/replacing it.*	County/City Budgets **Possible FEMA HMA 5% Initiative**
21	Severe Summer Storms	Mitigation Preparedness & Response Support	Provide/participate in the National Weather Service's SkyWarn "Storm Spotter" training in various parts of the County for first responders and community residents.	Ongoing	High	2017-2021	Hubbard County, Akeley, Laporte, Nevis, **Park Rapids**	HC Emergency Management in collaboration with local cities and NWS	Hubbard County Emergency Management coordinates with the National Weather Service to provide SkyWarn training every 2 years. (Annual training is not provided due to low participation). Handouts & information is available from the EM office upon request at any time of year.	County Budget and NWS funding to deliver program

#	Hazard	Mitigation Strategy	City of Park Rapids Mitigation Action	Status	Priority Ranking	Time-frame	Jurisdictions	Responsibility	County/City Comments on Planning Mechanisms for Implementation	Possible Funding
22	Severe Summer Storms	Structure and Infrastructure Projects	Identify areas where vulnerable populations are susceptible to tornadoes or extreme wind events (i.e. schools, campgrounds, or mobile home parks) and evaluate for construction or retrofit of safe rooms or storm shelters.	Ongoing	High	2017-2021	Hubbard County Akeley, Laporte, Nevis, **Park Rapids,** All Townships and School Districts #306, #308, #309	HC Emergency Management, HC Public Health, in coordination with local cities	Hubbard County Emergency Management will work with the cities, townships, and school districts to identify areas of concern and assess potential for construction or retrofit of community safe rooms. HC Emergency Management will work any school or jurisdiction seeking to develop a grant application to FEMA for a safe room project.	County/City budgets
23	Severe Summer Storms	Structure and Infrastructure Projects	Implement construction or retrofit projects for safe rooms or storm shelters in identified vulnerable locations.	Ongoing	High	2017-2021	Hubbard County Akeley, Laporte, Nevis, **Park Rapids**, All Townships and School Districts #306, #308, #309	HC Emergency Management, HC Public Health, in coordination with local cities	Any community safe room projects that the County is involved in will be part of the Hubbard County Emergency Management program. HC Emergency Management will work with any school or jurisdiction seeking to develop an application to FEMA for a safe room project.	County/City budgets **Possible FEMA HMA funding for Safe Room Construction**

#	Hazard	Mitigation Strategy	City of Park Rapids Mitigation Action	Status	Priority Ranking	Time-frame	Jurisdictions	Responsibility	County/City Comments on Planning Mechanisms for Implementation	Possible Funding
25	Flooding	Local Planning & Regulations	Identify, map, and prioritize roads, bridges, and culverts in the County that are impacted by flood events, and prioritize required mitigation measures to reduce future flood damages.	Ongoing	High	2017-2021	Hubbard County Akeley, Laporte, Nevis, **Park Rapids**, and All Townships	HC Highway Dept, HC Public Works, HC GIS, HC SWCD, and local city and township public works	This is part of the Hubbard County Road Plan. Hubbard County Highway Dept. maintains an annual inventory of prioritized improvement projects for culverts, roads, and bridges throughout the county. Cities and townships also each work to identify and prioritize transportation improvement projects to address areas that suffer from flood damages. Hubbard County Highway Department provides engineering & construction to Townships for all roads projects.	County, and Township Budgets
27	Flooding	Structure and Infrastructure Projects	Implement prioritized flood mitigation measures for roads, bridges, culverts, and drainage systems.	New	High	2017-2021	Hubbard County, Akeley, Laporte, Nevis, **Park Rapids**, and All Townships	HC Highway, HC Public Works, HC GIS, HC SWCD, and local city and township public works	Hubbard County notes that CSAH 49 Graceson Ave. S, has a storm drain that will need to be looked at and repaired. The City of Akeley will need help to mitigate this problem area before the street falls in. Costs to repair this may be some were in the $30,000-$50,000 bracket.	County/City Budgets **Possible FEMA HMA funding for Localized Flood Reduction Projects**

#	Hazard	Mitigation Strategy	City of Park Rapids Mitigation Action	Status	Priority Ranking	Time-frame	Jurisdictions	Responsibility	County/City Comments on Planning Mechanisms for Implementation	Possible Funding
32	Flooding	Local Planning & Regulations	Ensure that storm water management plans and improvement projects are identified and prioritized to address flood management for future high-impact rain events throughout the County. (i.e., conduct hydro-modeling, GIS map of where culverts must be re-sized).	Ongoing	New	2017-2021	Hubbard County, Akeley, Laporte, Nevis, **Park Rapids**	HC Highway Dept., HC Public Works, HC GIS, HC SWCD and local city public works depts., MNDNR, MPCA	In the identification of projects, the County will evaluate what projects may be eligible to apply for the MPCA's annual Clean Water Project Priority List (PPL). Projects must be on the PPL to be eligible to apply for low interest CWRF loans and other state grants and loans from the Minnesota Public Facilities Authority (PFA). PFA financing is for investments in municipal infrastructure which result in improvements in water quality. Funding is not available for privately owned infrastructure.	County/ SWCD budgets. Possible MPCA/PFA grant funding
33	Flooding	Structure and Infrastructure Projects	Implement storm water management structure and infrastructure projects to assist with flood management throughout the County.	Ongoing	New	2017-2021	Hubbard County, Akeley, Laporte, Nevis, **Park Rapids**	HC Highway Dept., HC Public Works, HC GIS, HC SWCD and local city public works depts., MNDNR, MPCA	Same as above. The County will seek outside grant funding where possible to fund eligible stormwater improvement projects, such as through MPCA and FEMA HMA funding for flood reduction projects.	County/ SWCD budgets. Possible MPCA/PFA grant funding. **Possible FEMA HMA funding for Localized Flood Reduction Projects**

#	Hazard	Mitigation Strategy	City of Park Rapids Mitigation Action	Status	Priority Ranking	Time-frame	Jurisdictions	Responsibility	County/City Comments on Planning Mechanisms for Implementation	Possible Funding
34	Flooding	Local Planning & Regulations	Ensure that wellhead protection plans are in place to address flooding that may lead to contaminated drinking water.	New	High	2017-2021	Hubbard County, Akeley, Laporte, Nevis, **Park Rapids** and All Townships	HC Public Works, HC SWCD, MN Dept of Health and local city public works depts.	Hubbard County SWCD is working with municipalities to develop strategies to protect drinking water supply management areas and implement practices with landowners in those areas that will protect and improve water quality. Cities work directly with the Minnesota Department of Health on the development or update of wellhead protection plans to ensure they meet State requirements. The SWCD is a partner that sits in on the meetings with MDH and cities and can offer suggestions.	MDH grant funding for wellhead improvement projects

Table G - 8. Additional Mitigation Actions Identified for the City of Park Rapids for Specific Implementation by the City

#	Hazard	Mitigation Strategy	City of Park Rapids Mitigation Action	Status	Priority Ranking	Time-frame	Jurisdictions	Responsibility	City Comments on Planning Mechanisms for Implementation	Possible Funding
1	Severe Winter & Summer Storms	Mitigation Preparedness & Response	Identify critical facilities in the City that should have backup generator power.	New	High	2017-2021	City of Park Rapids	City Public Works dept.	The City of Park Rapids will coordinate Improvements with Future Building Improvement Projects Identified in the CIP.	City Budget
2	Severe Winter & Summer Storms	Structure and Infrastructure Projects	Work with MN Power to conduct power pole & lines inspection and replacements in the City of Park Rapids.	New	High	2017-2021	City of Park Rapids	City Public Works dept. in cooperation with MN Power	The City of Park Rapids will coordinate with MN Power on this effort. MN Power is the utility provider for the City.	MN Power, Possible FEMA HMA funding for Structural Retrofit (Power lines)
3	Severe Summer Storms	Structure and Infrastructure Projects	Construct a safe room for downtown residents.	New	High	2017-2021	City of Park Rapids	City Planning Dept., City Public Works/Parks Department, in coordination with HC Emergency Management	The City of Park Rapids will work with the Hubbard County Emergency Management Director to evaluate if a safe room project may be strong enough to advance for an HMA grant to FEMA.	Possible FEMA HMA funding for Safe Room Construction
4	Flooding	Structure and Infrastructure Projects	To mitigate against heavy rain events, replace culverts and develop stormwater infiltration basins in the east side of Park Rapids.	New	High	2017-2021	City of Park Rapids	City Public Works dept.	The City of Park Rapids will identify areas for improvement and Develop Stormwater Improvement Projects.	City Budget, MDH Stormwater Project grant
5	Flooding	Structure and Infrastructure Projects	Construct dams around lift stations (main lift) and lifts near river to avoid sewage entering river during a failure	New	High	2017-2021	City of Park Rapids	City Public Works dept.	The City of Park Rapids will coordinate Project with future lift station improvements.	City Budget, Possible FEMA HMA funding for Localized Flood Reduction Projects
7	Wildfire	Natural Systems Protection	Work to reduce wildfire risk in the newly annexed areas of Park Rapids (grassland/forested rural habitat) through targeted fuels-reduction measures.	New	High	2017-2021	City of Park Rapids	City Planner in coordination with HC Emergency Management and MN DNR	The City of Park Rapids will request assistance from local fire department personnel and the MN DNR to provide assistance in identifying where and how to reduce wildfire risk through vegetative management.	Possible MN DNR Firewise Grant Funding and Possible FEMA HMA Wildfire Mitigation Grant Funding

#	Hazard	Mitigation Strategy	City of Park Rapids Mitigation Action	Status	Priority Ranking	Time-frame	Jurisdictions	Responsibility	City Comments on Planning Mechanisms for Implementation	Possible Funding
8	Wildfire	Public Education & Awareness Programs	Work to provide education and training to local homeowners living within high-risk wildfire areas of Park Rapids on how to assess and implement property for increased defensible space.	New	High	2017-2021	City of Park Rapids	City Planner in coordination with HC Emergency Management and MN DNR	The City of Park Rapids will request assistance from local fire department personnel and the MN DNR to provide Level-1 Firewise Assessments to homeowners.	MN DNR Firewise grant funding

Table G - 9. Mitigation Actions Identified for Implementation by Hubbard County Public Schools (2017-2021) (From Hubbard County Master Mitigation Action Chart)

#	Hazard	Mitigation Strategy	Hubbard County School Districts' Mitigation Action	Status	Priority Ranking	Time-frame	Jurisdictions	Responsibility	County Comments on Planning Mechanisms for Implementation	Possible Funding
3	All-Hazards	Mitigation Preparedness and Response Support	**(Schools)** Identify and purchase essential supplies and have them readily available in all schools.	Ongoing	High	2017-2021	Hubbard County ISD #306 (Laporte) ISD#308 (Nevis) ISD #309 (Park Rapids)	HC Emergency Management in coordination with School Districts	HC Emergency Management encourages all school districts to have essential supplies on-hand (i.e., NOAA weather radios, first aid kits, flashlights etc.) to provide for students and staff safety in the event of a hazard event.	School District Budgets
4	All-Hazards	Mitigation Preparedness and Response Support	**(Schools)** Install remote locking system for all main entrance points.	Ongoing	High	2017-2021	Hubbard County ISD#308 (Nevis) ISD #309 (Park Rapids)	HC Emergency Management in coordination with School Districts	HC Emergency Management will work in coordination with Hubbard Co. school districts to address as funding & budgets allow at each school district.	School District Budgets
5	All-Hazards	Mitigation Preparedness and Response Support	**(Schools)** Install universal locks throughout the entire school so each room can easily be accessed with a master key.	Ongoing	High	2017-2021	Hubbard County ISD#308 (Nevis) ISD #309 (Park Rapids)	HC Emergency Management in coordination with School Districts	HC Emergency Management will work in coordination with Hubbard Co. school districts to address as funding & budgets allow at each school district.	School District Budgets
6	All-Hazards	Mitigation Preparedness and Response Support	**(Schools)** Implement measures to allow for remote accessibility of school warning systems.	Ongoing	High	2017-2021	Hubbard County ISD #306 (Laporte) ISD#308 (Nevis) ISD #309 (Park Rapids)	HC Emergency Management in coordination with School Districts	HC Emergency Management will work in coordination with Hubbard Co. school districts to address as funding & budgets allow at each school district.	School District Budgets

#	Hazard	Mitigation Strategy	Hubbard County School Districts' Mitigation Action	Status	Priority Ranking	Time-frame	Jurisdictions	Responsibility	County Comments on Planning Mechanisms for Implementation	Possible Funding
7	All-Hazards	Mitigation Preparedness and Response Support	**(Schools)** Practice remote access from Hubbard County Law Enforcement Center.	Ongoing	High	2017-2021	Hubbard County ISD #306 (Laporte) ISD#308 (Nevis) ISD #309 (Park Rapids)	HC Emergency Management in coordination with School Districts	The Hubbard County Sheriff's Office manages the remote access system for each school and practices with it regularly to ensure functionality.	County Budget
8	All-Hazards	Mitigation Preparedness and Response Support	**(Schools)** Purchase backup generators for all schools currently without a backup power source.	Ongoing	High	2017-2021	Hubbard County ISD #306 (Laporte) ISD#308 (Nevis) ISD #309 (Park Rapids)	HC Emergency Management in coordination with School Districts	HC Emergency Management will work in coordination with Hubbard Co. school districts to address as funding & budgets allow at each school district.	School District Budgets
9	All-Hazards	Mitigation Preparedness and Response Support	**(Schools)** Plan and implement a mock disaster response in coordination with other agencies for a hazardous material spill.	Ongoing	High	2017-2021	Hubbard County ISD #306 (Laporte) ISD#308 (Nevis) ISD #309 (Park Rapids)	HC Emergency Management in coordination with School Districts	HC Emergency Management works to conduct drills & exercises at the school locations when feasible. The county with schools to address shelter-in-place or evacuation planning for any emergency event.	County Budget

#	Hazard	Mitigation Strategy	Hubbard County School Districts' Mitigation Action	Status	Priority Ranking	Time-frame	Jurisdictions	Responsibility	County Comments on Planning Mechanisms for Implementation	Possible Funding
10	All-Hazards	Mitigation Preparedness and Response Support	**(Schools)** Continue to practice various types of mock drills including fire and tornado drills.	Ongoing	High	2017-2021	Hubbard County ISD #306 (Laporte) ISD#308 (Nevis) ISD #309 (Park Rapids)	HC Emergency Management in coordination with School Districts	All Hubbard Co. schools are encouraged to practice & drill for tornados, and mock car crash drills are carried out at the high schools throughout the county.	School District Budgets
11	All-Hazards	Mitigation Preparedness and Response Support	**(Schools)** Update school Emergency Operations Plans regularly and ensure copies are available to Hubbard Co. EM and Law Enforcement.	Ongoing	High	2017-2021	Hubbard County ISD #306 (Laporte) ISD#308 (Nevis) ISD #309 (Park Rapids)	HC Emergency Management in coordination with School Districts	All schools are asked to provide an updated copy to the HCSO EM Office at the start of each school year.	School District Budgets
13	Severe Winter & Summer Storms	Education & Awareness Programs	Promote individual and family emergency preparedness for safety and survival during periods of severe winter and spring/summer weather.	Ongoing	High	2017-2021	Hubbard County, Akeley, Laporte, Nevis, Park Rapids, and School Districts #306, #308, #309	HC Emergency Management in coordination with local cities	Hubbard County Emergency Management provides regular education and awareness information to the public through local newspapers, radio, and the Hubbard County Sheriff's Office FB page. Individuals and families are encouraged to prepare 3-days of food and water, to have a NOAA weather radio, to have generator power, to create a go-kit in the event of evacuation, and to be ready to care for pets.	County/City Budgets

#	Hazard	Mitigation Strategy	Hubbard County School Districts' Mitigation Action	Status	Priority Ranking	Time-frame	Jurisdictions	Responsibility	County Comments on Planning Mechanisms for Implementation	Possible Funding
14	Severe Winter & Summer Storms	Mitigation Preparedness and Response Support	Identify critical facilities or infrastructure that do not have backup power in the event of a major power outage resulting from severe winter or summer storms. *(Critical facilities may include: police/fire departments, EOC, health care facilities, water & sewer treatment facilities, and other facilities deemed as critical, i.e. public schools and sheltering facilities).*	New	High	2017-2021	Hubbard County, Akeley, Laporte, Nevis, Park Rapids, and School Districts #306, #308, #309	HC Emergency Management, City Admin & Public Works	Hubbard County, all cities, and school districts have identified a need for backup power to support continuity of operations in critical facilities and functioning of critical infrastructure. Hubbard County will identify where generators are needed throughout the campus of County facilities that are capable of supplying full electricity (shops, offices, fuel pumps, internet) to power all operations.	County/City budgets
15	Severe Winter & Summer Storms	Mitigation Preparedness and Response Support	Purchase and install generator hook-ups and encourage local generator purchases for identified critical facilities that require backup power.	New	High	2017-2021	Hubbard County, Akeley, Laporte, Nevis, Park Rapids and School Districts #306, #308, #309	HC Emergency Management, City Admin & Public Works	Hubbard County, local city governments, and schools will evaluate feasibility to purchase and install generators for key facilities. The county and cities will consider the availability of MN DNR generators that may be deployed if needed during power outages before making generator purchases.	County/City Budgets **Possible FEMA HMA 5% Initiative Funding for Generators**

#	Hazard	Mitigation Strategy	Hubbard County School Districts' Mitigation Action	Status	Priority Ranking	Time-frame	Jurisdictions	Responsibility	County Comments on Planning Mechanisms for Implementation	Possible Funding
22	Severe Summer Storms	Structure and Infrastructure Projects	Identify areas where vulnerable populations are susceptible to tornadoes or extreme wind events (i.e. schools, campgrounds, or mobile home parks) and evaluate for construction or retrofit of safe rooms or storm shelters.	Ongoing	High	2017-2021	Hubbard County Akeley, Laporte, Nevis, Park Rapids, All Townships and School Districts #306, #308, #309	HC Emergency Management, HC Public Health, in coordination with local cities	Hubbard County Emergency Management will work with the cities, townships, and school districts to identify areas of concern and assess potential for construction or retrofit of community safe rooms. HC Emergency Management will work any school or jurisdiction seeking to develop a grant application to FEMA for a safe room project.	County/City budgets
23	Severe Summer Storms	Structure and Infrastructure Projects	Implement construction or retrofit projects for safe rooms or storm shelters in identified vulnerable locations.	Ongoing	High	2017-2021	Hubbard County Akeley, Laporte, Nevis, Park Rapids, All Townships and School Districts #306, #308, #309	HC Emergency Management, HC Public Health, in coordination with local cities	Any community safe room projects that the County is involved in will be part of the Hubbard County Emergency Management program. HC Emergency Management will work with any school or jurisdiction seeking to develop an application to FEMA for a safe room project.	County/City budgets **Possible FEMA HMA funding for Safe Room Construction**

#	Hazard	Mitigation Strategy	Hubbard County School Districts' Mitigation Action	Status	Priority Ranking	Time-frame	Jurisdictions	Responsibility	County Comments on Planning Mechanisms for Implementation	Possible Funding
24	Extreme Temps (Heat / Cold)	Education & Awareness Programs	Educate the public on the dangers of extreme heat or extreme cold and how to take personal safety measures during periods of extreme temperatures.	Ongoing	High	2017-2021	Hubbard County ISD #306 (Laporte) ISD#308 (Nevis) ISD #309 (Park Rapids)	HC Emergency Management, HC Public Health and School District Staff	Hubbard County Emergency Management regularly posts information on the FB page on public safety measures during periods of extreme heat and cold. Hubbard County Public Health also works to reach out to vulnerable populations, such as the elderly. Schools regularly provide education to students on measures to take to avoid heat stroke, hypothermia, or frostbite during extreme summer/winter weather.	County Budget

Table G - 10. Additional Mitigation Actions Identified for Specific School Districts for Implementation by Specific ISDs

#	Hazard	Mitigation Strategy	School District Mitigation Action	Status	Priority Ranking	Time-frame	Jurisdictions (Public School Districts)	Responsibility	School District Comments on Planning Mechanisms for Implementation	Possible Funding
1	Severe Winter & Summer Storm	Mitigation Preparedness & Response Support	Install generator to support 24/7 electrical service to provide sheltering for students, staff and community.	New	High	2017-2021	ISD #308 (Nevis)	ISD 308 Superintendent & Staff	This effort will be incorporated into the School District plans for building maintenance and improvements.	School District Funding / possible grants
2	Severe Winter & Summer Storm	Mitigation Preparedness & Response Support	Install a generator to provide backup power for school use as Red Cross sheltering site.	New	High	2017-2021	ISD #306 (Laporte)	Superintendent & Staff	This effort will be incorporated into the School District plans for building maintenance and improvements.	School District Funding / possible grants
3	Severe Winter & Summer Storm	Mitigation Preparedness & Response Support	Install generators backup power for the Park Rapids Area Schools (High School and Frank White Education Center/District Office).	New	High	2017-2021	ISD #309 (Park Rapids)	Superintendent & Staff	This effort will be incorporated into the School District plans for building maintenance and improvements.	School District Funding / possible grants
4	Severe Winter & Summer Storm	Education & Awareness Programs	Use Community Education to provide personal preparedness education programming and provide preparedness materials/packages.	New	High	2017-2021	ISD #309 (Park Rapids)	Superintendent & Staff	Community Education programming will coordinate with Hubbard County Emergency Management on this effort to ensure we cover critical information on preparedness.	School District Funding
5	Severe Summer Storm	Structure and Infrastructure Projects	Retrofit the current school gym to be a community safe room for students, staff, and the community. Assess and implement the best possible shelter solution for the Industrial Arts Building for Laporte School.	New	High	2017-2021	ISD #306 (Laporte)	Superintendent & Staff in coordination with HC Emergency Management	The Superintendent and District Staff will work with Hubbard County Emergency Management on any safe room construction project we may pursue.	Possible FEMA HMA Funding for Safe Room Construction, plus local match
6	Severe Summer Storm	Structure and Infrastructure Projects	Construct safe rooms to be attached to the schools to provide for students, staff, and community members during tornado or high wind events.	New	High	2017-2021	ISD #309 (Park Rapids)	Superintendent & Staff in coordination with HC Emergency Management	The Superintendent and District Staff will work with Hubbard County Emergency Management on any safe room construction project we may pursue.	Possible FEMA HMA Funding for Safe Room Construction, plus local match

#	Hazard	Mitigation Strategy	School District Mitigation Action	Status	Priority Ranking	Time-frame	Jurisdictions (Public School Districts)	Responsibility	School District Comments on Planning Mechanisms for Implementation	Possible Funding
7	Wildfire	Education & Awareness Programs	Teach homeowners about creation of defensible space to assist with fire suppression near homes.	New	High	2017-2021	ISD #306 (Laporte)	Superintendent & Staff in coordination with MN DNR	The School District will coordinate with local fire fighters and the MN DNR on engaging students in conducting Level-1 Assessments in the community.	MN DNR FIrewise Program

Appendix H
Past Mitigation Action Review
Status Report (2010-2016)

Hubbard County – Past Mitigation Action Review Status Report (2010-2016)

Following is a report on the status of each of the mitigation actions that were included in the 2010 Hubbard County multi-hazard mitigation plan. This report meets the following FEMA crosswalk requirement:

D2. Was the plan revised to reflect progress in local mitigation efforts? (44 CFR 201.6 (d)(3) *The plan **must** describe the status of hazard mitigation actions in the previous plan by identifying those that have been completed or not completed. For actions that have not been completed, the plan **must** either describe whether the action is no longer relevant or be included as part of the updated action plan.*

COMPLETED

The following mitigation actions from the past MHMP have been completed and will be removed from the plan update.

- (Wildfire) Encourage communication and coordination among agencies in regards to equipment, training. *(This action is done each month during our monthly responder meeting.)*

- (Winter Storms) Partner with township contractors to clear roads for emergency responders on an as needed basis. *(This action is completed as a listing of all contractors & 24/7 contact phones numbers are available in the Dispatch Center.)*

- (Winter Storms) Conduct a cost benefit analysis and assess the feasibility of purchasing a 4x4 Ambulance. *(This action has been completed by all ambulance service to Hubbard Co. as they all have access to an AWD ambulance.)*

- (Winter Storms) Collaborate with statewide efforts to promote awareness during the Winter Weather Awareness Week and provide information to the public on how to prepare for severe winter weather. *(This action is completed each year by performing a public information session on the local radio station, along with publishing info on the HCSO Facebook page and putting information in the Park Rapids Enterprise newspaper.)*

- (Winter Storms) Promote and encourage the implementation of snow fences in areas where drifting snow can greatly decrease road safety. *(Hubbard Co. Public Works & the MN DOT have planted trees in the areas of most concern to Hubbard Co.)*

- (Flooding) Improve storm Water drainage on Crow Wing Lake Dr. by adding a culvert. *(Road work & landscaping has occurred to improve the area. 15 property owners on this road have been notified of the situation. No reports of flooding or damage to property has been received to the EM office since 2010.)*

- (Flooding) Enforce all County and City Sewage Treatment, Site Development, and Subdivision Regulations. *(This task is handled by the Hubbard Co. Zoning Office.)*

- (Flooding) Continue to monitor Lake Belle Taine. *(No reports of flooding or damage to property has been received to the EM office since 2010.)*

- (Dam Failure) *Ensure Fish Hook Dam and spillway are maintained and functioning properly.* Continuously monitor water levels. *(This tasking is handled by the City of Park Rapids, in cooperation with the MN DNR. No issues have been reported to the EM Office since 2010.)*

- (Dam Failure) *Ensure Fish Hook Dam and spillway are maintained and functioning properly.* Regularly inspect the Dam structure and encourage adequate funding to repair and maintain the dam. *(This tasking is handled by the City of Park Rapids, in cooperation with the MN DNR. No issues have been reported to the EM Office since 2010.)*

NOT COMPLETED (DELETE)

The following mitigation actions from the past MHMP have been deemed as not relevant and will be removed from the plan update.

- (Wildfire) In high risk areas offer a number of "Chipper Days" to promote Spring/Fall cleanup. *(Attempted this in the past – no longer a feasible option we would like to explore.)*

- (Wildfire) Consider amending City and County Zoning Ordinances to include a minimum driveway width requirement for all new residential construction. *(Each City in Hubbard Co. is responsible for their respective ordinances. There is no requirement for Hubbard Co. (rural) addresses and little interest was received by Co. Commissioners with the idea of a requirement.)*

- (Wildfire) Continue to place dry hydrants in areas not currently within 3 miles of an existing municipal water supply source. *(Due to the costs, Hubbard Co. Fire Depts. No longer are looking to place more dry hydrants as they prefer to pump from local waterways based on the location of the call for service.)*

- (Windstorm) Update Emergency Response Protocol to include severe weather pages to be sent to all Emergency Responders, and to notify media through State Duty Officer. *(Severe weather pages are not sent to all Emergency Responders from Hubbard Co. Each agency is responsible for notification of their personnel.)*

- (Windstorm) Encourage storm shelter construction in all mobile home parks throughout Hubbard Co. *(The encouragement of the shelter construction in all mobile home parks throughout Hubbard Co. has been made, but due to the seasonal & low income tenant in the parks, the return on investment is not equal to the cost of installation.)*

- (Flooding) Encourage installation of backflow protection in areas throughout Park Rapids prone to flooding. *(This action is completed by the City of Park Rapids.)*

- (Flooding) Educate citizens and businesses about BMP for reducing storm water run-off. *(Storm run-off has not been a reported problem to Hubbard Co. since 2010.)*

- (Flooding) Determine appropriate mitigation strategies to reduce the potential for flooding. Re-evaluate best possible solution to the problem. (Include home owners and lake association to determine mitigation actions that can prevent future flooding of homes). *(No areas of flooding have been a reported problem to Hubbard Co. since 2010.)*

- (Flooding) Pursue NFIP membership and CRS enrollment, in order for residents to be able to purchase reduced flood insurance. (No designated Floodplain exists) *(No areas of Hubbard Co. are in a Floodplain.)*

- (Flooding) Review County and City Ordinances and implement preventative flooding measures whenever appropriate. *(No areas of Hubbard Co. are in a Floodplain.)*

NOT COMPLETED (ONGOING/KEEP FOR PLAN UPDATE)

The following mitigation actions from the past MHMP have not been completed, have been deemed as still relevant and will be carried over into the plan update. Actions will be revised as necessary.

- (Wildfire) Develop and implement a Community Wildfire Protection Plan. *(Develop and implement of a Community Wildfire Protection Plan will be explored and implement into 2017-2018 as feasible with cooperation of Hubbard Co. Forestry & MN DNR Forestry.)*

- (Wildfire) Implement the Federal FireWise program. *(The FireWise program for Hubbard Co. will be re-evaluated during the winter of 2016-2017. More efforts will be taken to fully implement the plan.)*

- (Wildfire) Conduct risk assessment to evaluate vegetative fuels specifically around communities at risk (Akeley, Park Rapids, and Nevis). *(This tasking is completed by the Hubbard Co. Environmental Services & MN DNR.)*

- (Wildfire) Promote defensible spaces with residents and potentially offer a cost share program for high risk residences. *(This will be advanced further with the implementation of the FireWise program.)*

- (Wildfire) Develop an educational campaign to promote wildfire risk reducing activities. *(This will be advanced further with the implementation of the FireWise program.)*

- (Wildfire) Form an Emergency Planning Committee, which will meet semi-annually to discuss emergency preparedness and response issues. *(This will be advanced further with the implementation of the FireWise program.)*

- (Wildfire) Purchase and install metal screens for dry hydrants. *(If & when new hydrants are placed, metal screens are installed with the new equipment.)*

- (Windstorm) Inform and educate the public about severe storm events and safety precautions by hosting local severe weather information seminars. *(This action is completed during the SkyWarn Weather Spotter training that occurs every 2 years in Hubbard. Information is posted on the EM website & the HCSO Facebook page.)*

- (Windstorm) Offer annual SkyWarn training in various parts of the County for first responders and community residents. *(SkyWarn Weather Spotters training occurs every 2 years in Hubbard Co. due to the low participation numbers when it is conducted every spring time. Handouts & information is available from the EM office upon request at any time of year.)*

- (Windstorm) Install up to 10 additional audible alarms throughout Hubbard Co. to increase Civil Defense warning capacity. Evaluate the need for remotely controlled sirens and backup generators. *(Additional audible alarms are installed throughout Hubbard Co. to increase Civil Defense warning capacity when purchasing funds are available. All new installations are controlled by the Hubbard Co. Sheriff's Office Dispatch Center.)*

- (Windstorm) Test all Tornado warning sirens on Tornado Drill Day during Severe Weather Awareness Week. Encourage businesses to participate in the drill. *(All Tornado warning sirens are testing on Tornado Drill Day during Severe Weather Awareness Week, along with the 1st Wednesday of each month.)*

- (Winter Storms) Work with Utility Companies, St. Joseph Hospital, and private businesses to promote the high priority service list for people who rely on life saving medical devices. *(Hubbard Co. Public Health is tasked with maintaining the listing.)*

- (Winter Storms) Assess the need for potential generators that can be purchased and made available for residents to loan out in the event of a prolonged power outage. *(This action has been discussed and tabled as the return on investment is not equal to the cost of purchasing & storing the generators.)*

- (Winter Storms) Promote and encourage a good neighborhood initiative through townships and township association. *(This action is always encouraged & assistance is provided by the EM office upon request.)*

- (Winter Storms) Evaluate and bury power lines where appropriate throughout the County. *(This action is occurring in different locations in the county by the respective power companies.)*

- (Winter Storms) Work with local Utility companies to educate citizens on the importance of keeping trees and branches clear of power lines. *(This action is done in cooperation with the local power companies to inform their customers of the request. Public information is available upon request.)*

- (Flooding) Structurally improve and redesign roads, streets, culverts and bridges county-wide to reduce and eliminate overland flooding and road wash-outs. *(This action is completed by Hubbard Co. Public Works & MN DOT.)*

- (Flooding) Identify locations and assess the need to construct and replace existing storm water mains throughout the Hubbard Co. and pursuit funding. *(This action is completed by Hubbard Co. Public Works & MN DOT. More will be completed as fund sources & bonding occur, and the problem areas are scheduled to be completed on the Hubbard Co. Road Plan.)*

- (Schools) Increase or construct new shelter space wherever a deficiency exists. *(This is ongoing & will be completed as funding & budgets allow at each school district in Hubbard Co.)*

- (Schools) Assess and implement the best possible shelter solution for the Industrial Arts Building for Laporte School. *(Options are being explored for the off-site location.)*

- (Schools) Identify and purchase essential supplies and have them readily available in all schools. *(This is ongoing & will be completed as funding & budgets allow at each school district in Hubbard Co.)*

- (Schools) Install remote locking system for all main entrance points. *(This is ongoing & will be completed as funding & budgets allow at each school district in Hubbard Co.)*

- (Schools) Install universal locks throughout the entire school so each room can easily be accessed with a master key. *(This is ongoing & will be completed as funding & budgets allow at each school district in Hubbard Co.)*

- (Schools) Implement measures to allow for remote accessibility of school warning systems. *(This is ongoing & will be completed as funding & budgets allow at each school district in Hubbard Co.)*

- (Schools) Practice remote access from Hubbard County Law Enforcement Center. *(This is ongoing & will be completed as funding & budgets allow at each school district in Hubbard Co.)*

- (Schools) Purchase backup generators for all schools currently without a backup power source. *(This is ongoing & will be completed as funding & budgets allow at each school district in Hubbard Co.)*

- (Schools) Plan and implement a mock disaster response in coordination with other agencies for a hazardous material spill. *(Drills & exercises are conducted when feasible at the school locations.)*

- (Schools) Continue to practice various types of mock drills including fire and tornado drills. *(All Hubbard Co. schools are encouraged to practice & drill for tornados, and mock car crash drills are carried out at the high schools throughout the county.)*

- (Schools) Update school Emergency Operations Plans regularly and ensure copies are available to Hubbard Co. EM and Law Enforcement. *(All schools are asked to provide an updated copy to the HCSO EM Office at the start of each school year.)*

- (Schools) Implement a digital-auto phone notification system, and explore other electronic forms of communication such as e-mail, and social networking for notifying students and parents about emergency situations. *(Each school district has a system in place & work with law enforcement when needed to release importation information to the students and parents.)*

Appendix I
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Appendix J
Hubbard County Plans & Programs in Place

Plans/Programs	***Yes/No***
Comprehensive/Master Plan	Yes
Capital Improvements Plan	Yes
Economic Development Plan	No
Emergency Operations Plan	Yes
Continuity of Operations Plan	No
Transportation Plan	Yes
Community Wildfire Protection Plan	No
FireWise Program	No
Water Conservation/Emergency Preparedness Plan	
Wellhead Protection Plan	
Database of dry hydrants/well access	No
Burning permits/restrictions	Yes
Water Management Plan	Yes
Zoning ordinance	Yes
Subdivision ordinance	Yes
Floodplain ordinance	Yes
Natural hazard specific ordinance (stormwater, steep slope, wildfire)	Yes (Bluff, Stormwater, No-Wake)
Flood insurance rate maps	Yes
Acquisition of land for open space and public recreation uses	Yes (Regional Park Plans, Natural Area Corridors ordinances)
School closing policy/communications plan in event of inclement weather/temperatures	Yes
Storm shelters (list all locations)	No
Warning sirens (list all locations)	Yes
SKYWARN Program	Yes
CodeRED Mass Notification System	Yes
Severe Weather Awareness Week	Yes
Winter Weather Awareness Week	Yes
NOAA Weather Radios	No
THIRA	Yes

Administration	***Yes/No***
Planning Commission	Yes
Mitigation Planning Committee	Yes
Maintenance programs to reduce risk (e.g., tree trimming, clearing drainage systems)	Yes
Mutual aid agreements	
Staff	***Yes/No***
Chief Building Official	Yes
Floodplain Administrator	Yes
Emergency Manager	Yes

Community Planner	Yes
Civil Engineer	Yes
GIS Coordinator	Yes
Technical	***Yes/No***
Warning systems/services (Reverse 911, outdoor warning signals)	Yes
Hazard data and information	Yes
Hazus analysis	No

Program/Organization	***Yes/No***
Local citizen groups or non-profit organizations focused on environmental protection, emergency preparedness, access and functional needs populations, etc.	
Ongoing public education or information program (e.g., responsible water use, fire safety, household preparedness, environmental education)	Yes
Natural disaster or safety related school programs	No
StormReady certification	No
Firewise Communities certification	No
Public-private partnership initiatives addressing disaster-related issues	No

Appendix K
Local Mitigation Capabilities
Assessment Report

HUBBARD COUNTY

2017 Local Mitigation Capabilities Assessment Report

As part of the 2017 Hubbard County Multi-Hazard Mitigation Plan update, city and township jurisdictions as well as County departments were invited to respond to a "Local Mitigation Capabilities Assessment" (**LMCA**) questionnaire to provide information about the current capabilities they have in place to support hazard mitigation, as well as any identified gaps or deficiencies. Information from the LMCAs was used to assist in developing new mitigation actions for the 2017 plan update. Following are the responses from those departments or jurisdictions that participated.

CITY OF LAPORTE, MN

Submitted by: Patricia Gendron, City Council Member

Q1. What plans, authorities, or policies are in place to help accomplish mitigation in your community?

- The City of Laporte has no formal written plans or policies in place to help accomplish mitigation in the community. The city needs to work with School District #306 in order to set up plans and/or retrofit current gym facilities for the use of a safe house, and education for the public needs to take place.
- The City of Laporte, School District #306, and possibly the townships of Lakeport, Hart Lake and Hendrickson need specialized help to accomplish the goal to write a plan and secure funding and public education for sheltering in times of weather, etc.

Q2. What staff (organizational capacity) are in place to help accomplish mitigation in your community?

- The current city government is comprised of one mayor and four council members. The only paid employees are casual employees including one clerk, one treasurer and one water management specialist. There is no city hall, or regular government office hours or contact information. Mayor and council members can be reached on private home phone and/or cell phone numbers. Regular city council meetings are held once a month, on the 2nd Tuesday at 7:00 p.m. at either the school community room or Lakeport town hall.
- The city relies on Lakeport volunteer fire and rescue for emergency service protection.
- Police protection is provided by the Hubbard County Sheriff's Office.
- The city has a population of 111 (2010 census), but does draw trade and services population from several nearby townships, including Lakeport, Hart Lake and Hendrickson. The city has in the past used the Lakeport Town Hall for meetings and city functions as needed.

Q3. What programs are in place to help accomplish mitigation in your community?

- The City of Laporte has a very old emergency alert siren that cannot be tied into the County Emergency System. The city is desperately in need of a new updated system.

- The local school system does practice drills for tornadoes, fire and terrorism.

Q4. What funding or other resources are available to help accomplish mitigation in your community?

- The City of Laporte needs to work with state and federal partners to address mitigation efforts, but lacks information on what programs are available.
- The City of Laporte would like to work with local partners, but lacks information and assistance to achieve this goal.

Q5. What program gaps or deficiencies do you feel exist that are a barrier to accomplishing mitigation in your community?

- We need a comprehensive plan to address greater hazard mitigation.
- We need funding to replace the old warning system.
- There are mobile homes within our city limits that do not meet storm shelter requirements. Most homes within the city limits do not have basements. Most of the city residents are elderly or do not have adequate transportation.
- The school would be the logical place for a safe room or shelter, but would need to be retrofit to accommodate student and/or city residents.

CITY OF PARK RAPIDS, MN

Submitted By: Ryan Mathisrud, City Planner

Q1. What plans, authorities, or policies are in place to help accomplish mitigation in your community?

- We have a 10-year Comprehensive Plan (2008) that is used to plan for the physical growth of the community and appropriate land uses and policy statements.
- We have a Planning and Zoning Commission that reviews development applications.
- The river area has shoreland zoning and we review development applications in the river area for consistency with shoreland ordinance and lowest floor level elevations.
- We have a CIP program to plan for future road and infrastructure improvements. This can include stormwater improvements
- We have a stormwater utility ordinance to pay for stormwater infrastructure upgrades.
- We administer the Minnesota Building Code.
- We have a 2013 Emergency Operation Plan.

Q2. What staff (organizational capacity) are in place to help accomplish mitigation in your community?

- The City Administrator is the designated emergency manager.

- The Public Works Director manages equipment and personnel that would respond to an emergency. The Public Works Director also addresses culverts and flood mitigation.
- We have a City Planner who can work on plans or mitigation strategies.
- The City Planner acts as the city's GIS specialist.

Q3. What <u>programs</u> are in place to help accomplish mitigation in your community?

- The city has an emergency operation plan.
- The city has an urban forestry committee, and a City Forester that maintains the city forest and addresses dead drees in the community.

Q4. What <u>funding or other resources</u> are available to help accomplish mitigation in your community?

- The city has a capital improvement plan for budgeting for projects.
- The city has some capacity to write grants.
- The city has a stormwater utility dedicated to stormwater enhancement projects

Q5. What <u>program gaps or deficiencies</u> do you feel exist that are a barrier to accomplishing mitigation in your community?

- We need to update the comprehensive plan to address mitigation.
- Public support for mitigation projects.
- Identifying priorities for mitigation-what is important?

CLAY TOWNSHIP

Submitted By: Andy Kietzman, Board Chairman

Q1. What <u>plans, authorities, or policies</u> are in place to help accomplish mitigation in your community?

- None at this time

Q2. What <u>staff</u> (organizational capacity) are in place to help accomplish mitigation in your community?

- None at this time.

Q3. What <u>programs</u> are in place to help accomplish mitigation in your community?

- Clay Township supports a fire contract with the Park Rapids Fire Department. Clay Township has traditionally sent funds annually to help support the Hubbard Co. First Responder program.

Q4. What funding or other resources are available to help accomplish mitigation in your community?

- Clay Township pays a fee to Park Rapids Fire Department to support our fire contract. Clay Township has sent funding to help support the Hubbard County First Responders. When appropriate in the past, Clay Township has been able to utilize FEMA funds to help cover costs of storm damage to roads.

Q5. What program gaps or deficiencies do you feel exist that are a barrier to accomplishing mitigation in your community?

- Clay Township's Board has always had a focus on road maintenance and repair, with some zoning administration geared towards keeping the Township from being overdeveloped in regard to home and building site construction. Emergency mitigation has never been in our scope of focus, other than to ensure that we have an annual fire contract and support the First Responders. FEMA funds have been utilized in the past to help with financial burdens but only as they relate to road maintenance and repair.

CLOVER TOWNSHIP

Submitted By: Teresa Ohm, Clerk

Q1. What plans, authorities, or policies are in place to help accomplish mitigation in your community?

- The township doesn't have any policies. We react as needed to situations.

Q2. What staff (organizational capacity) are in place to help accomplish mitigation in your community?

- Township supervisors monitor the roadways once a month.

Q3. What programs are in place to help accomplish mitigation in your community?

- None

Q4. What funding or other resources are available to help accomplish mitigation in your community?

- The township has applied for FEMA after major disasters.

Q5. What <u>program gaps or deficiencies</u> do you feel exist that are a barrier to accomplishing mitigation in your community?

- None listed

HUBBARD COUNTY NATURAL RESOURCES CONSERVATION DISTRICT (NRCS)

Submitted By: Dan Pazdernik: Natural Resources Conservation Service-District Conservationist

Q1. What <u>plans, authorities, or policies</u> are in place to help accomplish mitigation in your community?

- The Natural Resources Conservation Service administers federal Farm Bill programs.
- All farm bill programs are on a voluntary basis. These programs provide technical assistance and financial assistance to agricultural producers to install conservation practices on their land.

Q2. What <u>staff</u> (organizational capacity) are in place to help accomplish mitigation in your community?

- We have two staff locally, the District Conservationist and the Soil Conservation Technician in Hubbard County. We have GIS specialists, wetland specialists, program specialists, and engineers, among others, available for assistance upon requests that are located in different areas of the state.

Q3. What <u>programs</u> are in place to help accomplish mitigation in your community?

- Our main program in Hubbard County is the Environmental Quality Incentives Program which provides technical assistance and financial assistance for agricultural producers to install conservation practices on their land that address resource concerns, whether it is fixing the damage such as gully erosion or preventing resource concerns from becoming issues such as no-till farming which will significantly decrease soil erosion in crop fields.

Q4. What <u>funding or other resources</u> are available to help accomplish mitigation in your community?

- Farm Bill funding

Q5. What <u>program gaps or deficiencies</u> do you feel exist that are a barrier to accomplishing mitigation in your community?

- The NRCS is able to provide technical assistance to everybody but can only provide financial assistance to individuals or entities that meet producer eligibility and the land being affected must meet agricultural requirements.

HENRIETTA TOWNSHIP

Submitted By: Russell Johnsrud, Vice Chairman

Q1. What plans, authorities, or policies are in place to help accomplish mitigation in your community?

- We have a zoning ordinance that is designed to plan for the future growth of the township and appropriate land uses.
- We have a Planning Commission and Zoning Administrator to help enforce the zoning ordinance.
- We also have an annual road tour to address road improvement projects that include culvert and drainage improvements to reduce over the road flooding and overland flooding from roads to public waters.

Q2. What staff (organizational capacity) are in place to help accomplish mitigation in your community?

- We have a township road supervisor that addresses road maintenance issues and serves as an emergency contact concerning road issues for the township.
- Our contracted road maintenance personnel are on call for emergency road issues on an as-needed basis.

Q3. What programs are in place to help accomplish mitigation in your community?

- None at this time

Q4. What funding or other resources are available to help accomplish mitigation in your community?

- The township is working with local and state partners to address mitigation efforts following the past storm events such as the July and August 2016 rainfall events.

Q5. What program gaps or deficiencies do you feel exist that are a barrier to accomplishing mitigation in your community?

- Not sure at this time

NEVIS TOWNSHIP

Submitted By: Pat Hrubes, Clerk

Q1. What plans, authorities, or policies are in place to help accomplish mitigation in your community?

- Every year the Board of Supervisors reviews the township's roads and plan any repair or maintenance that needs to be done to ensure township residents have reliable access to all parts of the township.

Q2. What staff (organizational capacity) are in place to help accomplish mitigation in your community?

- Nevis Township has 3 Supervisors and 1 full time road maintenance employee. They only have the capability of handling minor emergencies. Anything larger must be handled by Hubbard County, the State of Minnesota or the Federal government.

Q3. What programs are in place to help accomplish mitigation in your community?

- Nevis Township does not have any plans in place or any trained force to deal with major disasters.

Q4. What funding or other resources are available to help accomplish mitigation in your community?

- In the past, the township has worked with FEMA to address repair caused by flooding.

Q5. What program gaps or deficiencies do you feel exist that are a barrier to accomplishing mitigation in your community?

- Nevis Township does not have the manpower or resources to take on any major mitigation without the assistance of the county, state or federal governments. The township can only handle small scale mitigation with the existing personnel, such as clearing and repairing roads after major storms.

HUBBARD COUNTY PUBLIC HEALTH

Submitted By: Raeann Mayer, Community Health Director

Q1. What plans, authorities, or policies are in place to help accomplish mitigation in your community?

- We have the Hubbard County "Health and Medical All-Hazards Response and Recovery Plan."

Q2. What staff (organizational capacity) are in place to help accomplish mitigation in your community?

- We have 13 Public Health Staff working on educating the public on mitigation issues.

Q3. What programs are in place to help accomplish mitigation in your community?

- We do Public Health Preparedness education and exercises to identified key partners.
- We maintain the Hubbard County Health Alert Network, a Minnesota Department of Health
- Information sharing system.
- We assist the Hubbard County Emergency Management Director with Jurisdictional Risk Assessment (JRA) planning.

Q4. What funding or other resources are available to help accomplish mitigation in your community?

- We have a Public Health Preparedness Grant from Minnesota Department of Health.

Q5. What program gaps or deficiencies do you feel exist that are a barrier to accomplishing mitigation in your community?

- None listed.

HUBBARD COUNTY PUBLIC WORKS/HIGHWAY DEPARTMENT

Submitted By: David A. Olsonawski, County Engineer Public Works Coordinator

Q1. What plans, authorities, or policies are in place to help accomplish mitigation in your community?

- Emergency Management leads our hazard mitigation process. We have the resources to help with debris removal and dumping along with the equipment and staff to help.

Q2. What staff (organizational capacity) are in place to help accomplish mitigation in your community?

- The County has a Public Works department with equipment and staff ready to assist as needed for emergency situations. We have a team of engineers and maintenance personnel to organize the event.

Q3. What programs are in place to help accomplish mitigation in your community?

- The County has a person managing the Emergency Management process, there is an emergency alert system in place, weather reports are transmitted, drills are scheduled, etc.

Q4. What <u>funding or other resources</u> are available to help accomplish mitigation in your community?

- If our event is severe enough there is FEMA funding, State Disaster Mitigation funding and of course local funding if needed.

Q5. What <u>program gaps or deficiencies</u> do you feel exist that are a barrier to accomplishing mitigation in your community?

- None that I can think of at this time.