

Kalkaska County Hazard Mitigation Plan Input Community Meeting

April 26, 2022



**Networks
Northwest**

Talent / Business / Community



Introductions

- Networks Northwest - Community Planners
 - Jennifer Neal, AICP
 - Stephanie Loria
- Community Partners
 - Mike Thompson, Emergency Management Coordinator
 - County EM's Local Planning Team (LPT)

Agenda

- Thank you for joining us!
- We will be discussing the following:
 - Purpose of the Natural Hazard Mitigation Plan
 - Your Priority Hazard Concerns
 - Your Community Vulnerabilities
 - Site Specific Hazard Concerns



Welcome!

Poll #1 Select the **top 3 natural hazard events/impacts** that concern you in Kalkaska County

Potential Natural Hazard Events

- Severe thunderstorms (*can produce hail, lightning, high winds, flooding, etc.*)
- Hail
- High Winds
- Tornado
- Lightning
- Winter Storm (*can produce ice, sleet, heavy snowfall, high winds...*)
- Wildfire
- Drought
- Extreme heat or cold
- Excessive Rainfall causing riverine/urban flooding or erosion
- Dam Failure
- Invasive species (can cause damage to forests, crops, native species, etc.)
- Public health emergency (i.e., pandemic; contaminated water supply)
- Wildlife or zoonotic diseases (i.e., Bovine TB, Avian Influenza, Swine Flu)

Purpose

Hazard Mitigation Planning

“The effort to reduce loss of life and property by lessening the impact of disasters”

Subscribe

Latest Issues

SCIENTIFIC
AMERICAN

Cart 0 Sign In

Billion-Dollar Disasters Shattered U.S. Record in 2020

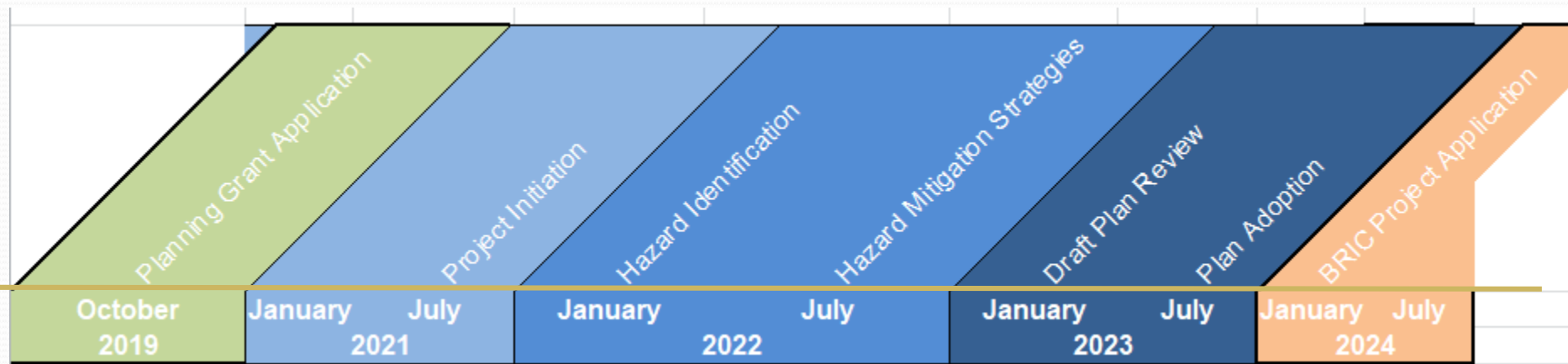
The 22 events that each caused at least \$1 billion in damage show the increasing costs of climate change

By Thomas Frank, E&E News on January 11, 2021



An aerial view of flood waters from Hurricane Delta surrounding structures destroyed by Hurricane Laura on October 10, 2020 in Creole, Louisiana. Credit: Mario Tama Getty Images

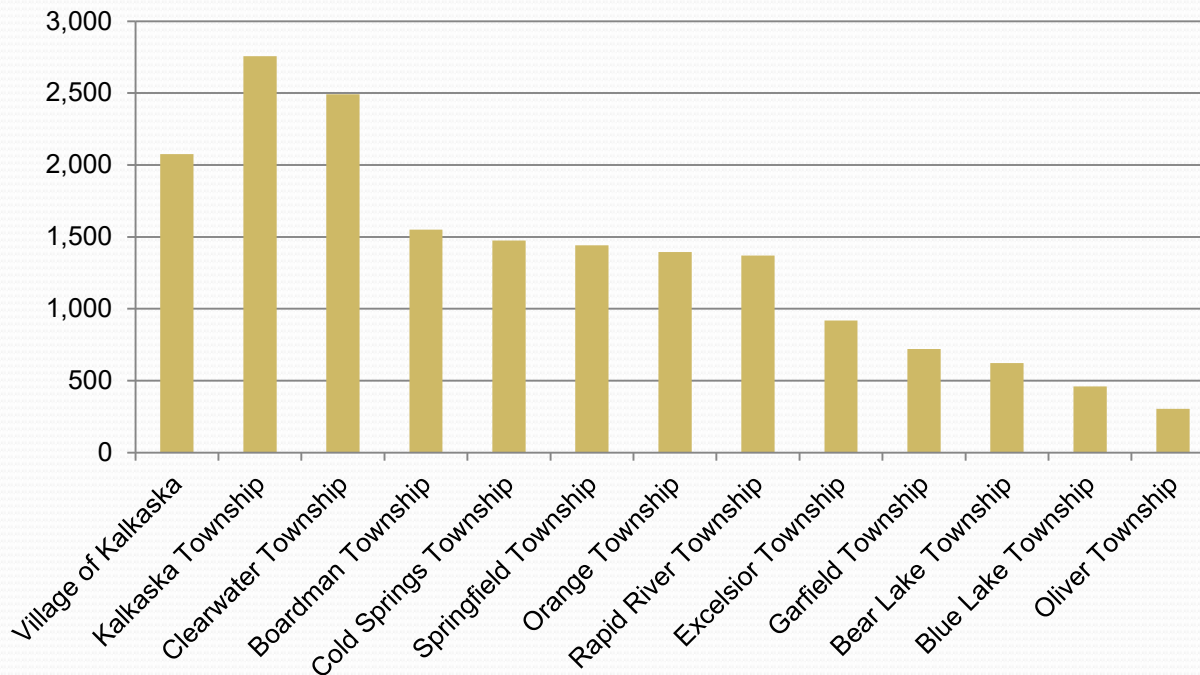
Timeline (2021-2024)



2020 FEMA Grant Awards

Building Resilient Infrastructure & Communities (BRIC) Funding Program

- \$700 million available for FY 2020
- Awards for “economically disadvantaged rural communities”
 - 3,000 or fewer individuals – see local jurisdiction population below



2020 FEMA Grant Awards

Building Resilient Infrastructure & Communities (BRIC) Funding Program

- Income not to exceed 80% of the national per capita income
- In 2019, US per capita income was \$34,103. 80% = \$27,282
- Kalkaska County per capita income in 2019, \$24,358
- 77% of economically disadvantaged rural community applications were awarded

2020 FEMA Grant Awards

Building Resilient Infrastructure and Communities (BRIC) Funding Program

- Awards for Wildfire Mitigation

- To ensure states, local communities, tribes and territories have what they need to respond wildfires and have capacity to address mitigation, there is a renewed focus on building the capability to take advantage of mitigation funding offered by FEMA.
- One project that FEMA selected represents an innovative systems methodology to reduce the risk of catastrophic wildfires. The methodology works simultaneously at large wildland and neighborhood scales to build more resilient communities.
- The total project cost is \$49.3 million. FEMA estimates that 4,103 structures will opt into the defensible program that provides cost-share to property owners to implement defensible space and ignition resistant construction activities.
- The project would also fund hazardous fuels reduction activities across 5,410 acres within three proposed project areas. The number of structures protected by hazardous fuels reduction activities is estimated to be 6,498.

Priority Areas and Strategies from 2016 HM Plan

Table 3: Priority Areas for Kalkaska County

Natural Hazards Mitigation Priority Areas	
Priority Area 1: (County) Potential of severe thunderstorms and high and straight line winds, and tornadoes	
Mitigation Strategies: <i>Severe Weather - High Winds and Tornadoes</i>	
Priority Area 2: (County) Potential wildfire/urban interface area	
Mitigation Strategies: <i>Wildfire</i>	
Priority Area 3: (County) Potential of severe winter weather with snow and ice hazards	
Mitigation Strategies: <i>Extreme Winter Weather</i>	
Priority Area 4: (Rugg Dam and Antrim - Rugg Pond area of the Rapid River) Potential of dam failure with a low possibility of flooding	
Mitigation Strategies: <i>Flood/Flash Flood</i>	

Presidential and Governor Declared Emergencies/Disasters

Date of Incident	Type of Incident	Affected Area	Type of Declaration/Federal ID #	Notes
March 2020	COVID-19; COVID-19 Pandemic	Statewide & National	State of Emergency, National Emergency (3455), and Governor and Presidential Declared Major Disaster (4494)	
1/29/2019	Extreme Cold	Statewide	Governor Declared Emergency	
9/4/2005 and 9/7/2005	Hurricane (Katrina) Evacuation	Statewide	Governor Declared Disaster and Presidential Declared Emergency (3225)	Declared due to the emergency conditions in the State of Michigan, resulting from the influx of evacuees from states impacted by Hurricane Katrina beginning on August 29, 2005.
1/26- 27/1978	Blizzard, Snowstorm	Statewide	Presidential Declared Emergency (3057); Governor Declared Disaster	
3/2/1977	Drought	44 Counties, including Antrim, Benzie, Charlevoix, Emmet, Grand Traverse, Kalkaska , Leelanau, Manistee, Missaukee, Otsego, Roscommon and Wexford.	Presidential Declared Emergency (3035)	

Historic Natural Hazard Events

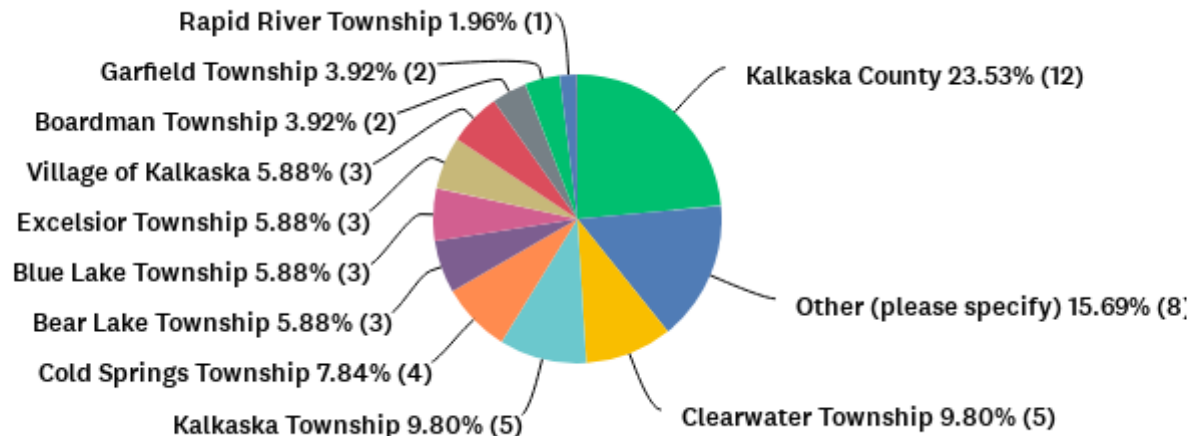
- Sources: NOAA Storm Database and FEMA's records of Presidential- and Governor-Declared Emergencies or Disasters

Frequency	Natural Hazard	# of Events	Time Interval/ Year Event Recorded
1	Extreme Winter Weather (includes 4 extreme cold events)	58	1996-2021
2	Thunderstorms with Wind / High Wind	32 / 4	1995-2021
3	Hail	12	2000-2021
4	Tornado	8	1974-2021
5	Flood/Flash Flood	2	2001, 2006
	Extreme Heat	2	2001, 2018
	Lightning	2	2000, 2005
	Drought	2	2001, 1977
6	Wildfire	1	2010
	Pandemic	1	2020

HM Community Survey Responses

11/8/2021 to 02/20/22

Q1 Please indicate the local jurisdiction you represent in Kalkaska County.

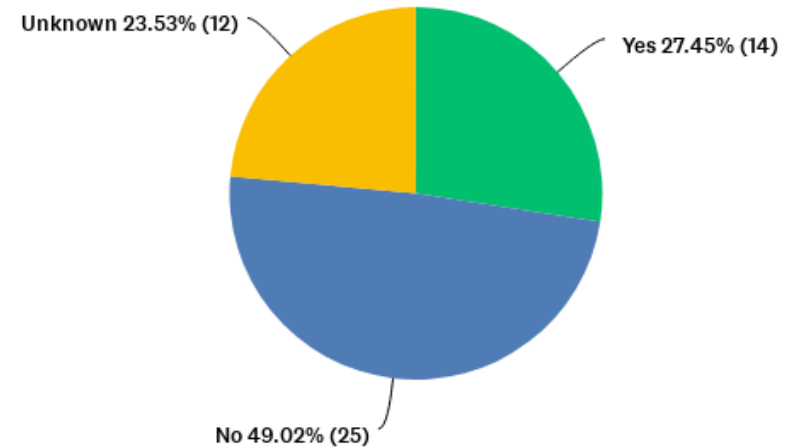


"OTHER": MI State Police; County Road Commission; DHD #10; Antrim County; Kalkaska Conservation District; MDNR - Private and Public Lands in the County; Non-Profit Director - Multiple Jurisdictions; Both Excelsior & Coldsprings Twps.

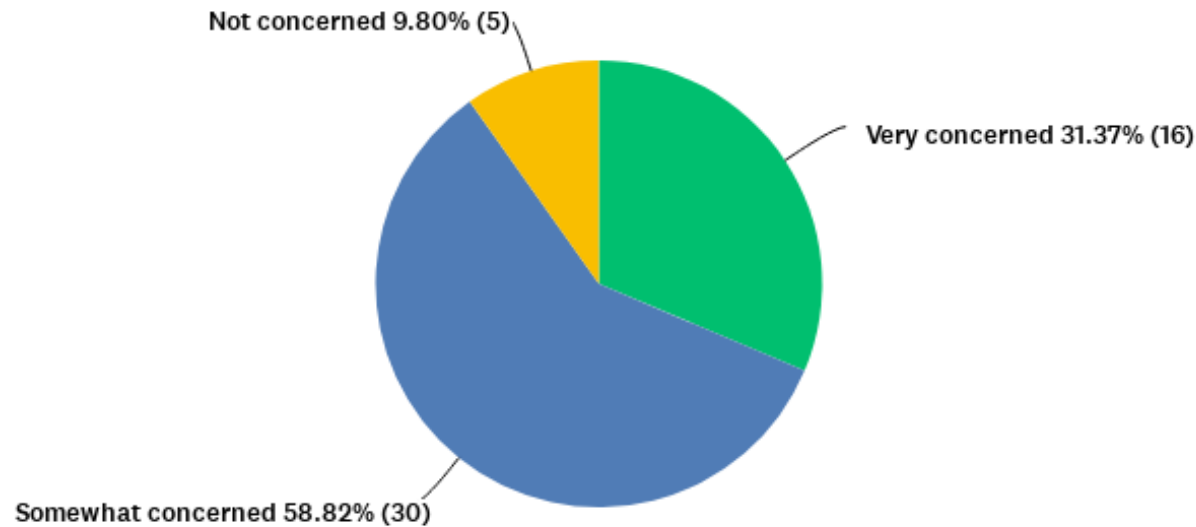
- 51 responded out of 88 invitations = 58%
- No response from Oliver, Orange and Springfield Twps.

Q6: Has the community you represent experienced a significant natural hazard event within the last 10 years?

- Kalkaska County
 - Pandemic
 - Significant and extended power outage due to a winter storm
 - Wildfire (including some across the state)
 - Flooding
 - Winter storms
- Village of Kalkaska
 - 2016 windstorm
- Kalkaska Township
 - Tornadoes
 - Forest fire
- Clearwater Township
 - 2015 extreme winds that felled many trees and power lines
 - Straight line winds
 - 5-7" rain that fell in 3 hours
 - Possible insect infestation (emerald ash borer, oak wilt, etc. that have killed various types of trees)
- Cold Springs Township
 - Tornado
- Excelsior Township
 - Snowstorm with electrical outage for 5 days
- Antrim County
 - Straight line winds
 - Tornado



Q8: How concerned are you about future natural hazard events impacting your community?



Kalkaska Community Survey Responses

Q9. What type of natural hazard events are likely to have the largest impact on your community, for example fire, flood, drought, illness outbreak, etc.?

#1. Wildfire (29)

#2. Illness Outbreak/Pandemic (17)

#3. Flooding/Heavy Rainfall (13)

#4. Winter Storms(12)

#5. Tornado (10)

#6. High Winds/Straight line Winds (9)


#7. Drought (5)

#8. Dams (3)

*Power outages resulting from high winds/winter weather was mentioned several times - concern for area seniors in the winter; concern that if heat goes out with a snowstorm the old County Road Commission garage could collapse and impact access to road clearing equipment.

*Also mentioned: contaminated well water; general storm damage; cell tower destruction

**Hazards that are NOT part of this scope of work: human-induced technological hazards, such as accidents, terrorism, civil unrest, etc. For example, accidents with oil and gas wells due to human error is not part of this scope



Q10. Does your community have concerns about infrastructure (dams, bridges, utilities, etc.) and the potential for a hazardous event in the future? Please describe.

#1. Dams (10) Rugg Pond Dam – potential failure or overflow in Rapid River Twp; numerous privately-owned small dams that could fail. The Rugg Pond Dam is being monitored and evaluated annually; there County is working on a plan for it. There are 2 [major] dams in the county and several small dams that could fail.

#2. General infrastructure/utility concerns (7)

#3. Roads/Culverts (5) and Bridges (5) – Culvert washouts; CR 571 flooding in Cold Springs Twp; Clearwater Twp. has multiple roads that have consistent water damage with heavy rain (Zimmerman Rd., Gillet Rd.); Aging bridges on Rapid City Road over the Rapid River and Crystal Beach Rd. over the Torch River.

#4. Lack of broadband (4) /cell service and power outages (4) – in the event of an emergency communication utilities are crucial to maintain

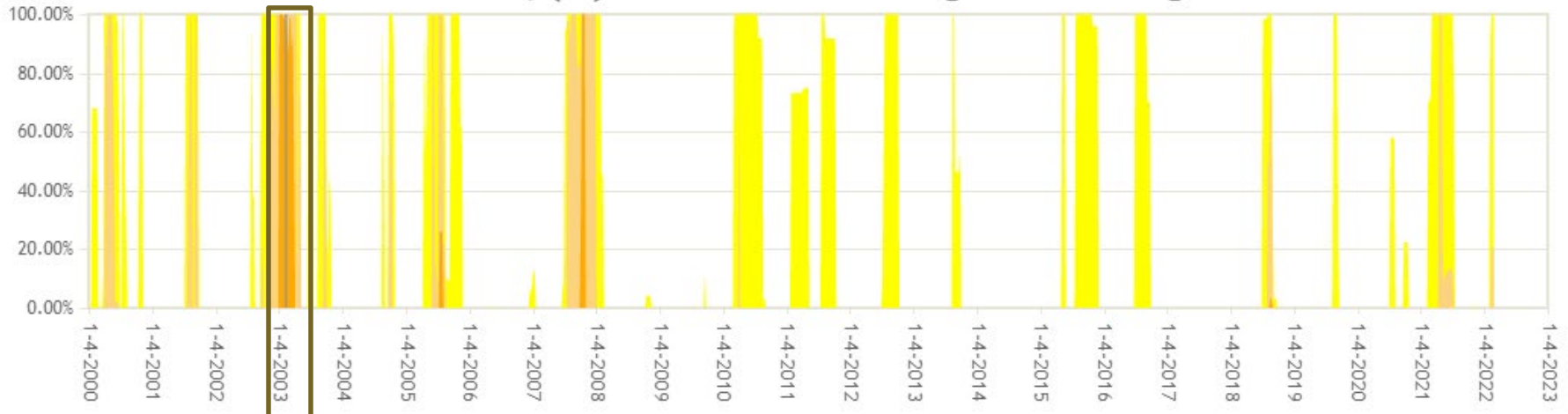
Drought

- Definition: Drought is a consequence of a natural reduction in the amount of expected precipitation over an extended period of time, usually a season or more in length.
- There has been 1 major drought - in 1977 (Presidential Declared Emergency) and 1 recorded as a major weather event with NOAA in 2001
- According to the Community Survey results
 - Concerns about drought ranked #7 out of 8 types of natural hazards that would have the largest impact on the community

Historic Drought Risk

April 2000-April 2022

Kalkaska County (MI) Percent Area in U.S. Drought Monitor Categories



Export Graph

<https://droughtmonitor.unl.edu/DmData/TimeSeries.aspx>

Drought – Key Issues

Agricultural Production Losses

The primary direct economic impact of drought in the agricultural sector is crop failure and pasture losses. These costs are often passed on to consumers through increased prices and/or they may be offset through government disaster assistance programs. Indirect impacts of drought in the sector can include reduced supplies to downstream industries, such as food processors, and reduced demand for inputs, such as fertilizer and farm labor. The non-market impacts of production losses include mental health strain on farmers.

Pests and Diseases

Drought, coupled with high temperatures, may expand the distribution and incidence of pests and diseases that affect crops, forage, and livestock.

Decreased Water Availability for Agriculture

The depletion of water availability in soils causes significant declines in crops and livestock productivity. In addition, surface and groundwater supplies may decline during drought, affecting water availability and increasing costs to access water for crop or forage irrigation and watering livestock. With a return to normal precipitation, soil moisture typically recovers long before surface and groundwater supplies are replenished.

Specialty Crops




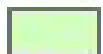

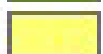

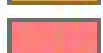
Most specialty crops (such as fruits, vegetables, tree nuts, and medicinal herbs) are more vulnerable to drought than field crops and have a higher value per unit of land/water. They may therefore represent a higher risk for experiencing economic loss in drought if the crop water demand exceeds water supply.

Wildfire

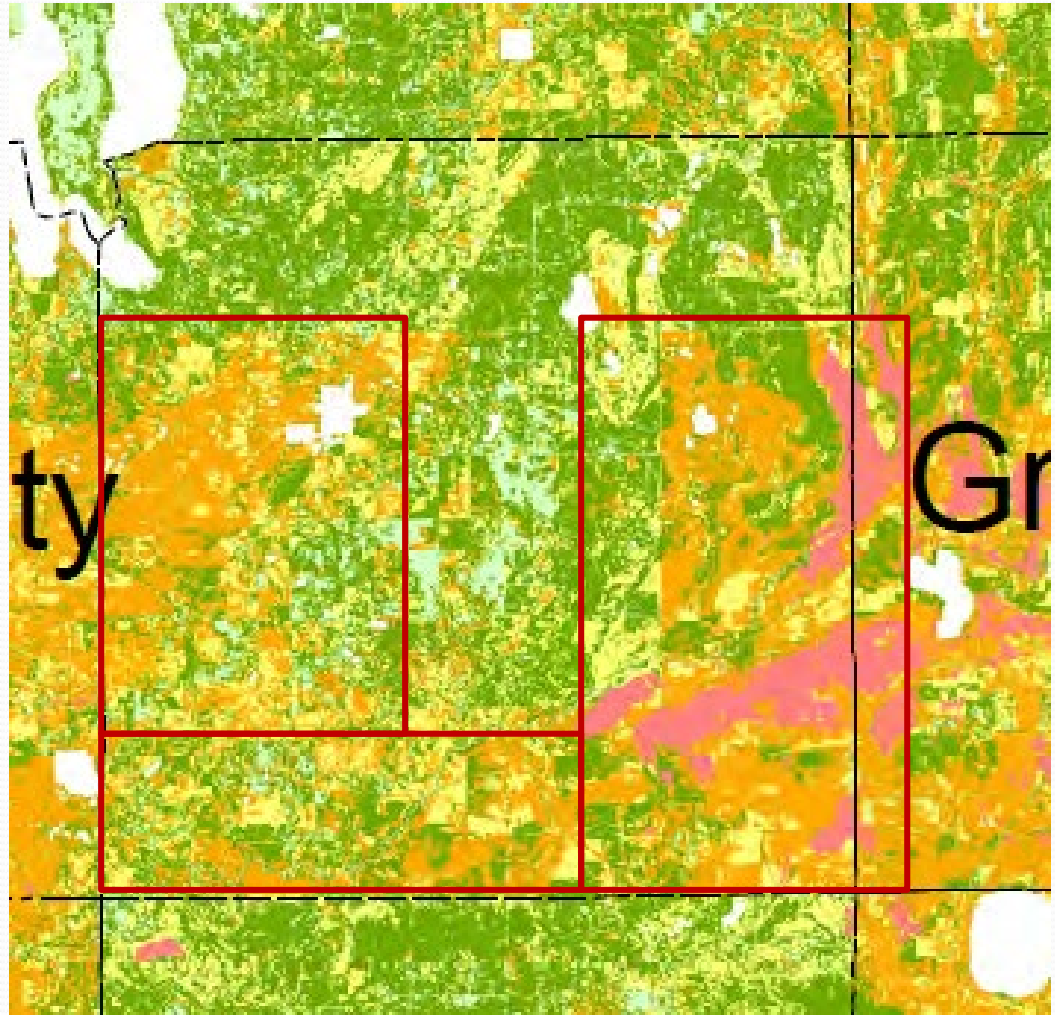
- A wildfire is an **unplanned, uncontrolled fire** in grassland, brushland, or forested areas.
- **627 wildfires** occurred on lands **under MDNR jurisdiction** within Kalkaska County from **1981-2018**, resulting in **3,200 acres burned**. This is equal to **84.2 acres burned and 16.5 wildfires per year on MDNR lands**.
- In the 10-county NW MI Region, **Kalkaska is #1 in MDNR wildfire frequency** (Source: Michigan State Police, 2019 *Michigan Hazard Analysis*)
- **Community survey results: Wildfire is the #1 natural hazard event** that would have the largest impact on Kalkaska County
- The “**Range 9 Fire**” on **May 18, 2010** at Camp Grayling, Bear Lake Twp. and Blue Lake Twp. began as a controlled burn on the artillery range of the National Guard Facility. 1,100 acres burned including 4 seasonal homes (\$125,000 property damages recorded). (Source: NOAA and MSP’s 2019 *Michigan Hazard Analysis*)
- **July 20, 2018 – A nearly 50-acre wildfire ignited in rural Kalkaska County** and kept firefighters occupied for several hours before they contained the blaze. The MDNR led the fire response, with assistance from multiple local fire departments and a military fire engine from Camp Grayling. No injuries were reported. (Source: MSP’s 2019 *Michigan Hazard Analysis*)

Wildfire Risk

Legend

-  Cities
-  County Boundaries
- Fire Risk w/ Dry Soils**
-  No Risk
-  Low Risk
-  Moderate Risk
-  High Risk
-  Very High Risk
-  Extreme Risk

Data includes Land Cover Type, Canopy Cover, Township Scaled Fire Risk, and Dry Soil types from SSURGO data.



Source: Wildfire Risk Map - MDNR Forest Resources Division

Small Group Discussions

- In groups of 5-6, discuss each natural hazard and how it affects your community
 - **Choose 1 person in your group to be the recorder;** this person will write each person's responses and will report key findings to the whole group
 - What is the potential for this hazard to affect your **population, infrastructure, environment or economy?**
 - Please answer this question for the following hazards
 - Severe Thunderstorm – wind, tornado, hail, lightning, seiche
 - Winter Weather – wind, ice, heavy snow, extreme cold
 - Extreme heat, drought
 - Spend **5-7 minutes** on each hazard



Vulnerabilities in Your Community

People

Economy

**Built
Environment**

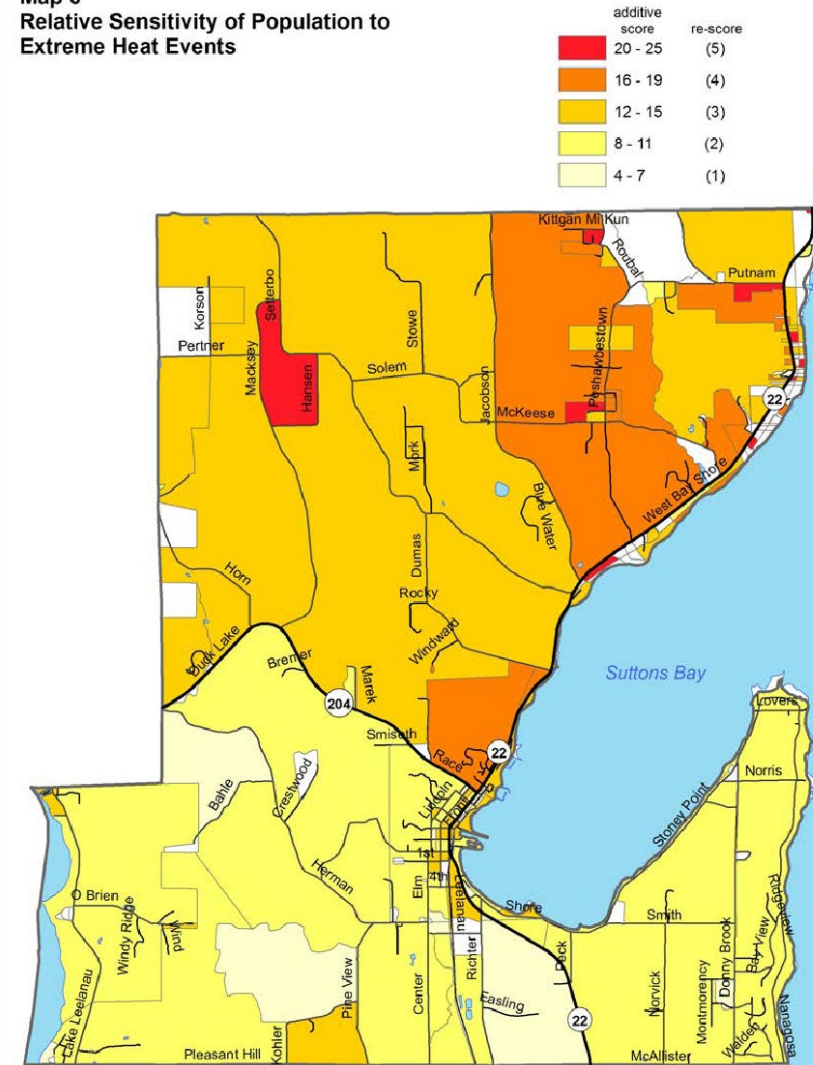
**Natural
Environment**

Vulnerable Populations

LIAA's NW MI Coastal Resilience Atlas – Heat Vulnerability Assessment

- Vulnerability = Exposure to the hazard (tree canopy and impervious surface) + Sensitivity
- Population Characteristics of Sensitivity:
 - Persons > age 65
 - Persons living alone
 - Minority (non-white) persons
 - Persons living below the poverty threshold
 - People > age 25 with less than a high school education
 - Disability status (i.e., ambulatory difficulty, mental disability)

Map 6
Relative Sensitivity of Population to
Extreme Heat Events





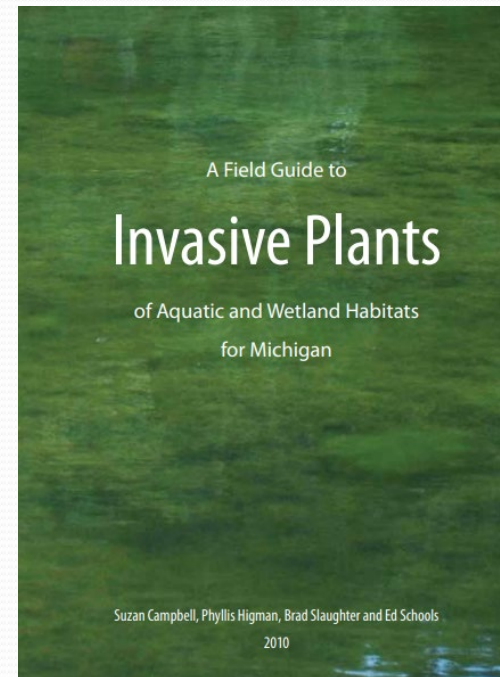
Vulnerable Populations

Full Group Discussion

- Who are your primary vulnerable populations?
- Where are they located?
- What mechanisms are in place to aid these populations in the event of a natural hazard?

Invasive Species

- An invasive is a species that is **non-native to the ecosystem** under consideration AND whose introduction causes or is likely to **cause economic or environmental harm, or harm to human health**.
- Invasive species can be **plants, animals and other organisms (e.g., microbes)**, and be categorized as **aquatic or terrestrial**
- Only a small fraction of non-native plants are invasive



Invasive Species – Full Group Discussion

- What are your **greatest concerns** pertaining to **invasive species**?
 - Impacts to forests, rivers, inland lakes, agriculture, etc.

Pandemic Experiences – Full Group

- From a hazard mitigation perspective, what **lessons did the community learn** from the pandemic?
- What **shortcomings** did the community experience in its ability to mitigate the effects of the pandemic?
- What **successes** did the community have?

County Wetlands

Map Legend

Change what items you see on the map by using the checkboxes

Wetland Data

☐ Wetland (Hydric) Soils

☐ National Wetlands Inventory 2005

Potential Wetland Restoration

☐ Highest Potential - Hydric and
Presettlement Wetland Overlay

☐ High Potential - Hydric Soils Only

☐ Moderate Potential - Presettlement

Wetlands Only

Part 303 Final Wetlands Inventory



☒ Wetlands as identified on NWI and MIRIS
maps

☐ Soil areas which include wetland soils

☐ Wetlands as identified on NWI and MIRIS
maps and soil areas which include wetland soils

Stream Data

Coastal Data

Historic Landcover

SSURGO Soils



Kalkaska County Dams –

Listed on the National Inventory of Dams

2 Dam(s) Found

Rugg Pond Dam

Hazard Potential Classification: High

Emergency Action Plan: Yes

Owner Name: Kalkaska County

Primary Purpose: Recreation

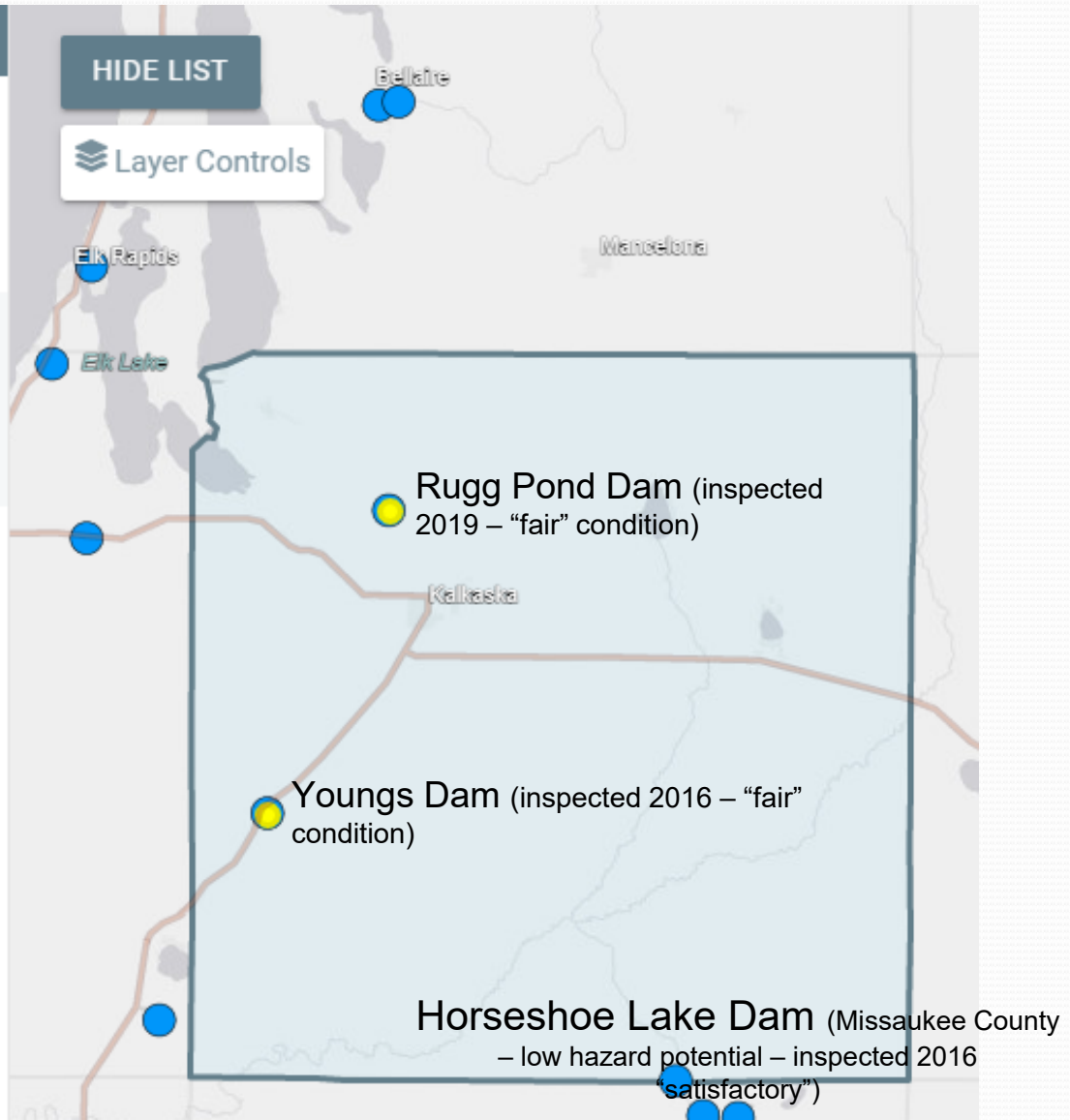
Youngs Dam

Hazard Potential Classification: Low

Emergency Action Plan: Not Required

Owner Name: Boardman Township

Primary Purpose: Recreation



Rugg Pond Dam in Rapid River Twp.



- Most recent Dam Safety Inspection Report 8/13/2019 by EGLE; dam is owned by Kalkaska Conservation District. Hazard Potential Classification remains “High”.
- In fair condition with no apparent structural deficiencies and has adequate spillway capacity to pass the design[ed] flood [scenario].
- Repairs listed by priority; all will require EGLE permits to complete:
 1. Flatten the downstream slope with granular fill to a slope of 2H:1V) or flatter. As the impoundment continues to fill with sediment the need for this improvement increases.
 2. Repair deteriorated concrete on the inlet box section for the steel pipe spillway as soon as practical.
 3. Repair erosion on the downstream slope in the location of the pipe spillway.

NFIP & CRS Participating Communities

- The National Flood Insurance Program
- The NFIP provides flood insurance to property owners, renters and businesses, and having this coverage helps them recover faster when floodwaters recede. The NFIP works with communities required to adopt and enforce floodplain management regulations that help mitigate flooding effects.
- **Boardman Township only participating jurisdiction**
- The Community Rating System (CRS) is a voluntary incentive program that recognizes and encourages community floodplain management practices that exceed the minimum requirements of the NFIP

Mapping Activity

- We will screen-share a map of the county and mark the following based on your input:
 - **Riverine and urban flooding (blue marker)**
 - Potential for dam failure
 - Locations where floods have occurred in the past
 - Locations where floods have a higher probability of occurring
 - **Wildfires (red marker)**
 - Locations where wildfires have occurred in the past
 - Locations where wildfires have a higher probability of occurring

Before you go!

- Click the link!

<https://www.surveymonkey.com/r/BJ2WJRB>

- Complete the *two questions* and then download, fill out and then upload the *in-kind form* through the survey link!

- NEXT STEPS:

- Hazard Analysis / Prioritization
- Mitigation Goals
- Mitigation Strategies