

2020 Edenville Dam Failure Lessons Learned

Midland County Emergency Management

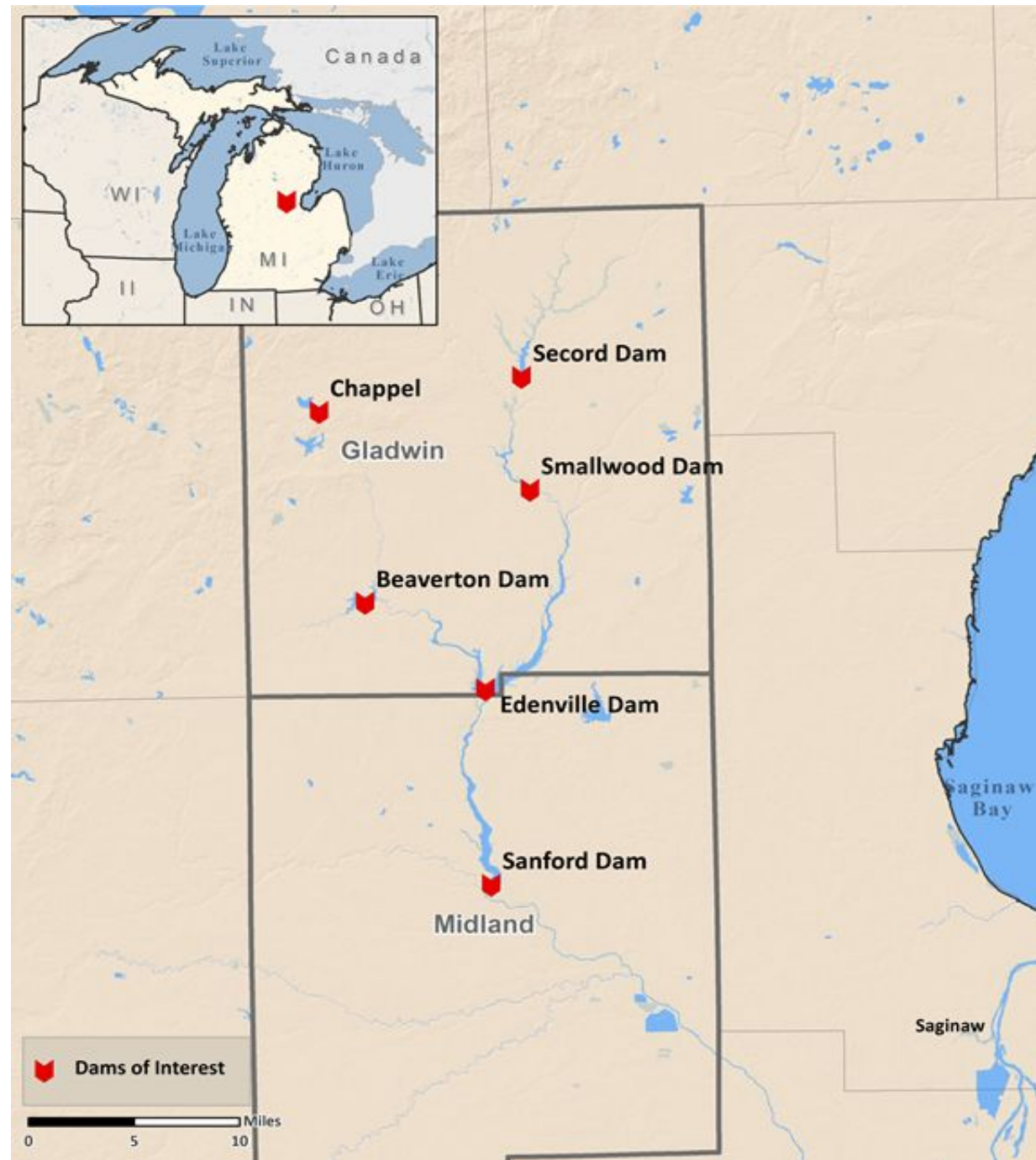
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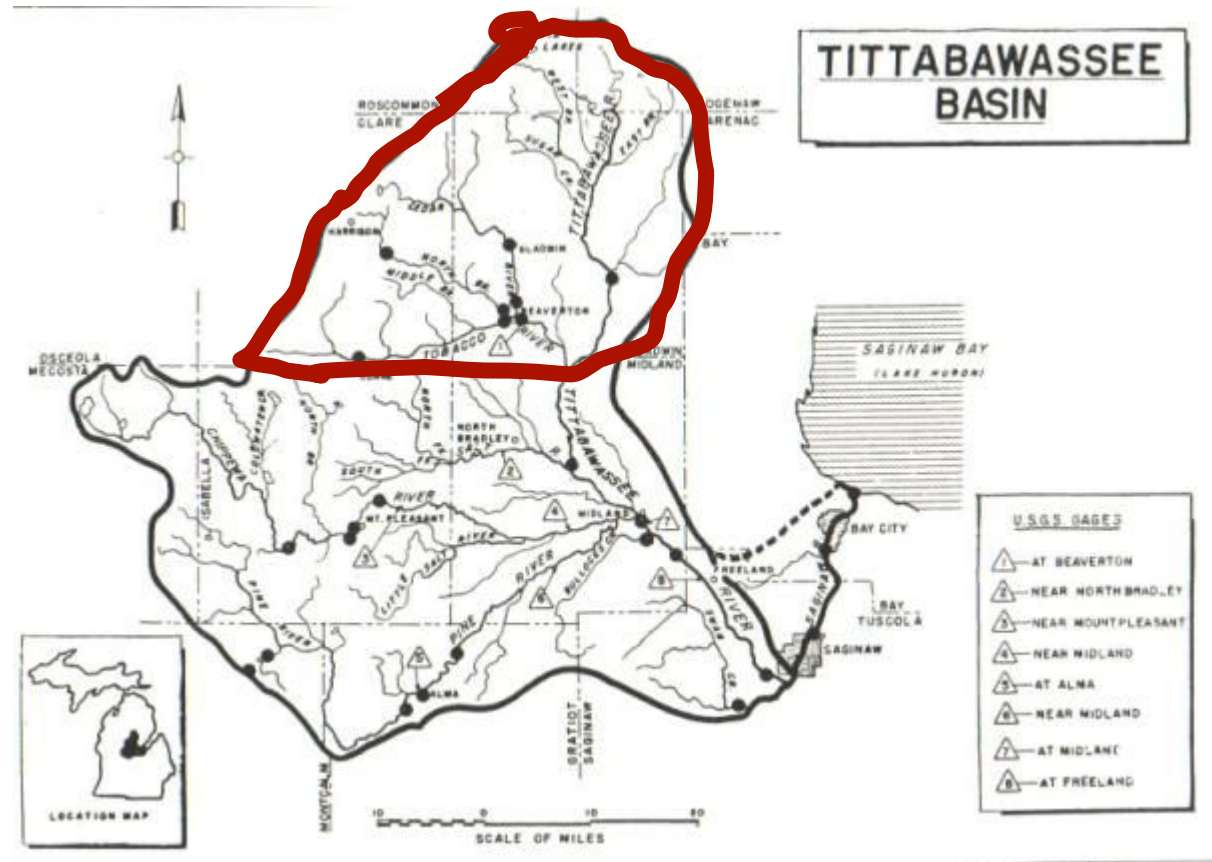
Jenifier Boyer
Emergency
Management
Coordinator



Dams within Tittabawasse Watershed



May 18th, 2020



- Northern part of Tittabawassee River Watershed received 5-8" of rain over 2-3 day period on already saturated ground.
- After 5p.m. the event moved rapidly.
- 11 pm EOC Briefing - Concerns

May 19th, 2020

- 12:30 a.m. Dam Operator activated EAP – Alert Condition
- 12:32 a.m. Evacuations for “Imminent Dam Failure” started.
 - Emergency Alerts sent out.
 - Community Shelters Opened
 - Door to door evacuations Edenville and Jerome Twp 1400 homes. Took 5 hours to complete
- 4:24 a.m. Dam Operator – Condition B
- 1:30 p.m. flooding concerns on Wixom Lake, Edenville Dam Reservoir. Possible controlled breach discussed.



May 19th, 2020

- **5:39 p.m. Failure of Edenville Dam**
- **5:41 Evacuations for “Failure of Edenville Dam” started.**
 - **Emergency Alerts sent out.**
 - **More Community Shelters Opened**
 - **Evacuations in all seven jurisdictions**
(4,326 homes ≈ 10,469 residents)
 - **110 Roads to Close**
- **6:00 p.m. Emergency Operations Center fully activated.**
- **Draft Dam Failure Plan Activated**

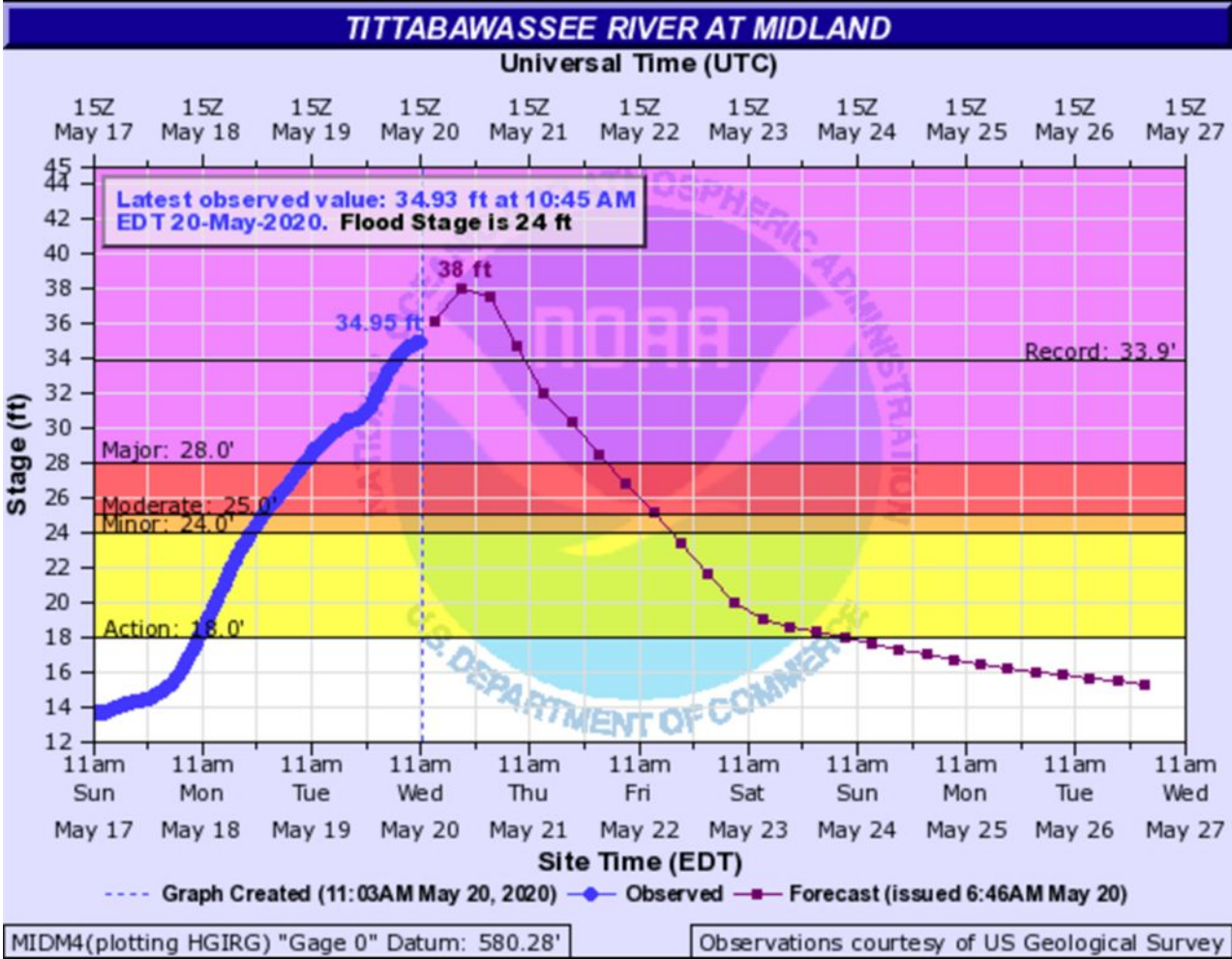
Edenville Dam Breach



Sanford Dam Breach

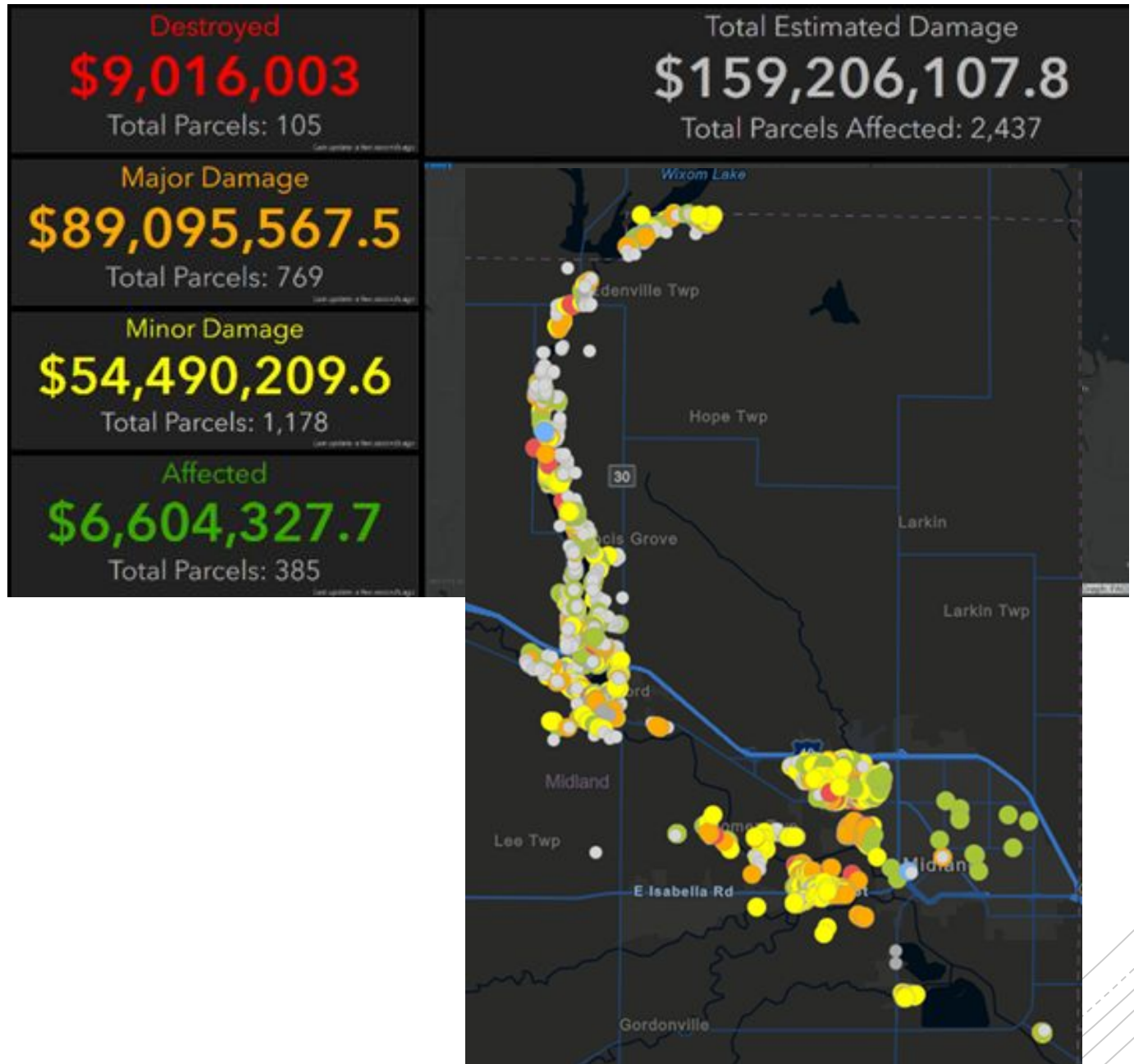


May 20th, 2020



- 6:36 a.m. Poseyville Rd dike fails
- 5:30 p.m. Tittabawassee River new record crest of 35.05' (11' above flood stage, 3' above 2017 crest)

Structural Damages



Curtis Rd Bridge

$\frac{1}{4}$ mile south of Edenville Dam



Before and During



Village of Sanford

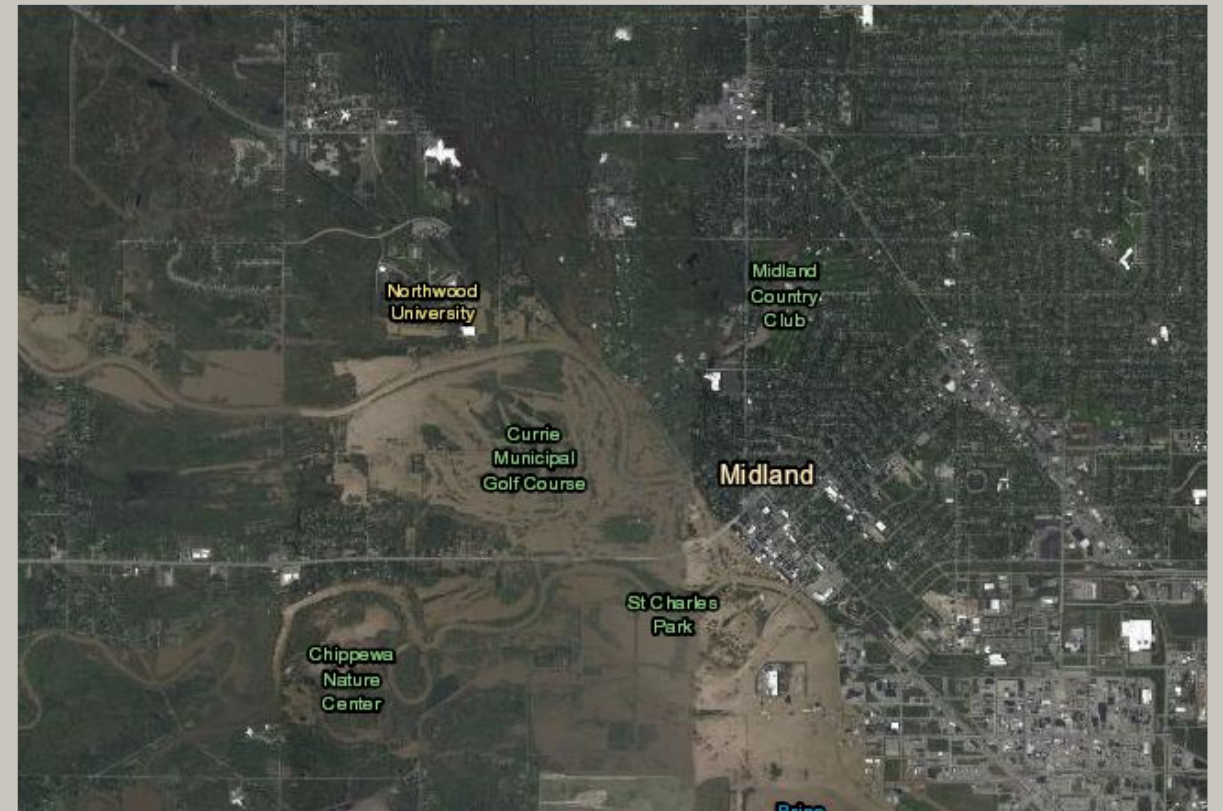


Downtown Sanford



Before and During

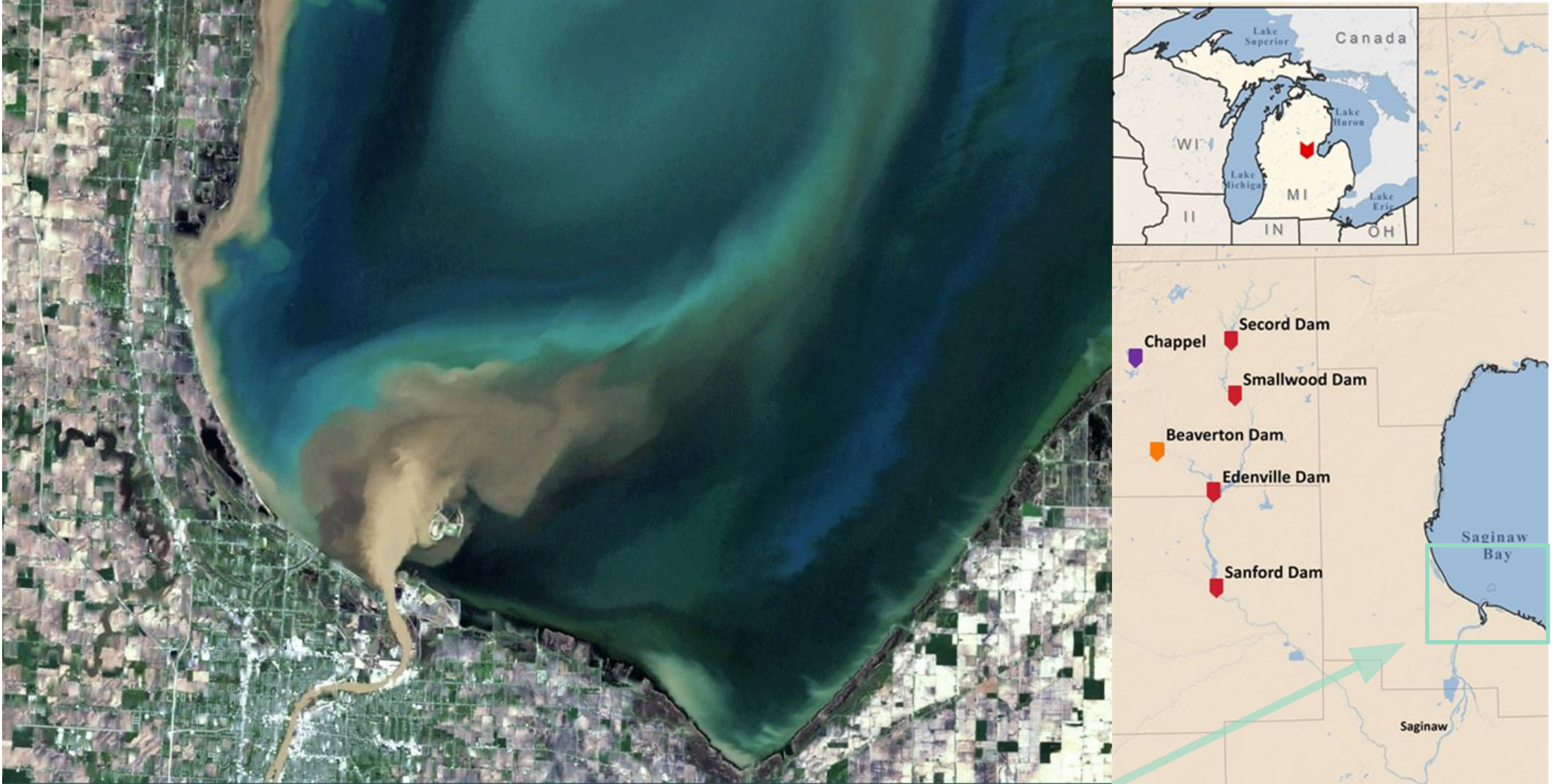
City of Midland



City of
Midland
(Sturgeon Creek)



Saginaw Bay in Bay City, Michigan
05/20/2020 - 70 Miles downstream from Edenville Dam



What led to Successes

- **Community Emergency Exercises with Dam Owner**
 - Understanding of roles and responsibilities
 - Understanding system limitations
 - **All** stake holders at the table.
- **Draft Response Plan**
 - Understanding of impacts
 - Understanding of roles and responsibilities
 - Immediate Needs and Tasks Planned Out
- **Dam Failure Inundation Map – Publicly Available**
- **All hands on deck response (during a pandemic).**

Dam Failure Response Plan

Dam Failure Inundation Area

- 7 Local Municipalities
- 6 Fire Chiefs
- Sheriff's Office and City Police
- 6 Major Roads (110 Total)
 - M-30 (N)
 - Curtis Rd (E/W)
 - US 10 (E/W)
 - Saginaw Rd (E/W)
 - M-20 (E/W)
 - Poseyville Rd (SW)
- 4,326 Homes \approx 10,469 Residents

Our Successes!

- Timely Critical Decisions
- Proper shutdown of critical infrastructure.
- Collaboration of Public Safety Leaders
- **NO LOSS OF LIFE**

Hard Lessons

- Residents unaware of hazard living below a High Hazard dam.
- Home Insurance does not cover flooding.
- Dam Owner responsible for damages, Dam Owner filed for bankruptcy.
- Most of those flooded were not within a floodplain and did not have flood insurance.
- Residents expected FEMA to pay for 100% of losses.
- FEMA does not cover secondary homes.
- No one thought the dam would ever fail.
- Recovery takes a **long** time.

The background features several concentric circles in light gray, some solid and some dashed, creating a ripple effect. A prominent red callout box is centered on the page, containing white text. The callout box has a rectangular top and a pointed bottom, resembling a speech bubble or a drop.

Know the potential hazards in your community.

Knowing what can happen can help you be better prepared for and able to recover from emergencies.

Local Emergency Management Office

State of Michigan PA 390

Emergency Management Act

- The county board of commissioners of each county shall appoint an emergency management coordinator. In the absence of an appointed person, the emergency management coordinator shall be the chairperson of the county board of commissioners.
- Every municipality with population of 25,000+ shall an appointed Emergency Management Coordinator and should have a local EOP or annex within the County EOP.
- Every municipality with a population of 10,000+ may appoint an Emergency Management Coordinator and should have a local EOP or annex within the County EOP.

Community Hazard Mitigation Plan



MIDLAND COUNTY HAZARD MITIGATION PLAN

OFFICE OF EMERGENCY MANAGEMENT
MIDLAND LAW ENFORCEMENT CENTER
2727 RODD STREET
MIDLAND, MICHIGAN 48640

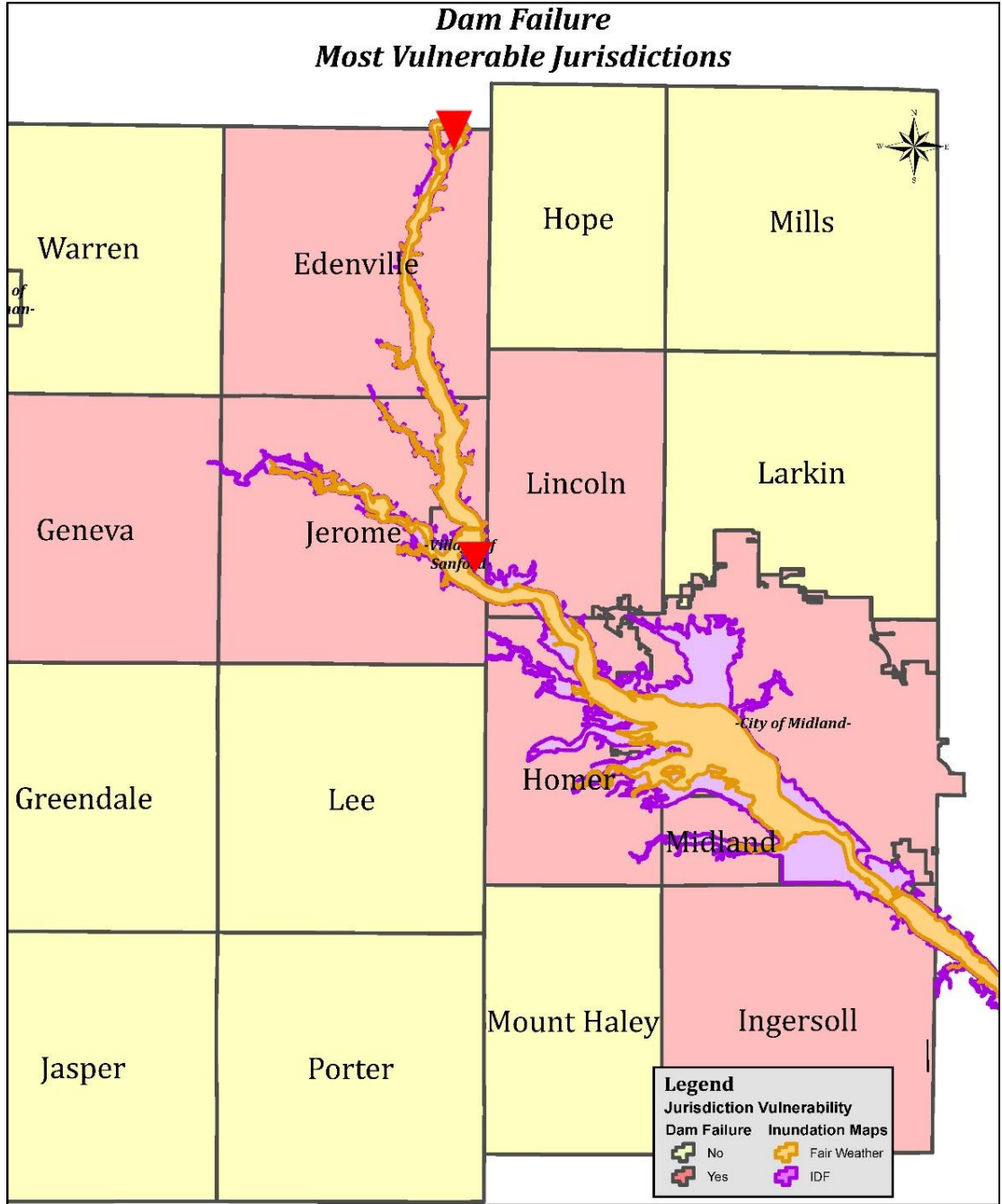
Risks

Identified Midland County Hazards

- What may threaten the community?
- Who and what is at risk?
- Severe winds
- Winter storms
- Flooding
- Dam Failure
- Tornadoes
- Public Health Emergency
- Wildfires
- Infrastructure Failure
- Terrorism / Acts of Violence
- Hazardous Materials
- Transportation Accidents

Failure of Edenville Dam Inundation Area

Dam Structure ▼



Insurance (Financial Mitigation)



FLOOD Insurance

- ANYONE CAN BUY FLOOD INSURANCE**
- There are insurance companies that offer private flood insurance policies and there is the National Flood Insurance Program (NFIP), which is a program under FEMA.
- In order to be eligible for a NFIP policy
 - Local municipality must participate in the NFIP.
 - NFIP policy premiums are align with your flood risk.
- If you live within or close to a flood or dam failure inundation area, you should strongly consider flood insurance. In 2019, 40% of flood claims were from those outside a designated floodplain.
- During a Presidential Major Disaster Declaration FEMA assistance is limited to \$35,000.**

Personal Preparedness

EVACUATE

- What do you need if you need to leave your home for 3-5 days?
 - Medications
 - Clothes
 - Pets
 - Where to shelter?



SHELTER IN PLACE

- Do you have provisions for 3-5 days to care for your family.

WWW.READY.GOV

Receive Emergency Warnings

- Make sure to enable emergency alerts on your cell phone.
- Sign Up for local emergency alerts through your 911 Center or Emergency Management Office.
- Have a NOAA Weather Radio!



Questions?

Midland County Emergency Management

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