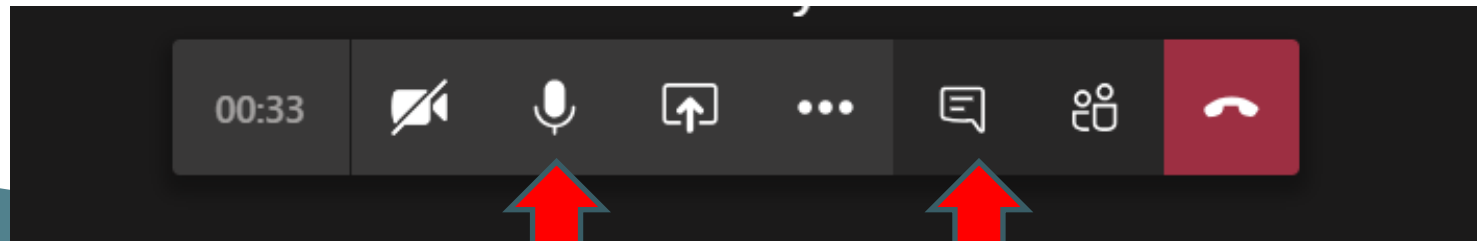


# Housekeeping

- Please keep your mic/phone muted unless speaking
- Only use the “chat” function for official comments or to request to speak
- The meeting is being recorded
- Cameras are optional



# Michigan Dam Safety Program



# Who Are We?

# Dam Safety Program Staff

- Mario Fusco, Jr., P.E., Supervisor
  - Lansing            517-256-4458            fuscom@Michigan.gov
- Dan DeVaun, P.E.
  - Cadillac            989-370-1528            devaund@Michigan.gov
- Luke Trumble, P.E.
  - Lansing            517-420-8923            trumblel@Michigan.gov

# Dam Safety Staff

[www.mi.gov/damsafety](http://www.mi.gov/damsafety)

To Report Dam Safety Emergencies to EGLE:

800-292-4706 (from within Michigan)

517-373-7660 (from outside Michigan)



[Dan DeVaun](#) 989-370-1528  
120 W. Chapin Street  
Cadillac 49601

[Luke Trumble](#) 517-420-8923  
PO Box 30458  
525 West Allegan Street  
Lansing 48909

[Mario Fusco](#) 517-256-4458  
Supervisor, Hydrologic Studies and Dam Safety  
PO Box 30458  
525 West Allegan Street  
Lansing 48909

# Dam Safety Program Budget

## Funding Sources:

- MOU with DNR for inspection of DNR Dams - \$112,300
- FEMA National Dam Safety Program Grant - \$87,000
- State of Michigan General Fund - \$74,200
- EGLE-WRD Permit Fees - \$74,200
- Total - \$348,100

## Expenditures:

- Staffing (2 FTEs) - \$300,000
- Travel - \$4,000
- Supplies - \$300
- DNR Inspections - \$37,500
- Contracts - \$2,500
- Other - \$3,800
- Total - \$348,100

# What do we do?

# Statutes Administered by Dam Safety Program

Natural Resources and Environmental Protection Act, 1994 PA 451, as amended (NREPA)

- Part 307, Inland Lake Levels
- Part 315, Dam Safety



# Overall Goal: Reduce/Prevent Dam Failures

- An incident resulting in an unplanned or uncontrolled release of water from a dam.

# Part 307, Inland Lake Levels

- **Process to establish and maintain legal lake levels**
- **Set up special assessment districts to fund construction, inspection, maintenance, and repair of dams**
- **Requires dam inspection every three years**
- **We review inspection reports and provide comments**
- **Do NOT issue Part 307 permits**
  - review plans and issue approval letters



# Part 315, Dam Safety

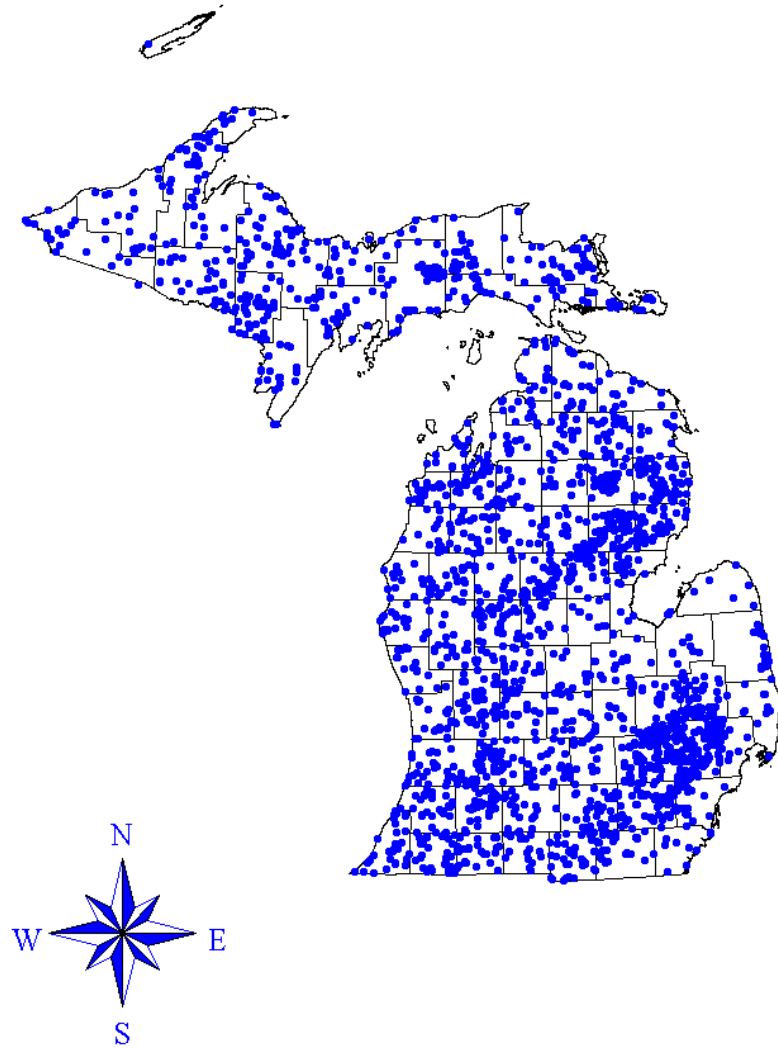
- Formerly known as “Dam Safety Act, 1989 PA 300, as amended”
- Grants the department the authority to enforce statute and issue permits for dam related activities
- Mandates inspection of regulated dams
- Inspect state and municipally owned dams
- Review and provide comments on consultants’ inspection reports for privately owned dams
- Review Emergency Action Plans (EAPs)
- Take enforcement action when dams are out of compliance with Part 315 regulations
- Issue permits for construction of new dams and alterations, enlargement, or removal of existing dams



# Inventory of Michigan Dams

- In every county
- Over 2600 structures
  - ~825 Part 315 dams
  - ~235 Part 307 dams
- Continuously updated
- Currently updating to a web-based platform
- Interactive Map:  
<https://egle.maps.arcgis.com/apps/webappviewer/index.html?id=f8c0637f34864bcbabb9c794fd8e452b>

## Michigan Dams



# What is a dam?

# Part 315 Regulated Dam – Definition

- An artificial barrier, including dikes, embankments, and appurtenant works, that impounds, diverts, or is designed to impound or divert water or a combination of water and any other liquid or material in the water; that is or will be when complete 6 feet or more in height; and that has or will have an impounding capacity at design flood elevation of 5 surface acres or more.



# Hazard Potential Classification

- Determined by the Dam Safety Program
- Based upon potential downstream impacts caused by failure of the dam
- NOT based upon the structural condition of the dam



# Hazard Potential

- Three hazard potential categories:
  - High – expected loss of life, severe impacts
  - Significant – possible loss of life, significant impacts
  - Low – no loss of life, minor impacts
- Inspection Frequency:
  - High – once every 3 years
  - Significant – once every 4 years
  - Low – once every 5 years
- Only High and Significant hazard potential dams require EAPs



# Emergency Action Plans

- Specifies who to notify in the event of an impending or actual dam failure
  - Emergency management and responders
  - Downstream residents
  - National Weather Service
  - Downstream dam owners
  - Technical consultants
  - Contractors
  - Dam Safety Program
- Identify downstream impacts
  - Inundation maps or list of affected areas
  - Downstream infrastructure
- Specifies Actions to be taken
  - Dam repairs (if possible and safe)
  - Evacuations
  - Road closings
- The Dam Safety Program reviews EAPs to make sure they contain the required elements, and provides suggestions to improve the effectiveness of the plans

# Inspection Report Requirements

- Must Be Conducted by a Licensed Professional Engineer
- Evaluation of Dam's Structural Condition
- Evaluation of Dam's Spillway Capacity
- Make Recommendations as Necessary to Meet Safety Standards
- Assigned an overall condition assessment

# Condition Assessments

- Satisfactory
  - No existing or potential dam safety deficiencies are recognized. Acceptable performance is expected under all loading conditions.
- Fair
  - No existing dam safety deficiencies are recognized for normal loading conditions. Rare or extreme hydrologic and/or seismic events may result in a dam safety deficiency.
- Poor
  - A dam safety deficiency is recognized for loading conditions that may realistically occur. Remedial action or further investigations and studies are necessary to determine risk.
- Unsatisfactory
  - A dam safety deficiency is recognized that requires immediate or emergency remedial action for problem resolution.
- Not rated
  - The dam has not been inspected, is not under State jurisdiction, or has been inspected but, for whatever reason, has not been rated.

# High Hazard Potential Dams

- There are 85 state regulated High Hazard Potential Dams in Michigan.
  - Of those 85 High Hazard Potential Dams:
    - Zero (0) are in unsatisfactory condition – 0%
    - Six (6) are in poor condition – 7.1%
    - Nineteen (19) are in fair condition – 22.4%
    - Fifty-nine (59) are in satisfactory condition – 69.4%
    - One (1) is unrated – 1.1%

# When Deficiencies are Identified

- Deficiencies are typically identified in inspection reports, along with recommended actions, and timeframe for implementation of a remedy.
  - Can also be reported by the owner or observed by Dam Safety Program staff during review of inspection reports or site visits.
  - Dam Safety Program then work with the dam owner to amicably resolve any issues identified.
  - If a dam owner fails to resolve any issues within the timeline provided by their consultant and/or EGLE, then EGLE will consider escalated enforcement action.

# Escalated Enforcement Action

- Typically starts with a letter to the owner directing them to submit an acceptable plan and schedule for addressing the identified deficiency.
- When there is no action by the owner, EGLE may take the following actions:
  - Issue a Notice of Violation and impose civil fines.
    - Up to \$10,000 per day of violation
  - Issue an order under Section 31518 of Part 315
    - When a condition exists that endangers the dam
    - Order the owner to take actions to alleviate the danger

# Escalated Enforcement Action (cont'd)

- Issue an order under Section 31519 of Part 315
  - When significant damage to public health, safety, welfare, or natural resources is resulting from the operation, condition, or existence of a dam.
  - Order the owner to limit operations of the dam or remove the dam.
- Issue an emergency order under Section 31521 of Part 315
  - When a dam is in imminent danger of failure or threatening to cause harm to public health, safety, welfare, property, or natural resources
  - Order the owner to immediately repair, draw down, breach, or cease operation of a dam
  - If the owner will not/cannot comply with the order, then EGLE may step in and take necessary actions to alleviate the danger
  - EGLE can then sue the owner to recoup costs

# Available Resources

- National Inventory of Dams
  - <https://nid.sec.usace.army.mil/#/>
- FEMA National Dam Safety Program:
  - <https://www.fema.gov/emergency-managers/risk-management/dam-safety>
- EGLE Dam Safety Program:
  - Website: <https://www.michigan.gov/egle/about/organization/water-resources/dam-safety>
  - Existing Inspection Reports and EAPs on file
    - Obtained through FOIA request
- Association of State Dam Safety Officials (ASDSO)
  - <https://www.damsafety.org/>



# Any Questions?

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