MICHIGAN DEPARTMENT OF
ENVIRONMENT, GREAT LAKES, AND ENERGY

Water Resources Division

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Water Resources Division
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Water Resources Division

- **Protect and Monitor**
  - 4 Great Lakes and Lake St. Clair
  - 3300 miles of shoreline
  - 11,000 inland lakes
  - 76,000 river and stream miles
  - 6.5 million acres of wetlands
  - 74,000 acres of coastal dunes
  - Groundwater
- For swimming, fishing, drinking water and aquatic ecosystems

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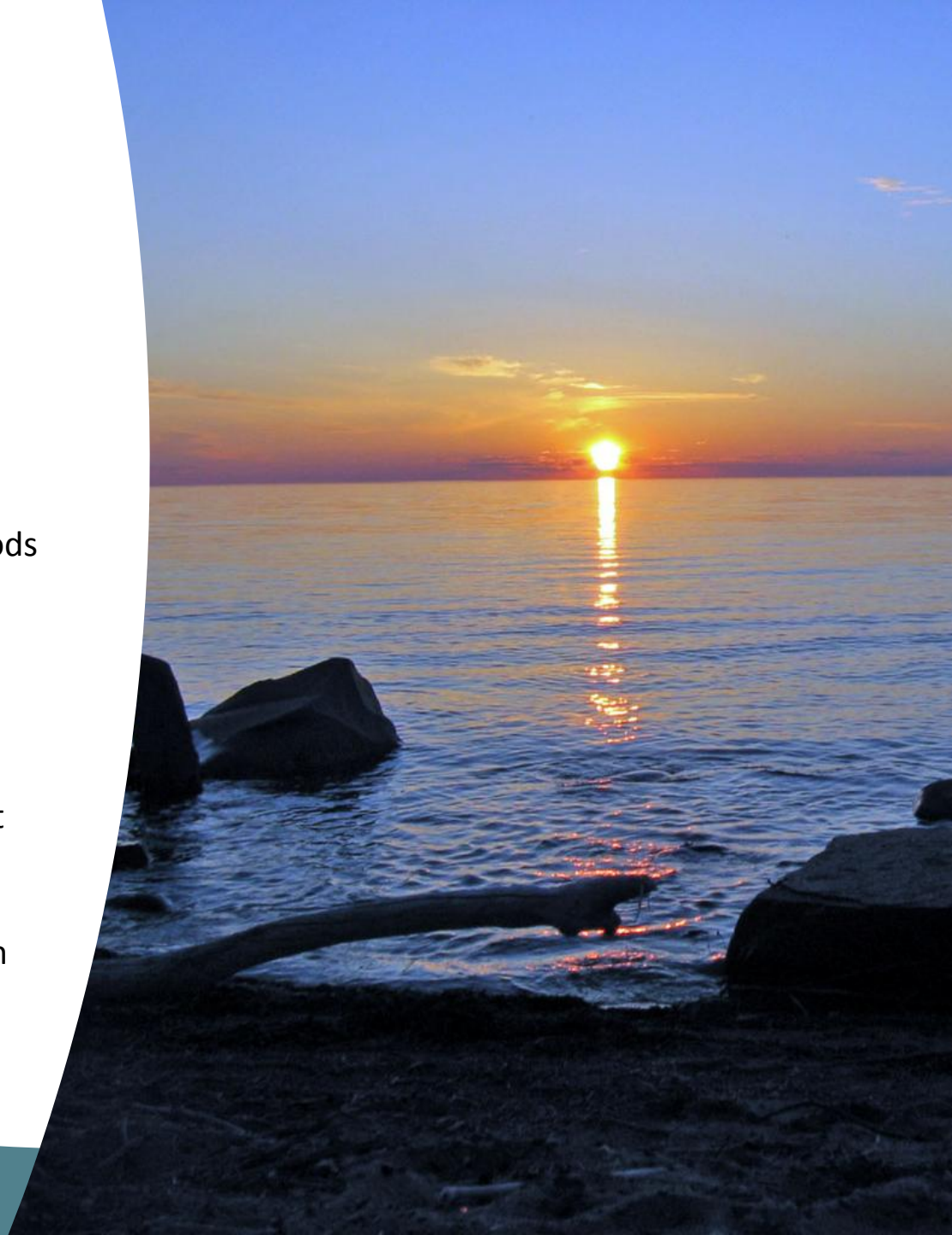
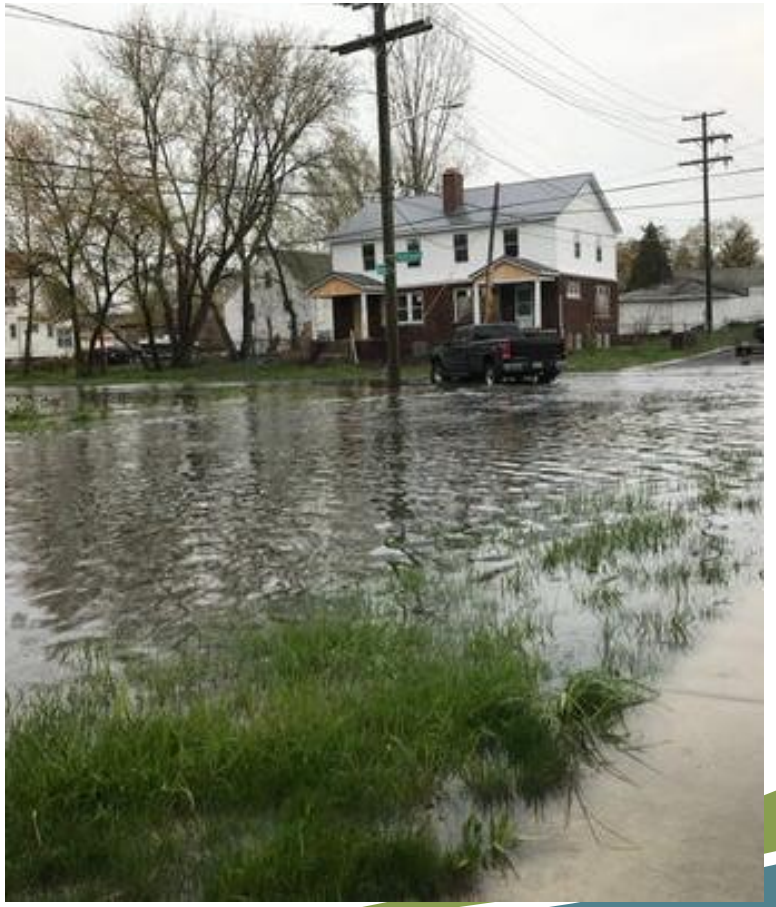
Great Lakes Water Levels

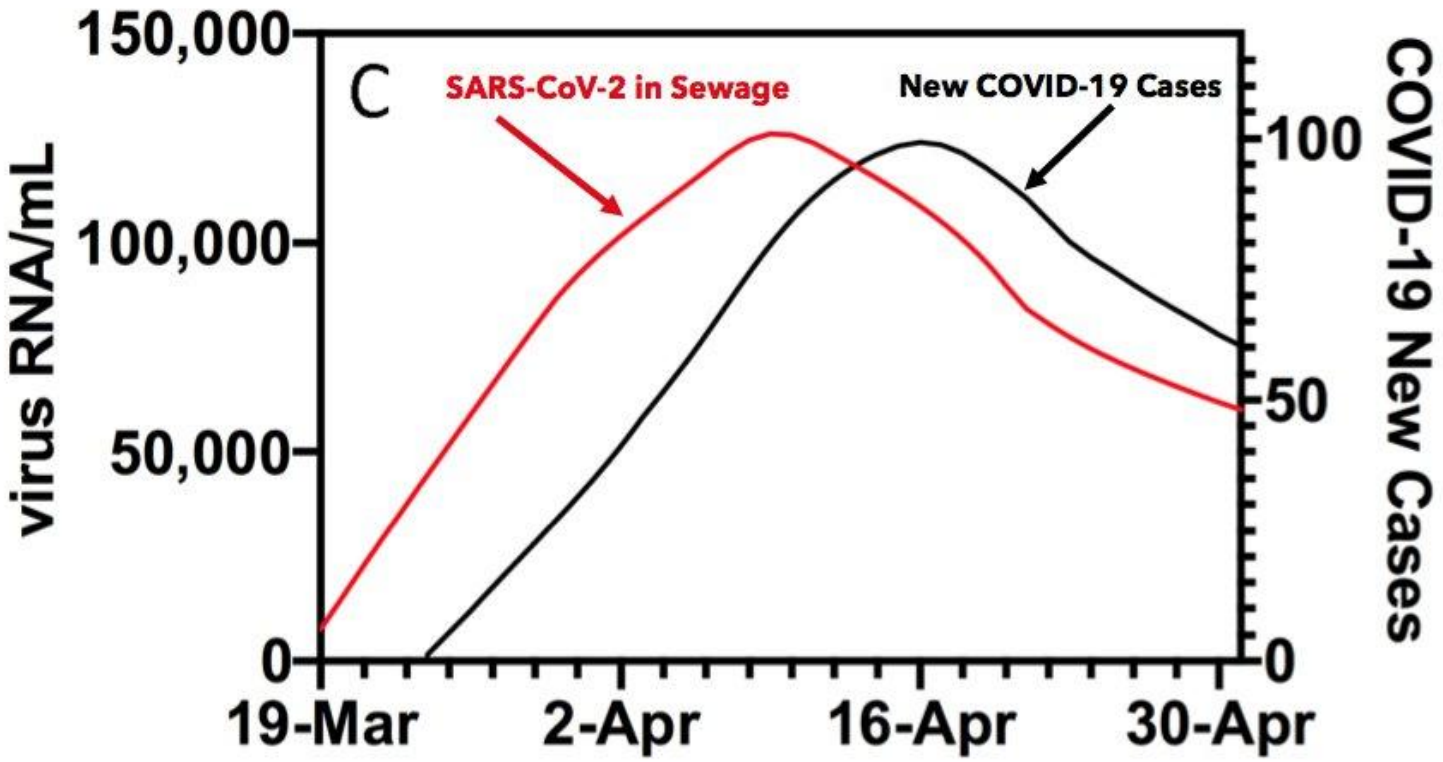
- Water levels are cyclical with periods of low and high water
  - Can last for several years
  - Influenced by precipitation, runoff, and evaporation
- All the Great Lakes are currently at or near record highs
- Integrated program within Division



Eastside Detroit flooding



Sampling Covid in Wastewater



Why monitor SARS-CoV2 in wastewater?

- History: Virus testing in wastewater has been done in developing countries for decades to trace for polio outbreaks.
- It's a good way to monitor a whole community, university, school, medical care facility, nursing home, prison, etc.
- The virus is excreted in the waste of those infected up to a week before symptoms, thus can be an early indicator of an outbreak.
- The virus is shed by asymptomatic people, thus is a better way to determine actual infection rates.
- The virus is inactivated by the human digestive tract, therefore presents little risk to those working with samples in the lab.

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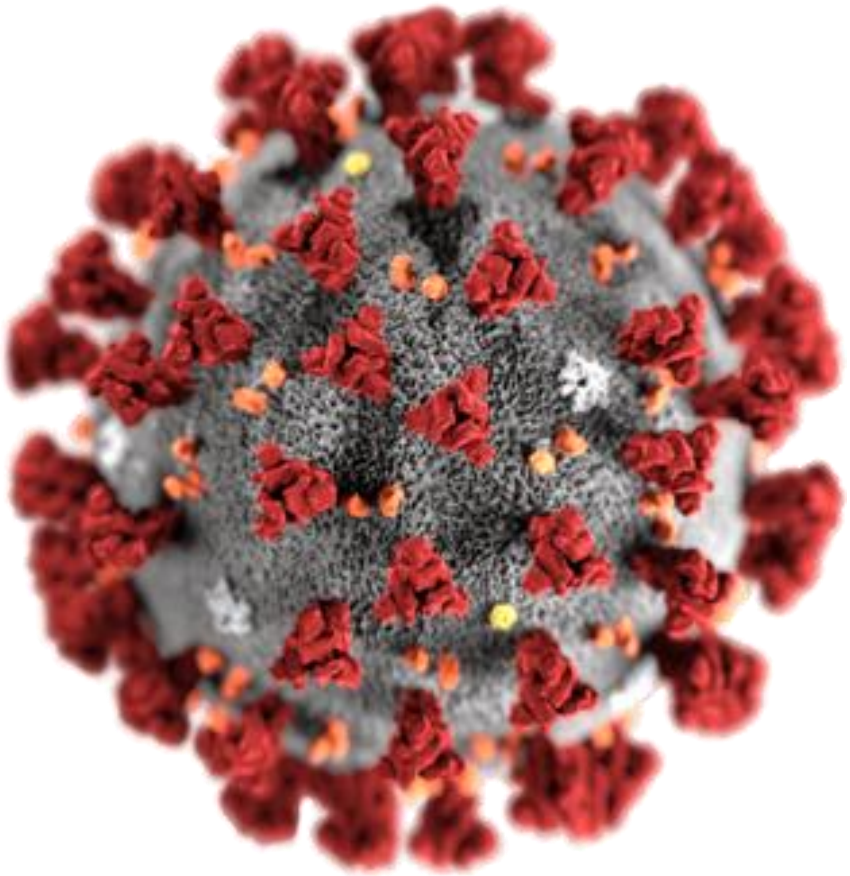
Covid in Wastewater Study

- Early Detection and Response
- $10 Million for 3-month pilot project
- Utilize existing labs
- Partner with MDHHS
  - MSU
  - GLWA
  - Other Universities
  - Local Health Departments

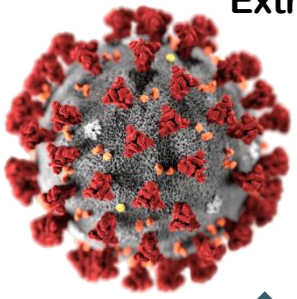
PARTICIPATION

- 20 grant awards for pilot projects
- 18 labs involved
- 125 partners
- 282 locations



Process

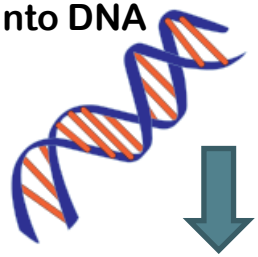
Collect sample from community wastewater

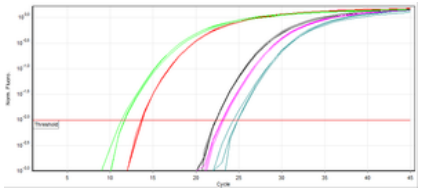


Extract viral RNA

Process sample in lab to collect microbes

Reverse transcribe RNA into DNA

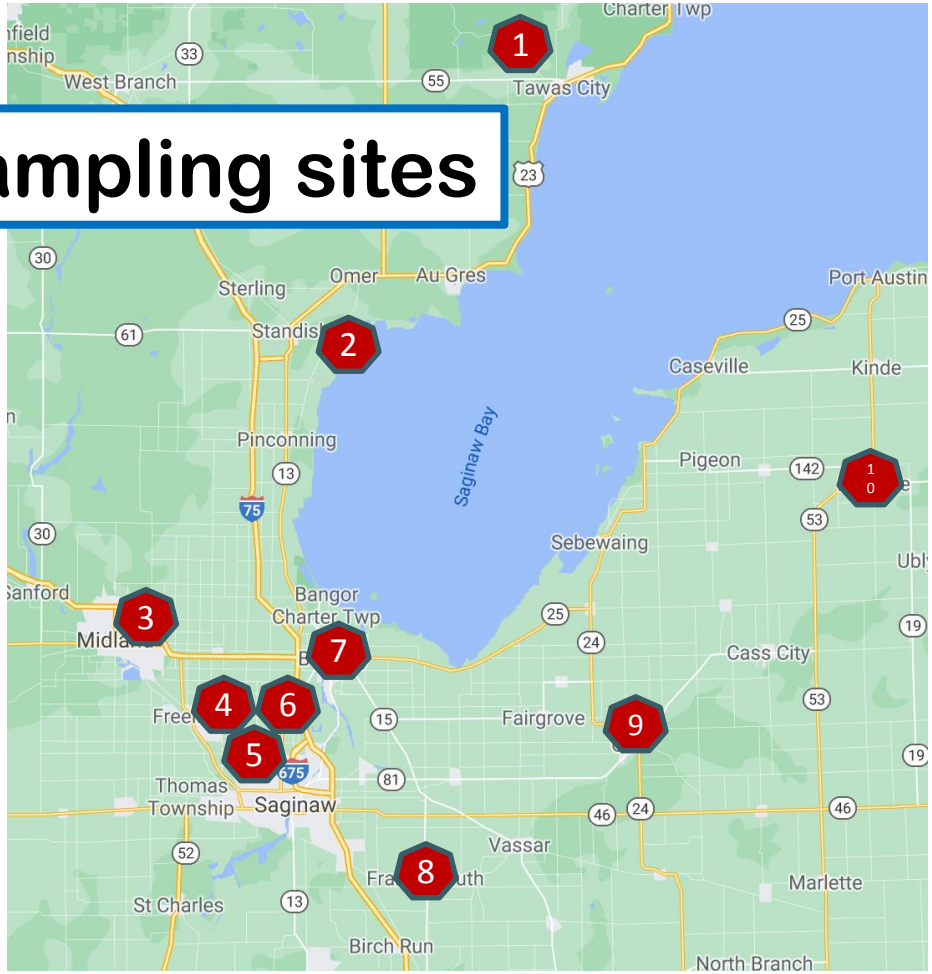




Amplify and quantify gene targets specific to Sars-CoV2

Use results to inform epidemiological determinations of infection rate and spread

Sampling sites



1. Tawas WWTP*
2. Saganing Eagle Landing Casino*
3. Midland WWTP*
4. Saginaw Correctional Facility***
5. Saginaw Township WWTP*
6. SVSU**
7. Bay City WWTP*
8. Frankenmuth WWTP*
9. Caro WWTP***
10. Bad Axe WWTP*

*sampling began in April
**sampling began in August
***sampling began in October

Dam Safety

- Mid-Michigan Dam Failure
- 2 Engineers plus support – and growing!
- Program Evaluation Complete – ASDSO
- Independent Forensic Investigation - ongoing
- Michigan Dam Safety Task Force

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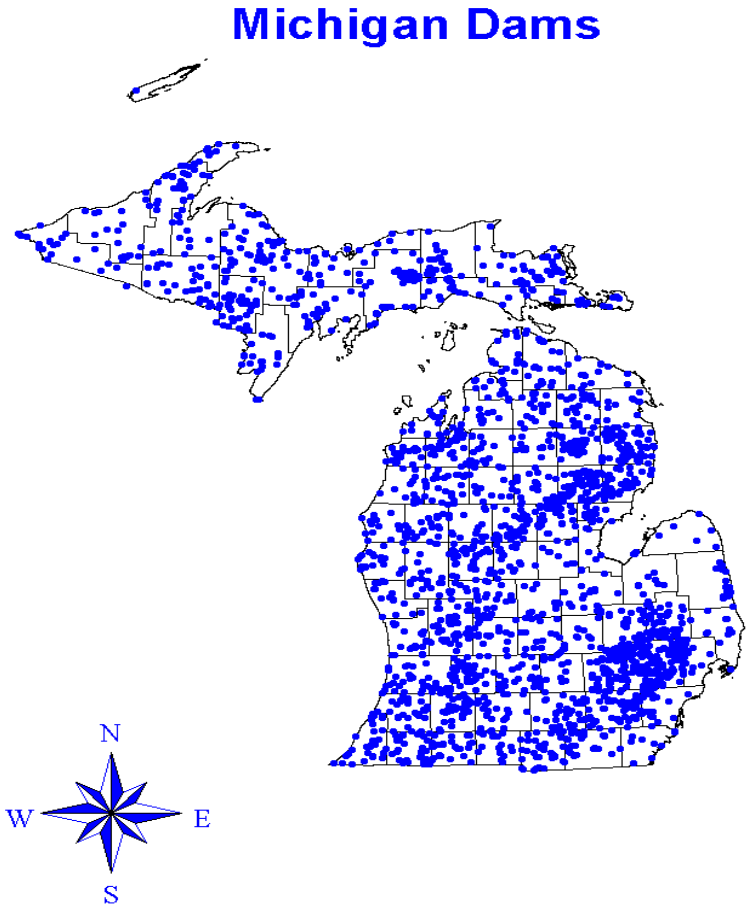
Inventory of Michigan Dams

- 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://mdeq.maps.arcgis.com/apps/webappviewer/index.html?id=f8c0637f34864bcbabb9c794fd8e452b



Chlorides and Sulfates

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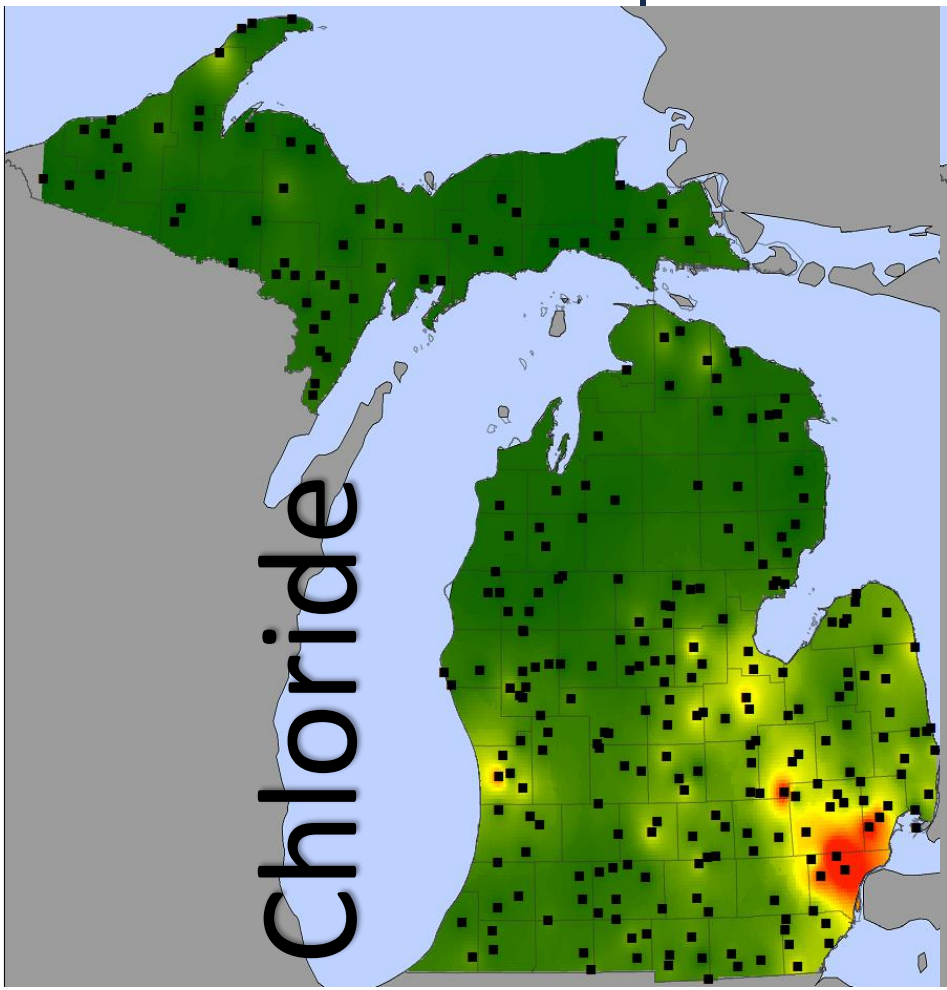
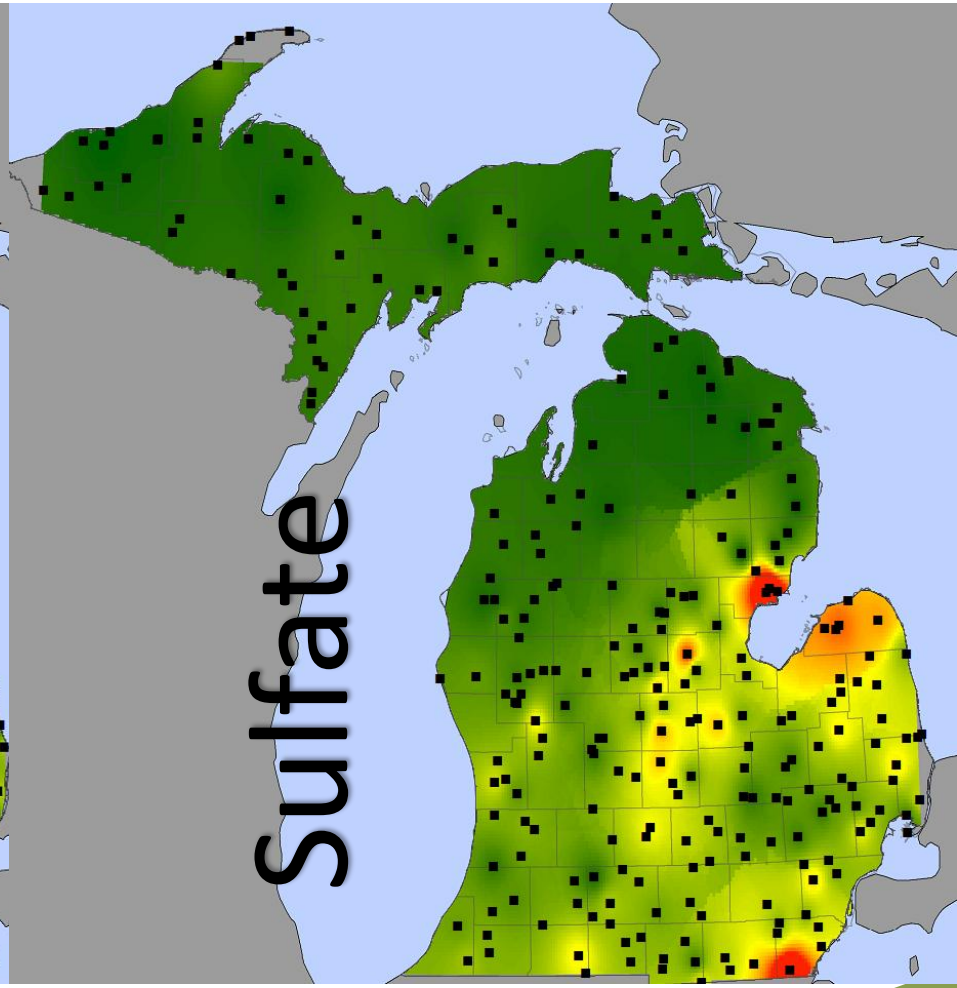
Data Show Areas for Potential Impacts to Aquatic Life – Criteria Help Understand This Information





Based on 2005-2014 Surface Water Sampling

Red - Highest; Yellow – Moderate; Green- Lowest

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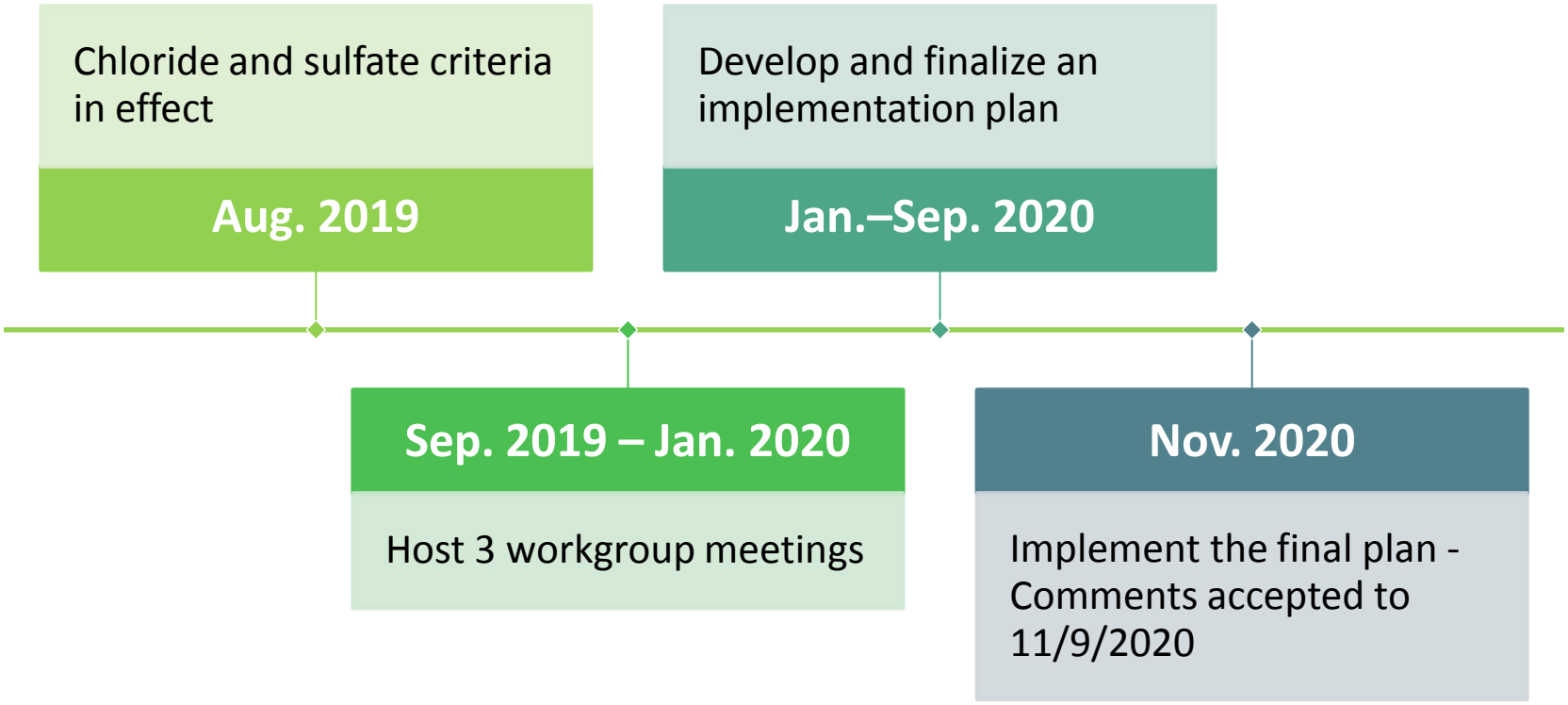
Timeline


Chloride and sulfate criteria in effect
Aug. 2019
Develop and finalize an implementation plan
Jan.–Sep. 2020
Sep. 2019 – Jan. 2020
Host 3 workgroup meetings
Nov. 2020
Implement the final plan - Comments accepted to 11/9/2020

Implementation

- Education and minimization in all areas
- Monitoring, limits if reasonable potential for industrial/municipal
- Consideration of longer schedules of compliance
- Potential for variances, mixing zone determinations
- BMPs for stormwater

Permitting Priorities

- Reducing Backlog
- Groundwater Categories
  - Food Processors
  - Craft Beverages
  - Slaughterhouses
- MS4
- Enbridge Line 5
  - https://www.michigan.gov/Line5

MI Clean Water

- Governor’s program invests directly into protecting public health, environment and the economy.
- •$500 million total commitment towards Michigan’s water infrastructure needs
- –$207 million for Drinking Water Investments
- –$293 million for Clean Water Investments
- •Grant programs used in conjunction with State Revolving Fund (SRF) financing can help maximize impact in communities

Clean Water Investment

- Objectives
- Reduce the number of illicit and inadequately treated discharges that create health risk our neighborhoods, lakes and streams
- Incentivize proper stormwater management to avid rainwater from impacting our ability to properly collect and treat the state's sewage.
- Assist small, rural communities struggling to fund and operate their wastewater systems
- Encourage replacement or maintenance of failing septic systems impacting Michigan's water resources
- Build on the successes of the SAW program by continuing to invest in wastewater asset planning

Clean Water Investment

Items needed before programs available

- Legislature's assistance
  - Amend legislation
  - Appropriation authority
  - Bond issuance
- Similar question and answer webinars will be held when preceding bullet points are completed

Clean Water Investment (cont)

- $293million for wastewater protection, including:
  - $235 million –Clean Water Infrastructure Grants
  - $20 million –Substantial Public Health Risk Reduction Grants
  - $35 million -Failing Septic System Elimination Program
  - $3 million -Stormwater, Asset Management, and Wastewater Grants

Here's what we're protecting…

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Thank You!

Michigan Department of

Environment, Great Lakes, and Energy

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