



MICHIGAN DEPARTMENT OF
ENVIRONMENT, GREAT LAKES, AND ENERGY

Water Use Advisory Council

April 12, 2022

1. Welcome

WUAC Chair Order for 2/12/22

- Laura Campbell, Senior Conservation & Regulatory Relations Specialist
Michigan Farm Bureau (Items 1-6)
- Bryan Burroughs, Executive Director
Michigan Trout Unlimited (Items 7-9)
- Brian Eggers, Principal
AKT Peerless Environmental (Items 10-13)

Water Use Advisory Council (WUAC) Meeting

Hosted by the Department of Environment, Great Lakes, and Energy (EGLE)

Tuesday, April 12, 2022

1:00 p.m.- 4:00 p.m.

Con Con Conference Rooms A and B, South Atrium, Constitution Hall
525 West Allegan, Lansing, MI 48933

Remote Option Available Via Teams

[Click here to join the meeting](#)

Or call in (audio only)

[+1 248-509-0316](tel:+12485090316),[467703494#](tel:+1467703494) United States, Pontiac

Phone Conference ID: 467 703 494#

AGENDA

1. Welcome
2. Roll Call
3. Approval of Agenda-Roll Call Vote
4. Approval of Minutes-Roll Call Vote
5. Public Comment (3 Minute Limit)
6. Legislative Update
7. Preventative Measures Concept
Dr. Jeremiah Asher, Institute for Water Research, Michigan State University
8. Committee Chairs Reports
 - A. Data Collection Committee
 - B. Models Committee
 - C. New Topics Committee
 - D. Conservation and Efficiency Committee
 - E. Implementation Committee
9. 2022 WUAC Report Update: Content, Logistics and Timeline
10. EGLE Update
11. Future
 - a. Remaining 2022 Meeting Dates
 - June 14 (Tuesday)
 - August 9 (Tuesday)
 - September 13 (Tuesday)
 - October 11 (Tuesday)
 - November 10 (Thursday)
 - December 5 (Monday)
 - b. Formats
 - c. Quorum
12. Open Comments (3 Minute Limit)
13. Motion to Adjourn



2. Roll Call



3. Approval of Agenda –Roll Call Vote



4. Approval of Minutes—Roll Call Vote

Backlog Minutes

June 8, 2021

- No comments at August 10 meeting
- Note from Yellich via email on July 30, 2021
Jason Geer is now Executive Director of Michigan Oil and Gas Association (MOGA).

Backlog Minutes

August 10, 2021

- No comments at October 12 meeting
- From Hamilton 8/20 –page 4 C. Models Committee

A key activity has been a study with MSU, funded by MDNR, on downstream accounting, ~~where it~~ ~~with the major~~ improvements in technology ~~that~~ now allows for the addition of return flows ~~with MSU~~. The analysis has been completed and the report is pending. When completed, applicable recommendations will be brought to the WUAC. There is also a need to consider other additional models that may be necessary.

Hamilton reported EGLE has completed their work and there does not seem to be any value in updating the index flow ~~to doing this~~ statistical work ~~on index flows~~. The Committee will review prior to bringing it to the full WUAC.

Backlog Minutes

October 12, 2021

- No comments at December 14 meeting/Or email

Backlog Minutes

December 14, 2021

- No Comments at the February 8 meeting
- Email Yellich 12/22 –
- Page 2

Jason Geer, ~~Michigan Chamber of Commerce~~ Michigan Oil and Gas Association

- Page 7

(A training recommendation in the 2014 WUAC report should also be looked at. The DEQ should work with stakeholders to increase the understanding of Part 327 requirements for owners of newly constructed large capacity wells and increase compliance with the requirement to report differences between registered and “as built” well characteristics. The 2020 WUAC report includes a recommendation for continuing MGS' trainings and other outreach for well drillers.) Yellich commented that MGS will conduct their annual sample description training at the MGWA annual meeting in February and Jim Milne and Sara Person will provide training on the relevance of both the High Capacity and Drinking Water input to Wellogic.

Backlog Minutes

December 14, 2021 (Continued)

-Email Lebaron, 12/22, Page 5

On page 5, second paragraph:

LeBaron in reference to Slide 11 bullet three, wanted to clarify that costs typically only exceed \$60,000 if new hydrogeological information is necessary to improve the determination. These costs are exceedingly rare. He recognized while this group likely realizes this, but it could be misleading should this information be viewed by those outside the group who do not have this understanding.

Here's what I was trying to get across:

LeBaron in reference to Slide 11 bullet three, wanted to clarify that any expenditure by an applicant for a site-specific review is very rare. Only rarely has an applicant invested in collecting new hydrogeological information because it was necessary to improve the determination. He recognized while this group likely realizes this, this slide could be misleading to those outside the group who do not have this understanding.

February 8, 2022

-Email from Hamilton 2/22 page 4

Campbell ask for clarification on water withdrawals that put a watershed in Zone D which is not allowed. Hamilton replied that if this methodology was applied this is what it would say. Nicholas shared that the increases of annual run off does not mean an increase in Index Flow. He also questioned Zorn's comment that noted the time period was from 1971 to 2000. If gauges were used the data could go back up to 70 years. Hamilton responded that the~~This~~ regression equation was based on that 30 year period-time. However, for a gauge analysis the entire available period of record is used.

Hamilton shared an illustrative presentation of case studies of the Kalamazoo River and St. Joseph River watersheds. Hamilton explained the methodology for the Kalamazoo River and then shared illustrated maps to further explain how it works. He next shared downstream accounting results of the St. Joseph River at the Indiana state line-River as a further example.

5. Public Comment

3 Minute Limit

6. Legislative Update

Co-Chair Bryan Burroughs

Agenda Items 7-9

7. Preventative Measures Concept

Dr. Jerimiah Asher
Institute for Water Research
Michigan State University

Improving Management of Michigan's Water Resources

Jeremiah Asher
Assistant Director, IWR

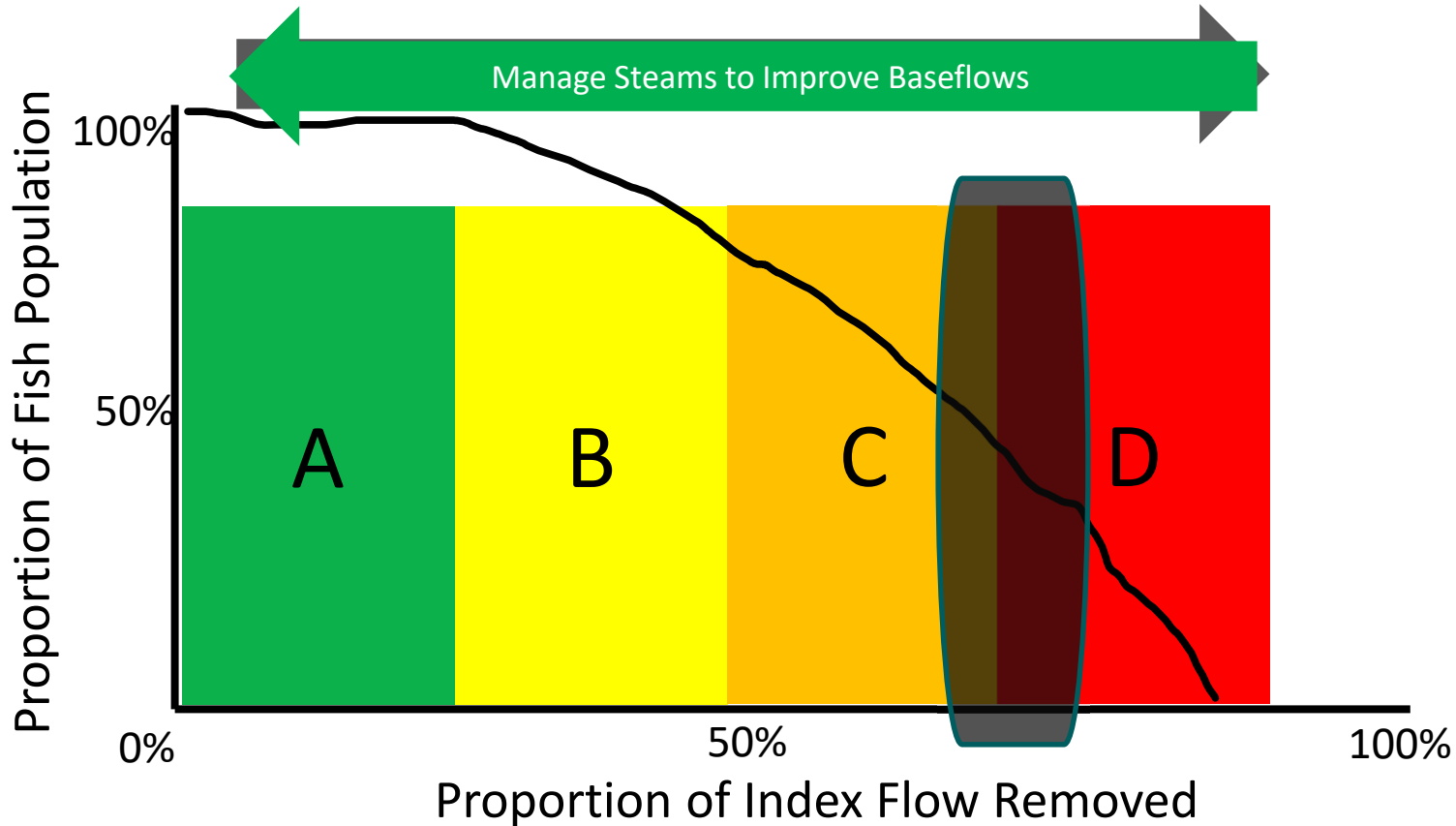


Institute of Water Research
MICHIGAN STATE UNIVERSITY




Institute of Water Research
MICHIGAN STATE UNIVERSITY


Managing Water to the Last Drop before ARI




One way checking account – only look at withdrawals

An ATM Didn't Give You Your Money:
What's Next?



- 

Record the exact time, date, & location of the malfunction
- 

Call your card issuer or bank
- 

Your bank has 45 days to investigate ATM withdrawals

the balance

How do we account for deposits in the bank account?



Offsetting Water Withdrawals in Michigan Watersheds



Saginaw Bay Ground Water Recharge Program

Paw Paw River Watershed Recharge Program

method.
a cleaner clean™

The classic red and white Coca-Cola script logo.

Improving Fish Habitat in Maple River Watershed

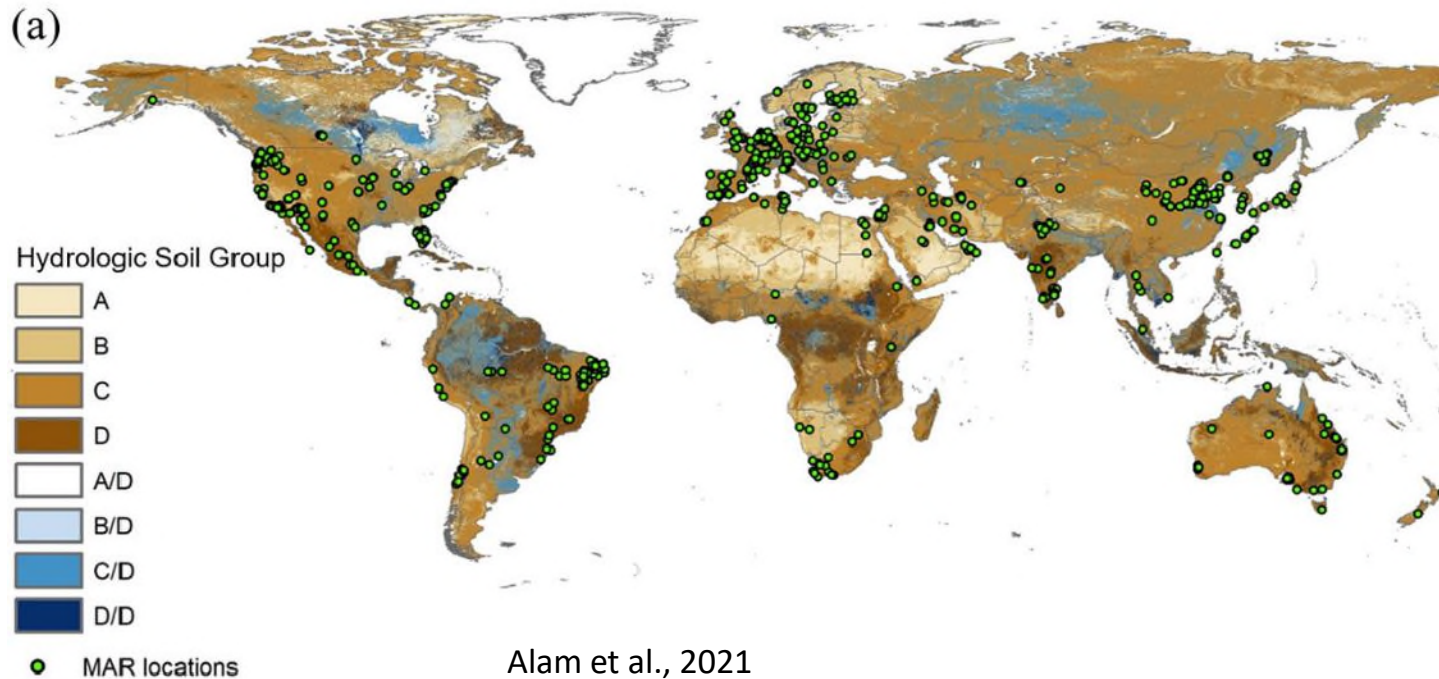


Institute of Water Research
MICHIGAN STATE UNIVERSITY



Global Managed Aquifer Recharge (MAR)

(a)



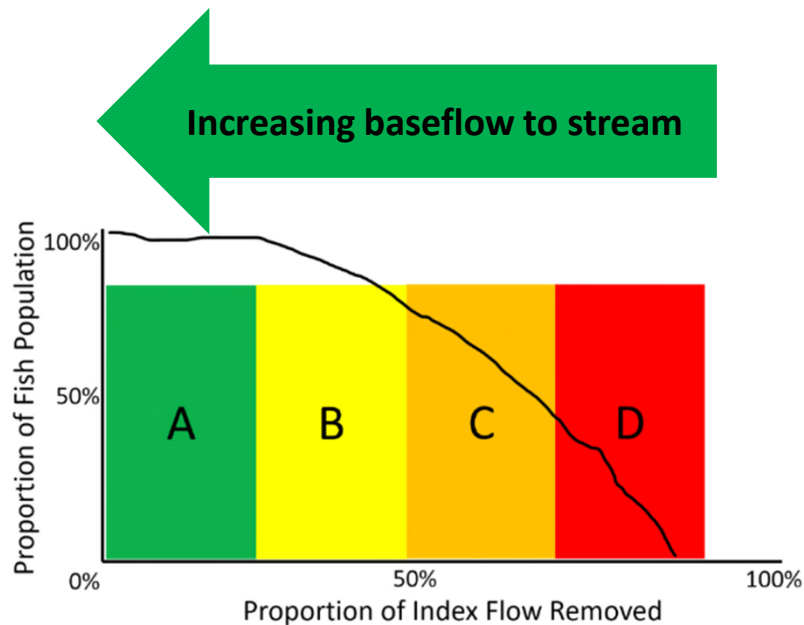
(b)

- Sand Dams
- Trenches
- Channel spreading
- Surface flooding
- Check dam
- ASR
- Subsurface Dam
- Storage using wells
- Bank filtration
- Infiltration basin

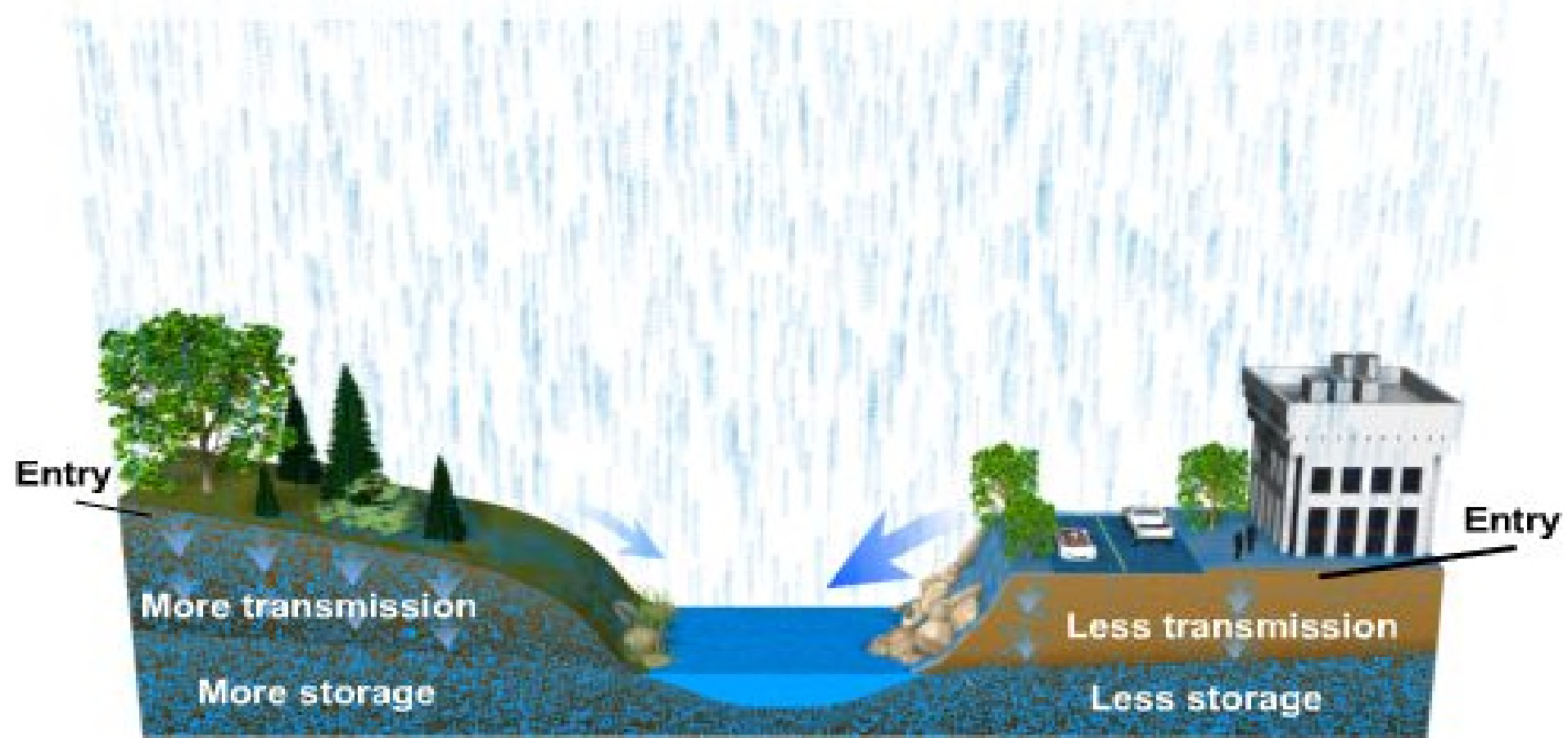
Alam et al., 2021

<https://doi.org/10.1016/j.scitotenv.2021.144992>

Improving Fish Habitat in Maple River Watershed



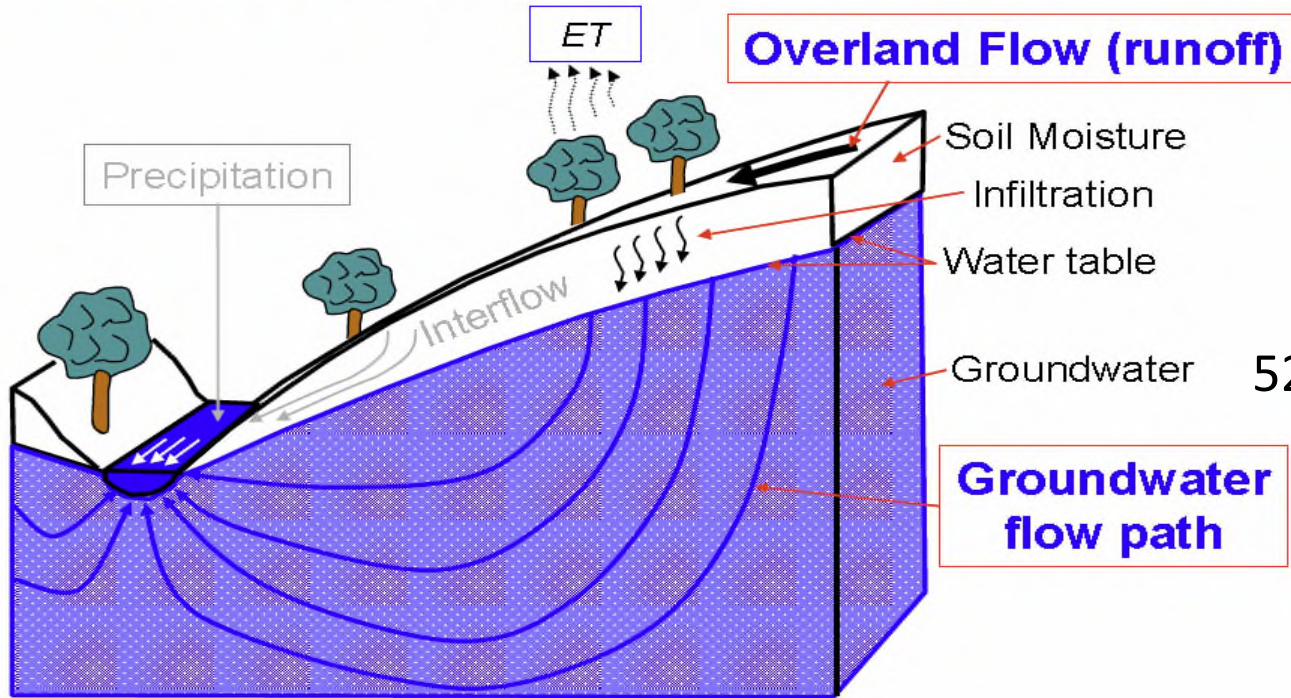
General Soil Water Processes



©The COMET Program

Why is Infiltration Important

• Sources of Water in Rivers



70-77° F (Univ. MN, 95° F Construction Eco Services)

52° F (EPA)

Temperature - Driving Factor for Fish Habitat

Summer Water Temperature: Major factor affecting growth, survival and distribution of fish

Precipitation

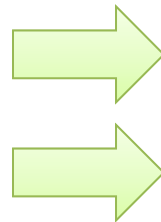
Evapotranspiration

Infiltration

Aquifer Storage

Aquifer Loss

Aquifer Transmissivity



Conservation Practices

(Brett 1979), (Smale and Rabeni 1995a), (Magnuson et al. 1979; Meisner et al. 1987; Smale and Rabeni 1995b; Lyons 1996; Wehrly et al. 2003; Zorn et al. 2004; Steen et al. 2008)

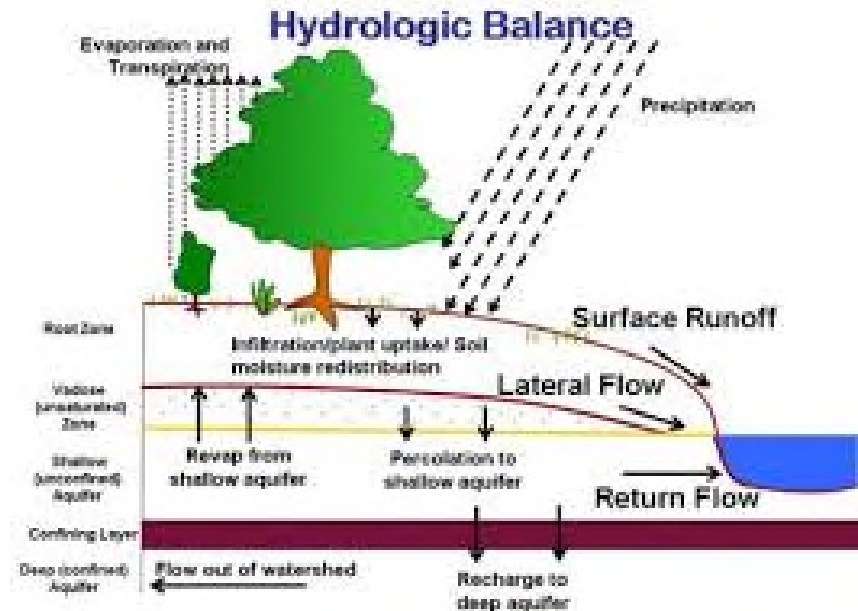


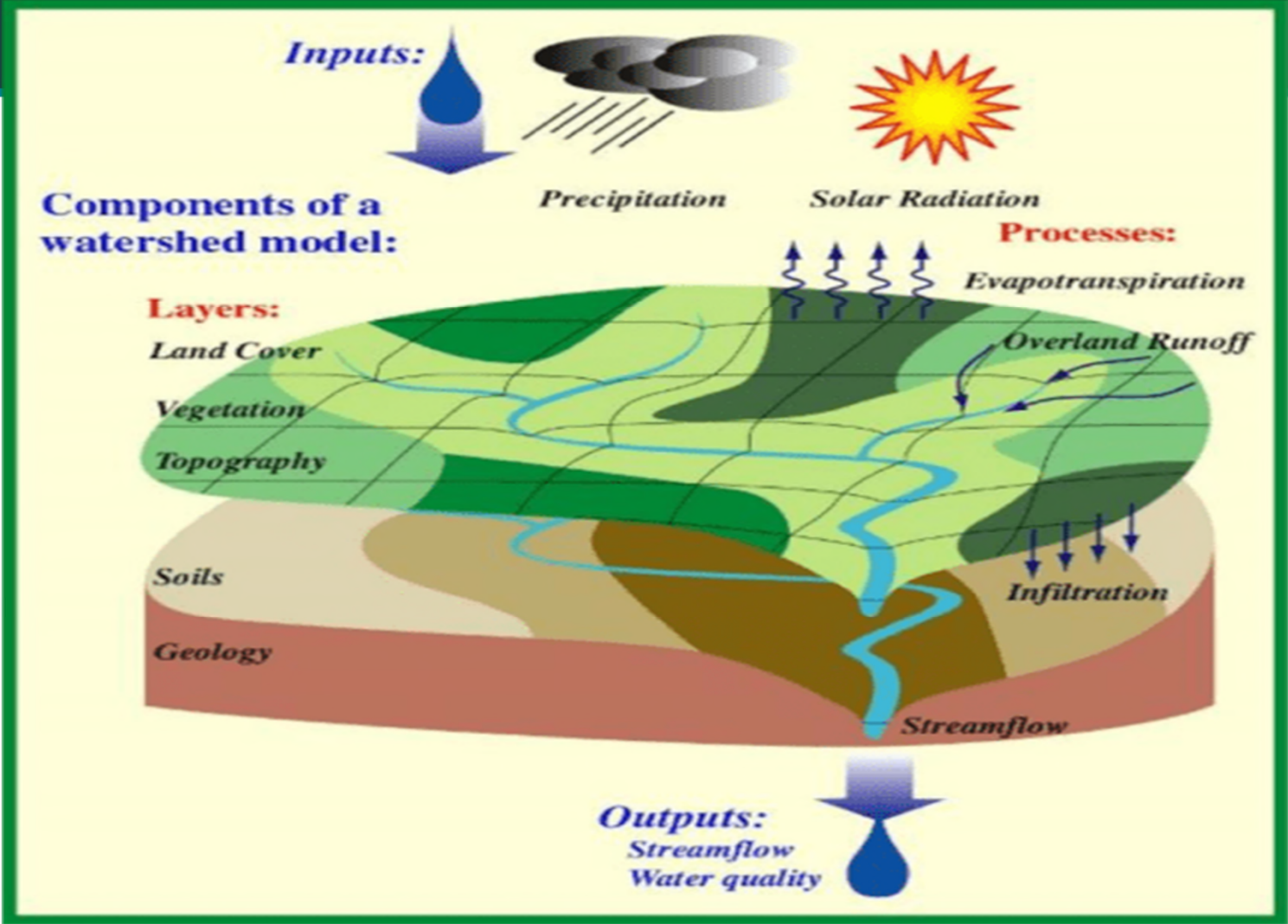
North Dakota State Extension



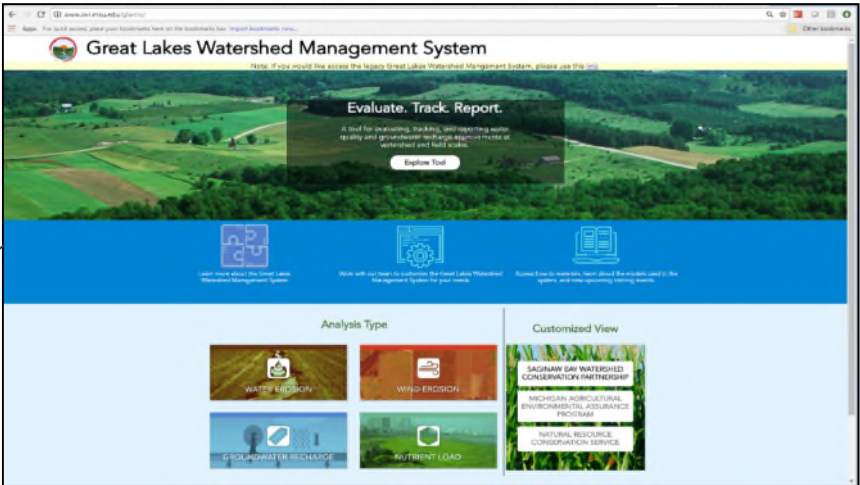
SWAT Model

The Soil & Water Assessment Tool is a small watershed to river basin-scale model used to simulate the quality and quantity of surface and ground water and predict the environmental impact of land use, land management practices, and climate change. SWAT is widely used in assessing soil erosion prevention and control, non-point source pollution control and regional management in watersheds.





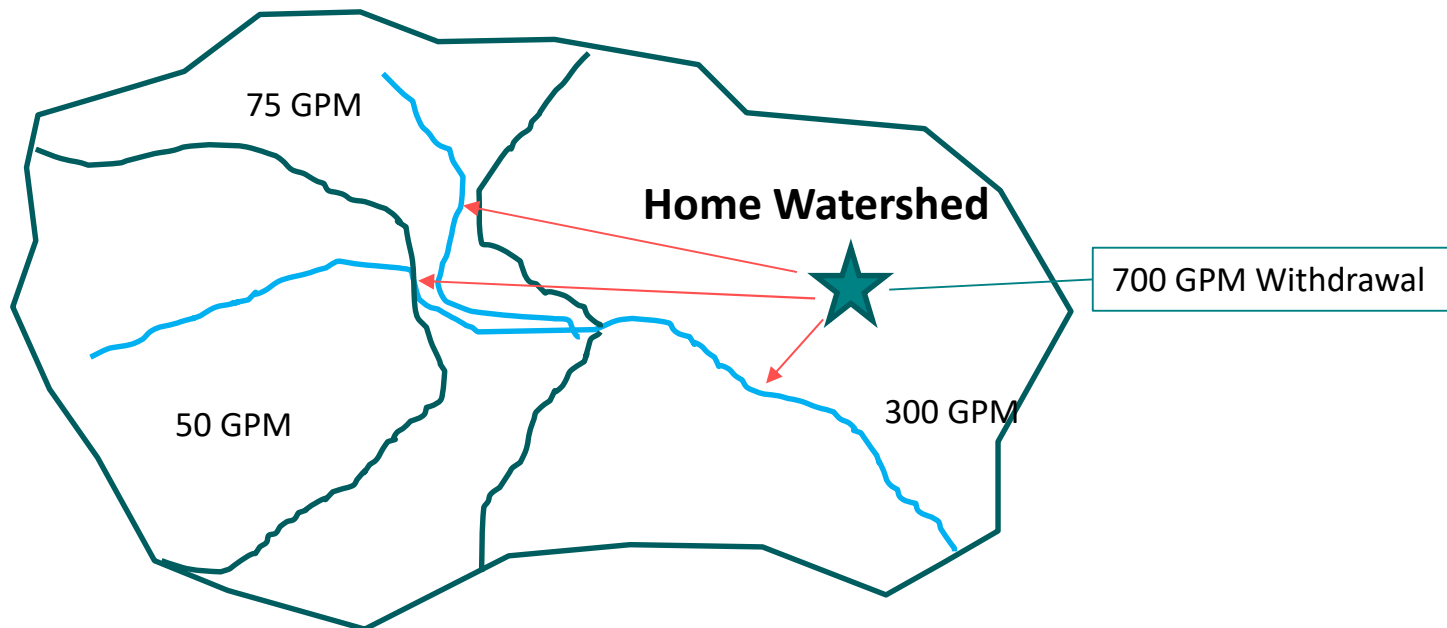
Great Lakes Watershed Management System



How to Incorporate into Current WWAT Process



Apply same logic as WWAT for distribution

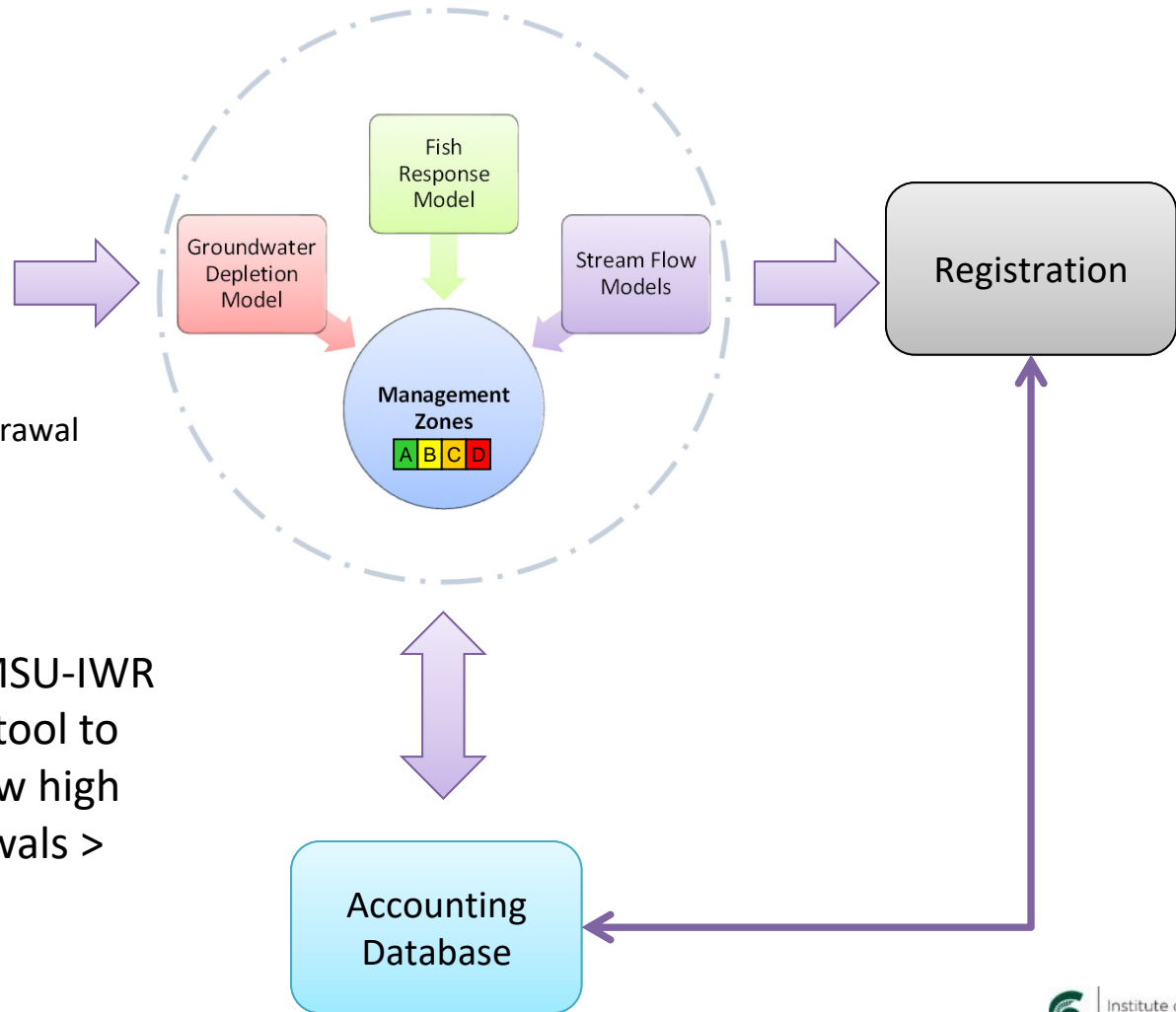


Use a safety factor of 50% to enable increased infiltration over time.



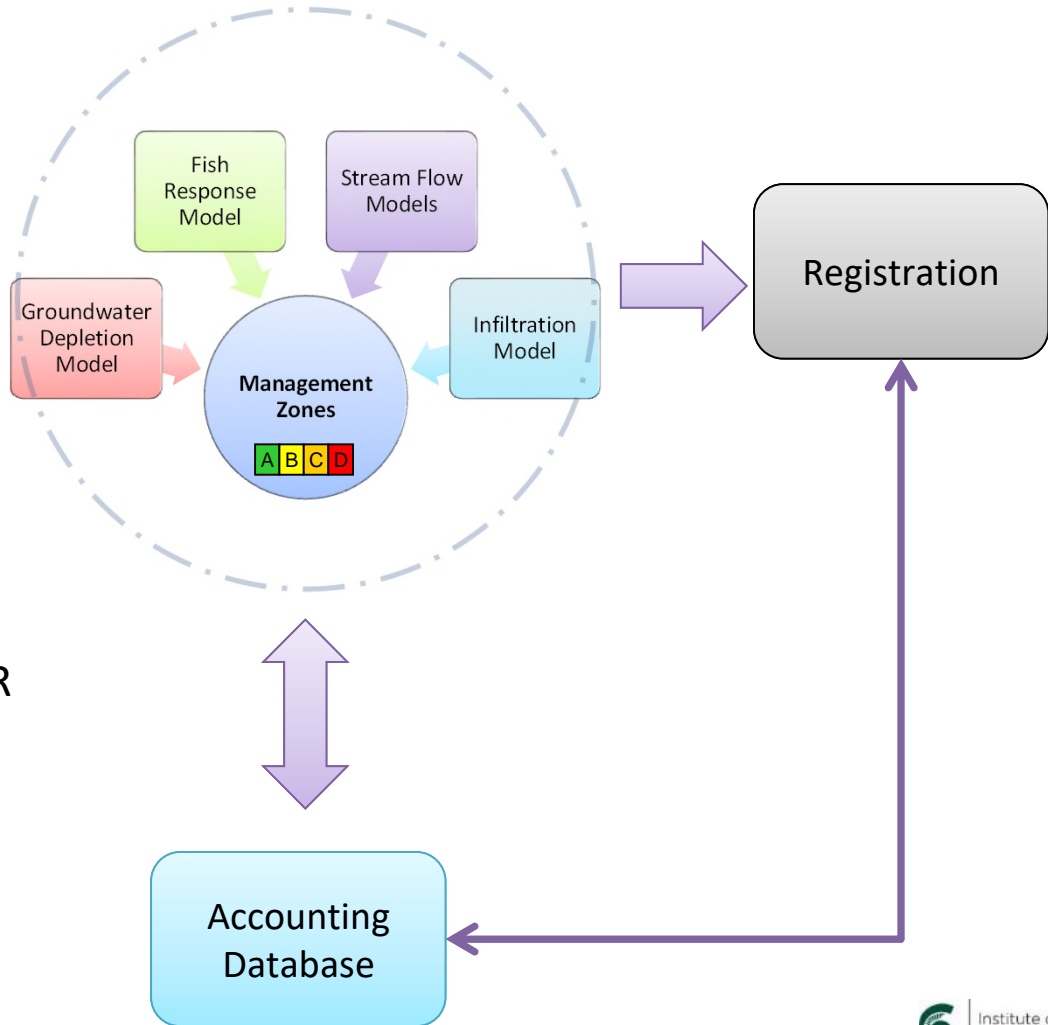
User Proposed Withdrawal

MDEQ, MDNR, USGS, MSU-IWR
Developed a screening tool to
assess the impact of new high
capacity water withdrawals >
70gpm





User Proposed Withdrawal



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70gpm

Mock GW Recharge offset 2016 with Farmers in SW MI



- Nine farmers participated in a mock GW recharge exploration session. Using real fields and practices they would be willing to put in place under contract, the group was able to offset ten 600 GPM withdrawals in their watershed.
- Empower water users to explore alternative ways to manage water in their watershed
- Cost-effective alternative to pumping test and other methods for SSR reviews



How Infiltration Improves Entire WWAT Process

- Paradigm shift to manage water resources to improve stream flows instead of manage to ARI
- How many water user groups have formed in the past 12 years?
 - What are the incentive to meet?
 - What options are on the table for discussion?
- How many preventive measures have been proposed?
- Provide additional avenues for water users to access needed water



Thank you!

Questions?

asherjer@msu.edu

8. Committee Chair Reports

A. Data Collection Committee

Bryan Burroughs

A. Data Collection Committee

- Meeting held March 23rd. Reviewed past charges and open topics, future work needs, and opened discussion of any new possible priorities.
- Focus of committee for next report:
 - “Develop standards & protocols for collection and use of new data within the program (last report rec)
 - Continue pursuing approach to inland lake ARI issue, conceptual framework and data options
- Focus of committee, outside of next report:
 - Begin preparing for implementation of projects from past recommendations, following acquisition of funding for them
 - Integrated water management databases
 - Systematic data assessment and long-term prioritization and planning needs
 - Groundwater monitoring well network development
 - Stream gage network maintenance/expansion
- Next Meeting: April 21, 2022 9 am
 - If you’d like to be added to the committee list, let Megan Tinsley or Bryan Burroughs know via email.

B. Models Committee

Dave Hamilton

Jim Nicholas

Topics for the Models Committee:

- 1) Develop tools to better represent streamflow depletion in SSRs.
 - a) Groundwater Model Report Format Guidance
 - b) Aquifer Testing Work Plan Guidance
- 2) Develop recommendations to incorporate Downstream Accounting and Return Flows into the WWAP accounting process.
- 3) Review existing models that may assist the WWAP.
 - a) Cass County
 - b) MichIndOh model
 - c) Wolf Cr/Skunk Cr by USGS
- 4) Allocate Streamflow Depletion (half max rule)

Topics for the Models Committee:

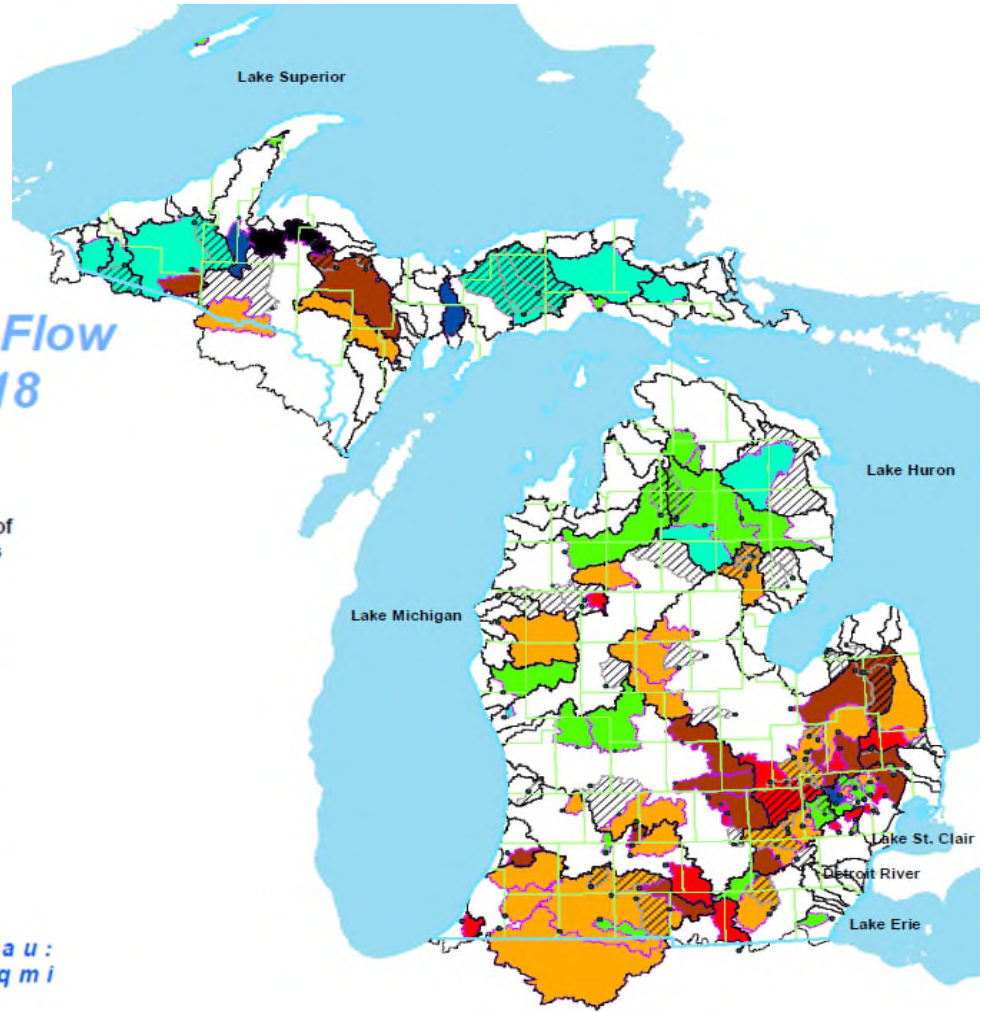
- 5) Recommendation that Index Flows do not need to be updated at this time.
- 6) Advise the department in dealing with “depleted” WMAs.
- 7) Follow up on recommendations from the 2020 report that were recently funded. This includes developing the Michigan Hydrologic Framework.

Michigan's % change of Index Flow From Water Year 2007 to 2018

Processed on August 18, 2021

Classes	% of Total area of the State	Number of Stations
Above 9.0%	2	13
5.0% to 8.9%	6	15
1.1% to 4.9%	11.6	26
-1.0% to 1.0%	7	22
-4.9% to -1.1%	5.6	9
-8.9% to -5.0%	0.7	3
Below -9.0%	0.6	3
Discontinued Station		56
Totals		147
Increased	19.6	55
No Change	4.4	18
Decreased	8.9	18

Based on U.S. Census Bureau:
Total area of Michigan is 56,538.0 sqmi



C. New Topics Committee

Pat Staskiewicz

Jason Walther

D. Conservation and Efficiency Committee

Emily Finnell

Kelly Turner

Water Conservation and Efficiency Committee

- Finalized 2022 Work Plan
 - Advance ideas from Dow Fellows report
 - Develop statewide Great Lakes education and outreach program (also from WUAC 2014, Michigan Water Strategy)
 - Advance efforts to promote water energy savings programs through collaboration with energy utilities
 - Restart and rebuild capacity in EGLE's Retired Engineers Technical Assistance Program to assist businesses with sustainability assessments
 - Further discussions on water conservation metrics for water infrastructure investments

Water Conservation and Efficiency Committee

- Reviewed and discussed 2020 Recommendations and New Funding
 - Recommendation 1. Advance Michigan's Water Conservation and Efficiency Efforts through State Climate, Energy, and Water Infrastructure Initiatives.
 - Discussed potential for funding for review and update of water sector bmps with focus on how climate migration/climate change may impact water sectors and how they are planning to mitigate and adapt
 - How will climate migration affect sustainable water use and how will water sectors adapt and mitigate climate affects?
 - Advance progress on Recommendation 2. Ag Efficiency – MSU ready to proceed if funded

Water Conservation and Efficiency Committee

- Reviewed 2014 WUAC recommendations
- Next steps to develop process for prioritizing topics for potential 2022 committee recommendations to WUAC
- What else would WUAC like WCE committee to focus on?

E. Implementation Committee

Laura Campbell

Implementation Committee

- Next meeting 4/21/2022, 1:00 – 2:00 pm
- For Login Information Contact:
 - Doug Needham, dneedham@miagg.org
 - Laura Campbell, lcampbe@michfb.com
- Will discuss Appropriation from SB 565 (\$10 million for WUAC recommendations) and what guidance EGLE needs for implementing 2020 recommendations

9. 2022 WUAC Report Update: Content, Logistics, and Timeline

Co-Chair Brian Eggers

Agenda Items 10-13



MICHIGAN DEPARTMENT OF
ENVIRONMENT, GREAT LAKES, AND ENERGY

10. Program Update

Water Use Advisory Council

April 12, 2022

Outline

- Program Metrics
- Map of Registrations Requested by County
- EGLE Stream Flow Measurements
- Contamination Site Maps & LQWs
- Questions

Compliance Numbers

January 1, 2022, to March 31, 2022

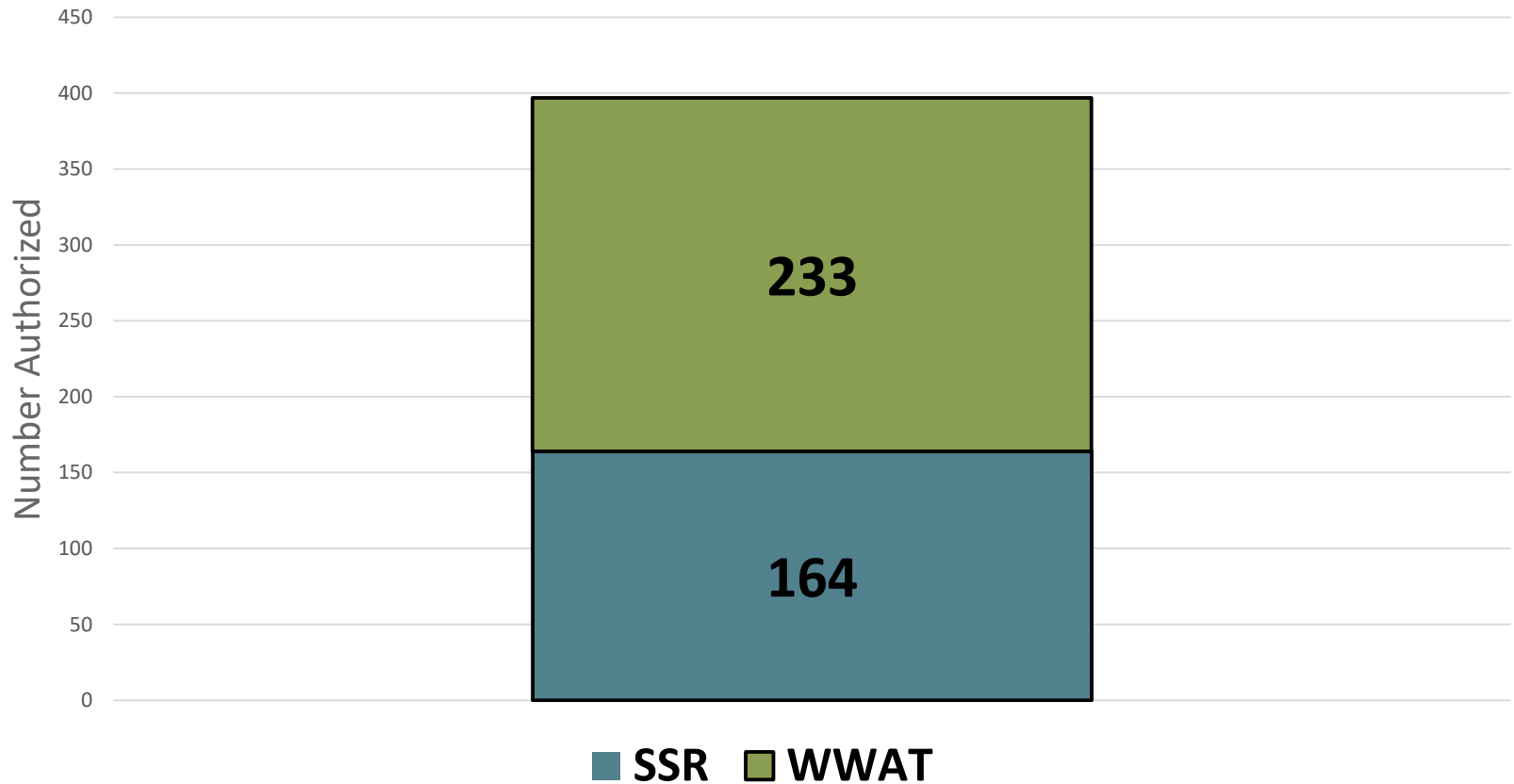
- Compliance Communications 31
 - After the Fact Registrations 8
 - Missing Pump Information Requests 2
 - Revised Registrations 19
 - Installation Verification Requests 2
- Violation Notices 8
- Complaints 1

Annual Metrics

January 1, 2022, to March 31, 2022

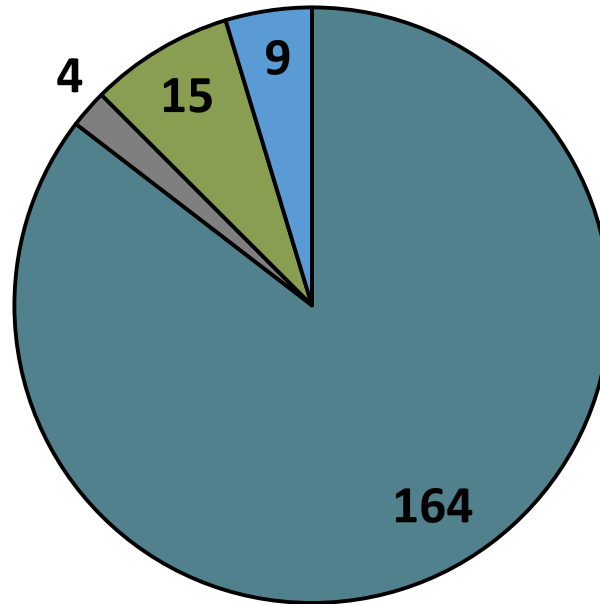
- 4 Pre-screening Reviews Passed
 - 2 Zone A
 - 2 Zone B
 - 0 Zone C
 - 0 Baseline Replacement
- 0 Pre-screening Reviews Denied
- 1 Pre-screening Review Retracted
- 4 327 Permits Issued

LQWs Authorized During Program Year 12: WWAT & SSR



July 9, 2021 – March 31, 2022

Total SSRs Received and Determinations Made During Program Year 13



■ SSRs Authorized ■ Denied ■ Retracted ■ Still Pending

July 9, 2021 – March 31, 2022

Program Year 13 Timeliness

Average Number of Business Days
from Receipt of SSR Request:

13.1 Days

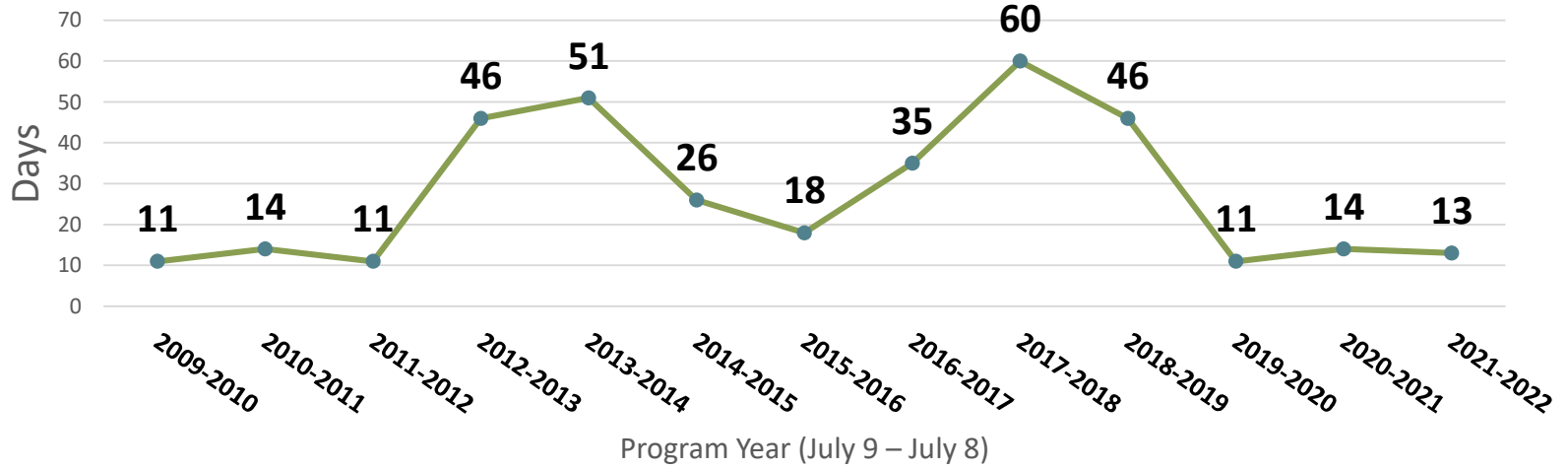
Percentage of SSRs completed
within 10 Business Days:

57%

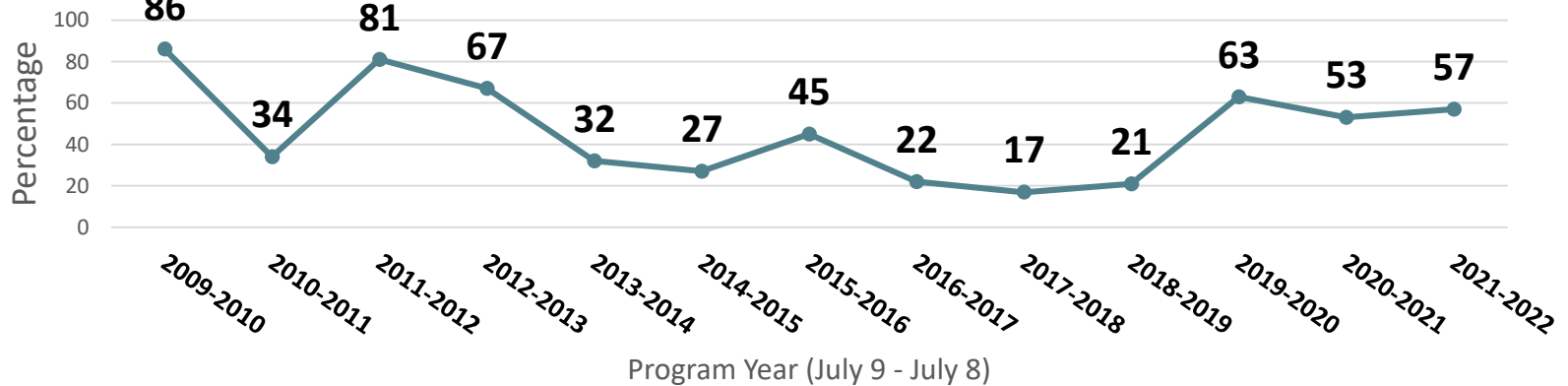
Statutory Deadline: 10 Business Days

July 9, 2021 – March 31, 2022

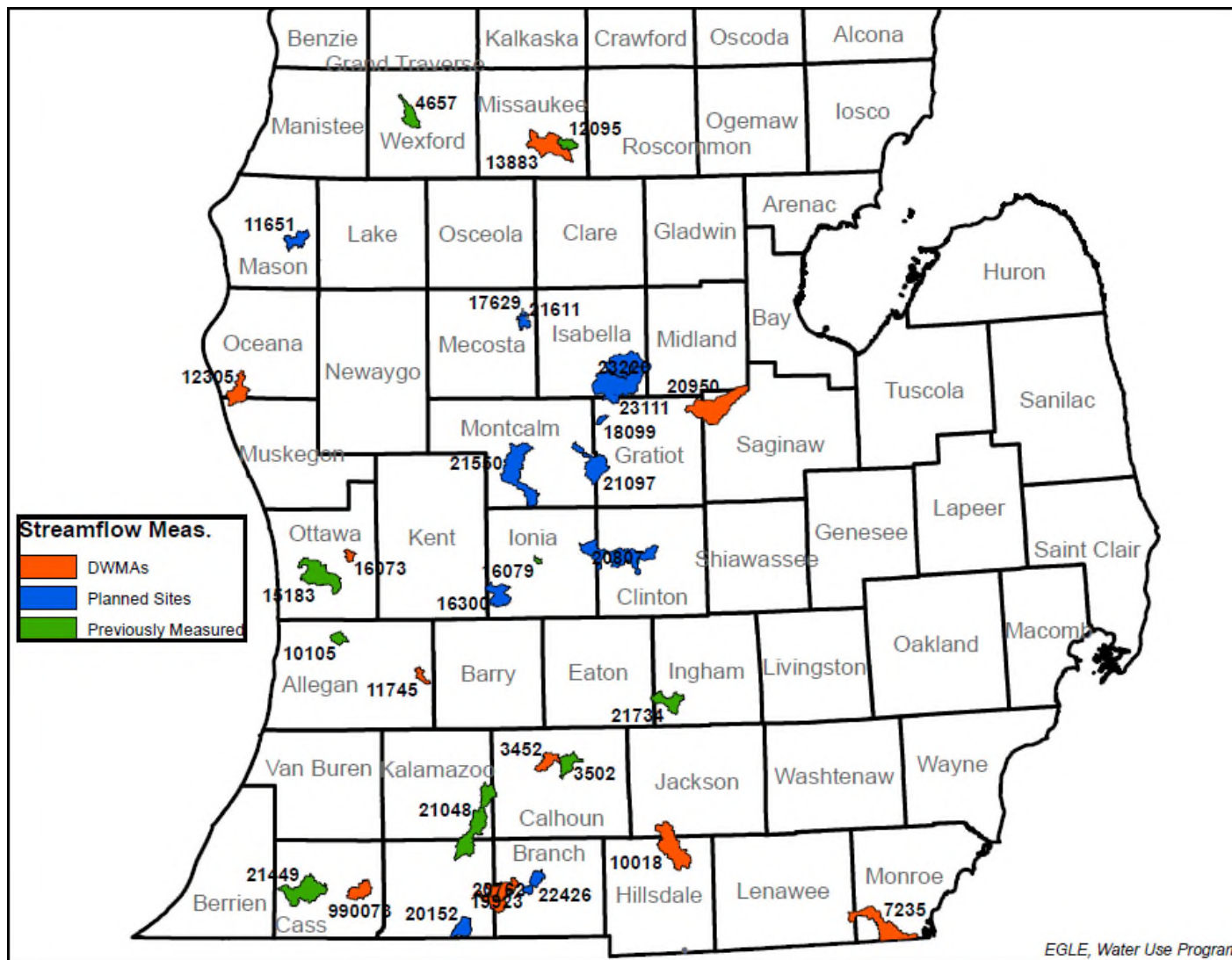
Average Number of Business Days from Receipt of SSR Request



Percentage of SSRs Completed within 10 Business Days

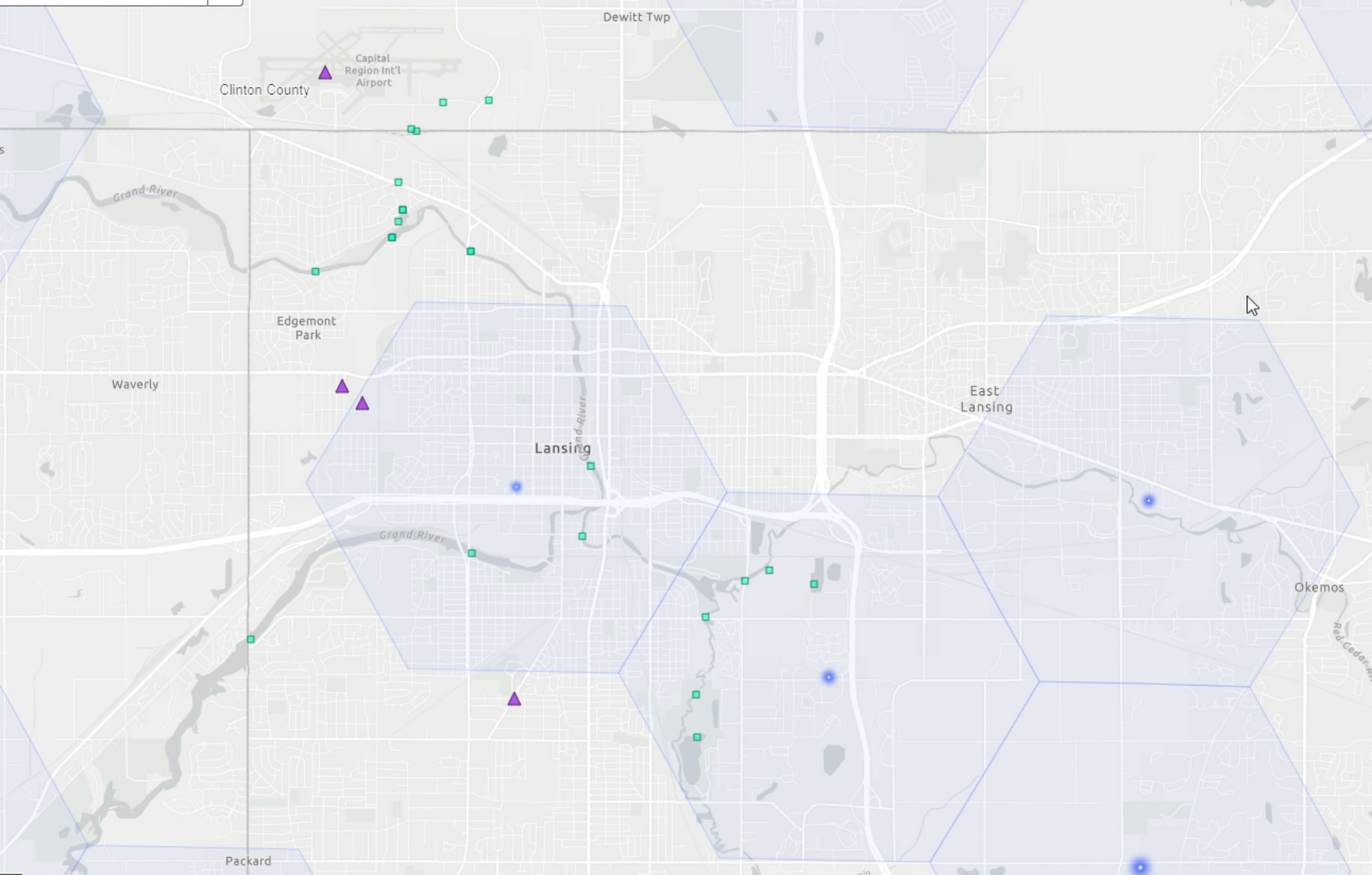


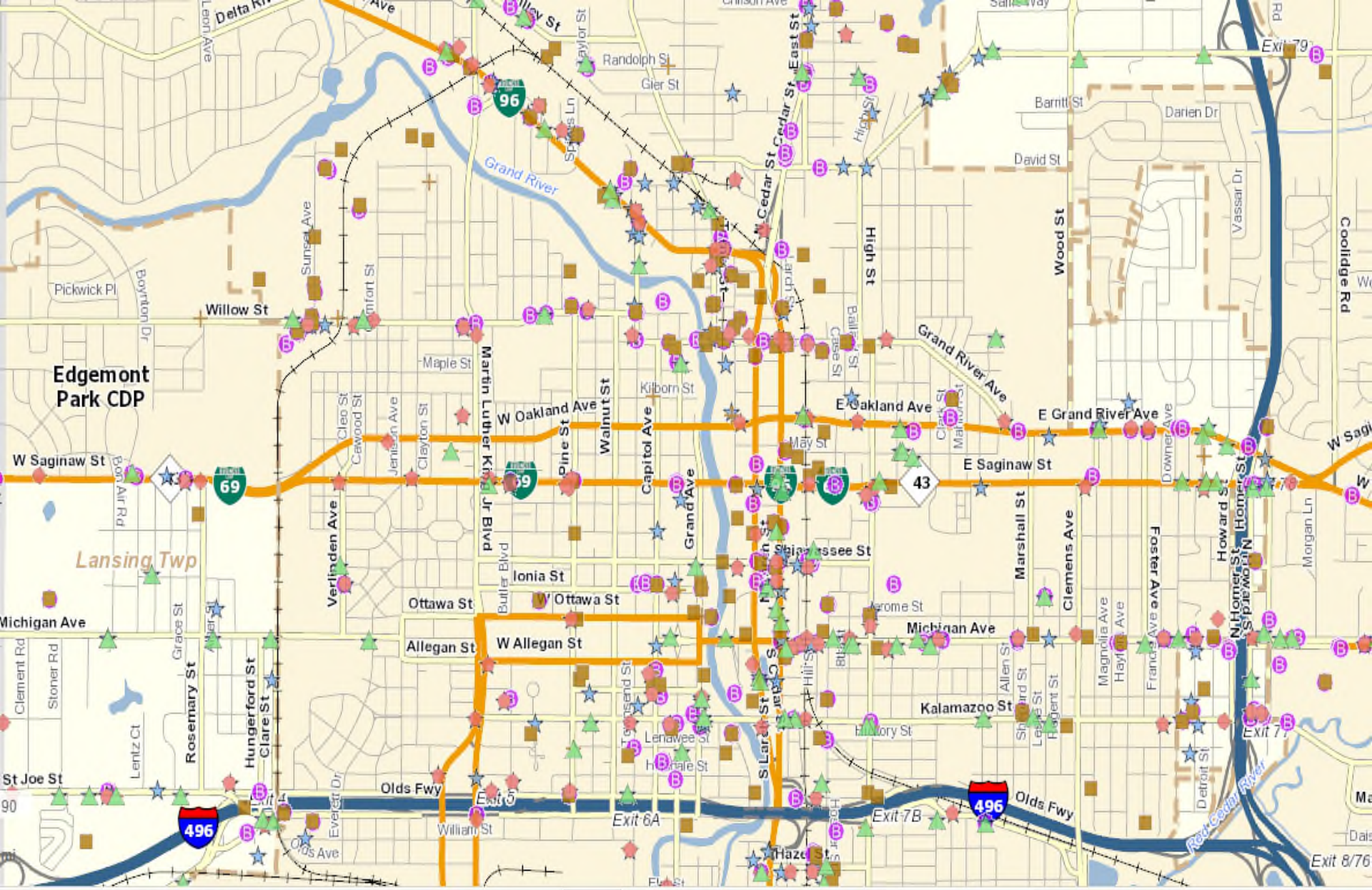
Miscellaneous Stream Flow Measurements



Contamination Sites Maps

- [MPART: PFAS Geographic Information System \(arcgis.com\)](#)
- [Environmental Mapper \(state.mi.us\)](#)





Questions?

Jim Milne
Water Use Assessment Unit
EGLE Water Resources Division
517-285-3253
milnej@michigan.gov

Michigan Department of
Environment, Great Lakes, and Energy

800-662-9278

Michigan.gov/EGLE



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11. Future

- a. Meeting Dates
- b. Formats
- c. Quorum

11. Future

Remaining 2022 Meeting Dates

- June 14 (Tuesday)
- August 9 (Tuesday)
- September 13 (Tuesday)
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- December 5 (Monday)

11. Future

- b. Formats
- c. Quorum

12. Open Comments

3 Minute Limit

13. Motion to Adjourn
