

Water Use Advisory Council (WUAC) Meeting

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

Tuesday, October 11, 2022

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

Con Con Conference Room
South Atrium, Constitution Hall
525 West Allegan
Lansing, MI 48933

Remote Option Available Via Teams

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Phone Conference ID: 825 311 627#

MINUTES

1. Welcome

Laura Campbell, Co-Chair, Farm Bureau, welcomed members and guests and shared the logistics for participation in the meeting. She noted she would be sharing the Chair role with fellow Co-Chairs Burroughs and Eggers.

2. Roll Call

Campbell took roll call attendance of members and/or alternates.

WUAC Members/Alternates Present at Constitution Hall:

Abby Eaton, Michigan Department of Agriculture and Rural Development
Ben Tirrell, Michigan Farm Bureau
Brian Eggers, AKT Peerless
Bryan Burroughs, Michigan Trout Unlimited
Buddy Sebastian, Michigan Ground Water Association
Christine Alexander, EGLE
Dave Hamilton, The Nature Conservancy Retired
Doug Needham, Michigan Aggregates Association
Kelly Turner, Michigan Agricultural Irrigators
Laura Campbell, Michigan Farm Bureau
Pat Staskiewicz, Michigan Section American Water Works Association
Rachel Proctor, Jackson Consumers Energy
Tom Frazier, Michigan Townships Association

A quorum was physically present therefore the WUAC was able to take official actions requiring a vote during this meeting.

WUAC Members/Alternates Present via Teams:

Megan Tinsley, Michigan Environmental Council
James Clift, Deputy Director, EGLE
Jim Nicholas, Nicholas-H2O
John Yellich, Michigan Geological Survey
Margaret Bettenhausen, Michigan Attorney General
Mike Gallagher, Michigan Lake Stewardship Associations
Steve Kohler, Kalamazoo River Watershed Council

WUAC Members/Alternates Absent:

Charlie Scott, Michigan Golf Course Owners Association-no
Clyde Dugan, Michigan Section American Water Works Association
Frank Ettawageshik, United Tribes of Michigan
Grenetta Thomassey, Tip of the Mitt Watershed Council
Jason Geer, Michigan Chamber of Commerce
Jason Walther, Michigan Agricultural Irrigators
Jay Wesley, Michigan Department of Natural Resources
Jim Johnson, Michigan Department of Agriculture and Rural Development (MDARD)
Kyle Rorah, Ducks Unlimited
Rich Bowman, The Nature Conservancy
Sue Hanf, Michigan Aggregates Association

Non-members present:

Aaron Asher, MSU
Adam Zwickle
Andy LeBaron, EGLE
Austen York, EGLE
Brandon Ellefson, OHM Advisors
Clayton Joupperi
Dave Lush
Grant Poole
Hannah Arnett, EGLE
James Johnson, MDARD
James Milne, EGLE
James Ostrowski, EGLE
Jennifer Laudazio, EGLE
Jill Van Dyke, EGLE
Joel Henry, Fishbeck
Lena Pappas, EGLE
Lyndon Kelley
Nathaniel Shuff, EGLE
Ralph Haefner, USGS
Ross Helmer, EGLE
Sarah, Pearson, EGLE
Simon Belisle, EGLE
Teresa Seidel, EGLE
Todd Feenstra, Tritium
Younsuk Dong, Michigan State University

3. Approval of Agenda-Roll Call Vote

Campbell called for the approval of the agenda. Hearing no changes or additions, the agenda stood as presented.

4. Approval of Minutes-Roll Call Vote

Campbell noted that since quorum was not physically present during the June, August, and September meetings, all three sets of meeting minutes are being called for approval. With no comments or objections, the minutes were approved as presented.

5. Public Comment (3 Minute Limit)

There were no comments at this time.

6. Legislative Update

Clift presented how EGLE would be distributing the 10 million dollars that are coming through the Legislature. A spreadsheet was broken down into recommendations made in the 2020 WUAC Report and showed expected expenses required to fund the initiatives. The general recommendation categories and target projects are listed below.

- Recommendations to advance water conservation
 - Advance Michigan's water conservation and efficiency efforts through state climate, energy, and water infrastructure initiatives
 - Increasing water efficiency and conservation practices in agriculture
- Recommendations to continue to improve current operations and data collection
 - Michigan integrated water management database development
 - Well driller training for improved data
 - USGS and EGLE streamflow gages
 - Existing streamflow gages
 - Launch a study to recommend how many additional gages are needed to fill in data gaps in the existing network
- Recommendations for new operations to improve data collection and modeling
 - Michigan hydrologic framework
 - Creation of groundwater models to improve management decision making
 - Create three regional models to assess water withdrawals within the framework
 - Assess metamodeling process on a regional model to evaluate water use impacts
 - Geologic data collection and mapping
 - Expands geologic information with data from drilling, soil sampling, seismic sampling, etc. (Not funded through the 10 million supplemental appropriation)
 - Michigan Geologic Survey data collection for inclusion in water withdrawal assessment program
 - Monitoring well network installation and join the national groundwater monitoring network through a EGLE and USGS partnership
- Recommendations for additional activities to improve data collection and modeling

- Long term planning for analysis of streamflow, groundwater, and geologic data
- Water Withdrawal Assessment Tool (WWAT) user interface update
- Compiling key aquifer properties for use in WWAT
- 3D Glacial mapping in two counties
- Wellogic log and digitalization and database population

During the discussion concerning the installation of USGS and EGLE streamflow gages, Clift noted that the proposed 1.2 million dollars was not a direct recommendation in the final 2020 WUAC report. He asked the group for clarification as to where the numbers originated and whether or not the WUAC still thinks this is a good idea. The original report cited up to 50 gages where this dollar amount could provide around 8-10 gages.

Campbell commented that this came about when the Legislature started to ask for more project ideas to spend American Recovery Act Funds. The Legislature was aware that the WUAC was expecting budget shortages so they asked for a wish list of projects that the WUAC would like to undertake if funds were available. The WUAC quickly worked with the Implementation Committee and tried to incorporate elements that would be necessary for some of the recommended long term data collection needs. These numbers came out of that effort to improve data collection.

Burroughs stated that this was a situation where the WUAC thought they were going to be asked to spend more money than was previously recommended in a very short amount of time. This was a response to a unique moment in time where the WUAC thought there might be more funds than planned.

Hamilton asked for clarification regarding the 1.2 million dollars being discussed and the additional 800,000 dollars for operations and maintenance.

Clift clarified that this is an estimated amount to cover the installation of twenty gages and ongoing maintenance for five gages. To the extent that the WUAC receives more money from the Legislature, this project can be revisited and dedicate more funds as needed.

Hamilton stated that the Michigan Hydrologic framework recommendation is not just for developing databases. It's also for developing three models to demonstrate how it can be used and model critical areas where more detail is needed.

Needham asked what the next step of the stream gage installation recommendation would be and is it contracting with the USGS. EGLE and USGS have several existing joint funding agreements (JFA) for stream gages, miscellaneous stream flow measurements, groundwater modeling, and other projects. Existing JFAs may be able to be modified and/or new JFAs created.

Clift provided a clarification for the 3 million dollars proposed for the Michigan geologic data collection and mapping recommendation. This recommendation was covered by overlapping legislation, and the good news is that this money was appropriated in a subsequent bill. So, we expect 3 million per year to be included within the budget fund that will not come out of the 10milliondollar appropriation.

Needham asked about the well logic digitization effort and wanted to know if the Michigan Geologic Survey team is staffed up enough to undertake this effort. Yellich said that they have five open

positions and hope to start hiring soon. There are currently 28 staff working on this and this will not change that.

Sebastian asked how many wells are expected to be installed in monitoring well network in a year with the proposed funding. Haefner clarified that to his understanding, this proposal was a recommendation from several years ago and the intent was to update the observation well network in a stepwise fashion to get 10-12 wells installed per year, instrument them, and add them to the database and possibly the State of Michigan database as it is created. The objective is to have two wells per county. The item from the spreadsheet concerning Michigan joining the national groundwater monitoring database was not part of the original proposal.

Campbell said that there have been matching funds available for Michigan to join the national groundwater monitoring network for a long time that Michigan has not taken advantage of. The 2020 WUAC Report recommended installing monitoring wells and joining the national monitoring database. They were both components of the 2020 WUAC Report although joining the monitoring database was not part of the proposal being discussed by Yellich.

Turner asked if Michigan could get more value by installing more wells in locations where there is more depletion instead of spreading them out two per county. Hamilton said that it depends on the intent of the monitoring. We need to design a data collection program in areas with depletions. Haefner said that part of this proposal included developing a group of stakeholders that would advise the locations of wells being installed. The two wells per county was a tentative recommendation that could be discussed by the stakeholder group.

Yellich added that the Michigan Geologic Survey has been looking at the monitoring network and has been mapping various counties. Their drilling rig can be used to convert drill holes to monitoring wells and when areas of high geologic interest have been identified, they are converting those locations to monitoring wells where funds are available. This effort started two and a half years ago and is ongoing.

Feenstra asked about the costs associated with installing new wells and if we were proposing activating old wells or installing new wells. Haefner said that it is a combination and that the budget is higher in the first year due to the need to assemble the stakeholders group. The costs are associated with reactivating old wells after they have been tested or installing new ones. Activating old wells is a cheaper exercise overall, but they need to be tested and rehabbed.

(At this time, Co-Chair Burroughs assumed role of meeting Chair.)

7. New Technical Advisor Application

Burroughs stated that the WUAC has had an application for a new technical advisor for some time. Approval was not possible due to a lack of quorum. He asked Dr. Younsuk Dong to introduce himself and give some additional background.

Dr. Dong works as an irrigation specialist at Michigan State University. His research program focuses on improving water use efficiency through technology. He works with various organizations and commodity groups to help improve water use efficiencies.

Burroughs asked if anyone had any questions on Dr. Dong's background and there were none. Burroughs asked for a motion to accept Dr. Dongs application. The motion was made by Burroughs and supported by Needham and Hamilton. The vote passed with all 13 attending members in favor and 0 opposed.

8. Committee Chairs Report

A. **Data Collection Committee**

Burroughs shared the Committee has been working on two documents that will be presented soon to the WUAC. The first is a description of the WUAC's progress since the 2020 WUAC Report. They were working on a data selection standard protocol. Some data sets have standards and others do not, so protocol needs to be in place to determine if the Committee should use that data. The Committee has struggled with this due to the large amount of data that this program could use. Some progress has been made, but not enough to say it is near completion. With the long-term data planning tasks and the water database, it means having to scrutinize every kind of data possible. To put this data into a database, something must be designed that can make use of it all. While the Committee did not make as much progress as hoped, the tasks ahead will help make more headway on this task.

The other task is trying to recollect our thoughts on the inland lakes adverse resource impacts topic. We have obligations to look at resource impacts to water and water dependent natural resources. In the last couple of years, we have had experts from Minnesota and Wisconsin share information from similar work in their respective states. EGLE has also helped move this forward by issuing a big lake bathymetry pilot drone study be completed. Looking at this data compared to the more intensive human efforts that have been done in the past will give us a look at the gains that can be made with the new methods and smaller transects. We are investigating whether new LIDAR technologies can be used to shoot through water and do bathymetry mapping. We are working with the company that seems most likely to succeed with this and are trying to get a better idea of how deep this can shoot. Depending on the results, we may want to launch some pilot scale studies for work in this area in the future.

As a group we want to discuss the types of data we want to collect, but for the adverse resource impact aspect, we do not have a good idea of how we would want to use the data. For inland lakes we do not really have an idea of what metrics we want to monitor to evaluate the adverse resource impacts. It could be metrics tied to recreation, biology, fish, or lake dynamics. We need to think through which pathways make sense and are doable and correct for the application.

The Committee will be working on bringing a recommendation to the WUAC to make some financial investments to allow our group to progress to the next step. This next step will be a proposal for a framework so we can show some real progress. There are three items where we could benefit greatly from some assistance. First, limnological expertise, someone who has more topic knowledge about the pathways and can provide insight would be very helpful. Second, facilitated modeling help. Some general facilitative modeling could help us tell which items are linked together and help us make selections on what data is best to collect and how sensitive different things are to one another. Last, there are data types that we do think are necessary enough to explore further, so we want to propose research to get some costs associated with that data collection.

Campbell asked if the Committee has looked at how the data sources might inform site specific reviews (SSRs) and whether the Committee has explored data by individuals who have set up

their own monitoring networks. Burroughs said that they are looking into these things but stressed the importance of the long-term planning effort that was intended to review every type of available data and then make recommendations about how to proceed with each available data set. As part of the long-term planning, the Committee wants to be able to say how they can make use of the available data.

Burroughs said that they will be working very hard before the next meeting to get the language and Data Committee's recommendations together for the Committee to review by November for inclusion in the 2022 WUAC Report.

B. Models Committee

Hamilton stated that the Models Committee has three sets of recommendations including revisiting the "Half Max Rule" with the "Web Squared" alternative method of streamflow depletion allocation, downstream accounting of streamflow depletion, and a downstream flow rate attenuation study to be considered and voted on at the November WUAC meeting.

Hamilton gave an overview of how the existing stream depletion tool works, the "Half Max Rule", and the current practices for calculating streamflow depletion. A set of British Columbia researchers reviewed what Michigan has done and looked to improve the method. The new method looks for near by streams that will be depleted and actually accounts for the geometry of the stream as it exists relative to the well.

Comparisons were made between the "Half Max Rule" and the new "Web Squared" method and the results vary due to stream geometry and the nearness of the well to the stream. Thirty wells across the state were examined comparing the methods. The values compared favorably to one another and the "Web Squared" method did not consistently predict higher or lower than the "Half Max Rule".

The Committee is proposing three recommendations from this work that will look at applying the new "Web Squared" method to improve the WWAT streamflow depletion allocations between WMAs. This includes determining the feasibility of using the methodology in the screening tool, determining the results of applying the revised methodology to the entire database of registered large quantity withdrawals (LQW), and preparing recommendations for the WUAC regarding the implementation of the revised method. Turner asked whether the data necessary to determine the feasibility of the revised methodology is available. Hamilton confirmed that we have the data and the comparisons necessary to look at this methodology and there have been models looked at which this method does a very good job reproducing. The information needed to apply this method is already in the existing tool, but we would have to evaluate whether or not a tool upgrade would be needed to implement.

Hamilton then discussed the downstream accounting recommendations. The way the system currently works is that water is withdrawn, and you see how it is allocated and the depression associated with it in the neighboring watersheds. This however does not carry downstream. The upstream withdrawals are not taken into consideration for downstream. There is no accumulation of depletions being accounted for in the current management system. Michigan State University (MSU) team members looked at a way of accounting for this in the tool and a way to link the downstream to upstream withdrawals. Multiple areas of the state were shown to be in significantly worse depletion status in the tool when upstream withdrawals were accounted for.

The Models Committee has three research recommendations with respect to downstream accounting for the 2022 WUAC Report. This included completing an exhaustive literature review

of existing and observed modeled downstream propagation of streamflow depletions, examining relationships between long-term changes in index flows relative to climate conditions, and conducting a literature review and empirical analysis to support the spatial scale for totaling cumulative withdrawals that affect the index flow of each watershed management area.

Hamilton then presented recommendations for a flow rate attenuation study. The Models Committee is recommending that a study be performed on stream flow data from a different angle to test several hypotheses. The hypotheses being tested are bulleted below.

- Streamflow changes are difficult to see in downstream stream gage records because of the magnitude of flow relative to the magnitude of the upstream withdrawals
- Hydraulics of flow in the channel and stream network attenuate the stream depletion response leading to lower peak rates over longer periods such that the peak depletion rate is not observed
- Exchange of water with groundwater allows the stream to access additional storage and this storage attenuates peak depletion.

Hamilton stated that this recommendation is intended to look at what is happening and the dynamics between flow, withdrawal, groundwater, and other factors. They want to get a better idea of what is better going on in the system. The recommendation being proposed as part of this study is to conduct a series of modeling analyses to test the mechanism that would lead to attenuation and stream depletion. This will help identify which mechanisms are contributing to the depletion phenomenon and understand how the system works.

Needham asked whether that will be very dependent on the specific watershed. Hamilton said yes, and this is the reason for doing the study. If we can look at different sub sheds and understand the different mechanisms better that impact the stream flow, it will give us the opportunity to make some decisions on where to go from here with respect to data collection, field studies, or other recommendations.

C. New Topics Committee

Staskiewicz said that the Committee has not met and does not plan to meet before the end of the year. If anyone has a new topic that they would like to talk about, please reach out.

D. Conservation and Efficiency Committee

Turner reported EGLE is planning on restarting the RETAP (Retired Engineer Technical Assistance Program) for retired engineers.

The Committee is reviewing the 2020-2021 water energy nexus project to determine if there is additional research needed on water energy savings. The Committee took a top-down view of the water conservation and efficiency as it tied into energy and efficiency. This was discussed at the last meeting. Burroughs provided some valuable comments that the Committee will be reviewing.

Eaton brought up that the Committee talked about a proposal at the last meeting that was in draft form. It was released to the WUAC a few days later for review, and then it was published on Gongwer two days later. It was a draft document that should not have been made public yet. However, the Committee received a lot of unsolicited input on this that would not have been

received otherwise. The Committee is considering some additional outside organizations in the review process.

Campbell said this was sent out to the full email group and it is unfortunate that Gongwer did not do any work to confirm that this was happening. Transparency is the main goal with the WUAC's work. The WUAC's email list is very long and if they are going to write a story about something that they have seen in an email that is in draft, she is not sure there is a way to stop that. The best course of action is to make it very clear these documents are drafts when they are sent.

Burroughs suggested this might be an opportunity to reach out to the journalist to talk with them about how the process works.

Turner continued with the recommendations slides and shared that Burroughs had some comments that are being addressed. Burroughs added that he wanted to know what the potential water savings from the proposed recommendations are and that he was not left with an understanding of what could be achieved. He also wants to know about larger scale implementations. If we could speculate on what fraction of the community, we could get to adopt the recommendations, and what would that look like whether it was voluntary or through other programs. A third item with respect to the irrigation system upgrades program, Burroughs suggested designing a study with more upgrades up front so you can monitor and examine the outcomes in the following years.

Dr. Dong added that the reason ten system upgrades are planned per year was due to difficulties in scheduling with the farmers, weather, and available workers to perform the upgrades. The committee felt that ten was a manageable number given these constraints.

Turner said that there are Generally Accepted Agricultural and Management Practices (GAAMPS) for irrigation systems, but there are not technical Best Management Practices with specifications of water-energy savings. Going forward with this project would allow the collection of data that can provide scientific data to support building those management practices. Especially if costs savings is part of the equation since it has been shown in other states that cost savings is a large driver for implementation with farmers.

Dr. Dong stated that they did an evaluation with some farmers in southwest Michigan, and they upgraded a sprinkler system that was 7-8 years old. The evaluation showed that 0.3 inches of water was saved for every inch of water applied. Assuming they are farming corn and soybean, they apply 6 inches of water per year, they could save 1.2 inches of irrigation water per year which equates to 3.2 million gallons of water saved.

E. Implementation Committee

Needham said that the Committee needs a chance to review the funding items discussed during 6. Legislative Update. They look forward to giving the WUAC an update that outlines a plan to implement the allocated funds.

In reviewing the 2020 WUAC Report, the Committee noted there were several items identified for ongoing funding. It is going to be hard to ask for more money in 2022 for uncompleted items that will need ongoing funding. These funding requests will need to be thoughtfully described in the 2022 WUAC Report.

Campbell stated that she wants to make a bulleted list of the recommendations that have already been put forward and approved by the council. By the end of the month, she plans to send out a list that will account for all the recommendations that will be included in the new WUAC Report. If there is anything that is missing, the group will have time to review it and add items before the November meeting.

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

This update was covered as part of the Implementation Committee update in part 8. E. of the meeting minutes.

(At this time, Co-Chair Eggers assumed role of meeting Chair.)

10. EGLE Update

Milne announced that Jill Van Dyke is back after being on medical leave and she will be transitioning back to doing pre-screening reviews for proposed public water supplies, reviewing groundwater models and hydrogeological studies.

A settlement agreement was reached for EGLE's first escalated enforcement referral for Part 327 violations. It took several years to resolve multiple violations of Part 327, including LQW being installed and/or operated differently than were authorized by the WWAT or site-specific reviews, and other unregistered LQWs. In April 2022, EGLE and the property owner/their representatives signed a settlement agreement which included a civil fine of \$30,000. Five SSRs and one amended registration were authorized as part of the settlement agreement.

Turner requested some insight as to what kind of violations ultimately lead to this being enforced and wanted to better understand the \$30,000 fine. Milne and LeBaron shared that this person was given multiple opportunities to comply over a multiyear period and repeatedly failed to communicate or make the necessary corrections. In this case, a larger pump was installed than was approved and more water was being pumped and used than was registered for as well as being installed shallower than approved. This resulted in there not being enough water available in the watershed to approve the withdrawals as-built which was a factor contributing to the escalation. Fines are typically \$1,000 for a single violation, but in this case with multiple violations over multiple years of noncompliance, the \$30,000 fine was a legal settlement.

Milne shared that EGLE is also going through its first administrative appeal with its first contested case hearing for a Consumers Energy Jackson permit. EGLE will be meeting with the petitioner soon to progress this item.

Milne discussed another new case that pertains to AquaBounty Farms Ohio, LLC which is a proposed aquaculture facility near Pioneer, OH, just over the border. The proposed aquaculture facility will raise salmon for food. AquaBounty has applied for a permit to pump 5.25 MGD from their proposed east well field, which is located close to the Michigan border. EGLE provided public notice comments and technical review memos for both permit applications. EGLE requested copies of the consultant's groundwater model files but were refused. This limited the scope of EGLE's technical review to the permit application and supporting written documents.

The Ohio Department of Natural Resources (DNR) recently issued the permit to AquaBounty to pump 5.25 MGD from their proposed east well field. The well field's capture zone is projected to extend into Michigan. The permit requires AquaBounty to submit a monitoring plan for Ohio DNR's approval. EGLE will request to review and comment on AquaBounty's monitoring plan. EGLE wants vertically nested monitor wells (in the Michindoh Aquifer and the shallow aquifer) located in the capture zone in Michigan. EGLE has a joint funding agreement with the USGS to have them create a groundwater model for the Michindoh Aquifer, which can include installing additional monitor wells in Michigan. EGLE will request that AquaBounty and Ohio DNR share their groundwater elevation data from their monitoring wells. EGLE's Water Resource Division will be requesting a follow up meeting with Ohio DNR to discuss remaining concerns and questions. This project does not come under the Great Lakes Compact since it is less than the threshold limit and EGLE has no authority over this organization to make any changes. EGLE will be working with Ohio DNR as possible to make sure their interests are considered.

Milne shared an image that was requested by Yellich at the last meeting displaying the WWAT zones for 2022. Turner asked if versions from past years can be reviewed to visualize how fast things are changing. LeBaron shared this can be done, but the image is very much in a transient state. The picture gives a snapshot in time for when the site inspections were performed. It does not do a good job of showing trends over a multi-year period.

11. Future

Eggers reiterated the goal to have the 2022WUAC Report ready by the December meeting.

a. Remaining 2022 Meeting Dates

- I. November 10 (Thursday)
- II. December 5 (Monday)

b. Quorum

Eggers stated there was good participation today and this will need to continue into the next meeting in order to move critical agenda items forward.

12. Open Comments (3 Minute Limit)

There were no comments at this time.

13. Motion to Adjourn

There being no further business the meeting was adjourned at 4:08 p.m.