



MEMORANDUM

To: MCWD Board of Managers

From: Brian Beck, Research and Monitoring Program Manager

Date: May 7, 2019

Re: Research and Monitoring Strategic Direction

Purpose:

To present and obtain Board feedback on the Research and Monitoring Program's strategic direction.

Background:

Research and Monitoring Program Formation and Purpose

From 1968 to 1996, the Minnehaha Creek Watershed District (District) contracted Wenck Associates (previously Hickok & Associates) to conduct water quality monitoring throughout the watershed. In 1997, the program was expanded significantly to include more surface waters throughout the watershed and more water quality metrics for collection. Wenck Associates continued managing this expanded monitoring program with a focus of providing an intensive look at baseline water quality throughout the watershed.

In 2004, the District brought the Research and Monitoring Program (previously called the Hydrodata or Water Quality Program) in-house to conduct lake and stream monitoring. The primary focus of Research and Monitoring staff at this time was data collection of baseline surface water quality conditions throughout the watershed.

Between 2004 and 2016 the Research and Monitoring staff grew from 1.5 FTE to 4.5 FTE and drastically expanded the number of monitoring locations throughout the District. However, the expansion of this program focused solely on data collection, which resulted in a lack of analytical capacity to support the District's ability to assess the drivers and stressors of water resources issues.

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Aquatic Invasive Species Program Formation and Purpose

The District's efforts in AIS began in earnest following the discovery of zebra mussels in Lake Minnetonka in 2010. However, the Aquatic Invasive Species (AIS) Program was officially established as an amendment to the 2007 Comprehensive Plan (pps. 97-d through 97-ggg) in July 2013. Beginning with the 2014 budget year, the District's AIS management activities were authorized as the Program had been adopted as an amendment in the Comprehensive Plan.

The over-arching goal of the AIS Program was to prevent the introduction of AIS to waters where they were not present. To achieve this goal District staff developed programming for prevention, containment, and control of AIS throughout the watershed. This program enlisted a variety of strategies, which included:

1. Early detection and response
2. Cost-share support to partners' boat launch inspection programs
3. Education and outreach

Since 2013, the AIS program implemented these strategies in an attempt to stop the spread of AIS in MCWD. However, AIS infestations continued to occur in District lakes despite extensive financial investment and staff efforts made by the District and local partners.

2017 Strategic Planning Process:

On February 9, 2017, the Board adopted the Strategic Alignment Report, which established strategic direction and priorities for each program and the organization as a whole. In this report, the Research and Monitoring Program and the Aquatic Invasive Species Program had similar issues identified through the strategic planning process. The primary issues for both programs included:

- 1) Need for clear role, direction, and priorities within the organization
- 2) Need to evaluate department structure

During the strategic planning process it became clear that the AIS program should be integrated into the Research and Monitoring Program since AIS, water quality, and ecological health are deeply integrated systems. Staff identified that the goal of both programs should be to develop a holistic understanding of the District's natural resources from a hydrologic, ecological, and water quality perspective to identify high impact projects.

2018 Research and Monitoring Program Restructuring:

In March 2018, the AIS and R&M departments were combined and the program was restructured based on the 2016 Springsted Human Resource Study and input from District staff. The reorganized program structure included five permanent staff and two seasonal field assistants, which was a reduction from seven permanent staff and two seasonal field assistants.

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The goals for this program included:

- Characterizing ecological health
- Diagnosing drivers and stressors of water resource issues
- Collaborating to identify management strategies
- Communicating data analysis and recommendations

The goals outlined in the 2017 Strategic Action Plan for the Research and Monitoring Program, while ultimately achievable, would require several interim tactics to build technical capacity in the Research and Monitoring Program. Research and Monitoring staff identified the need for internal technical leadership within the program to mentor junior staff in the areas of data analysis and water quality modeling.

In June 2018, the District hired a Program Manager from outside the organization in order to build the Research and Monitoring staff technical capacity to meet the goals outlined in the 2017 Strategic Action Plan.

Over the past 10 months the recently hired Research and Monitoring Program Manager developed interim steps needed to meet the recently adopted goals for the program. These interim steps include:

- 1) Reduce the amount of staff time spent collecting data by streamlining field procedures and investing in remote sensing equipment to automate field tasks.
- 2) Realign MCWD's AIS program to focus on ecological issues and water quality issues.
- 3) Improve technical capacity for data analysis, lake modeling, and watershed modeling.
- 4) Integrate with the Planning, Projects, Communication, and Education programs to streamline project implementation and communication of results.

Reducing Staff Time for Field Work

Currently, the majority of Research and Monitoring staff time from April through October is spent performing water quality or ecological data collection. A key initiative in 2019 is streamlining field data collection and data entry to greatly reduce the amount of field work for staff. The primary method for reducing staff field time is automating field tasks, data entry, and data processing. The primary tactics for automating these processes include:

1. Purchasing field equipment to automate water quality sampling and flow monitoring efforts for stream sampling.
 - a. This will require purchasing level and velocity sensors to install throughout the District to reduce the amount of field work for staff.

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2. Streamline data collection procedures and incorporate technology updates to reduce the amount of data processing.
 - a. Research and Monitoring staff will utilize the Information Technology (IT) consultant to identify field data collection efficiencies to automate field data collection processes.
3. Reduce the amount of manual data processing
 - a. Staff will develop computer scripts to automate lab and field data entry/processing.

Improve technical capacity of Research and Monitoring staff

Research and Monitoring staff created professional development plans in 2018 to establish clear expectations and timelines for improving technical capacity to support the District's mission and achieve the goals identified in the 2017 Strategic Plan.

Integrate with the Planning, Projects, Communication, and Education departments

Research and Monitoring staff, led by the program manager, are working on developing functional connections with other groups to increase the capacity of staff to conduct:

- Ecological health characterizations throughout the district
- Diagnosis of drivers and stressors of water resource issues
- Collaborating to identify management strategies
- Communicating data analysis and recommendations to other programs

Realign MCWD's AIS Programming

From 2013 to 2018, the AIS Program ran a pilot program that tested several strategies for preventing and controlling AIS within the District. The original goal of the AIS program "was to prevent the introduction of AIS to waters where they are not present." In 2016, District staff began assessing the effectiveness of the pilot AIS program established in 2013 and the District's role in the statewide AIS framework.

Since 2016, staff have assembled AIS infestation data throughout the District and found that prevention and control has resulted in limited success for preventing new infestations of AIS in MCWD lakes (Figure 1). In addition, the AIS pilot program was recently reviewed by the Research and Monitoring Program Manager, Aquatic Ecologist, and District Administrator to assess if the program had achieved the results it initially had outlined in 2013, and determine if current tactics and strategies need adjustment. Overall, staff have found that the AIS pilot program has not effectively achieved its primary goal of preventing new AIS infestations within the District.

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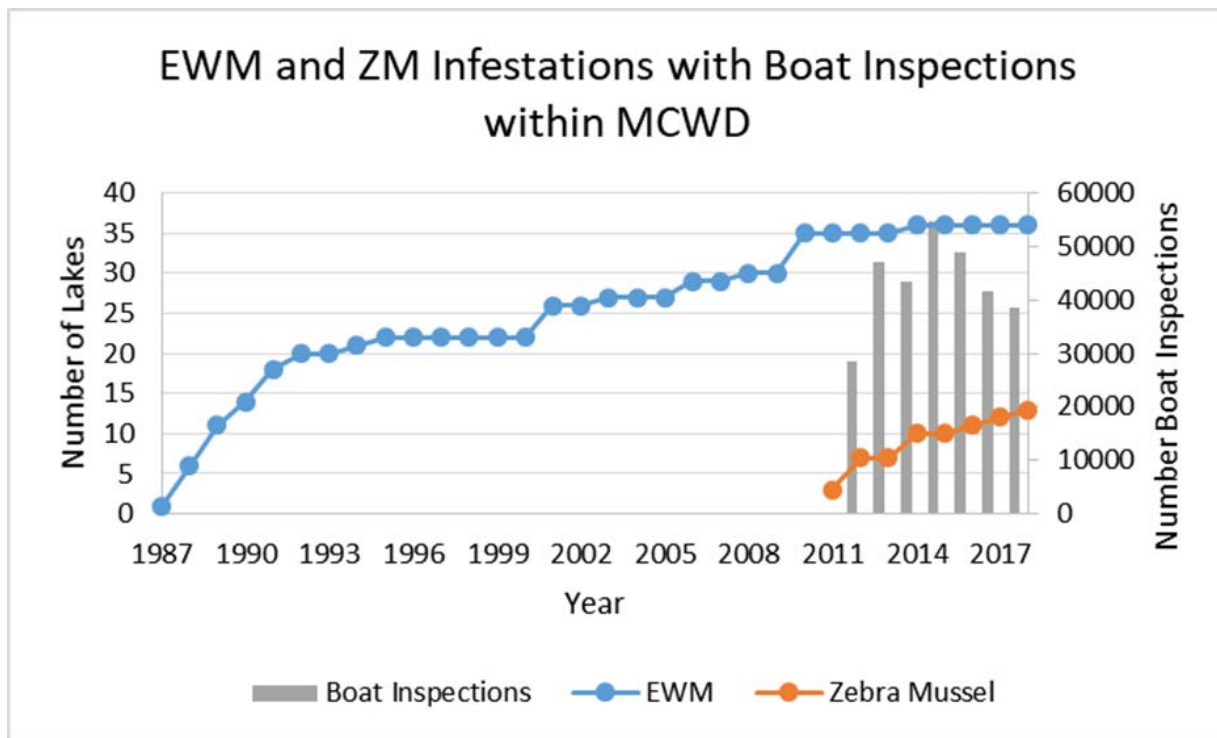


Figure 1. Eurasian water milfoil and Zebra mussel infestation in Minnehaha Creek Watershed District Lakes.

District staff have also taken time to evaluate local and state AIS frameworks to determine the role of MCWD in AIS management and prevention. In 2012, there was a lack of funding and framework to address AIS. From 2012 to 2014, MCWD partners began investing more in prevention activities, including providing inspections at high priority waterbodies. The majority of local prevention investments are located at boat launches operated by our partners, which demonstrates that our partners are better equipped to offer prevention programming at a local level than MCWD. Furthermore, the State of Minnesota began to allocate funding to counties for prevention activities in 2014, which surpassed the MCWD’s limited ability to fund this work across the large number of public accesses and waterbodies (120 lakes) in the watershed.

Research and Monitoring staff believe that management of AIS is a critical function for the District, however, District staff do not see boat launch inspections as an effective method for improving the ecological condition of lakes based on recent changes in the statewide AIS funding framework, and the limited success of boat launch inspections on prevention. Staff are in the process of repositioning the District’s approach on AIS and ecological management to maximize the impact and cost effectiveness of management strategies. The steps and timeline for repositioning the District’s AIS management program include:

- 1) *Define criteria for success for prevention, management, and restoration with respect to AIS (Early May to Late May)*

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Staff will conduct literature review and meet with researchers from the Minnesota Aquatic Invasive Species Research Center (MAISRC) to identify a scientifically valid definition of restoration for AIS infested lakes.

2) *Identify AIS that have established management strategies (Mid-May to Early June)*

The purpose of this task is to clearly articulate which AIS the District is or is not willing to manage. Staff will develop a document that outlines which AIS have established management strategies that will result in ecological or water quality improvement.

3) *Develop a transparent framework for ecological management (Early June to Mid-June)*

The key to any aquatic management is establishing effective management methods and achievable goals. The steps taken in Steps 1 and 2 in May and June will help formalize the AIS management framework to ensure that staff management decisions are transparent to external stakeholders.

4) *Meet with the Board to establish an updated policy on the ecological management framework (mid-June to Mid-July)*

Staff will bring recommendations for an updated ecological management framework to the Policy and Planning Committee in June for discussion. The topics that will be covered during this meeting will include the updated ecological framework, reduction in AIS boat launch inspection cost share, and an external organization and stakeholder communication strategy.

5) *Request Board action on the updated AIS management framework and budget (mid-July)*

Staff will finalize the District's framework on ecological management and boat launch inspection funding. District staff will request Board authorization to establish the District's policy on ecological management priorities.

6) *Communicate policy decision with outside stakeholders (July – September 2019)*

Staff will use the communication strategy developed in June 2019 to inform policy makers, general public, partner organization staff, and lake associations of the District's new policy on ecological management.

7) *Biennial review of ecological management program (Ongoing)*

The AIS and ecological management landscape is constantly changing based on research findings and staff experience. Research and Monitoring staff recommend that the policy on AIS and ecological management be revisited on a biennial basis to ensure that the

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management framework incorporates the most up-to-date management techniques for AIS and ecological management.

Summary:

The Research and Monitoring department has made drastic changes to the department structure, increased technical capacity, and formed functional links to other programs in 2018 and early 2019. To continue this trajectory, it will be critical for Research and Monitoring program staff to reduce the time spent on field work, reposition the AIS program, and invest in technical capabilities to achieve the goals outlined in the 2017 Strategic Action Plan.

If there are questions in advance of the meeting, please contact: Brian Beck at (952) 471-8306 or bbeck@minnehahacreek.org.

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