

Introduction

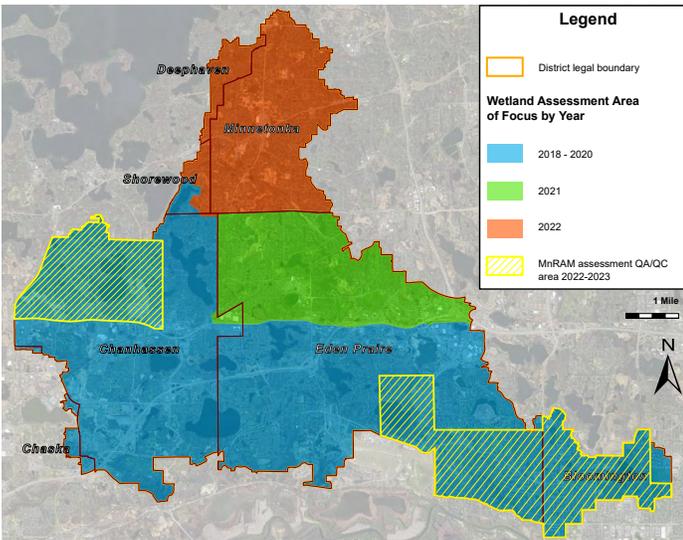
In 2023, the District staff re-assessed a total of 72 wetlands using the District’s modified Minnesota Routine Assessment Method (MnRAM) and the Rapid Floristic Quality Assessment (Rapid FQA). Staff also conducted wetland re-assessments in the southeast part of the District. This included areas around the Staring Lake Subwatershed, the southeastern part of the Purgatory Creek Watershed between Staring Lake and Minnesota Highway 169, and the majority of area within and immediately surrounding the Hyland Lake subwatershed (Figure 1).

Methods

Minnesota Routine Assessment Method

The Minnesota Routine Assessment Method (MnRAM) for Evaluating Wetland Functions was developed by an interagency working group to assess wetlands following passage of the Minnesota Wetland Conservation Act in 1991. It is a systematic

Figure 1. Wetland assessment areas by year.



way of documenting wetland functions and characteristics such as vegetative communities, habitat, anthropomorphic values and impacts, stormwater interactions, general site hydrology, water quality, soils, topography, and buffer widths.

Barr updated the Microsoft Access Database version of the MnRAM worksheet for the District to use in its wetland assessment. This modified version of the MnRAM worksheet allows staff to input more details about wetlands and their functions, providing a more accurate assessment of the site. It also generates a report that provides wetland function classifications/values based upon input.

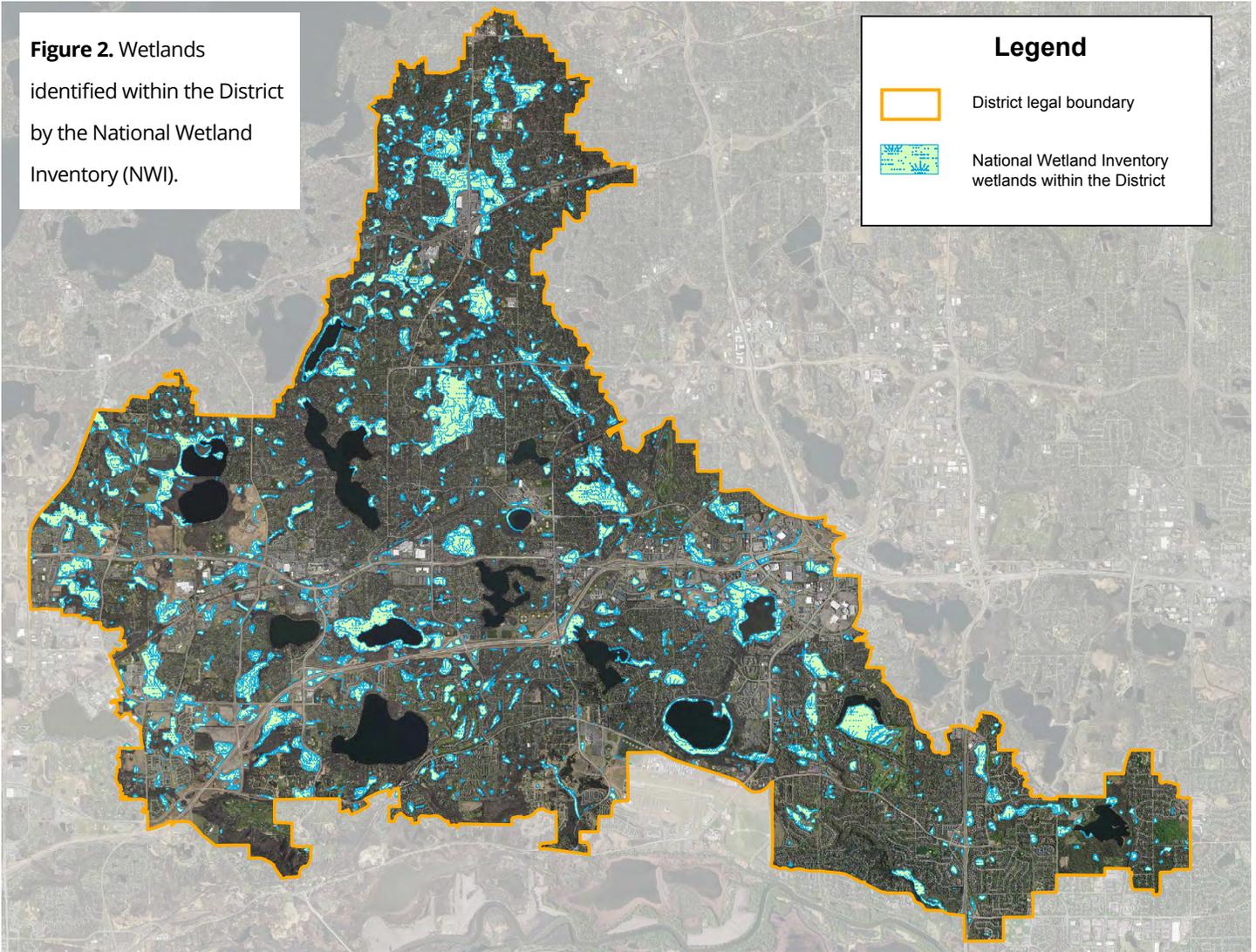
During wetland site visits, staff assess the site, fill out a MnRAM worksheet, and document the site with photographs. If staff observe indications of a potential wetland, they perform an initial assessment of the approximate wetland boundary or flag the site for future investigation.

Through MnRAM wetland assessment, staff are building a detailed catalogue of wetlands in the District. The catalogue supplements standard state and federal wetland inventories by including details such as fine-scale wetland extent, more accurate vegetative community designations, record of wetland impacts and degradation, and infrastructure risks. Figure 2 shows the extent of wetlands within the District based on National Wetland Inventory (NWI) data.

Floristic Quality Assessment for MN Wetlands

Developed by the Minnesota Pollution Control Agency (MPCA), the Rapid Floristic Quality Assessment (FQA) for wetlands provides an ecological assessment approach based on plant habitat requirements and/or tolerance for disturbance. The

Figure 2. Wetlands identified within the District by the National Wetland Inventory (NWI).



approach is based on a C-value assigned to each plant species by Minnesota botanical experts. The higher the C-value, the more sensitive a plant is to site conditions and disturbance. C-values of plants within a given community are used to calculate a floristic quality index (FQI). The greater the FQI, the closer a plant community is to a natural state.

FQA compliments MnRAM by providing a quantitative assessment of the makeup and quality of plant communities within a wetland. When used together, FQA and MnRAM data sets provide a much more comprehensive metric to assess wetlands. RPBCWD first began FQA at the end of the 2020 field season. FQA has been a standard part of all District wetland assessments since 2021.

Wetland Management Classification

To advance the wetland assessment program, District staff are

developing an assessment and management methodology based on ecosystem services to prioritize wetland rehabilitation, protection, and creation. These functions are listed on the

Wetland Assessment Methods

MnRAM

Rapid, qualitative assessment used to identify wetland functions.

Combines data and observations gathered from a site visit and remote sensing data. This data produces ratings for assessed wetland functions.

This method asks:

What are the characteristics of the wetland as a whole?

FQA

Vegetation-based ecological condition assessment. Sites

are assessed for diversity and abundance of plant species. The higher a site scores, the closer it is to a natural condition and the more sensitive it is to disturbance.

This method asks:

What plant species grow in the wetland? How abundant are they?

"Wetland Classification Continuum" section of this report.

Metrics have been developed for each of these services, which, along with data gathered from the updated MnRAM and FQA assessments, determine the assignment of District management classifications to wetlands. These classifications include low, medium, high, or exceptional value wetlands. Management efforts to promote functions and services and to restore, protect, and create wetlands are prioritized on wetlands with higher classification values. Vegetated buffer rules are also set based on these classifications.

To date, staff have conducted assessments and assigned management classifications to 957 wetlands within the District.

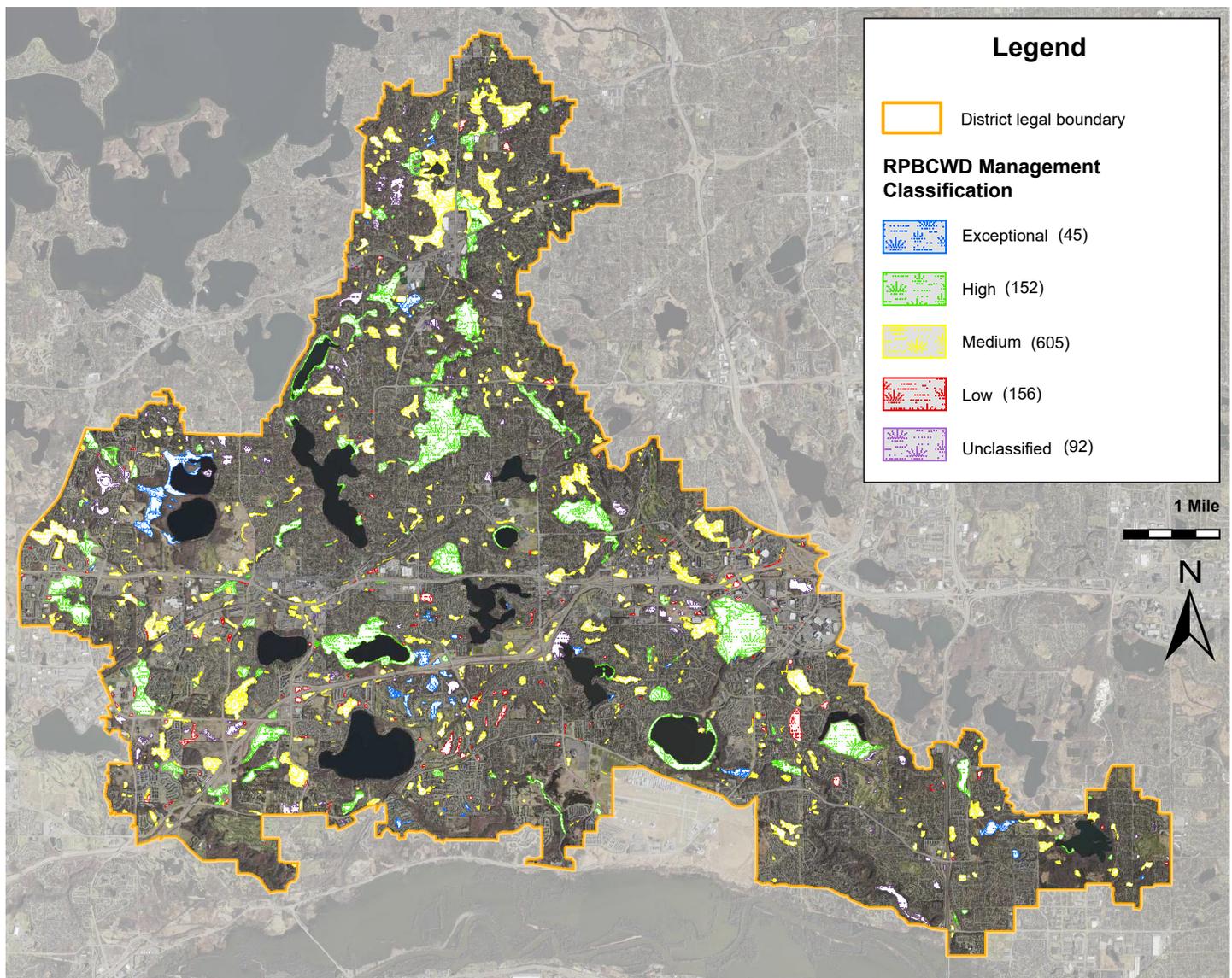
Table 1 and Figure 3 detail and show the distribution of these

management classifications for wetlands identified within the District. The Wetland Classification Continuum on the next page provides details on how wetland functions (or lack of functions) help determine and assign a management approach.

Table 1. Distribution of wetland classifications in the District.

Classification	Quantity
Exceptional	45
High	152
Medium	605
Low	156
Unclassified	92
TOTAL WETLANDS	1,050

Figure 3. Classification of wetlands assessed with the Riley Purgatory Bluff Creek Watershed District as of 2023.



Wetland Classification Continuum

Assigning management classification to wetlands provides input for prioritization of restoration efforts. These classifications are based on FQA data and MnRAM functional categories which include:

- **Vegetation diversity/integrity**
- **Habitat structure**
- **Amphibian habitat**
- **Fish habitat**
- **Shoreline protection**
- **Cultural/recreational/educational value**
- **Stormwater/urban sensitivity**
- **Wetland water quality**
- **Characteristic hydrology**
- **Flood/stormwater attenuation**
- **Commercial use**
- **Downstream water quality**



Exceptional Value

Wetland has large buffer area or buffers shoreline. High plant diversity. Little or no alteration of soils and plants. Water quality is good. Provides fish and/or amphibian habitat. Significant recreational, educational and/or cultural value.



High Value

Wetland with buffer or provides buffer for shoreline. Provides floodwater attenuation. Better to good water quality. Water deep enough to provide overwintering amphibian habitat. May provide fish habitat. Moderate plant diversity.



Medium Value

Wetland may have been excavated or serve as stormwater pond. Low plant diversity. Minimal educational, aesthetic, or recreational opportunity. Deeper water may provide overwintering wildlife habitat.



Low Value

Associated with agricultural or high-intensity land use. Very low species diversity and dominated by invasive species. Poor water quality, usually due to high inputs of untreated stormwater runoff. Has alteration or excavation. Little or no recreational or cultural value.



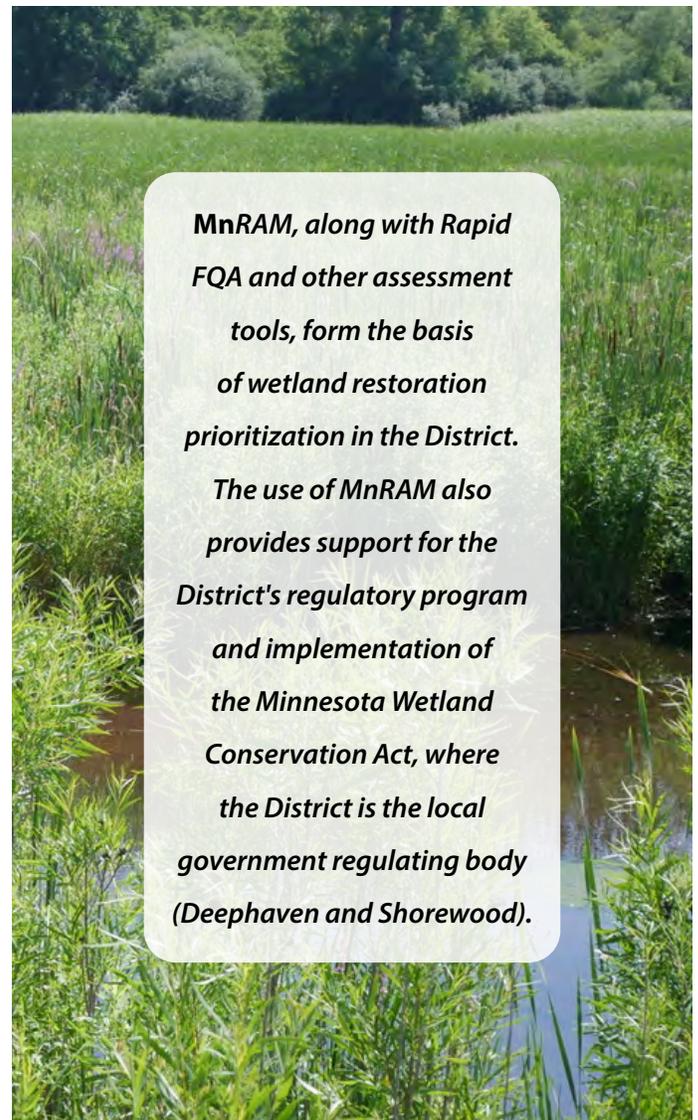
2024 Wetland Assessment and Next Steps

As of the end of 2023, the majority of wetlands within the District have been assessed using MnRAM and assigned a management classification. Staff Dickhausen will continue to conduct QA/QC assessments in different parts of the District. Assessment efforts in 2024 will focus on re-assessing vegetation at wetlands within the area of Chanhassen south of MN HWY 5. This area was assessed prior to the introduction of FQA into the District's wetland assessment protocol. Re-assessment using FQA/Rapid FQA methods will provide staff with a more accurate biodiversity and vegetation community value, as well as better provide guidance for prioritization of wetlands to be considered for restoration, rehabilitation and/or protection in the next steps of the program.

The overall goal of this program is to identify areas within the District where wetlands can be restored, rehabilitated and/or protected. The main focus of these restoration/protection actions are the functions that the wetlands provide or could potentially provide within the watershed. Often when impacts to wetlands occur, mitigation efforts do not always take place within that watershed. Many replacement plans for wetland loss have mitigation action taking place outside of the District. This means that even though off-site mitigation is required and taking place, wetland impacts are leading to the loss of vital wetland functions such as water storage, biodiversity, habitat, water quality improvement, etc. within that specific watershed. By identifying these areas, the District and its staff can work to bring back and improve these functions and values within the watershed.

Over the last six years, staff have assessed the majority of wetlands within the District, determining the health and quality of the functions they provide. They cataloged this data and assigned management classifications to each wetland. From here, staff, along with staff from Barr Engineering, can start identifying groups of wetlands which could be classified as higher priority for restoration, rehabilitation and/or protection. If any special wetland types such as calcareous fens or tamarack swamps are identified within the District, they will be set aside

as automatic candidates for rehabilitation and/or protection. The majority of wetlands to be chosen for restoration/rehabilitation/protection will be those deemed higher priority from the first round of wetland assessments. In this next step of determination for these wetlands, staff will focus on three main functions: biodiversity, water quality and water storage/flood mitigation. A wetland will gain higher priority if it provides or could potentially provide more value for one or more of these three functions within the watershed/subwatershed it is in. A wetland that has good potential for providing flood retention functions and makes up 3% of a watershed after restoration is bound to have higher priority than a wetland that only makes up 0.5% of the watershed; a wetland that has higher levels of nutrients flowing through it and its watershed may have higher priority due to water quality functions it could provide; a wetland that has rich vegetation community interspersed



MnRAM, along with Rapid FQA and other assessment tools, form the basis of wetland restoration prioritization in the District. The use of MnRAM also provides support for the District's regulatory program and implementation of the Minnesota Wetland Conservation Act, where the District is the local government regulating body (Deephaven and Shorewood).

and plant biodiversity will beat out those with one or two plant communities and a lack of plant diversity. Those wetlands that provide higher functional value for two or all three of these functions will gain the highest priority along side the special wetland types. Over the course of 2024, staff will work with Barr staff to determine which of the wetlands already assessed will be analyzed at this next level. From, here they can start to assess these wetlands for their priority for restoration, rehabilitation and/or protection.

Restoration versus Rehabilitation

Wetlands have primary impacts, where the hydrology is altered to a point where they no longer function as a wetland. This can be through the installation of drain tile, excavation of ditches, installation of outlet structures below the bed elevation of the wetland, or placement of fill. When one of the three parameters for determining the existence of a wetland are missing, in this case hydrology, the area does not meet the definition of wetland. If repairs take place so that wetland hydrology is restored to functions like a wetland again, this is considered wetland restoration.

Conversely, wetlands may have secondary impacts that result in diminished functions, but the area still meets the definition of a wetland. This could be any of several factors. Some examples might be hydrologic alterations such as ineffective tiling or ditching where the wetland is only partially drained. It may be that the contributing watershed was diverted resulting in less water inputs to the basin resulting in a drier hydrologic regime. The hydrology may remain the same but, due to land use changes, excessive nutrient or sediment loading may occur which impacts the community type, avian or amphibian habitat, or result in a proliferation of invasive or pioneer species colonizing the wetland. In these cases, the wetland could be rehabilitated to enhance the diminished functions and possibly provide additional functions and public values.

Identification of Restorable Wetlands

In concert with the wetland inventory and assessment program, staff will work to identify historic wetlands that have been drained or filled and have the potential to be restored. In order to be considered for a wetland restoration, an area must have the following characteristics:

1. An adequate source of hydrology.
2. Hydric soils.
3. Unimpeded by structures except when removal of the structures is desired by all stakeholders.
4. Property must be owned by an entity that is agreeable to protecting the area in perpetuity.

Wetland Rapid Assessment Update

In the fall of 2020 a memorandum of understanding was completed between the Minnesota Board of Water and Soil Resources (BWSR) and the Wisconsin Department of Natural Resources (WI DNR) regarding the Wetland Functional Assessment Initiative, a joint effort between several agencies (WI DNR, MN DNR, BWSR, MPCA, EPA, and St. Paul USACE) to develop wetland functional assessment tools that can be used in Minnesota and Wisconsin to assist in wetland regulatory implementation and other wetland conservation uses. Current standards for wetland functional assessments in the state, such as MnRAM, are outdated and may not serve the needs of regulatory programs. Because of this initiative, development of new tools for functional assessment is underway. In February 2021, a steering committee was formed to define goals and objectives of the initiative. A technical advisory team made up of professionals within the agencies was established in summer 2021 to develop the tool and its functional categories. A draft tool draft and spreadsheet was completed in 2023.

Staff Dickhausen attended the Minnesota Water Resources Conference, special wetland session on October 17, 2023 where updates about the Wetland Functional Assessment Initiative were discussed. One of the main pushes for this initiative, besides the lack of updates to MnRAM over the years, is that

MnRAM is considered too qualitative of an assessment. The technical advisory team referenced aspects of the Minnesota Stream Qualification Tool (MNSQT), a tool which uses function-based parameters and metrics to assess functional categories of streams. It was used as a template when drafting aspects of the new wetland tool. The tool will still be a rapid assessment, but it is going to rely more on observation-based metrics. Hydrogeomorphic (HGM) classification will also play a larger role in the assessment and establishment of areas of interest. Speakers also presented a basic breakdown of how the tool will work in providing functional assessment of wetlands. The assessment helps identify drivers/factors that change how well the wetland will perform functions. Indicators (the observable characteristics related to the drivers) are assessed and from this primary and secondary indicators are established. From here, the assessment helps identify primary and secondary opportunity values.

The tentative timeline for continued development and release of the tool is as follows:

- Continue developing and testing of the tool/spreadsheet in 2024
- Beta testing with help from wetland professionals and environmental organizations in Minnesota and Wisconsin in late summer of 2024
- Release of version 1.0 of tool and spreadsheet in summer of 2025

Although the District has worked with Barr to update and improve upon aspects of MnRAM and the Microsoft Access MnRAM worksheet for use within our watersheds, staff are interested in reviewing the new tool. Once it is available, staff will assess it to see if it should be considered for use in some capacity within the District's wetland program. District staff remain in contact with MN DNR staff about being a beta testing site of the new tool when it reaches that stage.

Wetland Conservation Act Activities

The overall goal of the Wetland Conservation Act (WCA), passed as Minnesota law in 1991, is to achieve no net loss of wetlands in the state. It does this by regulating the:

- Draining and filling of wetlands
- Excavation within type 3, 4, and 5 wetlands
- Excavation of all wetland types if said excavation fills or drains the wetland, converting it to a non-wetland.

Local government units (LGU) are responsible for administering WCA and for making determinations on applications/projects/activities impacting wetlands. The District acts as the LGU in charge of administering WCA for parts of Shorewood and Deephaven located within the District and makes the decision to accept or deny WCA joint applications proposing activities within wetlands. Applications range from seeking a concurrence of wetland boundaries, based on a formal delineation, to seeking approval of an application for the purchase of wetland banking credits to replace wetlands lost during the course of a project. Staff also sit on WCA Technical Evaluation Panel (TEP) for cities who act as the WCA authority throughout the rest of the District. Staff, along with other TEP members, advise LGUs on making decisions on to accept or deny WCA joint applications.

The District received one WCA joint application in 2023 for a wetland boundary and type confirmation in Deephaven. Staff Dickhausen, along with a TEP consisting of members from Hennepin County and BWSR, met on-site and reviewed the wetland delineation. After having the applicant's wetland delineator edit a few small parts of the delineated edge to better represent the overall boundary of the wetland, the TEP was in agreement that the delineation was accurate and the application was approved.

Over the course of 2023, Staff Dickhausen represented the District on the various TEPs of the other LGUs within the District boundaries. This included the review of applications received by Chanhassen, Eden Prairie, and Minnetonka. Staff also worked with Chanhassen and their TEP to review a pair of related WCA violations.