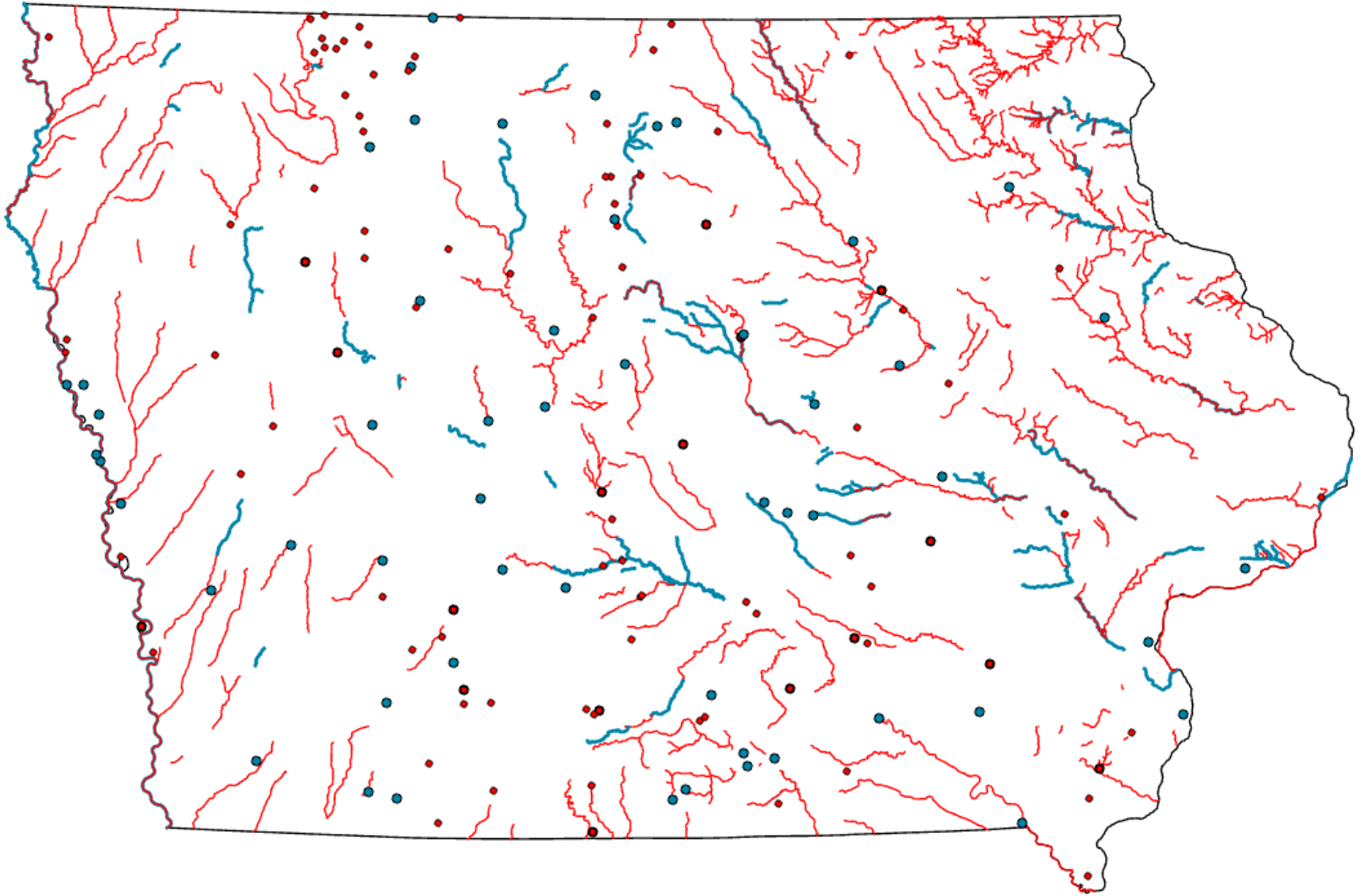


## Iowa's TMDL Vision 2024



Category 5 (red) and Category 4 (blue) waters in Iowa based on the 2024 IR.

Written by the TMDL Program

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## **Iowa's TMDL Vision Goals**

- Partnerships - *Promote and facilitate communication between the TMDL Program and its internal and external partners.*
- Planning and Prioritization - *Create and utilize a planning and prioritization structure that balances social impact and partnership needs with TMDL development efficiency based on cost, time, and number of impairments.*
- Data and Analysis - *Coordinate the collection of additional data with partners to allow for more robust modeling of water bodies and a better understanding of pollutant sources.*
- Restoration - *Create actionable TMDLs in coordination with restoration efforts of partner programs.*
- Protection - *Investigate the use of predictive modeling, flow variable loading, and only including statistically different recent years to ensure that the pollutant loading determined in TMDLs will attain and protect water quality criteria in various future weather conditions.*

## **Introduction**

The Environmental Protection Agency (EPA) has initiated the updating of states' Clean Water Act (CWA) Section 303(d) program visions with the September 2022 document [2022 - 2032 Vision for the Clean Water Act Section 303\(d\) Program](#) (2022 Vision). The 2022 Vision includes new points of emphasis when compared to the previous 2013 Vision as well as updates to some old points. Overall, the 2022 Vision outlined five goals: planning and prioritization, restoration, protection, data and analysis, and partnerships. Section 303(d) includes two programs at the Iowa Department of Natural Resources (DNR): the Integrated Report (IR) Program, which monitors Iowa's waters and completes the 305(b) reporting and 303(d) list (impaired waters list); and the Total Maximum Daily Load (TMDL) Program, which typically models waters on the 303(d) list and creates implementation plans to start the restoration process. In Iowa, the vision is created by the TMDL Program and focuses on work done by the TMDL Program or coordinated efforts with its partners. The TMDL Program has adapted the goals of the 2022 Vision to better fit the relationships between the TMDL Program and its partners within the DNR. This includes reorganizing the goals to better match the scope of what the TMDL Program controls and highlight where continued improvement is needed. These goals will shape the direction of the TMDL Program for the upcoming years.

## **Partnerships**

*Promote and facilitate communication between the TMDL Program and its internal and external partners.*

The overall goal of restoring and protecting Iowa's waters can only be met with strong partnerships. As such, it is a priority goal for the TMDL Program to expand old collaborations and create new collaborations with internal and external stakeholders. Without proper communication with these partners, implementation of water quality improvement plans are likely to fail. Coordinating with these partners requires recurring meetings, open communication, and an understanding of the timelines involved with each step of the process. The other goals

outlined in this TMDL Vision are possible only by creating, maintaining, and relying on strong partnerships.

During the first half of the TMDL Vision timeline, an emphasis will be placed on creating strong partnerships internally within the DNR. These groups include, but are not limited to, the following:

- Lake Restoration Program (LRP)
- Section 319 Program (319)
- National Pollutant Discharge Elimination System (NPDES)
- Water Quality Monitoring and Assessment
- Conservation and Recreation Division (CRD)
- State Revolving Fund (SRF)
- Source Water Protection

During the latter half of the TMDL Vision timeline, an emphasis will be placed on creating partnerships externally, though earlier partnerships may form to improve program capacity. This will include outreach to underserved communities in affected watersheds as described in the DNR's Nonpoint Source Management Plan (Appendix A). These include, but are not limited to, the following:

- Iowa Department of Agriculture and Land Stewardship (IDALS)
- External Watershed Coordinators
- EPA
- University Partners (ex: Iowa State University or University of Iowa)
- County Conservation Groups
- Soil and Water Conservation Districts
- Natural Resources Conservation Service (NRCS)
- Water Management Authorities (WMA)
- Tribal Communities

## **Planning and Prioritization**

*Create and utilize a planning and prioritization structure that balances social impact and partnership needs with TMDL development efficiency based on cost, time, and number of impairments.*

With the increased role of partnerships in planning and prioritization, a new prioritization structure is needed to accommodate the priorities of TMDL Program partners. Partner communication is a continuous process with updates to priorities occurring at no greater intervals than the 2-year cycle of the IR. Priorities from the previous TMDL Vision, which included water bodies with high social impact (drinking water impairments and lakes with bacteria or nutrient related impairments) and low cost and complexity of modeling, are still a portion of the priority structure. To increase the efficiency of TMDL creation and target severe and pervasive causes of impairments, priority is also given to TMDLs where multiple

impairments can be addressed in a single project and addendums to existing TMDLs where the new impairment has the same cause. Additionally, deprioritization of potential TMDLs where the pollutant and water body combination already has a TMDL and an addendum would take significant modeling updates will be limited to water bodies with recent TMDLs (within the last 15 years) to synergize with the restoration goal described in this vision. Wetland eutrophication is also deprioritized, as achieving the current dissolved oxygen standards for wetlands would negatively impact the ecological function that they provide. A points system was created to accommodate the priorities described (Table 1).

Table 1: Points system used for prioritization of TMDLs


Priority Parameter		Points
Designated Uses with High Social Impact		1
Low Complexity/Cost		1
Addendum to Existing TMDLs		1
Severe/Pervasive Impairments in Proposed Plan	2-5 Impairments	1
	6+ Impairments	2
Partner Priority*	LRP or 319 High Priority	2
	Any Partner Priority	1
TMDL for Pollutant/Water Body Combination within Last 15 Years, Excluding Addendum Cases		-1
Wetland Eutrophication		-1

\*LRP and 319 each have an available pool of 10 points which may be assigned during the prioritization process; other partners each have available pools of 5 points.

A tier system is then used to group priorities into a simpler framework and fit existing infrastructure while ensuring that the highest priority could be achieved only with some amount of partner priority (Table 2).

Table 2: Tier system for TMDL priority based on the number of points allocated

Priority Tier	Points Required
Tier I	5+
Tier II	4
Tier III	3
Tier IV	0-2



Prioritization examples can be found in Appendix B.

## Data and Analysis

*Coordinate the collection of additional data with partners to allow for more robust modeling of water bodies and a better understanding of pollutant sources.*

To better meet partner needs for more robust modeling of Iowa's water bodies, coordinated efforts for additional sampling are needed. This starts by identifying data needs for improved modeling and restoration efforts. Examples include sampling tributaries of an impaired water body, collecting samples related to internal nutrient loading of a water body, and additional sampling locations for lakes where their shape may result in spatial differences in water quality. Improved modeling can also lead to better planning and implementation of best management practices during the restoration process, as pollutant sources are easier to identify. The use of predictive modeling, flow variable loading, and shortened modeled years that only include recent years if there are significant differences from older data will also be investigated to ensure protection of the water body in future weather conditions.

Additionally, while not stated in the data and analysis goal, it is important to identify water quality success stories. This includes identifying water bodies with a TMDL that now meet their water quality criteria and determining if water quality improvement plans were utilized to improve the water quality. Communication about these success stories is important to maintain public interest in improving Iowa's water quality.

## Restoration

*Create actionable TMDLs in coordination with restoration efforts of partner programs.*

While completing a TMDL does not restore the water quality of a water body, it plays an important role in a partner's ability to do restoration activities. TMDLs are a starting point for nutrient related lake restoration projects and used to develop portions of the nine-elements watershed plans created for Section 319 projects. In tandem with the other goals outlined above, restoration of water bodies is achieved via increased collaboration with TMDL program

partners to ensure that load reductions and the implementation plans to attain those load reductions are actionable by partners. This will include the ability to create new TMDLs for water bodies with existing TMDLs for similar impairments, as previous modeling efforts may not meet the needs of restoration partners and new data become available to create a better understanding of the current conditions of the water body. Previously, these potential TMDLs have been deprioritized if the cause for the new impairment was determined to be the same as that in the TMDL. An example of this would be revisiting an existing TMDL for algae due to excessive phosphorus because the water body now has a pH impairment due to excessive phosphorus.

## **Protection**

*Investigate the use of predictive modeling, flow variable loading, and only including statistically different recent years to ensure that the pollutant loading determined in TMDLs will attain and protect water quality criteria in various future weather conditions.*

Creating new TMDLs for the sole purpose of protecting waters that already meet water quality criteria is a low priority due to staff time and the large number of TMDLs needed for impaired waters. However, an existing TMDL acts as a protective TMDL when the water body meets its designated uses. To ensure that modeling efforts are protective in the future and in synergy with the data and analysis goal, the TMDL Program will investigate the use of predictive modeling, flow variable loading, and shortened modeled years that include only recent years if there are significant differences from older data. These changes would be enacted to ensure that water quality criteria can be attained in various weather conditions.

## **Appendix A:**

Excerpt from the Nonpoint Source Management Plan<sup>1</sup> about underserved communities.

“Underserved communities are disproportionately affected by environmental degradation but have fewer resources to impact policies and decision-making on their behalf. Negative consequences of NPS pollution in underserved communities include polluted drinking water supplies, increased likelihood of flood and drought impacts, and lack of safe access to outdoor spaces. Actions that address this inequity include expanded engagement, investment, and capacity-building. The DNR will consider the current allocation of funds to underserved communities and work to increase funding to these communities to federally identified levels.

The DNR will also engage in targeted outreach to ensure meaningful engagement and capacity-building in underserved communities, including offering language-accessible communication consistent with federal civil rights law. The DNR may also adopt other EPA guidance for better supporting underserved communities in NPS management. The DNR will pay particular attention to feedback from local leaders in these communities, who know firsthand what barriers they face and what resources might be helpful.”

1 Iowa Department of Natural Resources. (2023). *Iowa Nonpoint Source Management Plan*.



## **Appendix B:**

Below, examples of the prioritization structure are given. See the Planning and Prioritization Goal for details about the points and tier structure. The examples are done for the year 2024.

### Example A

Name: Big Creek Lake

ADB Code: 04-UDM-1242

Impaired Designated Use: A1

Impairment(s) Covered by Proposed TMDL and Cycle Listed: Algal growth Chlorophyll a (2020)

Other Segments Covered by Same TMDL: No

Total Number of Impairments Covered by Proposed TMDL: 1 (0 points)

Old TMDL that Covers This Impairment and Year: No

Age of TMDL (if applicable): NA

Low Cost and Complexity: 1 point

High Social Impact: 1 point

Lake Restoration Priority: 2 points

319 Priority: 1 point

Other Program Priority: No other priorities

Total Points: 5 points

Tier: Tier I

### Example B

Name: Bass Creek

ADB Code: 01-TRK-215

Impaired Designated Use: A1, A2

Impairment(s) Covered by Proposed TMDL and Cycle Listed: Bacteria: Indicator bacteria - E. coli (2014)

Other Segments Covered by Same TMDL: Yes

Total Number of Impairments Covered by Proposed TMDL: 60 (2 points)

Old TMDL that Covers This Impairment and Year: No

Age of TMDL (if applicable): NA

Low Cost and Complexity: 1 point

High Social Impact: 0 points

Lake Restoration Priority: 0 points

319 Priority: 0 points

Other Program Priority: 0 points

Total Points: 3 points

Tier: Tier III