

Restoring our waters

A starter guide for
your TMDL project



Minnesota Pollution Control Agency

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Welcome

Minnesota Pollution Control Agency (MPCA) staff welcomes you as a partner in the important challenge of improving Minnesota's water resources.

Efforts to improve water quality will be successful because of the leadership and participation of local government professionals and citizens alike. As you embark on the journey of addressing water quality concerns in your community, you are likely to play many roles, including leader, partner, administrator, and strategist. MPCA staff will be available to help you as you move through each step of the process, from developing Total Maximum Daily Load (TMDL) studies and interpreting their results to developing a watershed strategy for restoring and protecting water quality.

This information packet is designed to provide you with the most essential sources of information you will need to get your TMDL studies underway. Rather than provide a large binder of printed material, we have instead provided you with the link to MPCA's web site where the most important information you might need can easily be obtained. In this packet, we have included a referral index so that you can easily locate key MPCA staff.

The goals of TMDLs and watershed strategies are to restore water quality for present and future generations of Minnesotans. Using the knowledge and leadership skills of staff and stakeholders at the local level, we believe that the potential for success is great. MPCA staff looks forward to working with you toward this important goal. With your help, and the help of citizens and stakeholders, we can achieve this goal one river and one lake at a time.

Definitions

Total Maximum Daily Load (TMDL): Calculation of the maximum amount of a pollutant that a waterbody can receive and still meet water quality standards. A TMDL report identifies levels, or loads, of pollutants, their sources, and ways to reduce them.

Local Project Sponsor: The local entity that contracts with the MPCA to conduct a TMDL. These local entities can be cities, counties, watershed districts, soil and water conservation districts, and non-profit groups.

MPCA Project Manager: The MPCA employee responsible for managing the TMDL project at the state level. The project manager helps the Local Project Sponsor with all aspects of the TMDL.

Click!

All web addresses mentioned in this guide are gathered on a single handy web page for your convenience: www.pca.state.mn.us/tmdl-guide



Step 1: Gather Information

What's a TMDL project?

A TMDL, which stands for Total Maximum Daily Load, is a confusing name for an organized effort to study and then restore a lake, river or stream to good health. A TMDL project is one part of a larger effort to restore and protect all waterbodies within a watershed.

An unhealthy body of water is said to be impaired, meaning it fails to meet state water quality standards. Total maximum daily load, in its simplest sense, is a measurement of how much pollution a lake or river can absorb and still be healthy. This pollution commonly takes the form of excessive amounts of sediment, organic matter, or fertilizer, which makes the water cloudy, or green, and unable to support aquatic life such as fish.

In Minnesota, TMDL projects are usually led by local government organizations, often a partnership between soil and water conservation districts, cities, counties, and others. These organizations are called Local Project Sponsors. The MPCA plays a key role in facilitating and funding this process.

Getting up to speed with TMDL tutorials

The MPCA has developed a comprehensive training program for local government officials that describes the TMDL program. The modules, developed for new Local Project Sponsors and others interested in the program, provide an overview of each of the major steps of the TMDL process, including important information, tips and lessons learned from existing projects. The modules consist of PowerPoint™ presentations and a manual that accompanies them, as well as project planning worksheets. The modules provide a valuable guide to what will be expected during each major step of the process. The worksheets are intended to help Local Project Sponsors plan their study for optimal results.

The modules can be viewed as a tutorial on-line or your MPCA Project Manager may present them to you and anyone else who may be interested.

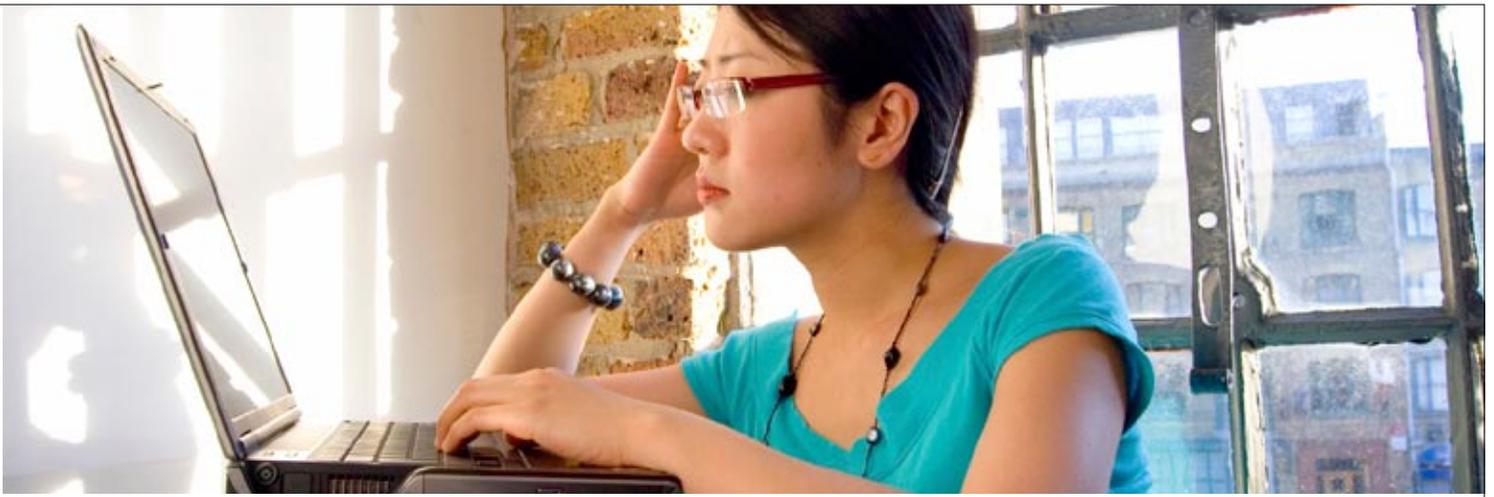


Overview of modules available:

Session 1	TMDL Program Overview
Session 2	TMDL Administrative Requirements
Session 3	Listing/Delisting Waters
Session 4a	Citizen Participation in TMDLs
Session 4b	Working with TMDL Stakeholder Committees
Session 5a	Watershed Systems and TMDLs
Session 5b	Streamflow, Stream Shape and Connectivity in Watersheds
Session 6a	Planning and Scoping Your TMDL Project
Session 6b	Collecting Watershed Data
Session 6c	Tips for Developing a TMDL Work Plan
Session 7	Scoping the TMDL Project
Session 8	Identifying Data Gaps; Developing a Monitoring Plan
Session 9a	Water Quality Monitoring and Data Collection
Session 9b	Organizing and Analyzing Your Water Quality Data
Session 10a	Biological Monitoring and TMDLs
Session 10b	Tackling a Biological Impairment/ The Groundhouse River TMDL Case Example
Session 11a	Modeling for TMDL Studies
Session 11b	Selecting a Model
Session 12	Developing an Allocation Formula

Several more modules are under development. See the Resources Contact Information sheet for whom to contact for additional modules.

Click! A link to TMDL training modules are available at: www.pca.state.mn.us/tmdl-guide



Step 2: Develop a Work Plan

A TMDL work plan should provide the vision and a major foundation for the successful completion of your impaired waters study.

Before any funds can be awarded for completion of the TMDL study, the Local Project Sponsor must develop a detailed TMDL work plan and submit it to the MPCA for approval. The work plan should include:

- A description of the impairment(s) that will be addressed by the TMDL
- A plan for completing a detailed assessment of the waterbody
- Specific tasks, schedules, and roles and responsibilities for completing this assessment
- A description of a process for developing a final report which includes the study's findings
- A general implementation plan for addressing impairments

MPCA has developed a guidance document that can help you write an approvable work plan. This guidance can be found at the web site listed at right. Following this guidance carefully can save Local Project Sponsors considerable time and effort in the long run. A work plan typically takes two to four months to complete.

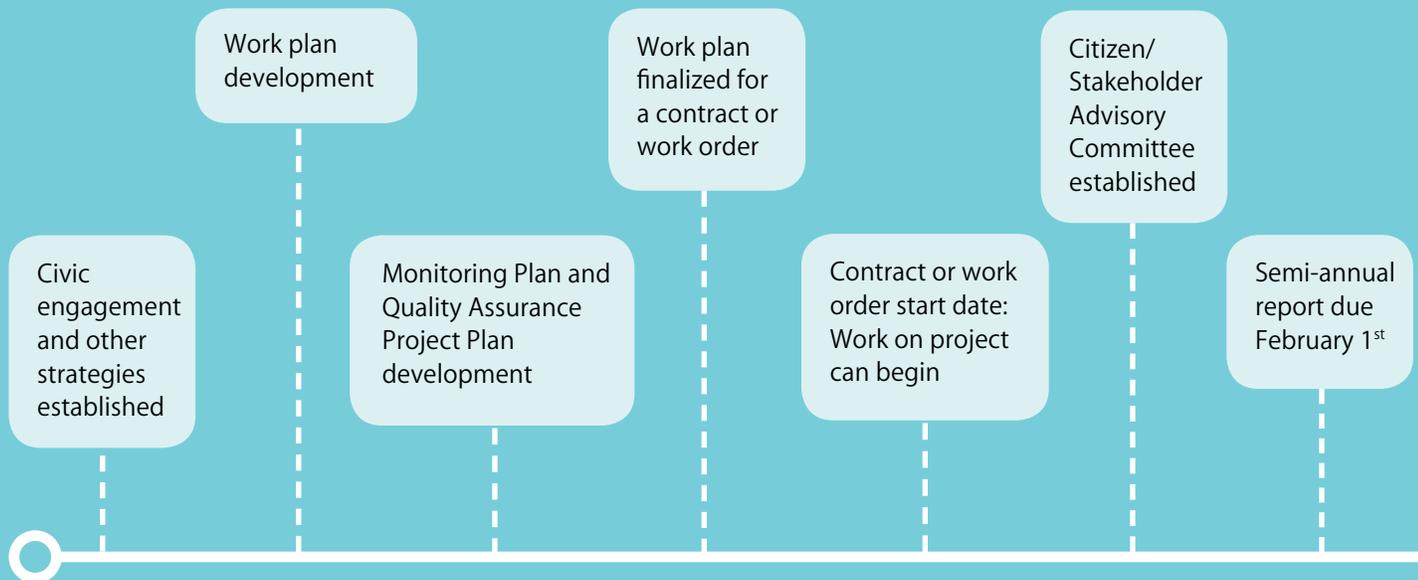
The **TMDL Work Plan Guidance document** provides the recommended outline for TMDL work plans. It is important that TMDL work plans be sufficiently detailed and complete when they are submitted to MPCA for review. A complete, detailed work plan will increase the likelihood that the contracting process is completed in an efficient and timely manner.

Once the work plan is approved, the MPCA can write a contract. It will take an additional two to four months to get a contract approved.

Contracts are typically written for a time period of three years or less. *Once the contract is fully executed and in hand, activities outlined in the work plan can begin.*

Click! The MPCA's TMDL Work Plan Guidance is available at:
www.pca.state.mn.us/tmdl-guide

TMDL Tasks and Timelines



TMDL financial assistance and contracting

Be sure to work with your MPCA Project Manager early and often to ensure a successful start to your project. Developing a high quality, complete work plan will significantly increase your chances of getting your project off on the right track and your financial assistance contract developed in a timely manner. Once your contract is fully executed, be certain to read it carefully so that you know what will be expected of you when completing your project.

Click!

The Locally Led TMDL Fact Sheet and other information is available at: www.pca.state.mn.us/tmdl-guide

On the MPCA web site is a fact sheet entitled, “*Locally Led TMDLs*,” that should answer some of your questions about the funding and contracting process for TMDL studies.

Project payment processing instructions

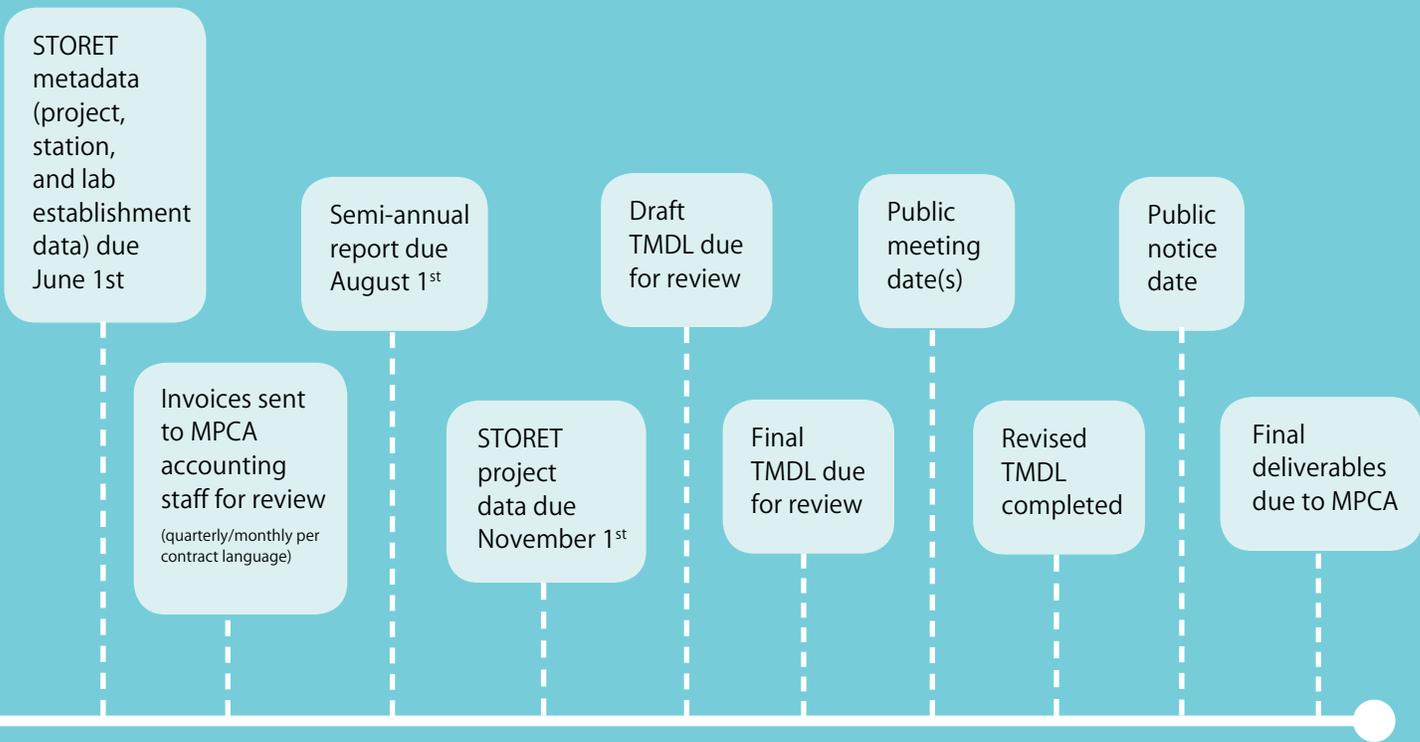
Payments for TMDL projects are made using a “reimbursement for expenses incurred” process.

The MPCA cannot reimburse local governments for any work that is completed *before* a contract has been fully executed (signed by all parties) or after the contract period ends.

All Local Project Sponsor invoices must be submitted to MPCA accounting as per contract language. MPCA Project Managers will review invoices and authorize payment as quickly as possible.

Final contract invoices must be submitted to MPCA accounting within 30 days after the contract end date. *Final payment will not be made until all the products/deliverables of the contract have been submitted to and approved by MPCA and all the contract requirements have been met.*





Contract or work order end date - No work under the contract or work order can be conducted and submitted for payment after this date.
 Final Progress Report and invoices submitted no more than 30 days after contract or work order end date

Semi-Annual Reports

Local Project Sponsors must provide Semi-Annual Reports to the MPCA by Feb. 1 and Aug. 1 of each year. The purpose of these reports is to inform MPCA management of progress made in developing the TMDL studies and in spending the funds dedicated to each specific project.

Final Progress Report

TMDL grant recipients must also complete a Final Progress Report when projects have been completed. Information from these reports will be used to illustrate progress made toward meeting the MPCA's goals. This information will be shared with interested parties and legislators.

Note: Failure to submit a completed Final Progress Report may result in the grantee having to return grant funds and/or the withholding of the final payment.

Click!
 See the proper format for the Semi-annual and Final Progress Reports
www.pca.state.mn.us/tmdl-guide



**319/Clean Water Partnership/
Total Maximum Daily Loads**
Semi-Annual Report for Reporting Year 2008

Reporting Period: January 1 through June 30, 2008 (Due August 1, 2008)
 July 1 through December 31, 2008 (Due February 1, 2009)

All information is required by U.S. Environmental Protection Agency (EPA). Do not leave blanks. This report form can be typed using your computer. Use the "tab" key to move through the fields of this form. Enter responses using text and check boxes as indicated. Keep a copy for your records.

I. General Report Information			
1. Project Title:			
2. Project Sponsor:			
3. Project Representative:			
4. Email Address:			
5. Loan Sponsor (if applicable):			
6. Contract Number:		Loan Number:	
7. MPCA Project Manager:			
8. Contract Start Date:		Contract End Date:	
9. Best Management Practice (BMP) Name (Refer to BMP List):			
10. 319/Clean Water Partnership (CWP) only - Nonpoint Source (NPS) Category (Refer to NPS Definition of Categories):	Primary	Secondary	Others
Category Name			
11. 319/CWP only - NPS Functional Category (Refer to NPS Definition of Categories):	Primary	Secondary	Others
Category Name			
12. Waterbody type (refer to NPS Waterbody Type):			
13. Hydrologic unit code (12 digits):		Latitude-longitude:	
14. 319/CWP only: Name of pollutant(s) addressed (refer to NPS Pollutants):			
15. Ecoregion (refer to NPS Ecoregion):			
16. Basin name (check all that apply): <input type="checkbox"/> Statewide			
<input type="checkbox"/> Lake Superior			
<input type="checkbox"/> Lower Mississippi/Cedar			
<input type="checkbox"/> Upper Mississippi			
<input type="checkbox"/> Minnesota			
<input type="checkbox"/> Rainy			
<input type="checkbox"/> Red River			
<input type="checkbox"/> Des Moines			
<input type="checkbox"/> Missouri			
<input type="checkbox"/> St. Croix			

Budget spreadsheet for TMDL projects

In order to have your TMDL work plan approved, you must include a complete budget proposal. MPCA has a template you can use, or you may use one of your own. The budget must include the number of hours the task is estimated to take to complete, salaries for staff, travel costs, and equipment and supply costs. You should itemize tasks in some detail. Be certain that the budget numbers add up and make sense! Many work plans are stalled because of mathematical errors in the budget. Take the time to ensure that it is accurate before submitting it to the MPCA.

Click!

The TMDL Project Budget Template is available at www.pca.state.mn.us/tmdl-guide

	A	B	C	D	E	F	G	
1	Clear Creek Watershed TMDL Project	Wobegon County SWCD						
2								
3	FINAL BUDGET/EXPENDITURES AS OF	(DATE)						
4								
5	Work Plan Tasks	unit cost (salary per hour, mileage, etc.)	unit type	# units	Original Project Budget	Project Expenditures	Project Balance	
6	Task 1 - Field Data Collection						\$0.00	
7	SWCD Resource Technician	\$50.00	hours	40	\$2,000.00		\$2,000.00	
8	Field Intern	\$40.00	hours	150	\$6,000.00		\$6,000.00	
9	Mileage	\$0.55	miles	3500	\$1,925.00		\$1,925.00	
10	Total Task 1				\$9,925.00	\$0.00	\$9,925.00	
11	Task 2 - Compile Potential Source Data and Information						\$0.00	
12	SWCD Resource Technician	\$50.00	hours	20	\$1,000.00		\$1,000.00	
13	Field Intern	\$40.00	hours	5	\$200.00		\$200.00	
14	Mileage	\$0.55	miles	100	\$55.00		\$55.00	
15	Total Task 2				\$1,200.00	\$0.00	\$1,200.00	
16	Task 3 - Problem Investigation						\$0.00	
17	SWCD Resource Technician	\$50.00	hours	30	\$1,500.00		\$1,500.00	
18	Field Intern	\$40.00	hours	50	\$2,000.00		\$2,000.00	
19	Lab samples - e. coli	\$13.00	samples	15	\$195.00		\$195.00	
20	Lab samples - BOD	\$17.00	samples	15	\$255.00		\$255.00	
21	Shipping for lab samples	\$10.00	shipping	15	\$150.00		\$150.00	
22	Total Task 3				\$4,100.00	\$0.00	\$4,100.00	
23	Task 4 - Public Participation and Out Reach						\$0.00	
24	SWCD Resource Technician	\$50.00	hours	15.5	\$775.00		\$775.00	
25	Field Intern	\$40.00	hours	5	\$200.00		\$200.00	
26	Total Task 4				\$975.00	\$0.00	\$975.00	
27	Task 5 - Data Reporting						\$0.00	
28	SWCD Resource Technician	\$50.00	hours	20	\$1,000.00		\$1,000.00	
29	Field Intern	\$40.00	hours	70	\$2,800.00		\$2,800.00	
30	Total Task 5				\$3,800.00	\$0.00	\$3,800.00	
31	ITEMIZED PROGRAM TASK BUDGET							
32					Total Task 1	\$9,925.00	\$0.00	\$9,925.00
33					Total Task 2	\$1,200.00	\$0.00	\$1,200.00
34					Total Task 3	\$4,100.00	\$0.00	\$4,100.00
35					Total Task 4	\$975.00	\$0.00	\$975.00
36					Total Task 5	\$3,800.00	\$0.00	\$3,800.00
37	Project Grand Total					\$20,000.00	\$0.00	\$20,000.00

Step 3: Marshal Your Resources

If you are working on a new TMDL study or assisting someone with developing a work plan, you will want to be aware of the following resources that are available to you. Local Project Sponsors can mix and match any or all of these tools to meet the needs of their particular project (depending on available funding).

Local Government Contracts - MPCA can enter into Joint Powers Agreement contracts or Professional/Technical contracts with local governments that have jurisdiction and expertise in the impaired watershed and who are willing and able to be responsible for completing some or all of the TMDL project. A detailed work plan must be written, reviewed and approved by MPCA staff before any work can be completed and paid for.

TMDL Master Contract – The MPCA has developed a Master Contract to provide technical and professional services for water restoration (TMDL) and protection projects. These pre-approved contractors can provide services in the areas of monitoring design, modeling, land use inventories, data assessment, public information and outreach, technical writing, or all of the above. Local Project Sponsors can use contractors for some or all of the work needed to complete the TMDL study. See the Resources Contact Information sheet for whom to contact.

Minnesota Department of Health Lab – MPCA has a contract with the Minnesota Department of Health (MDH) to conduct laboratory work for TMDL studies. Local Project Sponsors who want to use the MDH for their lab analyses must provide a written proposal to the MPCA. See the Resources Contact Information sheet for whom to contact.



Sampling and Analysis Laboratory Master Contract – MPCA has a Master Contract that includes various laboratories around the state. These labs can provide laboratory analytical services and some of them also provide water quality sampling services for TMDL projects. Some of the labs provide full services (all of the services listed in the Master Contract) and some of the labs provide partial services (lab analyses

for certain parameters) for Regional areas. A work order and a work plan describing the needed services must be developed and submitted to MPCA prior to completing any field or lab work. Discuss this option with your MPCA Project Manager. Also see the Resources Contact Information sheet for whom to contact.

STORET data management assistance – The MPCA can provide information and assistance to Local Project Sponsors regarding the compilation and organization of monitoring data into files that can be entered into STORET (short for STOrage and REtrieval), the U.S. Environmental Protection Agency's repository for water quality data. See the Resources Contact Information sheet for whom to contact.

DNR Flow Work Contract - MPCA currently has a contract with DNR staff to conduct flow gaging work for TMDL projects. DNR staff will take stream flow measurements, develop rating curves and conduct analyses of data. If your project needs flow gaging work completed, see the Resources Contact Information sheet for whom to contact.

Monitoring Equipment – MPCA has had a TMDL equipment budget and owns many sondes and other kinds of monitoring equipment. Note that locally-managed TMDL projects that purchase equipment with TMDL funds must return that equipment to the MPCA when the project is complete. Equipment may be shared with other TMDL projects, if it can be arranged. See the Resources Contact Information sheet for whom to contact about equipment availability or to discuss whether equipment must be purchased for a particular project. Local Project Sponsors should estimate total equipment costs for their project and include that information in their TMDL work plan.

GIS Analysis and Mapping Services

– are available for TMDL projects from a several MPCA staff. See the Resources Contact Information sheet for whom to contact.



Click!

The Master Contract, along with other TMDL contracts is available at: www.pca.state.mn.us/tmdl-guide

Protocols: Best practices for your TMDL study

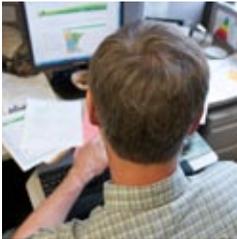
Your resources include MPCA teams who help Local Project Sponsors apply protocol documents to their projects. The MPCA has produced five TMDL development protocols for the following impaired waters listing parameters: 1) low dissolved oxygen, 2) turbidity, 3) bacteria, 4) lake nutrients and 5) biota. The purposes of these protocols are to ensure greater clarity for all Project Managers involved in developing TMDLs, to enable TMDLs to be developed in a technically rigorous and consistent way and to increase the potential for successful implementation projects in the long run. The protocols are technical documents intended for use by TMDL practitioners.

The protocols are not rules, but are guidance to help facilitate TMDL development. These protocols reflect the most up-to-date best practices for developing TMDLs. As the MPCA gains more experience with TMDL development, it will revise the protocols.

Click!

The TMDL Protocols are available at: www.pca.state.mn.us/tmdl-guide

Within MPCA, there are teams assigned to help Local Project Sponsors apply the protocol documents to their projects. The lead staff person for each of these teams is listed below. Feel free to contact them with any questions you might have.

Nutrient/Eutrophic Lakes	Low Dissolved Oxygen	Turbidity	Bacteria	Biota
<p>Tim Larson timothy.larson@state.mn.us 651-757-2518</p>	<p>Bruce Henningsgaard bruce.henningsgaard@state.mn.us 651-757-2427</p>	<p>Greg Johnson gregory.johnson@state.mn.us 651-727-2471</p>	<p>Lee Ganske lee.ganske@state.mn.us 507-344-5248</p>	<p>Jeff Jasperson jeff.jasperson@state.mn.us 218-302-6636</p>
				

Step 4: Engage the Public

Civic engagement

While scientific assessment of water quality impairments is essential to developing an accurate and defensible TMDL study, the ability to improve water quality will ultimately rest on the shoulders of stakeholders and citizens. Consequently, public involvement is every bit as important, and possibly more important, than scientific studies in improving water quality.

Take the time at the earliest stages of your project to carefully develop a public and stakeholder engagement strategy – one that goes beyond simply consulting the public. The new goal is encourage more citizens to lead change rather than act as passive participants. A civic engagement plan will need to be a part of every TMDL work plan and will be eligible for funding through the contracting process. MPCA is developing planning tools, an idea bank of innovative approaches, and a network of civic engagement specialists who will be available to help facilitate civic engagement activities at the local level.

Note: The TMDL Training modules (Sessions 4A and 4B) and manual have some useful information to get you started.

Contact your MPCA Project Manager for more information about civic engagement.

Public information

Keeping the public informed of a TMDL project helps pave the way to restored waters. By keeping the public informed, a Local Project Sponsor builds support for the project and ensures a report representative of the local community. Involving more citizens as members of an Advisory Committee for your TMDL project is a powerful way to inform those individuals who can then become ambassadors in the community for clean water.

Web page

Another way to keep the general public informed is through a TMDL project web page on the MPCA web site. Hosted and maintained by the MPCA, TMDL project web pages provide a central, public home for all:

- Documents
- Updates
- Event and meeting schedules
- Meeting minutes
- Links to related information



Following are instructions on how to submit project documents, photos and event information for posting on your project's page:

- Send documents to your MPCA Project Manager for posting on the TMDL project web page. MPCA Project Managers will work with the MPCA's Publication Support Team to convert documents into a PDF format and prepare them for posting on the web page. Some documents, such as presentations, meeting agendas and minutes, may be combined into one PDF before posting.
- Photos need to be high resolution (300 pixels/inch or greater) and in the form of a .jpg file.
- Meeting and event information needs to include event, name, date, location (address), and contact name with phone numbers and email addresses.
- For links, please provide the name of the web location to which you would like the link, in addition to the URL address (*for example*: "Minnehaha Creek Watershed District- link to: www.minnehahacreek.org").

Public notice for draft TMDLs

Once a draft TMDL study has been developed, the public must have an opportunity to comment on the project, as mandated by federal and state laws. MPCA must provide a 30-day public comment period for each TMDL before seeking final approval by the U.S. Environmental Protection Agency. Please consult with the MPCA to plan this public comment period, which includes many preparation steps, including publication requirements. The process may also include a public meeting for the local community and a presentation to the MPCA Citizens Board.

Step 5: Gain Approval of TMDL Report

Definition

After public review and any subsequent changes, your TMDL Draft Report will undergo rigorous review by MPCA staff. Once the MPCA Commissioner approves the TMDL report, it will go to the U.S. Environmental Protection Agency (EPA) for review and approval, which can take 30 days or more.

Delisting: Removing a water body from the state list of impaired waters.

After EPA approval, then the Local Project Sponsor can work with its stakeholders to develop an implementation plan. The goal of the implementation plan is to translate pollution reduction goals into restoration strategies. It should include a schedule of activities and reasonable assurance that nonpoint source reductions are achievable. Cost estimates and roles of different agencies are also part of the implementation plan.

The implementation plan goes to the MPCA for approval. Finally, the Local Project Sponsor can seek funding to start restoration work, using the TMDL report as a guide and monitoring for measuring progress.

Delisting:

If a Local Project Sponsor or MPCA staff believes that one or more of the 303(d) listed reaches in their jurisdiction are no longer impaired and should be delisted, they need to provide the MPCA's Delisting Committee the necessary information to make a formal determination. More information about the delisting process can be obtained from your MPCA Project Manager or the TMDL training modules.

If additional water quality or other data is needed to support a proposal to delist a water body, you should develop a written proposal that describes the kind of data that are needed and a budget for the proposed data collection work. Keep in mind that MPCA usually needs water quality data, flow data and land use information in order to determine whether a water body can be delisted. Make sure that you carefully document your proposal for delisting a waterbody, including all quality, supporting data.

Once a water body is removed from the impairment list, it must continue to meet water quality standards or it may be placed back on the impaired waters list.



Resource Contact Information

DNR Flow Work Contract

Tim James	MPCA	218-846-8103	Tim.James@state.mn.us
Greg Kruse	DNR	651-259-5686	Greg.Kruse@state.mn.us

GIS Analysis and Mapping Services

Pete Knutson	MPCA-North	218-316-3898	Pete.Knutson@state.mn.us
Tom Pearson	MPCA-Metro	651-757-2644	Thomas.Pearson@state.mn.us
Nels Rasmussen	MPCA-South	507-206-2614	Nels.Rasmussen@state.mn.us

Water Restoration (TMDL) and Protection Master Contract

Hafiz Munir	MPCA	651-757-2595	Hafiz.Munir@state.mn.us
Jayne Stilwell-Lamb	MPCA	651-757-2756	Jayne.Stilwell-Lamb@state.mn.us

Minnesota Department of Health Lab

Roger Fisher	MPCA	651-757-2360	Roger.Fisher@state.mn.us
Celine Lyman	MPCA	651-757-2541	Celine.Lyman@state.mn.us

Monitoring Equipment

Mark Evenson	MPCA	218-316-3908	Mark.Evenson@state.mn.us
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Sampling and Analysis Laboratory Master Contract

Martina Cameron	MPCA	651-757-2259	Martina.Cameron@state.mn.us
Roger Fisher	MPCA	651-757-2360	Roger.Fisher@state.mn.us

STORET Data Management

Miranda Nichols	MPCA	651-757-2614	Miranda.Nichols@state.mn.us
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TMDL Training Modules

Lynne Kolze	MPCA	651-757-2501	Lynne.Kolze@state.mn.us
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WaterFront Bulletin for updates on TMDL funding, projects and events

Cathy Rofshus	MPCA	507-206-2608	Catherine.Rofshus@state.mn.us
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Web Page Submissions

Celine Lyman	MPCA	651-757-2541	Celine.Lyman@state.mn.us
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