



To the Source

***MOVING MINNESOTA'S
WATER GOVERNANCE UPSTREAM***

Report of the Citizens League
Water Policy Study Committee

November 2009

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Executive Summary

Minnesota's 12,000 lakes and 92,000 miles of streams and rivers are central to the identity and the economy of the state and are a source of pride for Minnesota citizens. Thousands of Minnesotans are committed to protecting the state's waters, through their individual actions, volunteer and civic groups, and professional endeavors.

Minnesota's waters, however, face serious threats that our current water governance system is not prepared to confront.

Of Minnesota lakes and rivers that have been evaluated by the Pollution Control Agency, 40 percent have been found to be polluted to the extent that they do not meet the state's water quality standards. The principal causes of these impairments are widespread "nonpoint sources" of pollution, coming from behaviors on the land across the state. In recent decades, Minnesota has been successful in reducing pollution from defined "point sources," like industrial discharges and wastewater treatment plants, by regulating the relatively few sources of large amounts of pollution, but a different approach is needed to protect and restore waters from today's greatest threats.

In Minnesota's current water governance system, government entities bear the lion's share of the responsibility to assure the public has access to clean water. This system is not effectively protecting and improving the state's waters. Addressing today's diffuse water policy challenges will require more than changes to government.

It will require a much more central role for the millions of actors who are responsible for water problems and are capable of creating solutions—businesses, homeowners, civic groups, cities, watershed organizations, and all citizens.

To effectively address today's challenges, the people and organizations that contribute to water problems must play a central role in the actions and decision making to address these problems. Minnesota needs a model of water governance that takes advantage of the imagination and capacity of the public to confront these challenges.

The timing is crucial. In 2008, Minnesota voters approved a sales tax increase that will dedicate funding to clean water, beginning with an estimated \$158 million in 2010-11. We have not only the need but also the obligation to Minnesota taxpayers to ensure that this money is spent effectively to improve the waters of our state. Doing so will demand significant changes in the way that water is governed.

FINDINGS AND CONCLUSIONS

1. **The strong public commitment to water resources in Minnesota is a great asset in addressing water challenges.** Our system of water governance should take advantage of the great base of individuals and organizations devoted to and working to protect the state's waters.
2. **Minnesota's waters face serious challenges, which are significantly different from the challenges of the past.** Today's greatest water policy challenges are diffuse, and equally widespread strategies are needed to address these challenges.

In the great majority of impaired waters, pollution is due to nonpoint source pollution from millions of actions and practices on the land that eventually finds its way into the water, as opposed to the point source challenges that dominated the past. Our governance system has not been set up to confront today's challenges.

3. **We have insufficient data to demonstrate water quality trends, and the data is not made available in a manner that sufficiently supports public understanding and local decision making.**

Part of the problem lies in a lack of data: less than 20 percent of Minnesota's waters have been tested for impairments, and those that have been tested are distributed unevenly across the state. Data alone, however, is not sufficient; it must be communicated in a way that is meaningful to those who will use it.

4. **Minnesota's system of water governance is fragmented, incoherent, and poorly coordinated to the extent that it is failing Minnesota on all five principles by which the Citizens League evaluated the system:**

- **Transparency:** The lines of responsibility and accountability are difficult to understand, even for professionals and the legislators responsible for funding and overseeing water governance.
- **Effectiveness:** There is a lack of evidence of overall effectiveness or cost efficiency.
- **Equity:** Responsibility, resources, and authority for addressing water issues are not equitably distributed, either by geography or by impact on pollution.

- **Accountability** is often unclear and frequently not enforced.
- **Appropriate scale:** The system is driven by individual program and agency goals. Particular tasks have been delegated from the federal government to the state and from state agencies to special districts, cities and counties without comprehensive goals or a coherent picture of the whole system.

5. The people and organizations who are responsible for and affected by water problems must play a stronger role in the actions and decision making that make up our water governance system.

As the Citizens League wrote in 1993: “State lawmakers should embrace the view that the purpose of government is to design environments where individual citizens and institutions are systematically oriented to accomplish public purposes, and where they meet their own interests in the course of doing so. The traditional view has been that government solves problems by regulating, taxing and spending money on programs. That view has been discredited.”ⁱ

RECOMMENDATIONS:

1. Build a collaborative model of governance that promotes the roles of those who contribute to water problems to likewise contribute to solutions.

The public must be deeply and authentically involved in the many aspects of water management: framing the issues, devising solutions, and working collaboratively with all stakeholders to address the challenges. Minnesota’s water

resources should be seen as the responsibility of all citizens.

This will require changing both the actions and decisions that affect water resources and the processes for public collaboration with government. It will require that the public be better informed about water issues, that the public’s sense of ownership of and responsibility for our water resources be strengthened, and that structures be developed to facilitate collaboration not only between the public and government but also among peers. We must also create certain behaviors and inhibit others.

Achieving this collaborative model of governance will require a period of exploration and creation to discover what types of programs and processes are effective. To advance this recommendation, we should experiment with various processes for collaboration, some focused on changing behaviors around water resources and others on public engagement with government, to discover—and demonstrate—what works. (See page 20 for examples of models that could be considered).

2. Redesign government roles and responsibilities to promote this collaborative model with the public and among government entities.

At the state level, government should:

- Lead an effort that engages the public and local governments to determine long-term priorities for water policy in Minnesota.
- Develop measurable benchmarks to track progress towards these priorities,

ensuring that accountability for progress on each priority area is clear.

- Strengthen coordination among state agencies and between state and local units of government.
- Support local governments by providing data and tools that can be used by those implementing policies at the local level and highlighting local government successes.

At the local level, government should:

- Work on the ground to implement policies set at the state level, including by building the capacity of local organizations and individual citizens to address water issues.

To advance this recommendation, we must next bring together those people who will be responsible for accomplishing these ends—lawmakers and professionals in state and local government—to determine the most effective means.

3. Create a single online water resource information hub to provide data and analysis on the status and trends of Minnesota’s waters in a manner that is accessible and useful to the public, professionals, and those in government.

To advance this recommendation, we should bring together people from government organizations, research institutions, and the public to determine more specifically how to best design this resource.

Introduction

With nearly 12,000 lakes of 10 acres or larger and approximately 92,000 miles of streams and rivers, clean water is central to the identity and the economy of the state of Minnesota.

Yet Minnesota's lakes, rivers, streams, and groundwater face serious challenges. A growing population

from millions of sources—from failing septic systems to agricultural runoff and urban stormwater.

In contrast to the challenges of the past, the largest water policy issues we face today are widespread. The ways that we address water problems, however, have not evolved sufficiently to meet today's challenges.

remediating pollution from these “point sources.” However, we have not as a state figured out how to effectively address the diffuse “nonpoint source pollution” that is the greatest water quality problem in Minnesota and the United States today.

If we are to successfully address challenges like nonpoint source pollution, hundreds of thousands of citizens must change their behaviors to avoid and correct water pollution. Tens of thousands of businesses must change their practices. Thousands of city councils, planning commissions, and their staff must change how they approach land use decisions and municipal operations.

The policies and processes by which Minnesota currently governs water are inadequate to address today's challenges and to protect water resources for future generations. The governance system is falling short because of its fragmentation and the lack of coordination among actors. Moreover, the structures and

To effectively address today's challenges, the people and organizations that contribute to water problems must play a central role in the actions and decision making to address these problems.

has resulted in increased demand for food and energy production, and increased urban and suburban development. Despite gains Minnesota has made to manage pollution in such ways as redesigning manufacturing processes and improving filtration, our lakes, rivers, and streams continue to be contaminated by pollution coming

To confront pollution, for example, our existing water governance system has been developed primarily to deal with pollution from defined points, like wastewater treatment facilities and industrial discharges. Thanks to strong regulation and investments in improved infrastructure, we have been relatively successful in

Vision

In our vision of Minnesota's water future, we have recast the relationship between the public and government, making water stewardship a shared responsibility. Our vision reframes water management entities as the conveners of collaboration among members of the public and between the public and government. Our water vision also imagines a centralized, comprehensive, and electronically accessible public information hub from which citizens and water professionals alike can access timely, coordinated and novice-friendly data and analysis about the conditions and trends of our state's waters. And our vision expands the current conception of a well designed, well integrated water governance system with emphasis on prevention and clearly defined responsibilities and outcomes for government and the public.

In Minnesota, our natural waters are integral to our identity, our economy, our relationship with the natural world, and our relationship to each other. We call on these values and the commitment of Minnesotans to collectively take responsibility for our waters. And we call on our water governance system to work inclusively, transparently, and collaboratively to protect the health and future sustainability of water—our most precious natural resource—now and for future generations.

processes by which we govern must change to promote a stronger role for the people and organizations that contribute to and are affected by water problems.

Water management must be a shared responsibility among all levels of government, businesses, civic organizations, and individual citizens. Nonpoint source problems require nonpoint source solutions: To effectively address today's challenges, the people and organizations that contribute to water problems must play a central role in the actions and decision making to address these problems.

THE OPPORTUNITY

Minnesota has committed and continues to commit significant funding to water governance. We have both the obligation and the necessity to ensure that this money is spent effectively to improve the waters of the state.

In recognition of the growing concerns regarding the quality of Minnesota's freshwater resources, the state has taken dramatic strides recently to commit to sustainable water resource management. In

2007 the **Clean Water Legacy Act** was signed into law and reiterated Minnesota's determination "to protect, restore, and preserve the quality of Minnesota's surface waters."ⁱⁱ This was quickly followed by **the Clean Water, Land and Legacy Amendment**, which was passed by voters in November 2008, and which is designed, among other purposes, to raise millions of additional dollars to protect and restore water quality in the state. Because of the Legacy Amendment, Minnesota now has additional funding dedicated to clean water (an estimated \$77 million in FY 2010, \$81 million in FY 2011, and further dedications until 2034).

With newly energized political support for clean water and an infusion of funding, now is the moment when the calls for environmental improvement in Minnesota must be met with coordinated and inclusive action. At this important juncture in Minnesota's water policy history, the state has the opportunity to set a precedent for effective water governance.

Many people across the state are putting time, effort, and resources towards this end. To ensure that we are working in a coordinated and effective manner to address the challenges we face today, however, will require significant changes in the way that water is governed.

A Note on Scope

While Minnesota faces water resource challenges both around water quality and the sustainability of our water supply, in order to ground the discussion of governance, the Committee focused on water quality, specifically nonpoint source pollution: pollution created by activities on the land that is carried into surface water and groundwater by precipitation. The principal goal of the study was to use nonpoint source pollution as a case study to illuminate the ways in which water governance must change to more effectively address the greatest challenges and in coming years.

Evaluative Principles

The Water Policy Study Committee developed the following principles for water governance. The Committee evaluated the ways in which water is currently governed against these principles to develop conclusions and recommendations of the changes needed.¹

1. **Transparency:** The water resource management framework and decision-making process should be understandable both to those in government and to the public. It should be clear what is—and is not—being done, by whom, and why the responsibility lies with that party. Information on water status and trends should be readily available.
2. **Effectiveness:** Protection of water resources should be stressed before costly and environmentally harmful problems arise. Regulatory overlap and duplication should be minimized. Rules and regulations should be meaningful, resulting in positive environmental outcomes, and actions should be efficient in terms of cost and results. To accomplish this, policies, regulations, and programs should be based upon up-to-date science and should be able to adapt as new science and new circumstances emerge.
3. **Equity:** All individuals, entities, and sectors should share in equitable access to safe water

Definition of Water Governance

There is a difference between governance and government.


Governance is the process by which water is managed for the public good. Governance includes the goals and activities of government entities, businesses, nonprofits, communities, and individual citizens.

Government refers to the laws and rules of the country, state, or locality and the entities given authority by those laws and rules.

Government is one piece of the governance system, but citizens and private organizations are critical, as well. They may or may not have formal authority and policing power over water policies, but their actions (and inactions) have important impacts on water management. ⁱⁱⁱ

- to meet their basic needs and should carry their appropriate share of the responsibility to achieve water management improvements. We should not place unreasonable burdens, financial or otherwise, on the regulated parties.
- the authority and resources necessary to carry out the responsibilities given to them. Monitoring and assessment data should be developed and made accessible to report on the progress and contributions made by all parties.
4. **Accountability:** All water users should be held accountable for the impact of their water use, land use, and other actions that affect the quality and quantity of our water resources. With respect to government entities, it should be clear who is responsible for outcomes on priority areas. Those responsible for policy goals should be held accountable to measurable goals, and funding, staff, and other resources should match responsibilities. Individuals or organizations should have
5. **Appropriate scale:** Laws must be flexible enough to recognize that one size will not fit all at the local level, yet flexibility must be balanced with the need for clarity in regulations, and local control must be balanced with the need to ensure that certain standards are upheld statewide. Policy should be based on the direction that water flows (watershed boundaries), even though political boundaries do not usually align with the flow of water.

¹The Water Policy Study Committee operated in accordance with the Citizens League's mission, principles, and operating guidelines (see page 29).



Nonpoint source pollution is pollution that comes from a diffuse area, such as stormwater runoff from land or the settling of pollutants from the atmosphere. Many pollutants that come from activities on the land—such as lawn fertilizers and motor oils—are washed away by rain and snowmelt and eventually find their way into water bodies.

Point source pollution comes from a confined, discrete conveyance, such as a pipe or ditch.

Findings and Conclusions

FINDING AND CONCLUSION 1. THE STRONG PUBLIC COMMITMENT TO WATER RESOURCES IN MINNESOTA IS A GREAT ASSET IN ADDRESSING WATER CHALLENGES.

The public commitment to clean water is an enormous resource for the state. Our system of water governance should take advantage of the strong base of individuals and organizations committed to and working to protect the state's waters.

The state's lakes, rivers and streams are central to Minnesota's identity, and the public commitment to water resources reflects this.

Minnesotans consistently rank protecting surface waters as their **top environmental priority** in opinion polls.^{iv} Polling has also shown that support for clean water was the principal reason that voters approved a tax increase to protect natural resources and support the arts and cultural heritage in November 2008 by passing the Clean Water, Land and Legacy Amendment.^v

Beyond political support, Minnesotans put a great deal of time and energy into protecting and improving water resources. Thousands of Minnesotans belong to volunteer lake or river groups. Citizens serve on advisory boards for watershed districts and other government organizations. Through the Pollution Control Agency in 2007 alone, 1,187 **volunteers** monitored water quality at 2,207 lake sites and 490 volunteers monitored 831 sites on streams and rivers.^{vi} Neighborhood and community groups, local governments, nonprofit organizations, and many others

disseminate information and organize individual citizens to protect and improve water resources.

Moreover, thousands of committed and experienced employees work for clean water through state and local government and private organizations.

FINDING AND CONCLUSION 2. MINNESOTA'S WATERS FACE SERIOUS CHALLENGES, WHICH ARE SIGNIFICANTLY DIFFERENT FROM THE GREATEST CHALLENGES OF THE PAST.

A large number of Minnesota's lakes, rivers and streams are polluted. In the great majority of cases, this is **due to nonpoint source pollution:** contamination coming from millions of actions and practices on the land that eventually finds its way into the water.^{vii} Nonpoint source pollution is the greatest water quality challenge Minnesota faces today.

In recent decades, beginning with the federal **Clean Water Act** of 1972, Minnesota and the nation have been quite successful in dealing with point source pollution. Regulations imposed on point sources like wastewater treatment plants and industrial wastewater have greatly decreased point source contributions to water pollution.

According to a 2000 Pollution Control Agency study (no longer current data, but the most recent available), nonpoint sources are the major cause of impairments in 86 percent of Minnesota's impaired waters.^{viii}

Great resources are being committed and a set programs exists to address

nonpoint source pollution, but this is not done in a systematic or well coordinated way. We have made a positive impact on some pollutants and have improved water quality in some areas, but **nonpoint source pollution continues to be an enormous challenge for Minnesota's waters.**

FINDING AND CONCLUSION 3. WE HAVE INSUFFICIENT DATA TO DEMONSTRATE WATER QUALITY TRENDS, AND THE DATA IS NOT MADE AVAILABLE IN A MANNER THAT SUFFICIENTLY SUPPORTS PUBLIC UNDERSTANDING AND LOCAL DECISION MAKING.

At all levels, from individual citizens to legislators, information necessary to make effective decisions is lacking because of a lack of data, a lack of integration of data that exists, and a lack of understanding of the data by the public and by policy makers.

Despite millions of dollars and great effort applied to manage nonpoint source pollution statewide, we still do not have answers to many basic questions. (For example: Can local decision makers determine whether the water quality of any local water body is improving or declining?)

Part of the problem lies in a lack of data. As noted above, less than 20 percent of Minnesota's waters have been tested for impairments, and those that have been tested are distributed very unevenly across the state.

We have data on water clarity across Minnesota (this information is collected via satellite). Satellite imagery, however, gives limited

Water Pollution in Minnesota

Only about 18 percent of Minnesota's lakes and 14 percent of rivers have been evaluated for contamination by the Pollution Control Agency under the impaired waters program. Of the water bodies that have been evaluated, 40 percent have been found to be impaired by one or more pollutants. (Federal law requires that all waters be tested. See [Appendix C](#) for more information about the Clean Water Act, water quality standards, and the process to deal with impaired waters.)

Where does nonpoint source pollution come from?

Nonpoint source pollution comes from contaminants that run off the land and are deposited from the air. Sources of nonpoint source pollution in Minnesota include:

Agricultural runoff: According to the [National Water Quality Inventories](#), runoff from farms is the leading source of pollution to surveyed rivers and streams in the United States and the number three source of pollution in lakes.^{ix} Overall data is not available for Minnesota, but estimates indicate that agricultural runoff is a leading contributor to water pollution in the state, as well.^x Poor management of feeding operations and improper timing of plowing or over-application of fertilizer and pesticides can cause nonpoint source pollution. When uncovered soil is exposed to wind and rain, soil erosion carries nutrients and pesticides into water bodies. Planting crops too close to lakes or streams can [increase these effects](#) by reducing natural buffers that filter runoff before it reaches water bodies.^{xi}

Urban runoff: Stormwater and snowmelt [running off](#) roofs, yards, roads, parking lots, and construction sites carries debris, road salt, soil, fertilizer, oil, gasoline, and other chemicals into waters.^{xii} The increase of impervious areas, due to urban and suburban development, contributes to nonpoint source pollution.

Septic systems: Failing septic systems can allow nutrients, bacteria and viruses from sewage to contaminate groundwater, lakes, streams and rivers. Approximately 530,000 residences and other buildings in Minnesota are served by septic systems, and the Minnesota Pollution Control Agency estimates that [37 percent fail to protect](#) groundwater.^{xiii}

Forestry: [Poor land management and logging practices](#) can cause sediment, dissolved nutrients, pesticides, petroleum products and organic debris to be carried into water bodies and can interrupt or change the flow of water on or below the land.^{xiv} (See [page 20](#) for more information about steps Minnesota has taken to reduce forestry's contribution to nonpoint source pollution in recent years.)

Atmospheric deposition: Pollutants [released into the atmosphere](#) by activities like burning coal, waste, and fossil fuels are returned to the ground through precipitation. This can have an especially large effect on watersheds that have a high ratio of surface water to land area (Lake Mille Lacs, for example). Because pollutants can be carried long distances through the air, they can have major effects even on watersheds with no significant human activity (like the Boundary Waters). Mercury pollution in water bodies comes primarily from atmospheric deposition.^{xv}

Sedimentation: Erosion of stream banks, bluffs, and ravines due to changes that people have made to the way that water flows on and beneath the land causes sediment to accumulate in water bodies. Changes in hydrology that lead to sedimentation include the loss of wetlands, increases in artificial drainage, reductions in perennial plant cover in agricultural areas, and increases in impervious cover in urban areas.

Nutrients from pollution cause [eutrophication](#) in water bodies: an overload of nutrients like phosphorus and nitrogen leads to rapid plant growth; the decomposition of these plants and other organisms then creates a shortage of oxygen in the water. Some fish, such as bass and walleye, struggle to survive in these conditions and are replaced by fish such as carp.

In many areas, bacteria have made water unsafe for humans, and chemicals in the water are harmful to humans and can kill aquatic life.^{xvi}

THE COST OF WATER POLLUTION

As the Freshwater Society wrote in its [recent report](#) on protecting water resources: "Polluted waters not only endanger our health, well being and the environment, but also threaten the recreational opportunities that are a heritage of all Minnesotans and the cornerstone of a \$10 billion annual tourism industry."^{xvii}

Water pollution can have a very direct impact on property values. A [2003 study](#) of lakeshore property in Mississippi headwaters region found that a one meter change in lake clarity would have an average property value impact of \$211 per frontage foot—for Cass Lake, the impact was \$2,044 per frontage foot.^{xviii}

information. Though there is a very close correlation, murky water does not in every case indicate pollution, and it does not show pollution sources. To determine precisely if and why waters are polluted requires more specific data, for which we do not have good statewide coverage.

Moreover, because water quality often changes slowly and because variations in precipitation and other factors can affect water quality, demonstrating trends requires regular testing over a period of decades.

Data is collected statewide by the Pollution Control Agency and is available in its **STORET** system. Some watershed districts and other entities collect additional data, but differences in collection methodologies can make it difficult to develop a regional picture from these groups' data.^{xix}

Recent changes in the state's water quality monitoring suggest that greater data may be available soon. The legislature last year appropriated nearly \$16 million to water quality

monitoring for the biennium, a substantial increase in recent years. The Minnesota Pollution Control Agency has also begun a new data collection strategy designed to show water quality trends. The Pollution Control Agency has defined 81 major watersheds in Minnesota and has established a schedule to monitor each major watershed once every 10 years, beginning in 2008.

Data alone, however, will not be sufficient. Information must be communicated in a way that is meaningful to those who will use it. For individual citizens, this often means making information available on the water bodies that they use, answering questions such as: Does the water body have problems? If so, what are the problems? Is the water body doing better or worse than it was in the past? What is causing the problems? What can I do about it?

We have new generations of web-based tools and techniques to present data in ways that facilitate analysis and decision making by citizens, civic organizations, and local government

Data alone is not sufficient — information must be communicated in a way that is meaningful to those who will use it.

decision makers. These tools should be used to make water quality data and analysis broadly available and useful.

FINDING AND CONCLUSION 4. MINNESOTA'S SYSTEM OF WATER GOVERNANCE IS FRAGMENTED, INCOHERENT, AND POORLY COORDINATED TO THE EXTENT THAT IT IS FAILING MINNESOTA ON ALL FIVE PRINCIPLES OUTLINED ABOVE.

Virtually no one understands the entire system of government bodies that make and administer water policy in Minnesota. This fact has immense implications as decisions



are made by the legislature, state agencies, local governments and individual citizens.

The system of government to manage Minnesota’s water resources has been developed piecemeal to meet particular federal and state statutory requirements. The resulting system is comprised of a half dozen state agencies, numerous special purpose districts, as well as cities, counties, and towns, which all have roles in water management. (For descriptions of relevant government organizations, see [Appendix B](#).)

The entities involved in administering water policy are each guided by separate missions, duties, and powers prescribed by statutes.^{xx} Coordination between government entities happens on a program-by-program basis, but there is little thought given to the whole picture and no entity sets—and determines if we are meeting—larger goals.

There are **benefits to Minnesota’s complex water governance system.**

The host of state agencies serve as advocates for their areas of responsibility and can act as checks and balances on the interests of the others. In addition, agencies and local governments work collaboratively to plan and carry out many projects. (See, for example, Minneapolis Chain of Lakes project, page [12](#).)

Moreover, Minnesota’s water-related government is empowered in ways that other states’ are not.

In November 2008, the citizens of Minnesota guaranteed long-term funding devoted to water management by passing the [Clean Water, Land and Legacy Amendment](#). The Amendment increased the sales tax rate by 0.375 percent, with 33 percent of the revenue dedicated to

the newly created Clean Water Fund. This revenue is to be spent only “to protect, enhance and restore water quality in lakes, rivers, streams, and groundwater.”^{xxi} This new funding is to be used only to supplement existing revenue sources and not be used as a substitute for them (though in its first year, arguments have already begun over how to judge this distinction).

Legislation also gives great authority to local units of government. Special purpose districts—such as soil and water conservation districts and watershed districts—provide technical and financial assistance to landowners, cities and counties. Some have limited power to regulate water use and related activities. Watershed districts, where they exist, have the power to levy taxes to support their efforts and to regulate activities that impact water resources.

Moreover, some localities—such as the area covered by the Ramsey-Washington Metro Watershed

District—have excellent data to model water flows and show water quality trends in their districts.

Many Minnesota cities have active and sophisticated stormwater programs, motivated by new stormwater regulations and concern for valuable local water resources. These programs address essential local responsibilities, such as flood control, stormwater regulatory compliance, construction site inspection, surface water planning, development review, and water quality protections and improvement.

Governmental powers and increased funding can be tools to improve water resources, but they do not guarantee good outcomes. Minnesota spends millions of dollars on water management each year, yet we lack evidence to indicate that we have made much progress towards addressing nonpoint source pollution. Moreover, powers and resources can be used in ways

Government entities with water management roles include:

Federal:

- Environmental Protection Agency
- Farm Services Agency
- Natural Resource Conservation Service
- Bureau of Indian Affairs
- Army Corps of Engineers
- Fish and Wildlife Service

State:

- Pollution Control Agency
- Department of Natural Resources
- Department of Agriculture
- Board of Water and Soil Resources
- Department of Health
- Environmental Quality Board

Regional and local:

- Soil and Water Conservation Districts
- Watershed Districts
- Watershed Management Organizations
- Lake Improvement Districts
- Counties
- Cities and Towns
- Metropolitan Council

For more information on government organizations that set and administer water policy, see [Appendix B](#).



that are harmful to water quality as easily as they can be used to prevent nonpoint source pollution. Rainwater that is moved quickly across the land by ditches and storm sewers set up to prevent flooding, for example, carries pollutants to lakes, streams, and rivers at much higher rates than water that is allowed to soak into the ground more slowly.

Despite the strengths of Minnesota’s water governance system, **complexity and the lack of common goals in the governance system can lead to confusion, duplication of efforts, and overlap of responsibilities, while some important priorities are being neglected.**

The water governance system fails against each evaluative principle outlined on page 5:

A. Transparency: Lines of responsibility and accountability are difficult to understand, not only for the public but also for the elected officials and water policy professionals responsible for its execution. The Citizens League heard from multiple individuals who had attempted to visually map the system, all of whom had eventually given up—including professionals working for water policy nonprofits, and even legislators and state government staff charged with prioritizing water policy funding needs.

It is difficult to see exactly how and where water policy responsibilities are assigned, and which important responsibilities are not assigned to anyone at all (see Accountability, below).

B. Effectiveness: Despite the commitment of great amounts

of time, energy, and money, we have little evidence that we are successfully addressing nonpoint source pollution.

- The Pollution Control Agency listed approximately 1,500 impairments on 336 waters and 510 lakes in 2008, and the state has spent millions of dollars to clean up these impaired waters. However, to date only 9 water bodies have been removed from the Pollution Control Agency’s impaired waters list as a result.² It is unclear how much success we should expect from this approach of remediating impaired waters in the future, and on what timetable. (For more information on impaired waters, see [Appendix C.](#))
- Efforts to prevent pollution from entering water bodies in the first place are generally much more cost-effective than

²An additional 20 water bodies have been removed from the impaired waters list due to remonitoring and subsequent recategorization, and not because of the clean-up.

Cleaning Up Polluted Waters: Minneapolis Chain of Lakes Clean Water Partnership Project

In the 1970s and 1980s, citizens watched the Minneapolis Chain of Lakes degrade. Decades of intense recreational use and runoff from the fully developed watershed were having a serious impact on water quality.

Driven by these citizens, the Chain of Lakes Clean Water Partnership brought together about thirty groups in a 10-year effort, including:

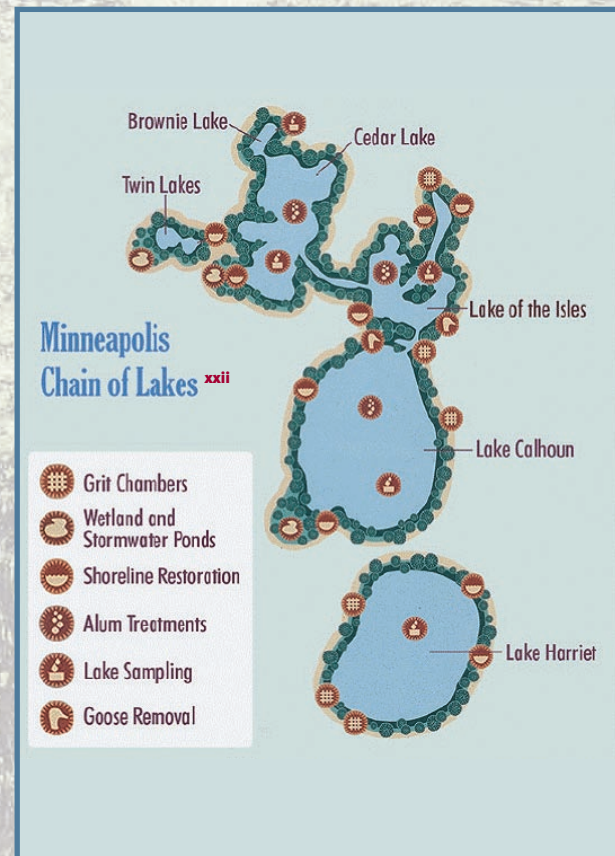
- Residents and neighborhood groups
- The cities of Minneapolis and St. Louis Park
- The Minneapolis Park and Recreation Board
- Hennepin County
- The Minnehaha Creek Watershed District
- The Pollution Control Agency, the Department of Natural Resources, and other state agencies
- Conservation and environmental groups like Muskies, Inc., SCUBA Divers, the Minneapolis Chapter of Audubon, and the Sierra Club

A Citizens Advisory Committee recommended aggressive water quality goals and strategies to achieve them. Activities included a major public education effort, better management of runoff with stormwater ponds and wetlands, improved street sweeping, alum treatments to reduce algae growth, and shoreline restoration.

The water quality goals were met or exceeded in Lake Calhoun, Cedar Lake and Lake Harriet. Lake of the Isles (a shallow lake dredged in the 1920s) has not seen as great a reduction in pollution as the others, and in 2002 it was found by the PCA to not meet water quality standards and was placed on the state's impaired waters list. Overall, however, this project was very effective, and the Chain of Lakes project is held up by the US Environmental Protection Agency as a national success story.

Factors contributing to this project's success include:

- **A strong resolve to improve the lakes:** The lakes are extremely popular, and many people have strong emotional attachments to them. They were a huge rallying point. With this end goal clear, participants worked together to resolve concerns over questions like the project design.



- **Great data:** A \$365,000 study provided data showing the sources of the problems.
- **Resources:** Participating groups contributed \$12.5 million (1996 dollars). Including the value of land donated by the Park Board, this figure is considerably higher.
- **Committed leadership:** from mayors, the Park Board, the county, the Watershed District, and others.
- **Public outreach:** Information was distributed in bookmarks, table tents and placemats at restaurants, utility bill inserts, pet waste posters, billboards, newspaper articles, and lawn care mailings throughout the watershed. The education efforts seemed to pay off quickly, with an over 50 percent reduction in pesticides contained in stormwater runoff.^{xxiii}

clean up—and they maintain the health of our environment—but programs designed to prevent nonpoint source pollution tend to be voluntary, are infrequently measured for effectiveness, and are often lower priorities for funding than projects to remediate already polluted waters. State and local regulatory programs and powers can be exercised where there are violations of water quality standards, while options are much more limited where there are no such violations.

- Because information is lacking, in many instances we do not know the management practices that best reduce nonpoint source pollution. We currently have a good understanding of stormwater ponds, which have been in wide use for the past 20 years, and we are moving toward a better understanding of other options. We are early in the process of monitoring to better understand the effectiveness of many management practices and developing calculation methodologies to enable project designers and local managers to more effectively use a greater range of management practices.
- Our system is too often the collection of what the University of Wisconsin Professor Peter Nowak calls “random acts of conservation:” programs and areas are chosen based on who volunteers to participate rather than putting limited resources towards those that can have the greatest impact.

C. Equity: Responsibility, resources, and authority for addressing water issues are not equitably distributed. Different resources

for addressing water issues are available to different geographic areas.

Government structure and available resources vary greatly throughout the state. Some local areas have more data and staff with much greater technical capacities than others at their disposal. Governments in densely populated areas have much greater tax bases to draw upon and can have much larger budgets for water resource management than other parts of the state. Moreover, where watershed districts exist, they can

raise tax revenues specifically for water-related projects. However, watershed districts only exist in about one-third of the state, and watershed districts outside the metro area have limited taxing authority.

In the two-thirds of the state without watershed districts, most areas have no special purpose district with the authority to levy taxes specifically for water resources.³ Soil and Water Conservation Districts rely on funding from the state, counties, and other local sources. For general purpose



³In addition to watershed districts, citizens can petition for or local governments can create Lake Improvement Districts (LID). A Lake Improvement District, by way of the county, has the ability to raise funds by assessing residents of the district. Currently, there are 32 LIDs in the state, pursuing water resource management activities ranging from flood control to the extermination of invasive aquatic species.

local government units (towns, cities, and counties), water policy concerns are often a lower priority than other local concerns such as police or fire protection.

Different sources of pollution are also not comparably regulated under law. For example, because of federal law changes and court decisions since 2000, urban stormwater flowing through storm sewer pipes has become regulated in a manner similar to point sources of pollution. Each stormwater discharge now requires a National Pollutant Discharge Elimination System (NPDES) permit with specific requirements that are legally binding. In contrast, there is much less regulation of agriculture (partly because of agricultural exemptions from the federal [Clean Water Act](#)). Cropped agriculture is virtually unregulated, with the ([widely violated](#)) exception that crops not be planted within 50 feet of a stream, river, or lake.^{xxiv} [Livestock agriculture is also minimally regulated](#). The Pollution Control Agency estimates that the amount of manure generated by livestock in Minnesota is equivalent to the waste from a human population of 50 million, but only about 40 of Minnesota's nearly 30,000 registered feedlots are required to have individual permits.^{xxv}

D. Accountability: Accountability for results is often unclear and frequently not enforced. The fragmented nature of the governance system leads to some overlap and, more importantly, significant “underlap”—some important issues are falling through the cracks.

Overlap can make government programs inefficient, and it can create scorn for and noncompliance with the programs (see “[Overlapping Accountability](#)”).

Moreover, it is unclear who is responsible for outcomes in

EXAMPLE: OVERLAPPING ACCOUNTABILITY

Regulated parties sometimes receive conflicting and confusing messages from different program staff.

For example, a water resources engineer told us that, regarding a wetland on his or her property, a property owner may receive different instructions and regulatory guidance from the Army Corps of Engineers, the MN Department of Natural Resources, a watershed district, a county, and a city. When that happens, the property owner's reasonable conclusion may be that the regulatory framework is irrational, wasteful, and not worthy of their compliance.

EXAMPLE: INEQUITY AND LACK OF ACCOUNTABILITY

Government's limited ability to regulate many sources of nonpoint source pollution can be an enormous challenge.

A senior Pollution Control Agency staffer gave the following example: In a water body that has been designated impaired because of a combination of nonpoint source runoff and discharge from a wastewater treatment plant, the state's only recourse may be to continue to crack down on the wastewater treatment plant (a regulated point source of pollution) until the problem is solved.

Because of the lack of regulation of many nonpoint sources – especially agricultural runoff – it can be difficult or impossible to mandate nonpoint source pollution reductions in many cases.

In this example, the result is not only unfair; it may not even be possible to meet water quality standards solely by addressing the wastewater treatment plant.

priority areas, and it appears that no entities are held accountable for what should be some of our highest priorities.

An example of this “*underlap*” is that the governance system is not adequately oriented toward preventing problems before they develop. In fact, our laws, if they are followed, often ensure that we will have nonpoint source pollution problems down the road (see “[Following the Law Creates Pollution Problem](#),” page 15).

Forty percent of evaluated water bodies have been found to be

impaired, but that means that 60 percent have been found *not* to be impaired. Most do not receive the same attention that is required for impaired waters. We must plan now to prevent degradation of these waters in the future.

Another underlap lies in the lack of accountability in cleaning up polluted waters. Federal law requires that states set water quality standards, evaluate waters against these standards, identify and list water bodies where the standards are violated, conduct studies to identify the extent and



sources of the pollutant loads, and develop plans (called Total Maximum Daily Load plans, or TMDLs) to restore these water bodies to pollutant levels below the standards. (The Pollution Control Agency has been given this responsibility in Minnesota.)

The Pollution Control Agency has the responsibility to reassess these waters over time to assure that the pollutant load allocations from the TMDL plan are being achieved and that the water body meets water quality standards. Where insufficient progress has been made, the Pollution Control Agency is required to develop additional measures to assure compliance with standards.

However, it is not statutorily required that in the end these waters be brought up to compliance with the standards, and mechanisms to enforce compliance with TMDL plans are very limited when dealing with nonpoint source pollution. The Pollution Control Agency uses its permitting authority to compel actions by point sources

(like wastewater treatment plants and industrial processes) and stormwater permittees (some cities, construction sites, and industrial facilities), but it has little or no regulatory authority to require compliance by many major pollutant sources, such as runoff from agricultural or forestry practices. (For more information on TMDLs and the impaired waters program, see [Appendix C.](#))

Though many people and organizations are doing a lot of good work to address water pollution, we lack state-level

policies assigning responsibility and accountability for real results.

E. Appropriate scale: The actions of the many entities involved in water governance are not effectively coordinated. The principle of scale as defined on [page 5](#) states that local control and flexibility must be balanced with the need for clarity and to ensure that certain standards are upheld statewide. However, particular tasks have been delegated from the federal government to the state and from state agencies to special districts,

EXAMPLE: FOLLOWING THE LAW CREATES POLLUTION PROBLEM

In rural areas where sewage sludge is applied as a fertilizer, application amounts are based on the amount of nitrogen that is needed in the soil—a farmer may apply as much nitrogen as the plants take up. Doing so, however, means applying four times as much phosphorus as the plants use. Following the regulation, therefore, can eventually lead to phosphorus accumulation in the soil, which likely contributes to rising phosphorus levels in lakes.

cities and counties without a coherent picture of the whole system or comprehensive long-term goals for water governance.⁴

Coordination in water governance today happens on an ad hoc, program-by-program, and project-by-project basis. The state bodies involved with water policy are each guided by their individual missions and statutes driving particular programs, not coordinated by an overarching set of goals or a shared vision for water resources. In some instances, different government bodies even work at cross purposes. (For example, the objective of one entity may include minimizing polluted stormwater runoff, while the goal of another may be to move water off land as quickly as possible.)

FINDING AND CONCLUSION

5. THE PEOPLE AND ORGANIZATIONS WHO ARE RESPONSIBLE FOR AND AFFECTED BY WATER PROBLEMS MUST PLAY A STRONGER ROLE IN THE ACTIONS AND DECISION MAKING THAT MAKE UP OUR WATER GOVERNANCE SYSTEM.

In 1993, the **Citizens League** wrote: *“State lawmakers should embrace the view that the purpose of government is to design environments where individual citizens and institutions are systematically oriented to accomplish public purposes, and where they meet their own interests in the course of doing so. The traditional view has been that government solves problems by regulating, taxing and spending money on programs. That view has been discredited.”^{xxvi}*

This may be more true in water policy today than ever. In the 1970s, ‘80s, and ‘90s, Minnesota was able to make great improvements in water quality by regulating relatively few large point sources of pollution. In contrast, much of today’s water pollution is the result of millions of individual actions and decisions. Successfully reducing water pollution requires active roles by these millions of actors.

Government is seen as the group responsible for ensuring the clean water supply, and citizens as consumers entitled to clean water. In the past, whole communities shared in the collective caretaking of local water resources, and with that came accountability to neighbors, intimate local knowledge of the water’s health, and social bonding. Over time,



⁴The Minnesota Environmental Initiative’s recent **Land and Water Policy Project** reviewed issues regarding the coordination of state agencies’ programs and projects related to water quality and land use. The MEI project made specific recommendations of first steps to address this set of challenges. More information can be found at <http://mn-ei.org/projects/Land.html>.

responsibility and authority for the use and care of our waters have shifted to government institutions with legal control and policing power.^{xxvii}

Today, government entities bear the lion's share of the responsibility for keeping Minnesota's waters healthy and cleaning up those that are polluted. It is very difficult to determine the role of the ordinary citizen within our system of

engagement processes or the results. Often, these processes are done in the form of public meetings. Public officials are frustrated by frequent low turnout for public meetings and the perception that citizens who attend are often focused on a narrow self-interest. Citizens are frustrated by "too much talk and not enough action," and it is a common opinion that government officials are merely

such widespread issues as nonpoint source pollution. Similarly, we must also move beyond customary command and control approaches and regulatory mandates.

Rather, the public should be engaged as problem solvers if we are to successfully address issues like nonpoint source pollution. Hundreds of thousands of citizens must change their behaviors to avoid and correct water pollution. Tens of thousands of businesses must change their practices. Thousands of city councils, planning commissions, and staff must change how they approach land use decisions and municipal operations.

This does not mean that government responsibility should be reduced. Government is the only entity that can perform many important roles. Regulating and holding regulated parties to account for their actions, for example, will still be a crucial aspect of addressing water issues. It should also be a job of government to bring the public together in processes that promote collaboration to address water problems in line with participants' self-interest. But government alone has not been and will not be able to effectively address issues like nonpoint source pollution. Citizens and other public actors must be brought more fully into water governance.

Addressing these complex challenges will require that many stakeholders be involved to see their particular interests as part of the larger solution.^{xxix}

The traditional model of government simply consulting with the public has not and will not result in the kind of broad-scale changes needed to address difficult problems like nonpoint source pollution.

governance. Correspondingly, large numbers of citizens do not perceive or understand how their actions and decisions contribute to nonpoint source pollution.

Citizen participation in water governance today is primarily thought of as engagement in government processes, not as individual, business, or community actions outside of government, or the individual choices that affect water quality for good or bad. Many government entities have citizen representation on their boards or on citizen advisory committees—including watershed districts, the Pollution Control Agency, and the Board of Water and Soil Resources—and citizen engagement processes of some form are carried out by most government entities working in water policy (often to meet statutory requirements).

Neither government nor citizens are satisfied with these citizen

going through the required motions and do not truly care what citizens think. A survey done by the Citizens League in 2006 shows that the biggest reason that citizens do not participate in public processes is that they don't believe the processes are worth their time.^{xxviii}

Addressing today's diffuse water policy challenges will require a much more central role for the millions of actors who are responsible for problems and are capable of creating solutions. The traditional model of government simply consulting with the public has not and will not result in the kind of broad-scale changes needed to address difficult problems like nonpoint source pollution.

Our current governance system too often imposes on government the impossible expectation to solve a problem that cannot be solved without public knowledge and effort. State government alone will never have enough money nor staff resources to adequately address



Recommendations

With our strong tradition of good government and an engaged public, Minnesota should develop a model for water governance in which individual citizens, farmers, businesses, and local governments recognize their roles as both contributors to water problems and problem solvers—and in which all players collaborate to improve the state’s waters.

Addressing today’s water policy issues requires a *governance* model that is broader than *government*. As a senior government official told us: nonpoint source pollution requires nonpoint source solutions. The biggest challenges we face today are widespread, and effective solutions to problems like this must also be widespread.

Deeper public participation is not the “silver bullet”—it alone will not solve all of Minnesota’s water problems—but it is a necessary step. The scope of water resources in Minnesota is enormous, and all government bodies combined do not have enough money or resources to do the job.

RECOMMENDATION 1: BUILD A COLLABORATIVE MODEL OF GOVERNANCE THAT PROMOTES THE ROLES OF THOSE WHO CONTRIBUTE TO WATER PROBLEMS TO LIKEWISE CONTRIBUTE TO SOLUTIONS

The roles of individuals, businesses, agricultural producers, and other organizations must be expanded in a collaborative model of governance.

The public must be deeply and authentically involved in the many aspects of water management: framing the issues and setting priorities, devising solutions,

and working collaboratively with all stakeholders to address the challenges.

It can no longer be seen as solely government’s responsibility to deliver clean water to the public, and the consultative model most often used by water-related government entities today—in which the main role of the public is to weigh in on government decisions—is not sufficient to address today’s challenges.

Rather, the governance system should align individuals’ and organizations’ self-interests with the public interest in clean water and should encourage collaboration among individuals, organizations, and government in order to do so.

This will require changes of two types:

a. Changing behaviors: Changing the actions and decisions taken by Minnesota citizens and institutions will require that the public be better informed about water issues (see [Recommendation 3](#)), that the public’s sense of ownership of and responsibility for our water resources be strengthened, and that structures be developed to facilitate collaboration not only between the public and government but also among peers. We must also create mechanisms that will incent certain behaviors and inhibit others.

b. Changing processes for public collaboration with government: Government entities involved

in water management should involve the public in governance processes at all stages, defining water problems from a personal perspective and working with government entities to develop responses. Processes should allow public participants to frame issues, problem solve and develop solutions, participate in implementing the solutions, and hold one another accountable for the achievement of outcomes. Processes should build common ground so that participants see themselves as equal partners with vested interests in changing behaviors to improve water conditions.

Nonpoint source pollution requires nonpoint source solutions.

Steps should be taken to increase the capacity of organizations responsible for public engagement processes—especially local governments—to facilitate public engagement.

Groups facilitating public processes around water policy should recognize that this requires not only knowledge of water issues and technical skills regarding water and land use but also particular skills for public engagement. Those responsible for public engagement processes often specialize in other skills and are not trained in the skills necessary to effectively develop and lead public processes.

Government entities should put a priority on training staff members responsible for public engagement in skills like group facilitation, conflict resolution, and civic capacity building. When hiring new staff,

To achieve this collaborative model of governance, Minnesota should explore models such as:

HARNESSING COMMUNITY PRESSURES FOR THE COMMON GOOD: THE WISCONSIN BUFFER INITIATIVE

A group in Wisconsin is hoping to bring farmers together to address watershed problems as a community.

The **Wisconsin Buffer Initiative** (WBI) is a collaboration of farmers, scientists from the University of Wisconsin, and other citizens organized to develop recommendations for the Wisconsin Department of Natural Resources on how buffers along streams and rivers can be better used to address agricultural nonpoint source pollution. The WBI is hoping to receive a grant to provide financial incentives at a small watershed scale, based on:

- **Performance:** All farmers in the watershed would receive an incentive based on pollution reductions measured at the watershed outlet.

- **Participation:** The greater the percentage of farmers participating, the greater the incentive each farmer would receive.

This model provides incentives to farmers to use their professional problem-solving skills and hold each other accountable for implementing best management practices to reduce nonpoint source pollution. Rather than treating each farmer as an isolated individual, it harnesses the power of peer pressure in the farm community towards addressing nonpoint source pollution together.^{xxx}

ALIGNING INCENTIVES FOR BEST MANAGEMENT PRACTICES: INDEPENDENT CERTIFICATION IN FORESTRY

While many states have taken a regulatory approach to reducing forestry practices that cause polluted runoff, Minnesota has achieved comparable results with voluntary certification programs. This path receives praise both from those in government and in the forest industry and may be a model for other industries such as agriculture.

In the mid 1990s, the forest industry was feeling pressure from various sides to make their practices more environmentally friendly:

- **Public pressures** from citizens (especially environmental and conservation interests) and people within government agencies to protect water resources.
- **Threat of regulation:** States on the coasts had begun to enact regulations mandating certain management practices. Forest companies much preferred a voluntary approach, believing that regulations were too costly and prescriptive and would stifle innovation.

Pressures from a third angle have also grown in the past decade:

- **Economic pressures** from forest product buyers. There has been a worldwide move toward environmentally sustainable forestry practices certified by third parties. Large buyers such as Time Inc. and Home Depot have insisted that their Minnesota suppliers obtain most of their wood from forests that have been certified to follow best management practices.

At the same time, the Minnesota Legislature directed the **Minnesota Forest Resources Council**—a body representative of broad forest resource interests, including loggers, manufacturers and the forestry industry; conservation and environmental groups; labor organizations; the tourism industry; Indian tribes; private landowners; and federal, state and local governments—to develop a set of voluntary best management practices that would improve environmental outcomes, including reducing forestry’s contribution to water pollution.

The **forest management guidelines** developed by the Forest Resources Council have now been adopted as criteria for two forest land certification programs and a logger certification program. All are voluntary programs with periodic audits by independent, third-party review.

This system of independent certification has made Minnesota a national leader. Approximately 8.4 million acres of forest land in Minnesota are certified (of 16.3 million total acres), more than any other state. Most forest land owned by the state and the forest industry is certified. For non-industrial private forest land, certification rates are quite low, largely because of the cost of the certification process.

Such high participation strongly suggests that certification has improved environmental outcomes including water quality and reduced forestry’s contribution to nonpoint source pollution, but more data is needed to confirm this conclusively.^{xxxi}

government entities should look for individuals skilled not only in the natural sciences but also in social sciences and organizing techniques. At times, government entities should hire organizations with expertise in facilitation or citizen engagement.

Further research is also needed to assess how behavior changes lead to water quality improvement. Some data is available showing the effectiveness of rain gardens and similar activities, but further research to evaluate the efficacy of public actions on improving water quality—both in urban and farm settings—would be helpful and should be supported by the state.

The public should be engaged in a range of practices around water governance. Not everyone will be willing or able to participate in the same way, and not everyone needs to—public participation will be necessary in many different types of processes, from long-term planning of priorities for water policy (see [Recommendation 2](#)), to participating on citizen advisory boards for a local government organizations, to day-to-day behaviors to reduce polluted runoff.

Achieving this collaborative model of governance will require a period of exploration and creation to discover what types of programs and processes are effective. To advance this recommendation, we should experiment with various processes for collaboration, some focused on changing behaviors around water resources and others on public engagement with government, to discover—and demonstrate—what works. **See page 20 for examples of models that could be considered.**

RECOMMENDATION 2: REDESIGN GOVERNMENT ROLES AND RESPONSIBILITIES TO PROMOTE THIS COLLABORATIVE MODEL WITH THE PUBLIC AND AMONG GOVERNMENT ENTITIES.

As discussed above, it is the role of government to create environments where individual citizens and organizations, in pursuing their own interests, build the common good. Government change is needed to more fully meet the principles outlined on page 5—especially to clearly assign responsibilities for water management, to hold responsible parties accountable, and to assure that the many actors are using their resources efficiently toward common goals.

Fragmentation in the governance system is well established through a complex combination of state and federal statutes, and it will not be eliminated in the foreseeable future. We can and should, however, build a more effective system within this reality.

At the state level, government should:

Convene a collaborative process among members of the public and government to determine long-term priorities for water policy in Minnesota. In the absence of agreed-upon priorities for Minnesota’s water management, priorities are currently being driven by the objectives of many distinct programs. This is backward. The state should lead an effort that engages individual citizens, businesses, civic organizations, and local governments to determine the

long-term, comprehensive priorities for water policy.

Develop measurable benchmarks to track progress towards these priorities, ensuring that accountability for progress on each priority area is clear. This will require a review of the organization of government related to water policy to ensure that responsibilities and objectives for these priorities are clearly assigned and that responsible parties are held accountable for results. A robust system for reporting

The public must be deeply and authentically involved in the many aspects of water management.

on progress and results is an essential component of this recommendation (see [Recommendation 3](#)).

Accomplishing the above goals will help **strengthen coordination among government entities.** Setting common priorities across programs and across agencies will encourage various government bodies to work in collaboration with common purposes.

State government **should support local governments by providing better data and tools that can be used by those implementing policies at the local level.** State agencies provide data and tools for use by local governments and other organizations, and steps are being taken to improve these, for example by developing better models for how to reduce stormwater runoff in new developments. A centralized, publicly accessible information source ([Recommendation 3](#)) would

also be significant progress towards this end. This is important because it is sometimes local governments that are leading the way in water management. The state agencies should encourage successful local governments and share successful examples with others working at the local level.

At the local level, special district, city, and county governments should:

Work on the ground to implement the policies set at the state level.

A key aspect of this is to build the capacity of local residents, businesses, and organizations to address water issues. Local government entities should develop the collaborative structures and processes to engage individual citizens and groups deeply and authentically in local watershed protection and restoration and provide supports for community members to work together.

With this recommendation, the Citizens League intends to make clear the endpoints for governmental change without, from the distance of an independent organization, being overly prescriptive regarding the means to reach these ends. To advance this recommendation, we must next bring together those people who will be responsible for accomplishing these ends—lawmakers and professionals in state and local government—to determine the most effective means.

RECOMMENDATION 3: CREATE A SINGLE ONLINE WATER RESOURCE INFORMATION HUB

From individual citizens to policy makers at the state capitol, Minnesotans lack the necessary data and analysis to make effective water policy decisions.

Information that shows the status and trends of Minnesota’s waters should be made more available, understandable, and relevant to citizens, policymakers, and professionals. **A single entity should be charged to compile water data collected by organizations statewide and make this information accessible through a single website that is usable by non-experts.**

This information should be organized and presented with the purpose of promoting public understanding and involvement.

Using the example of water quality, the committee found that numerous organizations make data available to the public online. Some websites such as the Department of Natural Resources’ [Lake Finder](#), Conservation Minnesota’s [www.checkmylake.org](#), and Wilder Research’s [www.tccompass.org](#) try to simplify scientific data to make it understandable to the general public. Others, like the Pollution Control Agency’s [Lake Water Quality Data Search](#), present data in more detail.

Sites like these are a good start. We should continue on this path by creating a searchable database with the following characteristics:

- **Centralize information:** Many different organizations collect data related to water resources. Citizens—and even water professionals—are often confused about where to go to find information on water resources. Minnesota would benefit from a single portal that compiles information from the many entities that collect it, including cities, counties, special purpose districts like watershed districts, citizen

monitors, and nonprofit and community organizations.

- **Make it local:** We are most concerned about and motivated by issues close to our homes and the places we spend time. The site should allow you to search by lake name and area, as does [www.checkmylake.org](#) and the DNR’s [Lake Finder](#).
- **Answer questions relevant to the public,** such as: What problems does a water body have? What are the causes and the consequences of these problems? What is being done to address the problems? What can I do about it?
- **Clear, understandable presentation:** The information should be understandable and the site should be readily usable by individuals with minimal scientific background and no specialized software. More detailed data should be available for those who would like to access it.

In many instances, compiling data from the multiple government entities and organizations that collect it will provide enough information. In other cases, this exercise will point to additional research needs.

To advance this recommendation, we should bring together people from government organizations, research institutions, and the public to determine more specifically how to best design this resource.

Appendix A: For Further Study— Water Quantity and Groundwater Sustainability

In its early research, the Water Policy Study Committee identified two primary water policy challenges for Minnesota: nonpoint source pollution and water quantity, or the sustainability of our groundwater resources. The Committee focused its study on nonpoint source pollution to illuminate the ways in which Minnesota’s governance system must change to address today’s challenges. The issue of water quantity, however, is critical and merits further study.

As the Freshwater Society writes in its 2008 report, *Water is Life*: “There is a startling lack of consensus among ground water experts on whether our current use is sustainable and on how to measure the ground water we can safely use.”^{xxxii}

The Minnesota Department of Natural Resources grants permits for wells that pump large amounts of groundwater. However, the DNR **does not deny permits** based on

the anticipated cumulative effect of each new well, nor does it have the authority to restrict development where groundwater is scarce.^{xxxiii}

As development pressures (especially the expansion of the ethanol industry) drive increasing demand for groundwater, Minnesota should carefully consider its groundwater resources and the manner in which they are used and protected.

Appendix B: Government Entities Involved in Minnesota Water Governance

FEDERAL

The **Bureau of Indian Affairs** assists in monitoring water resources on reservations. Waters are held in trust for the Ojibwa (excluding Red Lake) and Dakota bands. The Bureau falls under the Department of the Interior.

The **Environmental Protection Agency (EPA)** implements the Clean Water Act by compelling states to monitor waters and regulating certain activities affecting oceans, wetlands, lakes and rivers. It provides research and assistance to state and federal agencies and requires state programs to meet or exceed federal standards. The EPA is a cabinet-level agency.

The **Farm Service Agency (FSA)** administers federal farm programs, including the Conservation Reserve Program, which provides farmers with payments and cost-share assistance to address soil, water, and related natural resource concerns on their lands in an environmentally beneficial and cost-effective manner. It is a division of the US Department of Agriculture (USDA).

The **Natural Resource Conservation Service (NRCS)** delivers soil and water conservation programs on agricultural lands. The NRCS provides financial assistance for many conservation activities and conservation technical assistance to landowners, communities, and state and local government units. It is a division of the US Department of Agriculture.

The **United States Army Corps of Engineers** does many flood control projects and is the principal federal wetland regulator. The Corps does dredging, filling and dam

maintenance in the waters of the United States.

The **United States Fish and Wildlife Service (USFWS)** is the principal federal agency that provides information on the extent and status of the nation's wetlands. The agency has developed a series of topical maps to show wetlands and deepwater habitats. The USFWS is also involved in combating invasive species and supporting fisheries and habitat conservation.

The **United States Geological Survey (USGS)** conducts research and provides information on ground and surface waters: publications, maps, data, and applications software. The USGS is a division of the Department of the Interior.

STATE

The **Board of Water and Soil Resources (BWSR)** works with local governments to protect and enhance Minnesota's soil and water resources. It is the state administrative agency for soil and water conservation districts, watershed districts, metropolitan watershed management organizations, and county water managers. BWSR focuses on private lands.

The **Clean Water Council** advises on the administration and implementation of the Clean Water Legacy Act. It coordinates public agencies and private entities; prioritizes strategies for water testing, restoration, and protection; develops processes for expert scientific review; and develops education and participation strategies for citizens and stakeholders. The Clean Water

Council consists of 23 members, including 19 appointed by the Governor and four non-voting representatives from the Pollution Control Agency, Dept. of Agriculture, Dept. of Natural Resources, and Board of Water and Soil Resources.

The **Environmental Quality Board (EQB)** develops policy, creates long-range plans, and review proposed projects that could significantly influence Minnesota's environment. It issues periodic reports including water quality and quantity trends, assessment and recommendations for state policy and funding needs. The EQB consists of representatives of the Governor's Office, five citizens, and the heads of nine state agencies (Dept. of Agriculture, Dept. of Administration, Pollution Control Agency, Dept. of Employment and Economic Development, Dept. of Health, Dept. of Natural Resources, Dept. of Transportation, Dept. of Commerce, Board of Water and Soil Resource).

The **Legislative-Citizen Commission on Minnesota Resources (LCCMR)** makes funding recommendations to the legislature for special environmental and natural resource projects funded by the Environmental and Natural Resources Trust Fund. The LCCMR is made up of five senators, five representatives, and six citizens.

The **Minnesota Department of Agriculture (MDA)** regulates fertilizers, soil and plant amendments, the Minnesota Pesticide Control Act, and the Agricultural Best Management Practices (AgBMP) loan program.

The **Minnesota Department of Health (MDH)** administers the Drinking Water Protection Program to ensure safe and adequate drinking water in public water systems (facilities that serve more than 25 people on a regular basis). MDH administers the Well Management Program, including establishing standards, licenses, and permits for construction and sealing of wells.

The **Minnesota Department of Natural Resources (DNR)** oversees water appropriations permits (for water users withdrawing more than 10,000 gallons per day or more than 1 million gallons per year), groundwater monitoring, hydro mapping, invasive species, dam safety, flood damage, lake and stream hydrology, and shoreland management.

The **Minnesota Department of Transportation (MnDOT)** is involved with replacing wetlands, reducing erosion and improving sediment control. MnDOT analyzes water quality, performs hydrology studies (including road salt analyses), and regulates materials and waste related to transportation.

The **Minnesota Geological Survey (MGS)** performs research and collects data. The MGS maintains a statewide database on well records, collects geophysical logs, and maps and analyzes groundwater.

The **Minnesota Pollution Control Agency (PCA)**'s mandate is to protect, improve, and conserve water quality. The PCA oversees wastewater and stormwater permitting, septic systems, the impaired waters program (see [Appendix B](#)), surface water monitoring, groundwater protection, and the state administration of Clean Water Act mandates.

REGIONAL AND LOCAL

Cities and Towns are involved in zoning, land use decisions, permitting and local ordinances that can affect water resources. Many cities operate water and wastewater facilities.

Counties are responsible for local water management. (About one-third have [delegated this responsibility](#) to Soil and Water Conservation Districts.^{xxxiv}) Counties have a wide variety of water management duties, including planning and zoning (outside the metro area) and constructing and maintaining water and sewer systems.

Lake Improvement Districts (LIDs) can be formed by petition to the local government, by resolution of the local government, and by the commissioner of the Dept. of Natural Resources after denial by the local government (though [no LID has been formed in this manner](#)).^{xxxv} Petitions for lake improvement districts are approved by the Dept. of Natural Resources. Lake improvement districts are usually formed to preserve particular lakes and shoreland environments. County boards delegate powers to lake improvement districts; they do not have taxing authority of their own. As of August 2009, Minnesota had 32 lake improvement districts.

The **Metropolitan Council** plans for water management and operates wastewater treatment system in the Twin Cities metropolitan region.

Minnesota has 91 **Soil and Water Conservation Districts (SWCDs)**, which cover the entire state along county boundaries (except in Beltrami, Marshall, Otter Tail, Polk, and St. Louis counties, where SWCDs split county boundaries). SWCDs are governed by boards of elected

supervisors. They work mainly on a one-to-one basis with landowners to connect them with funding and other resources for conservation practices on their land.

Watershed Districts are special purpose units of government formed along the lines in which surface water flows rather than political boundaries; as such, they frequently cover multiple cities, towns, and counties. Watershed districts are governed by boards of managers appointed by county commissioners. They have authority to raise revenue, including through property tax levies. They are formed voluntarily through petition by citizens, cities, or counties to the Board of Water and Soil Resources (BWSR), and are overseen by BWSR. Minnesota has 46 watershed districts, covering about one-third of the state.

Watersheds in the Twin Cities metropolitan region are required to have **Watershed Management Organizations (WMOs)** where this function is not covered by a watershed district. WMOs exist as joint powers agreements among cities and towns within the watershed. WMOs may have taxing authority, though many do not exercise this authority.

Appendix C: Impaired Waters and the TMDL Program

Laws relating to water quality in Minnesota stem primarily from the federal **Clean Water Act**, initially passed in 1972. Under the Clean Water Act, the US Environmental Protection Agency requires states, territories, and tribes to establish water quality standards, to evaluate water bodies against these standards, and to develop lists of “impaired” waters that do not meet the standards. For each impaired water body, states, territories, and tribes must then develop a plan called a Total Maximum Daily Load (TMDL) to reduce pollution and bring the water body back into compliance with the standard.

In Minnesota, the Pollution Control Agency (PCA) has been given these duties. The PCA established standards and evaluates water quality in lakes and rivers against these standards. To date, about 18 percent of lakes in the state and 14 percent

of rivers have been evaluated. Of these, 40 percent do not meet the standards and have been placed on the impaired waters list. In 2008, Minnesota’s impaired waters list included 1,475 impairments on 336 rivers and 510 lakes.

After a water body is determined to be impaired, the PCA works with local partners to do a TMDL study. This assessment determines how much of a pollutant is present, where it is coming from, and what reductions will be necessary to bring the water body back into compliance with the water quality standards. (The “Total Maximum Daily Load” is the maximum amount of a specific pollutant that can be discharged into the water body while that body still meets water quality standards.) The TMDL study must then be approved by the Environmental Protection Agency.

After the TMDL is approved, an implementation plan is developed to clean up the water body. Implementation may include a mix of permitting (mainly for point sources such as wastewater treatment facilities) and voluntary measures (mainly for nonpoint sources such as agricultural runoff). Opportunities for mandating reductions in nonpoint pollution sources are very limited because these activities generally do not require permits (see page 14).

TMDLs deal with only one impairment (a single pollutant), even though a single water body may have multiple impairments.

To date, 29 impairments have been removed from Minnesota’s impaired waters list—20 due to remonitoring and subsequent recategorization and just nine because of activities to clean the water body after a TMDL study.

The Work of the the Water Policy Study Committee

CHARGE TO THE COMMITTEE

Water is a fluid resource, flowing across multiple jurisdictions and used by people for everything from drinking to manufacturing. Yet our approach to managing this vital resource is fragmented and disconnected from the ways that people think about and use water. There is no comprehensive approach to water policy in Minnesota. Consequently, our tendency is to react to water-related problems after they have been identified with restrictions and mandates, which often meet resistance from water users.

In order to effectively manage our water resources today and for future generations, the Citizens League

Water Policy Study Committee is charged with answering the following questions:

1. What are the appropriate roles and responsibilities of the various units of government that manage water in Minnesota, communities, businesses, nonprofits, and individuals?
2. Based on these findings:
 - a. What changes should be made to our system of water governance?
 - b. What core principles should guide collaborative water use and management in Minnesota?

To answer these questions, the committee will examine policy challenges in the area of nonpoint source pollution. The committee's primary task will not be to make recommendations to manage these challenges; rather, it will use them as case studies to illuminate the ways in which water governance must be improved.

The Water Policy Study Committee held committee meetings beginning on July 7, 2008 and finishing on August 5, 2009.

STUDY COMMITTEE MEMBERSHIP

Dianne Krizan, co-chair

Managing director, Development, Minnesota Public Radio; former director of Research and Development, General Mills

Gene Merriam, co-chair

President, Freshwater Society; former Commissioner, Minnesota Dept. of Natural Resources (2003-2007) and Minnesota State Senator (1974-1996)

Jonathan Abram

Partner in the Corporate practice group and co-chair of the Capital Markets practice group, Dorsey and Whitney LLP

Larry Baker

Senior fellow, Minnesota Water Resources Center, University of Minnesota; independent environmental consultant

Janna Caywood

Sociologist, civic organizer, writer, researcher; founder of Como Lake Neighbor Network; member, MPCA civic engagement protocol work team

Karen Chesebrough

Medicine Lake TMDL steering committee member (2008-2009); Plymouth Environmental Quality Committee (1999 - 2004); former project leader and buyer

Janne Flisrand

Consultant on land use planning, sustainability, affordable housing and transportation, Flisrand

Consulting; program coordinator, Minnesota Green Communities

Sherri Knuth

Writer, Minnesota Lawyer; attorney with prior experience in environmental law; former co-chair, St. Paul District 10 (Como Park) Environmental Committee

Tony Kwilas

Director of Environmental Policy, Minnesota Chamber of Commerce; former committee administrator, Senate Environment and Natural Resources policy committee (1988-1995); former member, Pollution Control Agency stormwater steering committee; member, Statewide External Advisory committee for Department of Natural Resources' shoreland rules update

Joseph Mansky

Director, Ramsey County Elections; former staff, Missouri River Basin Commission (Omaha, Nebraska); former staff, Lower Platte South Natural Resources District (Lincoln, Nebraska)

Wallace Neal

Founder and Citizen Advisory Committee member, Nine Mile Creek Watershed District; former manager, Lower Minnesota River Watershed District

Randy Neprash

Civil engineer, water resources engineer, and stormwater regulatory specialist, Bonestroo consulting; technical consultant, Minnesota

Cities Stormwater Coalition; founding member, Minnesota Stormwater Steering Committee

Jack Ray

Founder, former board member and executive director, Urban Boatbuilders; former member, Minneapolis Citizens Water Quality Advisory Committee

Jay Sjoström

Executive search consultant, LarsonAllen Search; former attorney; former principal in a company advising owners of residential and commercial real estate

Kaitlin Steiger-Meister

Ph.D. candidate, Natural Resources Science and Management with a second major in Non-Profit Management, University of Minnesota.

Danielle Waldschmidt

Stormwater technician, Rice Soil and Water Conservation District.

Other members who participated in the committee include:

Alex Bakkum

Shelley Shreffler

Leah Bartizal

Erika Sitz

Sherry Enzler

Joel Spoonheim

Annette Jacob

Nena Street

Kelsey Johnson

Judy Titcomb

Bruce Leslie

Michael Troemel

Nicole Moen

Becca Vargo Daggett

THE COMMITTEE RECEIVED TESTIMONY AND SUPPORT FROM THE FOLLOWING INDIVIDUALS AND ORGANIZATIONS:

Cliff Aichinger

Ramsey-Washington Metro Watershed District

Kevin Bigalke

Nine Mile Creek Watershed District

Susan Brower

Wilder Research

Jo Colleran

City of Minnetonka

Eli Condon

Minnesota Waters

Les Everett

University of Minnesota Water Resources Center

Warren Formo

Minnesota Agricultural Water Resources Coalition

Perry Forster

Riley Purgatory Bluff Creek Watershed District

Bob Fossum

Capitol Region Watershed District

Emily Franklin

Minnesota Environmental Initiative

Ellen Gibson

Minnesota Environmental Initiative

Ron Harnack

Formerly of Board of Water and Soil Resources, Minnesota Department of Natural Resources

Ron Nargang

Formerly of Minnesota Department of Natural Resources and Board of Water and Soil Resources

Peter Nowak

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Minnesota Department of Natural Resources

Bob Patton

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University of Minnesota Southern Research and Outreach Center

Gaylen Reetz

Minnesota Pollution Control Agency

Laurel Reeves

Minnesota Department of Natural Resources

Rob Slesak

Minnesota Forest Resources Council

Cherie Wagner

Freshwater Society

John Wells

Minnesota Environmental Quality Board

Steve Woods

Board of Water and Soil Resources

Bruce Wilson

Minnesota Pollution Control Agency

Dave Zumeta

Minnesota Forest Resources Council

STAFFING AND SUPPORT:

Annie Levenson-Falk and Jim Horan staffed this committee.

About the Citizens League

The Citizens League has been a reliable source of information for Minnesota citizens, government officials and community leaders concerned with public policy for over 55 years. Volunteer committees of Citizens League members study issues in depth and develop informational reports that propose approaches to address public problems.

The Citizens League depends upon the support and contributions of individual members, businesses, foundations, and other organizations.

For more information, visit the Citizens League [website](http://www.citizensleague.org) at www.citizensleague.org.

MISSION:

The Citizens League builds civic imagination and capacity in Minnesota by:

- Identifying, framing and proposing solutions to public policy problems;
- Developing civic leaders in all generations who can govern for the common good; and
- Organizing the individual and institutional relationships necessary to achieve these goals.

PRINCIPLES:

1. We believe in the power and potential of all citizens.
2. We believe in democracy and good governance.
3. We believe in civic leadership and active citizenship.
4. We believe in good politics and political competence.
5. We believe that all individuals and institutions must sustain these principles from one generation to the next.

CIVIC OPERATING GUIDELINES:

1. Defining an issue: People who are affected by a problem or issue will help to define it in keeping with our mission and principles.
2. Demonstrating transparency and good-governance: Leaders will establish a transparent governance process that expects all participants to engage in decision and policy making.
3. Contributing resources: All participants will help identify and contribute resources to address the problem or issue
4. Sustaining solutions: All participants will help advance and sustain recommended policy strategies

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