



Tracking Conservation and Efficiency for Minnesota's 1.2 Trillion Gallons of Water

State of Minnesota – Minnesota IT Services

CATEGORY:

Digital Services: Government to Business

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Executive Summary

Minnesota's permitted water users move more than 1.2 trillion gallons of water every year. The Minnesota Department of Natural Resources (DNR) recently began promoting and tracking water conservation and water efficiency efforts for their 10,000 permitted high capacity water users. Water conservation refers to a reduction in the amount of water used. Water efficiency generally refers to conserving water with water-saving technologies. Minnesota IT Services partnered with the DNR to develop the [Minnesota Water Conservation Reporting \(WCR\) system](#). The overarching goal is to provide a software platform where DNR water appropriations permittees can annually enter data, enabling them to track and compare their water efficiency and conservation efforts and trends over time. The key deliverable is a new web user interface and data store that acquires annual data from water suppliers, and provides enlightening reports of the aggregated data.

The WCR system tracks water use, water loss control efforts, and water saving information in Commercial, Industrial and Institutional (CII) facilities and delivers online reporting of individual businesses and aggregated data. These reports allow CII facilities and businesses to learn what water conservation methods are most effective, track implementation over time, and provide the best return on their investments. Taking the time to increase water conservation and efficiency gives companies, building owners, and business managers a unique opportunity to become leaders in their communities, helping to have a dramatic impact on reducing water consumption.

Using this WCR system, DNR now has the capability to track reductions in water use by practice, showing whether they are due to reducing facility demand (e.g., water efficient appliances), reducing water loss (e.g., pipe leaks), improving their heating and cooling systems, reducing process or product water, or reusing water. The data gathered and tracked in the WCR system can help businesses determine which reduction measures may provide the best return on investment.

While the DNR manages and tracks long-term trends in our water supplies, there is an increasing need for our local business partners and communities to become leaders in water conservation strategies to ensure protection of their own local and regional supplies. Additional water conservation requirements will be expected from local water utilities, businesses, and communities into the future in order to ensure adequate supplies of good quality water.

Minnesota IT Services helps our business partners to meet their missions. This WCR system will prove invaluable in helping with the DNR's efforts.

EXEMPLAR

This innovative technology project provides a way for businesses in Minnesota to provide their data to the DNR. The organized and expansive lists of possible water conservation options may also inspire businesses to try new actions and methods of saving water.

This project is the first of its kind in the nation to approach water conservation reporting on a statewide basis in the same way as electrical energy conservation. The economic benefits of water conservation for businesses include lower utility costs, energy savings, and reduced processing costs.

CONCEPT

This project was proposed by Minnesota Department of Natural Resources Ecological and Water Resources (EWR) Division management that oversees all 10,000 water appropriations permitted by the state of Minnesota. They proposed hiring a technology vendor with extensive experience developing software to track electrical energy savings for states and other utilities to build a similar software system for water savings.

This business initiative is part of a larger project to provide software that allows all water users in Minnesota to track their water use, water loss, and water savings methods and see trends, and learn more efficient and cost-effective ways to conserve our water resources. The final phase of this project will involve all Minnesota irrigators, and other high-volume water users to report on their water use, water loss, and water savings and learn how to better conserve our water.

This project was executed via an Agile methodology. The project involved three DNR staff, two MNIT staff partnering with DNR, four vendor staff, and more than a dozen business representatives, 3,795 hours, and cost \$657,107.

The WCR system meets the American with Disabilities Act (ADA) Section 508 and is Web Content Accessibility Guidelines (WCAG) 2.0 AA compliant so it is accessible to all visitors. This vendor was one of the first DNR IT vendors to make their product ADA and WCAG compliant. The information is stored behind secure firewalls.

The site is not public, however the information is aggregated on a statewide basis to provide useful data.

SIGNIFICANCE

Internal stakeholders are primarily the DNR project manager, field and regional hydrologists, EWR managers and supervisors. External stakeholders include municipal water suppliers, commercial, industrial and institutional water users. Secondary stakeholders consist of research and partner agencies including, but not limited to University of Minnesota, Metropolitan Council, League of Minnesota Cities, Minnesota Rural Water Association, Minnesota Department of Health, Minnesota Pollution Control Agency, Legislative Water Commission, local units of government, and nonprofit groups such as the Freshwater Society. The media may also ask for data summaries, and the general public will also be a stakeholder for summarized data and reports.

In accordance with the Demand Reduction Law of January 2015, the initial appropriations sector participants will be the approximately 360 water suppliers serving over 1,000 people. This include municipalities, rural water

systems, prisons, colleges and manufactured home parks. Many businesses use municipal water and their conservation efforts are also included in the municipal water reporting.

There are no similar projects in the nation.

This successful implementation has resulted in all 507-permitted commercial, industrial and institutional businesses along with 907 cities across Minnesota to report their water use, loss, and savings totals. More importantly, they can learn what other businesses are doing to improve efficiency and cost effectiveness.

This initiative contributes to Governor Tim Walz’s Building One Minnesota plan – it supports the Water Quality and Infrastructure improvement goal, the Public Safety and Asset Preservation goal, and the Quality of Life goal. Wise use of our water resources is critical to the safety and quality of life of every citizen of our state.

This initiative falls under the Minnesota IT Services’ Five Year Strategy for partnering with agencies to use technology to connect Minnesotans and provide better online government services with systems that are accessible and usable by all Minnesotans. Those strategies are:

- Implement data management strategies that help agencies to manage data as a strategic information asset.
- Investment IT for modern mission-critical IT systems and services.
- Ensure Minnesota can succeed in the digital economy by providing cost-effective solutions to state agencies to meet and manage their technology needs, while planning for the future and life cycle of technology in the state.
- Ensure that technology is accessible and easy to use for business partners and for all Minnesotans by requiring user-focused technology that makes dealing with government easier, simpler, and better for the people of our state, including people with disabilities.

This WCR system strengthens the state’s compliance with the statutory requirement for a state water conservation program (*Minnesota Statutes* 103G.101). The WCR also applies to *Minnesota Statutes*, sections 103G.255 -103G.315—Water allocation priorities, assurance of water supply, management & permit procedures. Minnesota is a member of the Great Lakes Compact Council and all states are required to report water conservation efforts annually. Other states in the council are interested in learning more about our successful Water Conservation Reporting system.

IMPACT

The WCR system helps us to make state government better, because we are playing a lead role in helping businesses to conserve our most precious natural resource—water.

Minnesotans may not be aware of the impacts of decisions about how much water is used or what is required to maintain or improve its quality. We are seeing more threats to our drinking water quality from our land and water use practices and we are also seeing more threats to adequate supplies for all users and uses.

Communities and local leaders will have the best ideas about how and where they can conserve their own water supplies and what will be most effective. State agencies and regional governments have access to a tremendous

supply of information and technical tools that can help people learn how to better conserve and use their water supplies.

The immediate impact of this initiative is the availability of an easy way for businesses to enter their required annual reports on water use.

Longer-term, the data gained will help businesses, Minnesotans and government ensure water conservation and efficiencies.

This initiative fits into the larger picture by advancing 6 of NASCIO's State CIO Top Ten Priorities:

- (2) Digital Government, by providing a new online data collection process for businesses
- (3) Cloud Services, by using it to collect and serve the data
- (5) Customer Relationship Management, by providing businesses with an easy to use online interface to enter their water use data and a reporting portal to see which water saving methods are most efficient and cost effective
- (6) Budget, Cost Control, Fiscal Management, by providing a way for business managers to learn what other businesses are doing to conserve water with a better return on investment
- (8) Data Management and Analytics, by aggregating information on business water use, water loss, and water saving methods
- (10) Innovation and Transformation through Technology, by applying electrical energy saving concepts to water conservation for Minnesota

The most important benefit is improved water conservation for all businesses and Minnesotans, and that is achieved through modern technology. The DNR benefits from an automated system for collecting and aggregating the information from all cities and commercial, industrial, and institutional businesses. The WCR system asks permittees about benefits and barriers to water conservation. Changing conservation practices and technology may benefit companies by saving money and helping to meet corporate goals on sustainability and water stewardship. Companies may identify logistical and financial barriers that initially seem prohibitive. Responses to these questions will help the DNR assist companies in developing multifaceted solutions to water efficiency.

All of Minnesota's 507 commercial, industrial and institutional businesses, along with 907 cities and smaller water suppliers, are using this software platform to report water use, loss, and savings. They can see trends over time, and what efficient and cost-effective approaches are being taken statewide. Seeing methods of water conservation and their effectiveness allows everyone to benefit from other's water conservation innovations.

The DNR uses this reporting system to highlight successes and give business an opportunity to show the good work they are doing. The [Water Conservation Reporting System](#) has given the DNR the opportunity to push some tremendous changes and expand water savings throughout Minnesota. MNIT is proud to partner with the DNR using technology to achieve their mission.