MNDNR Permitting and Reporting System (MPARS)

Digital Government: (G to C) Government to Citizen
Launched May 2014

Executive Summary

In Minnesota, local units of government, landowners and businesses are required to get a water use permit if they use one million gallons of water each year, or more than 10,000 gallons a day, or perform work in public waters. The process to apply for and get those permits was outdated. Consumers needed to fill out a paper form then mail them in and wait for several months to find out if they filled out the form correctly and/or if the permit was granted. Minnesota Department of Natural Resources staff spent hours hand-sorting applications and entering the data into the system to even get to the point of making a decision on the applications.

In May 2014, the Minnesota Department of Natural Resources (DNR) introduced a web-based system that simplifies and modernizes the process. The new MNDNR Permitting and Reporting System (MPARS) allows applicants to fill out and track the progress of their permit applications online, and are automatically alerted if they don't need a DNR water permit. Customers find out if their application is complete within 15 days of applying, and final decisions about their applications is made within five months, reducing waiting time by 60 percent.

Meanwhile, the automated system also is reducing staff worktime by 40 percent. The new system frees up DNR staff to focus on technical assistance and field work, such as monitoring water use, tracking permit violations and increasing compliance. The mapping tool enables staff to quickly view 60 different data layers, for trout streams, endangered species and infested waters, to name a few, to determine if a project location is near sensitive natural resources.

The estimated annual savings in moving from the paper-based to the electronic-based system is more than $250,000 and 5,000 staff hours per year.

Business Problem and Solution Description

Problem statement, including magnitude, duration, relative importance or priority

Cities, farmers, businesses and landowners are required to get a water use permit if they use one million gallons of water each year, or more than 10,000 gallons a day, or work in public waters. The system to apply and get those permits in a reasonable amount of time was outdated. Consumers needed to fill out a paper form then wait for several months to find out if they filled out the form correctly and/or if the permit was granted. Minnesota Department of Natural Resources staff spent hours hand-sorting applications and entering the data into the system to even get to the point of making a decision on the permit applications. The system was onerous to both customers and staff.

Issue or problem context, including programs, resources and activities of which the initiatives is a part

Governor Mark Dayton's [Executive Order 11-04](#) called for agencies to condense and simplify the environmental permitting processes.

What was the solution and how was it selected

MPARS is an internally-developed, custom application leveraging existing agency web-based application infrastructure. The internal development staff has extensive experience with web-based geospatial applications and was well positioned to create the graphic user interfaces needed to effectively blend traditional and geospatial technologies.

Project management approach, architecture and/or the use of a vendor

As an internally-developed application, the MPARS team featured a strong business liaison strategy where an IT development project manager was paired with a business-side requirements manager to ensure a smooth work flow between the two groups. The team followed a modified agile methodology to foster a dynamic relationship between developers and business owners.

Cost, including dollars, people, time

MPARS first and second releases required 17,000 hours of IT staff time valued at $1.3M.

Project definition, management and control

Architecture

Architecturally, MPARS makes use of best-of-breed open source (Ruby-on-Rails, PostgreSQL/PostGIS, MapServer/MapCache, Twitter Bootstrap), common Internet services (Google Maps API) and commercial tools (ESRI ArcGIS Server, SAP BusinessObjects BI) to create a scalable, robust system. Disparate technologies were

integrated using web services. For example, when applying for a permit a user must identify a location and that location is used to query a geospatial service that reports what natural resources may be impacted.

Innovation characteristics, including type of problem addressed, use of technology or the nature of the project itself

MPARS development utilized an agile development methodology and rapid prototyping to address the problem of fluid business requirements. This allowed the project team to quickly adapt to change and demonstrate to users how a particular piece of functionality could work well before it was fully implemented. This approach provided significant benefits for this project and was a primary reason the project utilized an internal development team. It would have been difficult for an external vendor to bid and work on a project subject to so much change.

The project team included user advocates that focused solely on the end-user experience. This included a content specialist to help simplify forms, workflows and instructions, and a web designer who created a simple, clean interface that continues to generate rave reviews from public customers.

Leverage and transferability

Communications plan to educate users and/or promote awareness and adoption

MPARS required dual training programs for internal staff approving permits and public customers applying for permits. The internal communications and training program spanned several months. Effective interface design minimized the need for a public training program. Staff is available to provide support to first-time users when necessary. An extensive external communications campaign highlighted system benefits to the public.

Significance

How the project improves the operation of government

The automated system reduced staff worktime by 40 percent. This new system frees up DNR staff to focus on technical assistance and field work, such as monitoring water use, tracking permit violations and increasing compliance. The mapping tool enables staff to quickly view 60 different data layers, for trout streams, endangered species and infested waters, to name a few, to determine if a project location is near sensitive natural resources.

In addition, MPARS has streamlined communications between DNR and partner agencies (e.g. counties, local soil and water conservations districts and federal authorities). Based on application location partner organizations are automatically notified and can comment on the permit application. In cases where the DNR will not be

the sole permitting agency, the information collected by MPARS can be passed on electronically as part of a joint application process.

Description of beneficiary/stakeholder groups

State agencies or other public sector organizations

MPARS is used by local governments, landowners and businesses who are required to get a water use permit if they use one million gallons of water each year, or more than 10,000 gallons a day, or perform work in public waters. One such example is Inga Foster, environmental project manager for St. Louis County in Duluth, Minnesota. She is using the system to apply for permits to work in public waters for culvert and bridge replacement projects. The dashboard view gives her a quick way to check on the status for many different permits**.** "I like how transparent it is," she said. Now when project managers come to her and ask where their permit is in the process, she can quickly tell them.

She's received 30 permits through MPARS so far and has 30 applications in the works. "It's difficult when you have 60 different balls in the air to capture what is happening with all those applications at any one moment," Foster said. "MPARS does that for me."

Citizens as service customers, citizens as taxpayers

For customers, there is a 60% reduction in wait time for the process of their application. For taxpayers, there is a $250,000 savings. Perhaps more importantly, permitting processes have become a much more predictable and timely for applicants, who can now track the progress of their applications, and concentrate their energies on business rather than the permitting process itself.

Decision makers (directors, managers, governor, legislature, etc.)

Agency leadership can, at a moments notice, get a complete picture of water permitting activities. Questions like: How many permits are waiting approval? Where are they in Minnesota? What is the average decision time? are easy to answer with all the information in one place.

Policy, strategy and goal alignment with gubernatorial priorities, IT strategic plans, enterprise architecture, agency business plans, goals and strategies, and/or state and federal mandates

Governor Mark Dayton's [Executive Order 11-04](#) called for agencies to condense and simplify environmental permitting processes. DNR's old water permitting database got in the way of timely reporting and made it difficult to track permit applications through the entire review and decision-making process. The paper-based permitting program needed a facelift. Instead of shuffling paper, DNR now has an efficient online system to track permit applications. MPARS is also a smarter way to manage our natural resources because staff have more complete and extensive information at their fingertips so they can make the best permitting decisions in the shortest amount of time.

The system facilitates good communication within the DNR, and externally with citizens and partners. MPARS is more transparent, accurate and simple to use for customers.

Benefit of the Project

Who was affected in the constructive, positive way?

Both customers and staff were impacted in a positive way. For customers, the process is more streamlined, transparent and the wait times are nearly cut in half. For staff, the system allows them to work on natural resources instead of paper resources by removing the manual processes for dealing with applications.

How is this project innovative?

MPARS creates a strong partnership between DNR as a permitting agency and the public customer. Permit approvals require detailed analysis by DNR hydrologists. By creating a single focal point for the myriad of documents and technical details required to evaluate a permit, the public customer and DNR professional staff are able to move smoothly through the process collaboratively.

How does this align with NASCIO's 2014 state of CIO priorities?

This project aligns with the CIO priority of "Budget and Cost Control." MPARS saves an estimated $250,000 and 5,000 staff hours per year.

References to specific outcomes related to accountability and performance

For staff:

- 40% reduction in staff time
- Savings of 5,000 work hours

For customers:

- 60% reduction in wait time

For taxpayers:

- $250,000 savings

Constituent service needs which might include accessibility, availability, improved access, improved content, additional channels for service, quality of service, single point of contact, speed and value

The MPARS system is customer-service focused. The DNR's goal is for permit applicants, permit holders and the public to be able to easily navigate the new system.

Customer-friendly features include:

- Convenient access 24 hours a day, 7 days a week
- User-friendly online permit application process on any device

- Information-saving features allow you to start an application, save the information you have entered and finish the application at a later time
- Water use reporting feature automatically calculates volumes and fees owed
- Secure banking system allows payment online; no more check writing and looking for a stamp to mail in payments!
- Straight-forward online process to request changes to permits, including amendments, transfers and terminations
- Single starting point for joint application process when DNR, Board of Water and Soil Resources and U.S. Army Corp of Engineer permits are needed
- Easy interface to ask DNR staff questions

Benefits to the Public:

- Increased transparency of the permit application process - permit applicants may always login to the MPARS system to see what stage their application is at in the process
- Improved access to permit files - all permit records will be maintained online, allowing permit holders to access their permit file at any time
- Better tracking of payments through a secure online method for payment
- Reduced data entry errors as the public will enter their own water use data and double-check its accuracy

Operational effectiveness and efficiencies which might include accuracy, collaboration, process improvements, productivity, risk and staffing requirements

MPARS reduces staff worktime by 40 percent. This new system frees up DNR staff to focus on technical assistance and field work, such as monitoring water use, tracking permit violations and increasing compliance. The mapping tool enables staff to quickly view 60 different data layers, for trout streams, endangered species and infested waters, to name a few, to determine if a project location is near sensitive natural resources.

Improved management

Staff no longer needs to hand-sort and manually enter the data into the old system. This allows more time to focus on administrative assistance, tracking and enforcement.

Transparency of government operations

Customers now have 24/7 access to MPARS, where they can watch their application go through the review and decision processes.

Financial Return on Investment

Realized ROI or payback

Long term benefits or payback – anticipated, estimated multi-year benefits or ROI

The agency is anticipating a five year return on investment for development and subsequent expansion of the program to include additional permit types.

Cost avoidance data

Non-Financial Return on Investment

Qualitative or intangible benefits

The real value of the system comes from the soft-cost benefits of citizens spending much less time on the permitting process.

Advancement of public policy goals

The MPARS project fulfill Governor Dayton's Executive Order 11-04, which called for agencies to condense and simplify the environmental permitting process.

Increased efficiency or other quality improvements

Moving from a paper-based to an electronic-based system has reduced DNR staff time by 40 percent.

Reduced completion or resolution time

Customers are able to receive information on their application 60 percent faster with MPARS.