



Michigan is leading the nation in implementing the most advanced electronic environmental compliance reporting system in the country. The System is innovative, flexible, easy to use, and has been widely accepted by the Michigan Department of Environmental Quality and the regulated community. The cost savings to state regulatory staff attributed to full implementation of E2 (e-DMR module) for all regulated facilities is estimated at \$250,000 per year.

## Project Background

### Business Requirements

In early 2000, Michigan's Water Resources administrators set out to make their paper and mail-based reporting more efficient. Too much time and money was being spent on manual data entry and correcting data entry errors. There was a three-year backlog of daily wastewater reports that required attention. The Department suffered from the resources waste and the burden of report management. State decision makers needed immediate



access to a centralized database of discharge monitoring reports and compliance information.

### Project Goals

By identifying business requirements with input from both staff and permitted facility representatives, management was quickly convinced to initiate the following projects:

- To overhaul its enterprise-wide NPDES Management System (NMS) by enhancing functionality and adding compliance and enforcement modules, and
- To develop electronic reporting capabilities.

## Highlights of Project Process

### I. Technology Challenges

Selecting the right set of technologies presented a dilemma since electronic reporting was at a crossroads when Michigan embarked on this process. A decision was needed to choose between the older, more familiar protocols, or a new and little known option at that time called eXtensible Markup Language, or XML.

In order to be successful, Michigan agreed to take the lead with three other states, the USEPA, and private consultant, enfoTech & Consulting, to develop an XML schema standard for electronic DMR submissions.

### II. e-DMR XML Schema Development

Michigan partnered with four other states and USEPA to develop an XML schema. Over 20 states supported this standard development project by contributing financially. The version 1.0 schema was completed in 12/2002 and submitted to the USEPA's Technical Resources Group for peer review. TRG is a technical oversight committee, under the National Environmental Information Exchange Network Steering Board, charged with development of national standards and protocols for environmental data exchange. The TRG has approved the schema for Candidate Recommendation.

### III. Selecting a Vendor

Michigan's early experience with enfoTech during the XML standards development, enfoTech's demonstrated electronic reporting expertise, and its extensive experience with

Exchange Network related projects helped convince Michigan to select enfoTech as a suitable vendor to implement the state's e-DMR system.

### IV. NMS Overhaul

Michigan's NMS system was completely overhauled with expanded functionality and faster performance. The new system was delivered to Michigan in 12/2001. After a thorough testing, the System began state-wide production in 6/2002.



### V. e-DMR Pilot

A pilot e-DMR effort was conducted in late 2001 including an orientation workshop and a four-month submission period involving over a dozen volunteer facilities. The pilot helped streamline the electronic reporting process and demonstrate its feasibility and practicality to the regulated community. Based on its acceptance by this user community, Michigan proceeded with a statewide implementation of the e-DMR project.

### VI. e-DMR Challenge Grant Project

Michigan was awarded an Exchange Network Challenge Grant by USEPA to develop security and data exchange standards and demonstrate Michigan's e-DMR capability as a national model. Michigan selected enfoTech to manage this project, which involved partners from 9 states, USEPA HQ, and EPA Regions II, III, V.

## Project Results

### NPDES Management System - State Version of PCS

NPDES Management System (NMS), the state version of the Permit Compliance System, is now operational and includes all monthly/summary reporting information required by the federal PCS system.

It also houses the more detailed daily reporting information used by the state's Water Division engineers for such applications as total maximum daily loads and stream assimilative capacity.

NMS version 2.0 went into state-wide production in June 2002. Approximately 200 MDEQ staff members are using the system on a daily basis.

### e-DMR Reporting System

Statewide Implementation of an e-DMR regulatory system included training workshops in mid-April 2003 to nearly 200 facility representatives.



The workshop was followed by electronic submission of May's discharge monitoring reports in the month of June.

In June 2003, over 50 facilities successfully submitted monthly and daily discharge monitoring reports. More facilities are expected to participate in the near future.

### e-DMR Challenge Grant Project

This project started in 10/2002 and has delivered significant results that benefit our state partners and their regulated communities. Michigan has successfully demonstrated how DMRs can flow electronically from facilities to the state regulatory agency.



Based on the project's early success, the project team decided to go a step further and apply the e-DMR technology to flow DMRs from Michigan to USEPA. The State-to-USEPA reporting capability is expected to be completed in Fall 2003.

## Benefits of Electronic Reporting

The IT innovation projects have proven to provide significant benefits to the overall environmental compliance program for Michigan. They include:

- Saving time and resources
- Improving data quality
- Improving customer service
- Provides immediate access to compliance data
- Most importantly, MDEQ is now more efficient in managing its environmental programs

## Future Plans

Michigan management has approved three major project expansions to offer such innovative IT projects to other environmental program areas. They include:

- NMS expansion for storm water compliance
- E2 expansion for drinking water analysis results
- E2 expansion for e-Permitting



## Why enfoTech & Consulting Inc. ?

Selection of a qualified consultant is essential to the project success. Michigan chose enfoTech because of its unique expertise and experiences, including:

- enfoTech offers a unique combination of environmental regulatory and information technology expertise.
- enfoTech has a proven track record in projects involving the development of environmental standards at a National level.
- enfoTech has extensive experience in the development

and implementation of enterprise-wide environmental systems, data warehousing, and system integration.

- enfoTech has been directly involved in the development of standards and procedures for the National Environmental Information Exchange Network.
- enfoTech is endorsed by USEPA and other states for the development of electronic reporting capabilities.
- enfoTech consistently meets or exceeds project goals and delivers products on time and within budget.

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