IOWAccess Project 11

Environmental Permitting

Mission

To develop a model environmental permitting application for the preparation, submission, review and management of Air Operating permits (Title 5 permits) and Air Construction permits; to build positive relationships among stakeholders; and to meet permitting requirements in an efficient manner.

Summary

DNR efforts to improve customer service, such as the monthly client-contact meetings, are resulting in significant improvements to the regulatory climate. IOWAccess and Project 11 have been a integral part of improving DNR's response to concerns of the regulated community.

The resources provided through Project 11 ($275,000) and the collaborative efforts of the project team leveraged substantial improvements to the Air permitting system. The DNR estimates, conservatively, there will be a $6 return for every $1 invested by the taxpayer and the regulated community in the Air permitting system. Lessons learned through and the model developed for Air permitting can be applied to other environmental regulatory processes.

List of Members

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Table of Contents

Section 1 P Approach 4
Project Background and Needs Assessment 4
System Improvements Description 5

Section 2 P Cost/Benefit Analysis 7

Section 3 P Evaluation 12
Lessons Learned 12

Section IV P Future Plans – Conclusions & Recommendations 14
Sustainability 14
Expansion 14
Maintenance 14
Intergovernmental & Citizen Focus 15
Public Awareness 15
Evaluations 15

Section 1 P Approach

Project Team: The project team involved members from business and industry; state government; federal government; regulated parties; county government and private citizens.

Beginning May, 1997, team meetings were held every four to six weeks. Initial activity completed in September involved developing a project budget and scope of work statement. In September, the team approved the scope of work for a proposed consulting contract. Volunteers from the team reviewed responses to the Request for Proposals in December, 1997 and recommended Windsor Technologies, Inc. as the software contractor. Subsequent team meetings focused on reviewing work progress.

Project Background and Needs Assessment

A recent Federal Clean Air act update added significantly to work required of both industry and government. The 305 largest emitters of substances into the air are required to apply for an operating permit. Operating permit applications are complex, each averaging over 2,000 pages of forms, narratives, engineering calculations and drawings and technical process descriptions. Operating permits are being phased in over a three year period. They must be renewed every five years or when significant changes to processes occur. Annually, each permitee must submit an inventory of emissions.

Many businesses, both large and small, must apply for Air construction permits to build or remodel facilities which emit defined substances. The DNR receives about 1,800 Air construction permit applications annually. Expeditious review and approval of construction applications is key to economic development and a customer-friendly attitude by State government.

Under a cooperative agreement, Air regulatory authority and much of the associated workload has been delegated to the two most populous counties, Polk and Linn.

There are six DNR field offices. DNR field staff are responsible for permit compliance; audits and compliant investigations.

Several requirements of the Federal Clean Air Act make it necessary and desirable to share permit information with other stakeholders. DNR field staff need ready access to permit data for compliance purposes. There must be free and rapid interchange of date between the DNR and the two counties with delegated authority. The Small Business Assistance Center at the University of Northern Iowa has been contracted to provide Clean Air Act advisory assistance to small businesses under contract with the DNR. The regional EPA office in Kansas City requires copies of permit applications and related data. The Clean Air Act includes a provision that non-

confidential data be readily accessible by the public. Meeting all of these requirements with a paper-based system would be cost prohibitive. Effective use of electronic technology was seen by the DNR and the project team as a cost-effective alternative to a paper-based system.

The DNR made a decision in 1994/5 to rely on electronic technology to cope with the operating and construction permit workload. The agency's vision was that a sophisticated client-server and imaging system was a preferred alternative to addressing the workload with a paper-based system and a major increase in staffing. Using fees generated from the 305 businesses required to submit operating permits, the DNR, in 1996, invested over $2 million in a mid-range client server and imaging system. The underlying database was built on a model and software available through a consortium of states and provinces adjacent to the great lakes.

Imaging was meant to handle the initial submission of operating permit applications. DNR's long range vision was that it would be preferable to receive the applications electronically, bypassing the imaging step.

The Regulatory Reform sub-group of the Governor's Competitiveness Task Force issued a report in December 1995. The report strongly recommended the DNR improve turnaround time for all environmental permits and make improvements to the outreach and communication process with the regulated community.

When IOWAccess was initiated, May, 1997, DNR had implemented the basic Air client-server/imaging system described above. During system development, it became obvious that additional enhancements, primarily electronic submittal and management of both operating and permit applications, was critical to realizing the anticipated system benefits, both from a client and from a government perspective.

The project team surveyed Iowa business to determine their priorities for improvement to DNR permitting processes. Survey results, received in September 1997, confirmed the team's judgment that using project funds to improve the Air permitting process offered the most opportunity for improving DNR services to the regulated community.

The project team decided that the most appropriate use of the opportunity available through IOWAccess would be to refine the Air system and to optimize the benefits inherent in having a paperless Air permitting system. Further the team believes the Air system could become a model for upgrading similar mainframe based legacy systems used to manage applications and regulatory activities related to Wastewater and Public Water supplies.

System Improvements Description

The project team decided the most appropriate use of funds available through IOWAccess would be to leverage the initial DNR investment in a client-server system and significantly reduce reliance on paper-based applications including imaging and optical character

recognition. It was envisioned the system would have three different topologies to make it widely accessible to clients with varying levels of expertise.

- PC Standalone
- Intranet/LAN Standalone - shared among multiple users on an Intranet/LAN
- Internet

Section 2 P Cost/Benefit Analysis

The analysis below assumes a five year life for the initial investment and compares the investment to an estimate for a paper-based submittal system. Since the DNR implemented a computer based approach to manage operating permits at the beginning, comparisons to a paper-based approach are necessarily imprecise. Staff estimates of cost savings or avoidance are believed to be conservative (actual costs, if incurred, are likely to be significantly more). Writing the initial investment off over five years is also conservative. If system maintenance and technology upgrades are purchased timely as indicated, the system should be equally effective five years hence.

Note that if the analysis focused on savings to state government alone, the electronic system would cost more than a comparable paper-based system. The primary savings accrue to the regulated community.

Investment:	Average Annual	Five Year Total
Air Permitting System Hardware & Software, Consulting & DNR Staff Development.	$520,000	$2,600,000
Project 11, Windsor Contract	$67,700	$338,500
System Operations and Maintenance	$418,500	$2,092,500
Maintaining Technical Currency	$50,000	$250,000
System Enhancements	$30,000	$150,000
Total Investment	$1,086,200	$5,431,000
Regulated Community Cost Reduction or Avoidance:		
Air Operating Permit and Renewal Applications	$1,220,000	$6,100,000
Air Operating Annual Emissions Inventory Submittal	$1,525,000	$7,625,000
Air Construction Permit Applications	$3,600,000	$18,000,000
Total Cost Reduction/Avoidance, Regulated Community	$6,345,000	$31,725,000
IDNR Cost Reduction or Avoidance:		
Paper-based Permit Review, Professional Staff	$165,000	$825,000
Paper-based, Clerical, Records and Data Entry Support	$330,000	$1,650,000
Total IDNR Cost Reduction or Avoidance	$495,000	$2,475,000
Total All Cost Reduction or Avoidance	$6,840,000	$34,200,000
Summary:		
Total Investment	$1,086,200	$5,431,000
Total Cost Reduction or Avoidance	$6,840,000	$34,200,000
Ratio of Investment to Cost Reduction or Avoidance	1/6.30	1/6.30

Investment

Initial State Investment in Air Permitting Electronic Technology	$2,000,000
Associated DNR Staff Costs	$600,000
Project 11 Contract For System Development & Improvements	$338,500
Total Investment	$2,938,500

Note: The initial investment is imprecise because it involved the purchase of electronic technology and associated consulting costs over a two year time period. Associated direct IT staff costs are estimated at $300,000 per year over the same period. The budget for Project 11 was $275,000. The Environmental Protection Commission authorized an additional $64,460 from Air operating fees to fund the Windsor Technologies contract. $960 was used by the project team for a business survey.

Annual System Maintenance: Air staff estimate an annual cost of $418,500 to maintain the system as currently developed. This estimate includes DNR information technology staff and associated support (3.5 FTE); and hardware and software maintenance.

Maintaining Technical Currency: Air staff estimates it will cost about $50,000 per year to upgrade both hardware and software as new releases come on the market. This amount is low because some of the associated costs are reflected in the annual system maintenance amount.

System Enhancements: Air staff believes an additional investment of $150,000 is desirable to add compliance features.

Savings or Cost Avoidance, Regulated Community (Clients)

Air Operating Permit Applications and Renewals: Three hundred and five (305) clients are required to submit and renew operating permits every five years. Based on Air staffs' discussion with clients and client consultants, they estimate a cost reduction or avoidance by the applicant of $20,000 per application or a total of $6,100,000 every five years.

Operating permitees must submit annual emissions inventories. Staff estimates a savings of $5,000 per year for each facility or $1,525,000 annually.

Air Construction Permits: Recent history indicates between 1,700 and 1,900 applications can be expected each year. Staff estimates a savings of $2,000 per application for the applicant if they use the electronic system, or a total of $3,600,000 per year.

Savings or Cost Avoidance, Department of Natural Resources

Application Review: Assuming no initial investment in a client-server system, reliance on paper-based applications, and use of a P.C LAN only for straightforward word processing and spreadsheet analysis, the DNR estimates it would have required three additional professional staff at $165,000 including support. A paper-based system would require substantial clerical, data entry and records support, estimated at eleven FTE and support or about $330,000 per year.

Air staff estimates the system, as currently developed by providing for faster review, will save the equivalent of two professional staff annually, estimated at $110,000. Using imaging and

OCR to enter data reduces that cost to $144,800 annually. When entirely electronic, the entry costs, either manual or imaging, would be minimal.

Intangible Benefits For the Clients

- Permit application software will be available at no cost via the Internet, diskettes, or CD-ROM, allowing applicants to complete applications on their standalone P.C. or an organization LAN.

- Facility data currently in DNR's database can be supplied to the client electronically and can be imported by the client into their applications, saving client time.

- The software includes "drop-down" and "pick lists" showing only valid choices. This aids clients to submit accurate information and results in consistent data.

- Applicants can attach supporting documentation, i.e., engineering drawings and calculations in a variety of common formats; Office '97, AutoCAD, HTML, PDF, TIF, etc.

- Applicants can submit applications via diskette, CD-ROM, or the Internet. It is the client's choice.

- Applicants can reuse electronic information, including obtaining data from the DNR's database, to create new applications or to update current applications.

- Reoccurring data, for example street addresses, need be entered only once.
- Applicants can determine the status of their permit application via the Internet.

- Applications will be processed more quickly.

Intangible Benefits for the Public

- The public will be able to view permit application status, obtain emissions information, prevention of significant deterioration (PSD) information, etc., via the Internet.

- The public will be able to view Air quality and emissions information for their local area.

- Draft and final versions of operating permits are posted on the Internet for public viewing and comments. DNR intends to make construction permits available in a similar manner.

Intangible Benefits for the DNR, EPA and Counties with Delegated Authority:

- Air quality staff will have consistent and readily accessible data for application and compliance purposes.

- Several DNR staff can work simultaneously on the same application.
- Special reports can be easily generated for internal and external uses.
- Except for the pending issue of legal signatures, the DNR will have Air data available electronically for legal purposes.
- Air data can be shared with the EPA, counties, and DNR field staff concurrently.

Section 3 P Evaluation

Initial Determination: The initial intent of the DNR was to use Project 11 resources to improve the Air permitting system. This direction was validated by a survey of the business community in August 1997. The survey confirmed that the business community saw a need to improve Air permitting as the highest priority compared to other DNR permitting processes.

Project Development: In addition to the project team, four members of the regulated community (IT professionals and engineers) participated in the development of the work plan and monitored the DNR's and consultant's progress.

System Testing: The initial testing, August and September, of the current Air permitting system is being conducted by Air Quality bureau professional staff and four professionals from the regulated community.

The final testing and acceptance will be based on further "hands-on" evaluation by nine other high level professionals representing the regulated community. As compared to the four professionals involved in system development, these individuals have had no prior experience with the system. These include:

Evaluator	**Associated With**
Ray Rusik	Maytag Corporation
Greg Slager	Linn County Health Department
Gary Young	Polk County Public Works
Steve Bachellor	Lennox Industries, Inc.
Leo Nichols, Ph.D.	Northern Natural Gas Company
Wayne Jochman	ALCOA Corporation
Cathy Woolums	MidAmerican Energy Company
Tom Ward	Monsanto Corporation
Bryce Harthoorn	Deere & Company

Lessons Learned

- Complex IT projects must be managed in a well-planned and scheduled manner to be successful. Project 11 and the associated Windsor contract resulted in the development of a solid work plan, and a scheduled, methodical approach. This drove related refinements to components of the Air permitting system already in place.

- Partnerships are invaluable. All stakeholders must be included in complex technology initiatives.

- Perfection should not be expected. High level policy makers should expect learning through failures.

- Government budget decisions are usually driven by a need to reduce or avoid costs in government agency budgets. It is important to include cost reduction or avoidance from the client's or citizen's perspective in the decision model.

- There must be a continuing emphasis on reducing government red-tape. From the time the project team developed the project scope of work to signing the contract with Windsor required 4.5 months. Most of that involved procedural glitches working with other agencies in the procurement process.

- Empowering staff directly involved with the project is important. The Windsor contract was successful because of a quality effort by Windsor, a motivated and empowered DNR project manager, and empowered DNR Air professional staff.

Section IV P Future Plans – Conclusions & Recommendations

Sustainability

As explained earlier, DNR made a significant electronic technology investment, prior to Project 11, as a staffing/cost avoidance strategy to implement provisions of the updated Federal Clean Air act. The IOWAccess process has been instrumental in achieving a reasonable expectation that the system will reach its potential.

Thus, system support is firmly embedded in the Air Quality bureau's budget at a high priority level. In terms of cost and meeting requirements of the Clean Air act, there are no viable options. The regulated community is receiving a significant cost avoidance benefit, and it is reasonable to expect they will support continued funding.

Expansion

The DNR has two other environmental regulatory systems similar to the Air Quality system; Wastewater regulation and Public Water Supply (drinking water) regulation. The wastewater system is a mainframe-based legacy system which is Y2K compliant. The drinking water system is currently being converted from a mainframe system to a client-server system. Once the Y2k issue is resolved, both of these systems could be refined and developed in the same general manner as the Air system. No cost estimates have been prepared, but it is reasonable to expect the wastewater system would be similar to the Air system ($2 to $3 million) and the drinking water system somewhat less due to investment already underway.

The Air Quality bureau chief believes the system could be used by perhaps 20 or more states with a similar approach to Air quality management. The EPA regional office supports that belief. The system will be demonstrated at a nationwide meeting of state air regulatory agencies next spring. A significant portion of the initial Air Quality permitting system relied on a software model developed by a consortium of states and provinces surrounding the great lakes. In turn, the software enhancements developed with project 11 will be shared with them, and any other state upon request.

Maintenance

System maintenance, estimated at $468,500, is included in DNR's current budget and budget request at a high priority level.

Intergovernmental & Citizen Focus

This system is directly linked to several counties with delegated regulatory authority and the regional EPA office. Citizens can access non-confidential emissions data, permit applications, etc., on the Internet.

Public Awareness

The primary impact of the Air system is on the regulated community. The DNR will use the ICN, the resources of the regulated communities (Business and Industry Association, Municipal Utilities Association, Private Utilities Association, etc.) to describe the benefits of the system and to train users. Public interest groups involved in environmental issues will be used to inform their members regarding system features. Public service announcements will be used to reach other citizens. This project will be features on DNR's home page within the IOWAccess Internet presence.

Evaluations

Concurrently with the IOWAccess project, DNR's Environmental Protection division initiated monthly client-contact meetings with representatives of the regulated community and other interested parties. These are informal meetings where DNR staff provide information regarding regulatory issues and attendees are invited to ask questions and raise related issues. These client-contact meetings are proving invaluable in improving communication between the DNR and the regulated community, and developing a partnership approach toward addressing mutual concerns.