ePermitting System

ePermitting Application for the Bureau of Mining

Digital Government: Government to Business

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Executive Summary

Introduction

The Department of Environmental Protection's (DEP) mission is to protect Pennsylvania's air, land, and water from pollution and to provide for the health and safety of its citizens through a cleaner environment. Like other environmental regulators, DEP reviews and approves a wide array of permits from businesses and other entities.

Years of budget cuts had forced DEP to reduce staff and defer investments in technology. As a result, the department found itself with a large backlog of permits, particularly related to the state's growing natural gas industry.

In alignment with Governor Tom Wolf's direction to address the long wait times for permit requests, DEP undertook a comprehensive review of the permitting process. The goal of the review was to identify opportunities for modernizing permitting processes that would foster a reduction in permit backlogs, while better utilizing technology for improved oversight and efficiencies. In February 2017, DEP launched a new electronic permitting system, ePermitting, to replace the antiquated paper application and review process used by the Bureau of Mining, which oversees natural gas mining permits.

The IT team worked with Mining Program representatives to plan an online ePermitting system that would create and track a permit request through the entire submission and approval process. The application provides mine operators with the ability to enter their permit requests online, as opposed to completing and mailing paper forms to DEP. The ePermitting application also includes an internal approval tracking system, automated notifications and electronic payment options.

The permitting system connects the state to the businesses requesting permits through the online software platform.

Outcomes resulting from the new permitting application include:

- Through business process reengineering, the platform reduced the modules required for mining permits by 20 percent - total of 7 modules eliminated
- Savings of $486,545 are projected to begin in the 2018/19 fiscal year, with the full annual savings of $696,766 starting the 2019/20 fiscal year
- Standardization of disparate business processes across DEP's six regional offices
- Online permit application provides an end to the cumbersome, error-prone paper-based system
- The ePermitting system is architecturally designed with an extensible platform on which all other agency permits will be built
- Increase in government transparency with outside agencies and the public via online reviewing of permit applications and ability to add comments electronically, which are stored with the permit
- The system is designed to be data driven – modifications to existing electronic permits, such as additional permit type additions, can be done with little to no code changes
- Digital entry of permits will bring improved data quality through use of required fields, online data validation and prefilled data fields

The ePermitting system provides DEP with a platform to modernize and standardize the permitting process across all of its program areas, providing greater efficiency and convenience to applicants and allowing DEP to more effectively fulfill its mission to protect Pennsylvania's environment.

Concept

Mining business leaders have repeatedly expressed frustration in recent years about inefficient permitting systems. This is more than an inconvenience; the delays discouraged investment and created a possible loss in business value during the permit waiting period. The process required permittees to download and print, complete and return paper applications, along with additional documentation and payments by check – an arduous undertaking.

Once received by DEP, program representatives would follow these cumbersome steps to complete the process:
- Review the permit request for completeness,
- Follow up on discrepancies and/or incomplete information,
- Manually enter the permit details into the DEP eFACTS permit tracking application for updates to the enterprise database, and
- Manually process the paper check.

In the last decade, DEP saw 25 percent of its staff and 40 percent of its General Fund monies cut. A lack of staff is cited as a primary reason for DEP not attaining minimum requirements from the EPA. The goal was clear – update the process and technology to maximize efficiency, minimize effort and meet standard requirements.

In alignment with Governor Wolf's direction to resolve long wait times for permit requests, DEP undertook a comprehensive review of its permitting practices. The objective was to identify opportunities for modernizing the process to foster a reduction in permit backlogs, while better utilizing technology for improved oversight and efficiencies. Based on this review, DEP identified an opportunity to move the permitting process online through the development and implementation of an ePermitting application. This initiative would result in a higher number of complete permits being submitted; previously, incomplete or deficient applications accounted for 80 percent of the 30,000 applications the agency received.

Applications submitted using the ePermitting system will not allow the user to submit the request electronically until all required fields within the record are complete, resolving the issue of incomplete applications. Additionally, the ePermitting system includes an internal approval tracking system, automated notifications and electronic payment options. All associated data is stored online and automatically updated in the DEP enterprise database for permit information. Permit data is accessible in real time, which is far more efficient than searching for a physical paper permit application. Use of the ePermitting system provides efficiencies for permit applicants, offering the capability to select from previously submitted notifications when submitting a revision or cancellation. Data is also prefilled in the application based on the user's login information.

Additional success criteria included integration with DEP's user management system; authorization can be 'shared' among approved users; PDF summary of original application; rejection/resubmission capability; separate plug & play "modules"; electronic payments; supported by DEP IT; document upload; and integration with other enterprise systems, to be extensible for reuse for all of DEP's

permits, for the system to be database driven and allow the business areas to make changes to permits without the need to contact IT.

DEP developed training initiatives to support the rollout of ePermitting, which included a comprehensive webinar session that can be viewed online at any time at http://www.dep.pa.gov/Business/Land/Mining/Pages/eInitiatives.aspx. The initiatives also included user guides, application maintenance guides, internal and operator user guides and portal self-registration and enrollment guides. An application support help desk team is also available via phone or email during operating hours. The guides, webinar and helpdesk support contact information is posted on the department's DEP PA eInitiatives webpage for convenient access.

The ePermitting system went into production in February 2017 for Bituminous Surface Mine Operators to apply for mining permits online. The system enabled faster application submission and payment, increased accuracy in data collection and more timely staff review and approval. While the focus was on this initial permit, the system is designed to allow easy expansion to many more DEP agency permits, notifications, reports and payments.
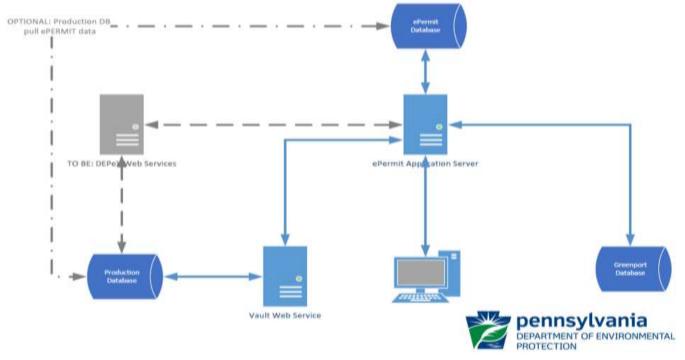
Significance

This online application represents a fundamental shift in the permit review and approval process by leveraging time savings and economy of scale for both the business of Pennsylvania and the agency.

Governor Wolf is committed to government reforms that increase efficiency and has been praised statewide for efforts toward government transparency in Pennsylvania. This project aligns with his Office of Performance Through Excellence (OPE) to modernize government operations to reduce costs and improve services. The office works with agencies, boards, and commissions to identify opportunities to share resources, collaborate and engage employees in transformational activities.

The ePermitting IT team worked with mining representatives to plan an online application process that would create and track a permit request through the entire submission and approval process. The application provides mine operator businesses the ability to enter their permit requests online as opposed to manually filling out and mailing paper forms to the DEP. In turn, the amount of time spent by DEP program staff to enter permits and process paper applications was greatly reduced.

Development and implementation of the ePermitting system was performed by DEP using the Agile methodology based on the Scrum tactic. Using an iterative approach to split product development work into smaller work increments minimized the upfront planning and design process and allowed for real-time problem solving from the bottom up. This methodology drives ePermitting to adapt to changes quickly for faster releases and provides modules for continual improvement.

The project team met with the mining business representatives at least three hours each week to provide full transparency into the work being done, decision-making and design input and approval. As a result, the development team had very little rework because all issues were addressed and adjusted in real-time. To facilitate team interaction and planning, the ePermitting project manager employed a document sharing site and online ticketing and action item tracking for user acceptance testing. These methods and technologies were paired with problem management, communication and escalation plans to provide rapid risk management capabilities.

Architecturally, the ePermitting system was designed with the .NET Framework using the MVC (Model View Controller) pattern. Web services are utilized to communicate between the web application and the business and data layers. Access to the DEP Enterprise Oracle 12C database is designed using Entity Framework. The system is also using Alpaca as the open source code to generate the dynamic modules.

Within a 12-month timeline, DEP designed, developed and integrated the system to meet the project deadline of February 13, 2017.

Target Area	Solution and Benefit
Architecturally designed for expansion	Extensible platform with flexibility to integrate additional DEP agency permits.
	Support permits from Department of Agriculture and the Department of Conservation and Natural Resources as part of the Conservation and Environment IT Delivery Center.
Consolidation/ Optimization	ePermitting will reduce permit review times by up to 30 percent.
	Online application system will eliminate paper permit process and reduce time spent trading paper between DEP and permittees.
	Application will improve data quality by reducing DEP entry of paper permits, streamline permit application process and reduce time spent tracking permits by providing the enhanced capability to track status of a permit as it progresses through the review process.
	Online payment feature is fast and secure, significantly improving the way permittees pay for a permit application.
Enterprise Vision and Roadmap for IT	ePermitting aligns with the Department of Environmental Protection's and Governor's strategic goals, and the Commonwealth's overall IT vision and roadmap.
	Enhancements are included in OPE reporting on initiatives to modernize government operations to reduce costs and improve services.

Target Area	Solution and Benefit
	ePermitting system is part of DEP's initiative to update core processes to 21st century technology.
Budget Cost and Control	With a shrinking workforce and stale or reduced budgets, any effort that increases effectiveness of existing permit review processes pays dividends in multiple ways.
	Full implementation of annual savings of $696,766 starting the 2019/20 fiscal year.
	There are additional reductions in inferred costs in the ePermitting system attributed to data quality, online storage of all permit information and reduction of time spent trading paper between DEP and business permittees.
Agile and Incremental Software Delivery	Application developed using Agile best practices, including utilizing an iterative development and implementation method.
	Benefits of using the Agile process included engaging the teams of DEP permit processors to assist with application requirements, providing input when prototyping application features and participating in the test process as iterations were released.

Impact

The transformation of the permit application process from paper to digital brings the Pennsylvania DEP permitting process into the 21st century.

The ePermitting system has fostered improved process efficiencies through several key features:
- The system automatically ensures that applications are complete before they are accepted for review,
- Pre-populating fields for future applications and renewals,
- Permit fees can now be paid online via credit card or ACH, and
- Use of the online ePermitting system increases data accuracy and eliminates many redundancies in our existing paper processes.

The impact of the permitting application includes the following:
- Platform reduced modules required for mining permits by 20 percent - total of 7 modules eliminated,
- Online permit application provides an end to the cumbersome, paper-based system. Previously, some application documents had hundreds of pages that had to be tracked manually,
- The ePermitting system is architecturally designed with an extensible platform on which all other agency permits can be built. Future environmental permits will be quicker and easier to integrate into the ePermitting system,
- Outside agencies and the public can review permit applications and provide their comments electronically, which will be stored with the permit application,
- The system is designed to be data driven – modifications to existing electronic permits, such as additional permit type additions, can be added with little to no code changes,
- All documents associated with the permit application are online, reducing the time spent filing and locating paper documents. Paperless applications will alleviate the need for additional filing space (rooms, cabinets etc.) for the agency,

- Digital entry of permits will bring improved data quality to the agency enterprise database through use of required fields, online data validation and prefilled data fields.

Savings calculated for ePermitting are identified by the reduction of DEP tasks for the permit application process. Due to the upfront cost of application development, savings of $486,545 is projected to begin in the 2018/19 fiscal year, with full annual savings of $696,766 starting the 2019/20 fiscal year.

The annual savings is calculated based on the following:
- The reduction of time and labor required for manual data entry of paper permits into DEP systems,
- The reduction of time spent passing of documents back and forth between permittees and the Central and Regional Offices at DEP,
- Increase of data quality based on use of ePermitting, and
- Reduction of impediments to proper workflow management.

As more environmental permits are added into ePermitting, there may be additional cost savings that will increase the overall project savings.

In addition, a more efficient system allows for the industry to receive their permits in a shorter period with no reduction in the quality of the review process. Efficiencies are gained through the improvement of the process without sacrificing the accuracy and thoroughness of the permit review.

A recent update of the ePermitting system includes electronic applications to be submitted for the Coal Notice of Intent permit provided by the Division of Radiation Control. Applicants with radiation-producing equipment can use the application to adjust their inventory and pay for their renewals electronically. The application will prefill data in the form, based on user login information, significantly reducing the amount of time the applicant spends adjusting their inventory and paying for renewals.

Another update to ePermitting is the addition of the Asbestos Notification for the Bureau of Air Quality. Previously, these notifications were completed on paper forms. The ePermitting Asbestos Notification application requires mandatory fields be completed and performs data verification. The use of ePermitting for Asbestos Notifications will reduce the need for the Department to enter the information from over 5,000 paper notifications annually, providing a significant time savings.

In 2018, ePermitting expansion efforts are underway for online submission of GP-5 and GP-5a permit applications, general permits for the Bureau of Waterways Engineering and Wetlands, ESCGP-3 surface permits, and all permits previously submitted using the legacy eWell application.

DEP plans to expand the electronic permitting process throughout the agency. As the expansion continues, additional businesses in Pennsylvania will begin to encounter the benefits of the online permit process. DEP also plans to expand the application beyond permitting to support the business need to provide additional environmental information associated with permits electronically through ePermitting. By providing a faster, easier and more streamlined process, DEP will continue to deliver the best customer service to its customers while supporting its mission to protect Pennsylvania's air, land and water from pollution and to provide for the health and safety of its citizens through a cleaner environment.