

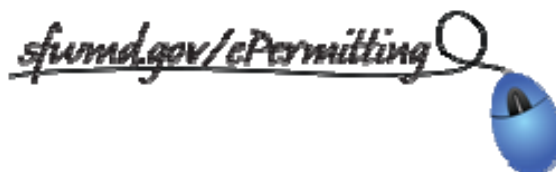


Post Implementation Review of the District's ePermitting System

Report # 11-19

Prepared by
Office of Inspector General

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SOUTH FLORIDA WATER MANAGEMENT DISTRICT

April 12, 2012

Audit and Finance Committee Members:

Mr. Timothy Sargent, Chair
Mr. Glenn J. Waldman, Vice Chair
Mr. James J. Moran, Member
Mr. Juan M. Portuondo, Member

Re: Post Implementation Review of
the District's ePermitting System
Project No. 11-19

This audit was performed pursuant to the Inspector General's authority set forth in Chapter 20.055, F.S. The objectives focused on assessing whether the ePermitting System has achieved its intended objectives. Overall our review revealed that the system sufficiently supports the Regulation Division's business processes, meets their operational needs, and improves the efficiency of the permitting process.

Sincerely,

A handwritten signature in blue ink that reads "J. Timothy Beirnes".

J. Timothy Beirnes, CPA
Inspector General

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BACKGROUND

In accordance with the Office of Inspector General's Fiscal Year 2012 Audit Plan, we conducted a Post Implementation Review of the District's ePermitting System. Regulatory programs help better manage and protect regional water resources. The ePermitting System is primarily used for applying for new permits or searching for the status of existing permits. The ePermitting Project to create this electronic system was in direct response to a mandate under Chapter 288.109, Florida Statutes. The 1999 Florida Legislature passed a state-wide One-Stop Permitting mandate (Chapter 288.109, F.S.) that extended to all five Water Management Districts, Florida Department of Environmental Protection, other state agencies, and Florida counties. Phase I required the creation of an informational statewide permitting web site. Phase II required participating agencies to accept permit applications on-line. Phase III extended to all aspects of permitting and post-permitting activities. A few examples of the electronic reports are; Information Updates to a Specific Permit/Application, Application Notification by County, Environmental Resource Compliance Notices, and Regulatory Consent Agreements by County or Permit Type. The goals of ePermitting include the enhancement of more efficient business processes for permit applications. Additionally, goals included a streamlined, simple way to apply, transfer, or submit payments for Environmental Resource Permits (ERP), Consumptive Water Use Permits (WU), and Works of the District (WOD)/Nutrient Source Control Permits (NSC).

In 2005, the District's ePermitting Team began a conceptual redesign project to implement the Records Search, eNotice functionality, and improve operational efficiency. The team had a primary function of managing the data electronically so that permit information and permit status can be gathered at a much quicker pace than the manual business processes of the past. From 2006 to 2011, the ePermitting System was enhanced with additional modules in support of automating these business processes. As the solution began to evolve through the definition of the business requirements, the following modules were implemented over the following six-year timeframe.

- 2006 – eSubmittal (ERP/WU) and Additional Submittals

- 2007 - eSubmittal (Nutrient Source Controls/ Works of the District NSC/WOD)
- 2008 – eTransfers and ERP eCompliance
- 2009 – Enforcement Records Search and WU eCompliance
- 2010 – Additional eSubmittal enhancements for Nutrient Source Controls / Works of the District NSC/WOD, Online payment and pay later, option, eNotice by application/permit/cost code
- 2011 – eFlow and PumpCalc
- 2012 - Google Earth mapping feature

In 2012 and beyond, the District’s ePermitting Team will continue to support the current functionality to improve operational efficiency and continue to promote increased use of the software by the public. As the solution continues to change through new business requirements and public support, the following enhancements may be implemented in the future:

- Incorporate electronic signature
- Update Water Use application flow process
- Interface the water use renewal application process with the database to display current permit information and allow for edits
- Self certification for ERP and Water Use permits
- Allow for auto population of database with ERP and WU compliance submittals

There is an additional budget of \$360,000 for the new enhancements that commenced in October 2011. This does not include the daily maintenance and support of the other ePermitting modules that have been implemented.

As of February 2011, the project costs have been \$4.2 million (including \$300,000 of internal cost for District staff). In FY 2010, project sponsors approved an additional \$120,000 to deliver additional scope for the eFlow and PumpCalc functionality. The total cost projected through FY 2016 for the ePermitting functionality is not yet determined.

The Project follows the Project Management Institute (PMI) standards, and the Capability Maturity Model Integration (CMMI) software development and application implementation standards. The ePermitting Project Team has handled multiple users and modified the scope to satisfy business expectations. No prior audits of these systems have been performed. The value to the public and the legislative mandate are what drive the continued support and funding for the project.

OBJECTIVE, SCOPE, AND METHODOLOGY

The overall objective of our review was to determine whether the District's ePermitting System has achieved its intended purpose. In addition, we assessed whether ePermitting's capabilities could be enhanced to more fully realize the District's investment. Evidence was gathered through inspections, analyses, and observations to compare project objectives to achieved results and recommend areas for improvement.

To accomplish our objectives, we interviewed Regulation Division and other relevant District staff responsible for the ePermitting System, reviewed project documentation, reviewed system documentation, and developed questionnaires. The methodology included interviews with project sponsors, project managers, system administrators, system owners, business analysts, and District contractors to ascertain the status, maturity, and overall capability of the project. The scope included a review of the system from implementation to the current period.

The methodology¹ of recording test results for auditing can be classified into one of these common reporting statements, presented in order of most desirable to least desirable.

- Noteworthy achievement – Auditee has demonstrated some aspect in the process or system is being done very well. Auditee's efforts are very effective and the auditor wants to bring recognition where credit is due. Auditee has exceeded the requirements.
- Conformity – The testing of the evidence proves the auditee is accomplishing their stated objectives. Minimum requirements have been met.
- Opportunity for improvement – A specific item found is not in violation, but should be targeted as an opportunity for improvement. For example, the level of work integration is low, therefore fixing this issue could reduce waste or the amount of manual effort required.

¹ Reference from the Audit Process of the Information Systems Audit and Control Association

- Concern – The evidence and the auditor’s observations indicate the possibility for future problems that need to be understood by management. Examples include over reliance, inefficiency, cascading problems and the likelihood of failure.
- Nonconformity – Testing indicates a violation exists which needs to be corrected. The violation found may be of minor or major significance. Nonconformities include system defects or missing control capabilities.

Our review was conducted in accordance with the Principals and Standards of Offices of Inspector General promulgated by the Association of Inspectors General. These standards require that we plan and perform the review to obtain sufficient appropriate evidence to provide a reasonable basis for our findings and conclusions based on our review objectives and report the results in a timely manner. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our review objectives.

REVIEW RESULTS

Executive Summary

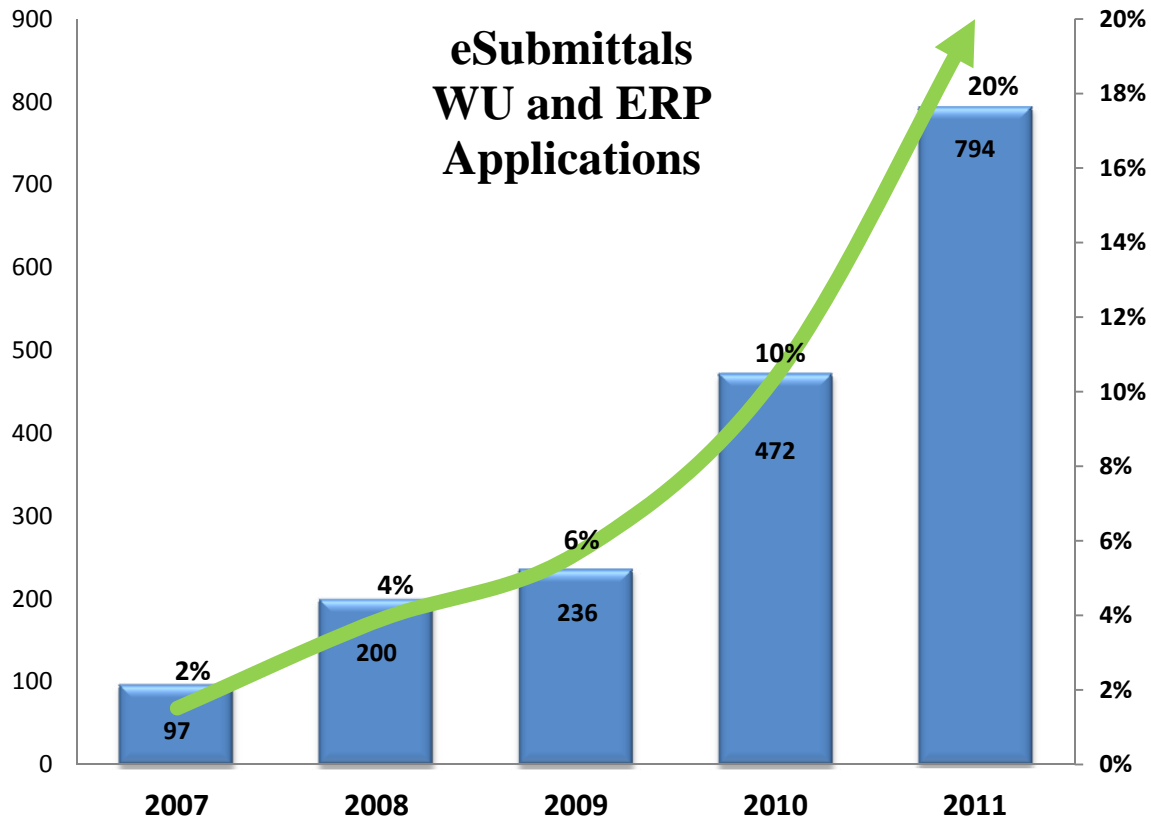
Overall, our review revealed that the ePermitting Project Team has sufficient planning, budgetary and project management control processes in place to ensure that ePermitting activities, projects, and applications support the Regulation Division's business processes and meet their operational needs. A noteworthy achievement was awarded to the ePermitting Project as the 2007 Project Management Institute's Project of the Year Award.

Sufficient controls and processes are in place to achieve the desired results and the District has value-added data through the ePermitting System. A review of the business solution that District staff intended to achieve disclosed that great progress has been made through project management and the leadership of partnering the Regulation Division with the Information Technology Bureau. The Regulation Division has sufficient procedures in place to electronically capture application and permit data. The ePermitting System collects details pertaining to this data from the public through the Internet electronically (instead of manual paper) in order to efficiently initiate the application and permit processes. The ePermitting System currently can sufficiently support the District's mission regarding water quality, flood control, natural systems, and water supply, by having the capability to report on applications and permits. However, we identified a potential cost saving opportunity and recommended that management determine whether the existing contract worker's skill set will be needed on a permanent on-going basis, and if so, consider replacing the contract worker with a District staff at approximately half the contractor's \$200,000 annual cost.

Functionality and User Expectations Fulfilled

The ePermitting Project Team has conformity, as defined in the methodology section, when it comes to application functionality and user expectations. Evidence demonstrates that the team is accomplishing their stated objectives and that the desired requirements have been met. The main objectives were increasing the electronic use of applying for new permits or searching for the status of existing permits. The goals of the ePermitting System include the enhancement of more efficient business processes for the submittal of applications. Additionally, goals included a streamlined, simple way to apply, transfer, or submit payments for Environmental Resource Permits (ERP), Consumptive Water Use Permits (WU), and Works of the District (WOD)/Nutrient Source Control Permits (NSC). This has been solidified through the users having the business requirements and specifications come together based on the business impact analysis and the Regulation Division processes.

No “off-the-shelf” product exists to fulfill the District’s ePermitting needs; therefore, a customized solution has been implemented. There has been a demonstration of the progress by customizing the application functionality modules of the ePermitting software to the District’s specialized Regulation Division requirements and procedures. These processes have captured the application functionality via initial data entry. The growth of the ePermitting System has been a natural output of the team’s effort. Usage reports show a continuous annual increase in the utilization of the eSubmittal features as shown in the graph on the following page.



The ePermitting Project Team has addressed user expectations by establishing the business requirements and specifications through business impact analysis and input from users within the Regulation Division. This is evident in user satisfaction and the level of increasing ePermitting System usage. The ePermitting Project Team’s efforts are effective and the formal user signoff demonstrates mutual agreement of ePermitting expectations. As new modules and enhancements are developed, user feedback and requirements shape an iterative development of value added information. The training manuals are kept up to date and readily available to users. The systems’ documentation is valid and up to date, which facilitates users understanding of the ePermitting System’s functionality. User self-service allows subscription to reports in a customized, user-friendly, and efficient manner. A few examples of the electronic reports are as follows:

- Information Updates to a Specific Permit/Application
- Application Notification by County

- Environmental Resource Compliance Notices
- Regulatory Consent Agreements by County or Permit Type

Effective Training Program

Overall, training for the ePermitting System and the ePermitting software have been evident through the formal training sessions created and implemented by the Regulation Division staff. ePermitting System training manuals have been developed and made available to the public via the Permitting and ePermitting web sites. Online quick references and file naming convention documentation are also available.

In FY2010, Regulation dedicated a position for ePermitting customer education and assistance, and re-implemented hands-on training workshops for external stakeholders and District staff. To date, more than 300 individuals have been trained in the bi-monthly regional workshops, and an additional 100 are currently registered to attend throughout FY 2012.

Ongoing training for the ePermitting public users should encourage system usage and increase the percentage of permit applications received electronically.

Effective Change Control and System Stability

The ePermitting Change Control process is usually handled by the Information Technology Bureau using the Information Technology Infrastructure Library (ITIL) methodology of Change Control. Change Control is a formal process used to ensure that modifications to a system are introduced in a controlled and coordinated manner. Regular Change Control meetings are held and the Information Technology Bureau implements normal approved changes on a weekly basis. The ePermitting System also goes through this same Change Control process for any major changes. For normal programming development and changes to the system, users are required to document and signoff on the developer's changes prior to these being moved into the production environment. The application has some simple changes at the presentation level that are completed informally and not put through any major Change Control process.

The System Stability for the ePermitting System has been a relatively stable environment. System Stability is the state of the computer system being steady, up and running, and in reasonable working order. The Information Technology Bureau has partnered with the Regulation Division to mitigate the risk of the system being down. This has resulted in increasing public acceptance based on the historical usage trends. Downtime has been minimal. Also, software changes and additional modules have been communicated well in advance. Changes are adequately tested in the Quality Environment prior to moving them into the Production System.

Comprehensive Project Management Plans Developed

Information Technology projects typically are undertaken based on a business plan or business case. The Comprehensive Project Management Plan (CPMP) contains the information typically included in an Information Technology project business plan and thus fulfills such purpose.

A CPMP is developed for each enhancement to the ePermitting system. The CPMP includes the project goals, scope, deliverables, assumptions, constraints and other pertinent information. It also specifies the resource requirements such as hardware, software, contactors, in-house staff time, and the estimated cost for those resources. If the estimated cost exceeds \$150,000, a Return on Investment (ROI) is calculated by identifying the estimated cost savings such as, improved productivity, reduced storage needs, etc., that justify the business value of the project.

Sufficient Controls over System Administration and Security

ePermitting software administration is being handled dually by the Regulation Division staff and the District Information Technology Bureau staff. The access controls for users are created by one or two Regulation Division staff based on the business requirements and requests for access by the data owner. Users set up an account by choosing their own user ID and password through the Internet. There is no subsequent

forced change of the initial user created password, which is a typical industry practice for websites with public access. Also, there was not any “cleanup” process for user names that were no longer being used or enabled. The District should have a standard for the data owner to take accountability of the users and the access controls for the users. In this case, a review of the user logs and who has utilized the ePermitting System may help for on-going system administration.

The ePermitting System is mainly administered by the Information Technology group responsible for the ePermitting application. The system is being used mainly as a reporting tool for the public in regards to status of permits within the District. The audit trail within ePermitting is mainly at the history level of the application. Also, the security and controls of this information are still being made by the Regulation Division staff prior to any data being updated in the backend Regulation System

Costs Saving Opportunities for System Support

The Information Technology Bureau has determined that creating customized software is the best solution for implementing some systems at the District, including the ePermitting System. The District has full-time employees (FTEs), who are knowledgeable and possess these skill sets. A contract worker is currently assisting with developing the software. Information Technology Bureau should analyze the cost/benefit of customized software tools in accordance with the Information Technology Strategic Plan. Research already conducted by Information Technology governance and other experts shows that the cost to maintain customized software systems, whether with contract employees or FTEs, will increase based on the number of additional modules within Information Technology systems. In addition, Information Technology governance best practices recommend that one system with minimal interfaces is the most cost efficient. More interfaces equates to more costs. Moreover, the Information Technology Strategic Plan requires congruence with the Information Technology governance vision and the prescribed standards. This establishment by management

takes into consideration industry best practices and helps future projects succeed based on the support from the Governing Board and Executive Management.

The remaining project costs beyond FY 2011 are minimal, with the majority being the annual maintenance to support the existing ePermitting System and functionality. However, the ePermitting Project has details that have changed during the project life-cycle. The cost and time parameters have increased and extended during the project life-cycle. The ePermitting Project Team makes extensive use of one contract worker, as well as some District staff, as the full time programmers on the project. Using contractors for short-term projects, or functions that are difficult to staff makes sense from a cost effectiveness standpoint. However, through discussions with Information Technology management some contractors have been with the District for years. It appears that the Information Technology Bureau has more expensive contract workers in information technology positions which seemed to be of a permanent, on-going nature for support. The contractor costs approximately twice the fee (over \$200,000) of a District FTE within Information Technology. The District has a degree of risk exposure based on the dependency of their knowledge.

Recommendation

- 1. Determine whether the existing contract worker's skill set will be needed on a permanent on-going basis, and if so, consider replacing the contract worker with a District staff.**

Management Response:

Management Response: The Information Technology Bureau agrees that the contract worker's skill set will be needed on a permanent on-going basis. As a mandated (FS Ch 288.109) application that is public facing there will be a need to maintain the application, implement software updates, and develop potential enhancements. The application was created using contract workers with specific programming skills. These skill-sets are in the process of being developed among

District staff through redirection of vacancies and recruitment of the necessary level of skills.

Responsible Division/Bureau: Information Technology

Estimated Completion: May 2014

Project Steering Provided Through District-Wide Project Scoring and Ranking Process

Information Technology projects are selected through the Metrics Section’s Project Portfolio Ranking process. This annual process entails ranking all District proposed projects using a point value ranking system. District projects are ranked based on a ranking model that assigns a range of point values (high, medium, low) to District business characteristics as shown in the following table:

Item	Criteria Category	Range of Point Values Assigned (0-50)
1	Mandate	High – Project/Process specifically mandated (26-50) Med – Flexibility of Mandates (11-25) Low – No Mandate (1-10)
2	Mission Critical/Strategic Plan	High – Clearly supports strategic plan prioritizations (26-50) Med – Somewhat or indirectly supports strategic plan (11-25) Low – No support to Core Missions (1-10)
3	Risk/Urgency	High – Public Health & Safety (26-50) Med – Limited liability (11-25) Low – No foreseeable risk (1-10)
4	Status of Implementation	High – Likelihood of completion of existing effort within current Fiscal Year/Readiness of resources for immediate execution (26-50) Med – Existing multiyear effort milestone completion during current Fiscal Year(11-25) Low – New initiative (1-10)
5	Investment Benefit	High – Significant resource or Agency benefit (26-50) Med – Provide Moderate Resource or Agency benefit (11-25) Low – Provides low or localized resource benefit (1-10)

The assigned points are totaled to give each project a total against the five criteria, with a maximum score of 250 points. Under the Metrics Section’s Project Portfolio Ranking process, Information Technology projects must compete for resources with all District projects and not just among technology projects.

Sufficient Controls over Contractor Payments

The contracts and cost/capitalization for the ePermitting software and the contractors implementing the ePermitting System have been in conformity, as defined in the methodology section, with the District's policies. Since FY 2009, capitalization has been based on accounting standards.

The cost reconciliation for ePermitting can be reviewed through the documentation received from the Project Manager. The responsible District manager of the contractors signs the weekly timesheets. The contractor supplies weekly status reports based on the work order. Timesheets are reviewed against the invoice for correctness. Lastly, a District manager is responsible for the contractor and their deliverables based on the contract.