

# How a Smart Information Management System Changed a Utility for the Better

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Information overload is a common complaint these days. For water agencies, how information is managed means the difference between a highly efficient operation and one that is burdened with redundancy and wasted resources. This article will show how one utility is successfully managing information related to project management, budget planning, internal operations, and customer service.

## Background

Beaufort-Jasper Water and Sewer Authority is a forward-thinking utility in a fast-growing coastal area of South Carolina. It supplies water and sewer services to large portions of Beaufort and Jasper Counties, including the city of Beaufort and three military installations.

The water system was created in 1954, and today it includes two water treatment plants, serving about 125,000 individual and seven

wholesale customers. In 1987 wastewater service began. The wastewater collection system today consists of 490 miles of gravity mains, 860 miles of force mains, 449 pump stations, and 10 wastewater treatment plants with the capacity to treat 22.8 million gallons per day.

## Challenge

Serving one of the fastest-growing areas in the state, the Beaufort-Jasper Authority needed to improve the scope, access, and effectiveness of its information management practices related to project tracking and scanned records administration. The existing project management database housed details on over 1,600 capital improvement project (CIP) and developer projects in a Microsoft Access database, while over 7,000 corresponding drawings were stored in a separate database. These databases had been designed by a

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former employee and had simply been outgrown.

In 2005, the year the new project tracking system was implemented, the Beaufort-Jasper Authority was receiving an average of 12 developer projects per month, sending an average of seven projects to the South Carolina Department of Health & Environmental Con-

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control for delegated review and beginning an average of nine new CIP projects per month. An integrated system was needed to track, report, and obtain information about these projects without going into individual project files.

## Goals & Objectives

Primary goals were to develop an information management system that would increase the accessibility of information throughout the enterprise and allow the Beaufort-Jasper Authority to track CIP and developer projects, store and report on the many details crucial to each project, and help with financial forecasting. To achieve these goals and to gain the greatest efficiencies through the implementation, the Authority determined that the new system should be built using open architecture without proprietary software, enabling its internal system administrator to make changes and improvements.

## Solution

The Beaufort-Jasper Authority implemented a system named "Project Tracker" in August 2005. The system was developed using open architecture and was customized to fit the project lifecycle, workflow practices, and business processes in place at the Authority. A high priority was placed on improved access to information and ease of use.

After completing a systems and workflow analysis, the project team, consisting of technical staff from Jacobs Engineering Group and

the Authority's internal information technology staff, recommended an information management system to be deployed across the enterprise that would house both the project data and the scanned drawings, as well as provide reporting capabilities and web access to everyone with a role within the system.

As opposed to an "out of the box" software product that can have a steep learning curve and may or may not have all the needed functionality, Project Tracker is a modular system that is easily customized. It is both comprehensive and easy to use and can evolve as requirements and business practices change over time. Since Project Tracker is a Web-based system, information is available to all Authority staff and stakeholders wherever they have internet access.

The lack of flexible reporting functions in the old system was of particular concern to management. Existing executive reports were examined, and the additional capabilities needed were discussed before the customized reporting features for Project Tracker were designed. After assessing the computing and networking infrastructure, security issues, and remote systems access, the project team installed the new system components, which included:

- ◆ Database management support queries, scripts, and reporting systems
- ◆ Table structures for tracking projects, including staff assignment, contractor assignment, budget, milestones, permit tracking, and right-of-way tracking
- ◆ Web pages and scripts for Microsoft Internet Information Services (IIS)

Several layers of security are employed in

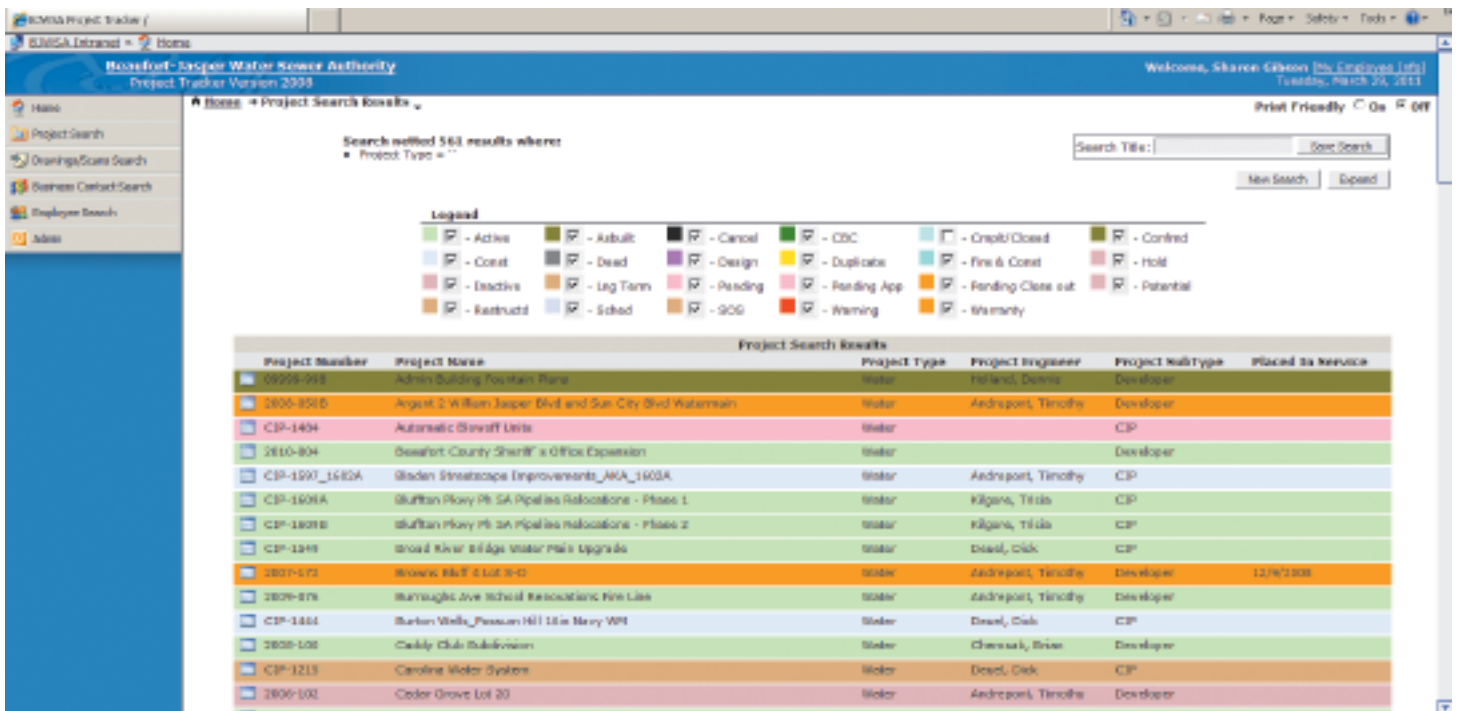
the system, and each individual is assigned a role which determines what he or she may view and edit. For example, a project manager will be able to view and edit all information regarding his or her projects, while others with peripheral roles may be restricted to certain areas with view access only. Managers also have summary pages set up for their review.

The system includes interfaces to load the project data and scanned record drawings. With data entry steps modified to the Beaufort-Jasper Authority's unique workflow, project management efficiencies were realized early in the implementation, and have continued to increase as the Authority has continued to update and refine the system.

Project managers and their staff members who use the Project Tracker as a central database for managing all aspects of a project now have Web access to project details and the schematics and drawings they need. Technicians doing regular operations and maintenance work have the ability to search and retrieve as-builts from their laptops in the field.

The system has been enthusiastically adopted throughout the enterprise. For example, field inspectors started using the system right away by tracking comments in the construction/status logs. Office staff members no longer need to track them down for necessary information—it's at their fingertips.

Automated project status reports are generated on a weekly basis, and the Beaufort-Jasper Authority is using the system to develop CIP budgets. Monthly reports that used to take many hours to compile manually are now generated at the click of a button with Project Tracker. The



Project Tracker stores, searches, queries, displays and reports on details on over 2900 CIP and Developer Projects.

Authority cites the improvement in reporting functionality and accuracy as one of the key benefits realized with Project Tracker.

After upgrading the system in the fall of 2008, the Authority is now building custom reports. Individuals within the organization can subscribe to have reports sent to them automatically. Reporting capabilities of Project Tracker are limited only by the data it contains. Some of the specific functions of Project Tracker include:

- ◆ Tracking and reporting on project budgets, cost estimates, cash flow projections, and financial milestones
- ◆ Providing reliable financial information for long-term CIP planning
- ◆ Monitoring project schedules
- ◆ Logging all consulting engineers and contractors on the project, including their contact information, and attachments of all agreements and invoices
- ◆ Providing document storage for all project records, documents and correspondence, and comment logs.
- ◆ Recording easement acquisition activities
- ◆ Housing and archiving record drawings
- ◆ Serving as a communication tool by automatically generating preset messages and reminders.

The initial product format was an SQL server 2000 database with a Web application for user access and an access front-end interface for reporting administrator use. The Authority has since migrated to SQL Server 2005 with Web-based reporting. The Project Tracker system currently houses information on over 2,900 projects and over 11,000 related drawings and scans.

The Beaufort-Jasper Authority continues to improve the Project Tracker system. Since its implementation, an additional software module was designed to track and report on capacity fees. Using the built-in customization features, the Authority's systems administrator has created sets of milestones applicable to each project type, so that the addition of a new CIP or developer project automatically identifies and associates each task required to be completed for the project.

Serving as an interface between all the stakeholders who need access to information, Project Tracker has directly helped the Authority meet its goal of improving information management practices and creating efficiencies throughout the organization.

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