

## Project Summary

In 2005, the City of Columbus submitted the Wet Weather Management Plan to the Ohio EPA in order to reduce sewer overflows and basement backups to make local waterways cleaner. Earlier, the City of Columbus entered into a Consent Order with the USEPA to reduce sewer overflows. The Consent Order required facilities training and documentation.

360water was hired to develop the facilities training and documentation.

## Challenge

The City of Columbus, Department of Public Utilities (DPU) is comprised of the Division of Sewers and Drains (DOSD) and the Division of Power and Water (DOPW). Approximately 1,240 people work for the DPU and serve over 1,093,000 people in the Columbus metropolitan area. The DOSD manages two wastewater treatment plants with a combined average flow of 168.9 MGD. The DOPW manages three water treatment plants with a combined output in excess of 100 MGD. In addition, the DOPW distributes power across a network of substations and transmission lines to downtown Columbus and to The Ohio State University, including over 50,000 street lights.

The Department of Public Utilities needed a training program with the following attributes:

- The training must be standard and uniform for each employee. Each shift must receive the same training, taught in a uniform and consistent manner.
- The training must be easily accessible so an employee could receive training at any time—not just during a classroom training session.
- Training must be relevant and specific to the staff's facility.
- Training content must include information from O&M manuals, equipment manufacturers, and informed plant staff.
- Training technology must conform with existing IT systems at DPU.

**The DPU wanted this training program to be developed first at its two wastewater treatment plants with plans to expand to other DPU facilities.**



**“We are extremely satisfied with the outcome of this project, as is the Ohio EPA. We couldn't have asked for better results.”**

**Laura Tegethoff**  
**President**  
**360water, Inc.**

## Solution

**ONLINE COURSEWARE.** Utilizing online courseware, 360water developed a training program that incorporates both standardization and easy access. Online courseware is accessible throughout the plants. No matter where or when an employee needs training, they can access training online for equipment, process, emergency management, maintenance and safety.

**EQUIPMENT.** Online courseware was created for select equipment. Course content is taken from three sources: the O&M manual, the manufacturer's onsite training session, and plant staff. The result is courseware that is relevant and accurate. Also, the online course preserves the information from the manufacturer (that is ordinarily given only once) and knowledgeable DPU staff.

**GREEN INITIATIVE.** 360water's online training fit the DPU's green initiatives. The City follows a green initiative that encourages City departments to utilize responsible green practices. Because the online courseware digital media is dynamic and electronic, the courseware can be readily updated without the waste of paper publishing and paper distribution. Also, DPU staff can be sent training updates electronically without a wasteful paper trail. Administration of training records is performed online and all training data is maintained on servers thus eliminating the need for paper file storage, cabinets, the office space to store hard copy records, and ultimately saving paper and the energy to heat and cool those storage areas.

**PROCESS.** Complementing the operations and maintenance courseware for equipment, 360water developed next-generation courseware that trains employees on a process. After an employee learns the maintenance and operating procedures in an equipment course, a process course trains an employee on an entire treatment process consisting of multiple pieces of interrelated equipment.

**EMERGENCY MANAGEMENT.** Each DPU wastewater treatment plant has an emergency management plan. 360water created online courseware that prepares employees to use the plan. 360water is well suited to help DPU update their plant emergency readiness plans on an annual basis.

**SAFETY.** Finally, 360water created online courseware for DPU employees to meet their safety training requirements. The online safety courseware allows employees to take classes on demand without waiting for a classroom session that may be offered only a few times per year. In particular, facility safety updates are communicated to plant staff more quickly through an online format than scheduling large group meetings.

## Project Outcome

In the beginning of the project, DPU staff completed online license renewal training from 360water to satisfy Ohio EPA requirements. From 2002 to the end of 2003, operators had completed over 600 hours of training. The staff enjoyed the concept of training on demand and liked 360water's Learning Management System. DPU expanded the training program from license renewal training to include customized online Operation and Maintenance Training.

360water began a pilot online O&M project in 2003 with Malcolm Pirnie Engineers in Columbus to determine the acceptable format for the delivery of online Operation and Maintenance Training. The pilot was successful and led to additional projects. The online O&M courseware program is ongoing and will be re-evaluated in 2012.

In 2006, the DPU IT staff and CDM engineers in Columbus worked to address accessibility issues within the DOSD IT infrastructure. The system was loaded onto servers and successfully run on the City's Intranet.

Finally, the training project has served to document the DPU staff's knowledge of their best practices. Customized O&M courseware contains valuable staff input from the same people who operate and maintain DPU facilities. This knowledge is now shared across DPU. Developing online courseware has enabled 360water to help the Department of Public Utilities have standard, uniform training programs that can be taken at any time.