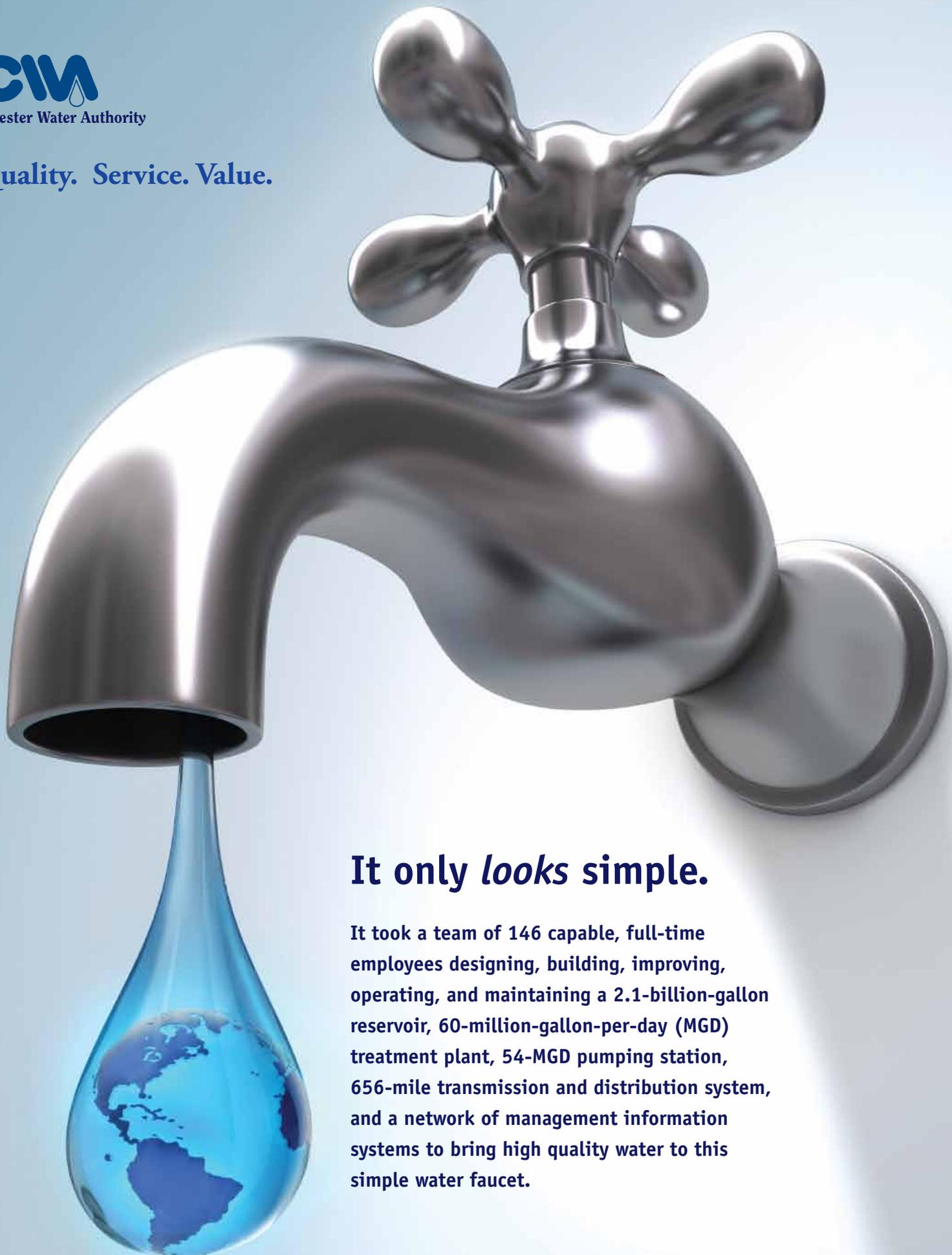




**Quality. Service. Value.**



## **It only *looks* simple.**

**It took a team of 146 capable, full-time employees designing, building, improving, operating, and maintaining a 2.1-billion-gallon reservoir, 60-million-gallon-per-day (MGD) treatment plant, 54-MGD pumping station, 656-mile transmission and distribution system, and a network of management information systems to bring high quality water to this simple water faucet.**

**2011 Annual Report**

## Chester Water Authority 2011 Board of Directors

*(Standing, from left to right)*  
Earl Pearsall, Jr., *Treasurer and Assistant Secretary;*  
Willie M. Wells, *Vice Chairman*

*(Sitting, from left to right)*  
Mary Smith, *Secretary;*  
Donald F. Tonge, *Chairman;*  
Norma Jean Holmes, *Treasurer*

*(Not pictured)*  
Francis J. Catania, *Solicitor*



## Chester Water Authority 2011 Management Staff

*(Standing, from left to right)*  
Robyn S. Bennett, *PHR, Manager of the Human Resources Group;*  
Thomas A. Zetusky, *Director of the Business Office Department;*  
Russell C. Williams, *P.E. Executive Manager and Chief Engineer;*  
Sandra L. Hunt, *Executive Administrator;* and Patricia P. Stabler, *P.E., Chief of Treatment and Pumping.*

*(Sitting, from left to right)*  
David J. Krupiak, *Chief of Distribution;* Brian P. MacEwen, *P.E., Director of Engineering;* and Elgin Nowoswiat, *CPA, Controller.*



# 2011 Report to Bondholders

The Chester Water Authority continued to prosper during 2011. Although our average daily pumpage decreased from 32.42 MGD (million gallons per day) in 2010 to 31.30 MGD, our Total Operating Revenue increased 1.3 percent from \$43,334,281 to \$43,877,982. Total Operating Expenses increased by 16.8 percent from \$31,369,983 to \$36,645,748. This includes a large unbudgeted expenditure of \$4,731,488 that was invested in the pension fund to fulfill our obligation. This percentage increase would be only 1.7 percent without the additional pension fund investment. Our uncounted-for water reduction program has kept the rate below the industry-acknowledged acceptable limit of 15.0 percent at 14.8 percent.

Capital expenditures for ongoing projects totaled \$12,154,000 in 2011. Much of this money was invested in the planned refurbishment of our 60-year-old Treatment Plant which includes major equipment replacements and improvements to our treatment and high-lift pumping facilities. We also conducted a Water Main Rehabilitation Project in 2011 as we have done almost every year since 1974.

The total average daily usage of our top ten largest industrial and commercial customers remained about the same amount as 2010 at 11.09 MGD. Table 1 at the top of page 16 shows the 2010 and 2011 usages of these ten customers of the Authority. Table 2 shows the usage of the seven water utilities that we serve. The total of 15.66 MGD of both these groups represents about half of our total metered demand. Please also see Table 3 which shows how our demand by customer group has changed since 1985. Unfortunately, we anticipate significant decreases in the usages of several of the large industrial customers due to industry closings and reductions in workforce during 2012.

Our customer growth rate stayed extremely low at 0.1 percent as it is still severely affected by the lack of residential housing construction. The Authority's indebtedness decreased from \$50,855,000 in 2010 to \$45,980,000 as a result of paying off bonds and refinancing older bond issues. Our economic health is sufficiently strong so that we did not have to adopt a rate increase for any customers in 2011. The rates average only 60 percent of the average of the rates of neighboring for-profit water companies, which shows the substantial value that we provide to our customers.

We continued implementing several advancements to enable us to conduct our customer business in a more flexible and efficient manner. We have now effectively replaced all meters in our system with new automatic-meter-reading meters, as this meter replacement project was completed in 2011. This completed project enables us to much more efficiently read water usage for all of our customers. In 2011, the other major improvement was establishing a satellite office in the Borough of Kennett Square. The additional meter serviceman stationed there enables us to respond to work assignments in Chester County much earlier in the day. The two additional customer service representatives serving this office enable us to communicate much more effectively in person with our Chester County customers. These two extra personnel have also enabled us to reduce customer phone call hold times significantly.

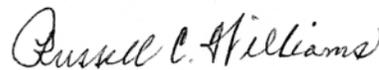
Our labor contract negotiations with the Service Employees International Union Local 32BJ (SEIU) resulted in an agreement that provides annual wage raises of 2.25, 2.5, and 2.75 percent for 2012, 2013, and 2014. The agreement allows us to more conveniently and economically provide better customer service by changing the shift of two servicemen to work on Saturdays in order to meet appointments without paying overtime wages.

The Authority used a consultant to conduct a telephone survey of our customers. Previous mail surveys had been conducted during the periods 1993-1995 and 2005-2007. During our most recent customer survey, we once again received very high remarks from customers located across all the different service areas of our distribution system.

These achievements are explained in more detail in the different articles throughout this Annual Report. We are proud of all of our accomplishments that allow us to confidently state that we once again successfully upheld our mission statement of providing our customers with "Quality. Service. Value."



Donald F. Tonge  
Chairman of the Board



Russell C. Williams  
Executive Manager & Chief Engineer

# Octoraro Treatment Plant

People optimizing the treatment process to meet or exceed regulatory standards



## Capital Improvement Program Breaks New Ground: Largest Capital Project in Recent CWA History

In the fall of 2011, the Authority broke ground on the largest capital project in CWA history since the source of water supply was moved in 1951: construction of a new high-lift pumping station that will supply the two 42-inch-diameter transmission mains that carry finished water from the Octoraro Treatment Plant to the Oxford Tank Farm. In 2011, CWA also completed improvements to the liquid alum feed system at the Treatment Plant. (To gain perspective on CWA's progress to date, please see "Milestones in the Capital Improvement Plan 2004-2010" on page 9.)

## Excavation Started for New High-lift Pumping Station

Contractors broke ground for a new high-lift pumping station that will supply the two 42-inch-diameter transmission mains that carry finished water from the Octoraro Treatment Plant to the Oxford Tank Farm. This is the second project in Phase Five at the Octoraro Treatment Plant. At a cost of \$14 million, this will be our largest capital project since our source of supply was changed from the Delaware River to the Octoraro Creek.

The new pumping station is being constructed on a site located across Ashville Road from the Treatment Plant. This location offers better flood protection for this valuable capital asset. With four new pumps, two of which are variable-speed, CWA also gains operational flexibility. Overall, the location and design of the new pumping station improve the long-term reliability and flexibility of this critical component of the Authority's infrastructure.

### Major project components:

- Construction of a new pumping station that will house four new high-lift pumps: one 1,750-HP constant-speed pump, one 1,250-HP constant-speed pump, and two 900-HP variable-speed pumps; two 2-MW diesel generators; and associated motors, electric switchgear, piping, valves, flow meters, and diesel storage tanks
- Renovation of the Auxiliary Pumping Station to replace existing motor switchgear, controls, vacuum priming system, and Venturi flow meter. The three constant speed pumps (two 12-MGD pumps and one 14-MGD pump) will be retained along with their associated motors. Major maintenance was performed in 2011 on Pump 2, replacing wear rings and impeller, and on Pump 3, replacing wear rings
- Division of the existing single clearwell in the Treatment Plant into two sections with redundant chemical feed, flow control, and monitoring systems to enable isolation and maintenance of either clearwell section while the Treatment Plant remains in operation
- Decommissioning and removal of the four high-lift pumps and motors comprising the original main pumping room in the main building of the Treatment Plant
- Replacement of the backwash tank fill pump with two pumps that are both capable of filling the backwash tanks and supplying the plant house water. Additionally, a redundant house water feed will be provided from the Ashville Road Pumping Station

- Connection of Ashville Road Pumping Station to new 42-inch-diameter ductile iron Transmission Main 2; installation of interconnecting piping and valves between 42-inch-diameter



- Transmission Mains 1 and 2; and completion of other planned work to connect 2,300 feet of new 42-inch-diameter ductile iron pipe to existing 42-inch-diameter prestressed concrete cylinder pipe of Transmission Main

The phased project schedule minimizes shutdowns and enables the Treatment Plant to remain fully operational through almost all of this challenging project, which is scheduled for completion in 2013.

## Completed: An Improved Liquid Alum Feed System

CWA successfully completed construction and testing of new feed and storage facilities for its liquid alum systems. The new system was put into service in June, and is performing to expectations. Alum is fed to raw water during the warmer months to coagulate and clump fine particles into larger particles that can then be removed by settling or filtering.

### Benefits of the new system:

- Replaced aging alum feed equipment
- Increased overall alum storage capacity
- Eliminated two outdoor heated storage tanks located in a flood-prone area
- Eliminated three indoor feed tanks located on the top floor of the main administrative building
- Eliminated the need to routinely transfer alum between bulk tanks and feed tanks
- Improved spill containment
- Achieved precise dosing control for each of two treatment trains





- Replacement of all gear drives, motors, controls, wiring, and conduit
- Replacement of telescoping valve and associated piping and wet well
- Integration of equipment controls into the Plant's SCADA system

In addition to the work listed above, the Authority is replacing all existing handrails on five of the six settling basins (which were constructed in the 1950s) and installing additional handrails. This work will bring basin handrails to current safety standards, allow routine personnel access to the basin walkways, and improve personnel safety during basin maintenance work.

- Implemented similar feed mechanism to the one used for polyaluminum chloride feed system, thereby reducing operator learning curve and opportunities for error
- Integrated into the Plant's Supervisory Control and Data Acquisition (SCADA) system, enabling remote monitoring and control by plant operators from control room

## Improving Maintenance, Reliability of Settling Basins

In 2011, CWA designed, bid, and awarded a contract to replace the equipment that continuously removes settled solids from one of six settling basins. Five sets of board-like "flights" mounted on parallel strands of chains slowly drag the settled solids along the basin floor to a sludge trough. Two horizontal screws then move the sludge in the trough to a center sump, where a telescoping valve periodically empties the sump to the plant's waste line for further processing.

The original equipment was installed in 1972; prior to that time, the basins had no mechanism for continuous sludge removal and were periodically drained and manually cleaned to remove accumulated sludge.

### Project components:

- Replacement of all chains, flights, and screws
- Replacement of all existing sprockets, shafting, and supports with new ones made of non-metallic components and using water-lubricated bearings

## CWA Prepares

"What if there were another event like Hurricane Floyd (1999), or worse, which resulted in flooding and the possible or actual failure of the Pine Grove Dam?"

This is the fundamental question CWA personnel asked themselves, emergency planners and responders, and representatives of key state and federal agencies during mock exercises that put the Authority's Emergency Action Plan (EAP) for the Pine Grove Dam through its paces in May.

By considering this question and envisioning the resulting scenario, participants gained insights and recommendations that will ultimately lead to better flood preparedness and coordination by the Authority, emergency agencies, and local emergency responders.

The primary source of supply for CWA is the Octoraro Reservoir, a 2.1-billion-gallon reservoir, impounded by the Pine Grove Dam located just above the Treatment Plant. During flood events, CWA operates the gates of the dam to minimize the rise in reservoir level and to allow excess flow into the reservoir to pass downstream. With a severe rainfall event, there is potential for flooding to affect Treatment Plant facilities, other properties in the floodplain, and roads and bridges.

The Authority's EAP for Pine Grove Dam is designed to communicate Pine Grove Dam conditions to the emergency response agencies responsible for notifying and evacuating persons who live downstream in the floodplain. To meet

*“The location of the new high-lift pumping station provides better protection from flooding. It includes two variable-speed pumps that will allow us to vary plant pumping rates without changing pumping combinations. We will be able to operate any of seven high-lift pumps during a power outage with the new diesel generators. Monitoring and control of all high-lift pumps will be accessible through our plant SCADA. Three pumps installed in 1951, one pump installed in 1956, and a 1959 motor will be replaced with new ones. Overall, the new high-lift pumping station will substantially improve the long-term reliability and flexibility of a critical component of the Authority’s water pumping and transmission infrastructure.”*

— Patricia P. Stabler, P.E., Chief of Treatment and Pumping

Federal Energy Regulatory Commission (FERC) regulations, CWA coordinates tabletop and functional exercises every five years to evaluate the effectiveness of this plan.

In May, CWA coordinated these exercises on two separate days, one at Robert Fulton Firehouse in Wakefield, PA, and the second at the Treatment Plant. Participants included emergency planners and responders from four townships, three counties, two states, five fire companies, Pennsylvania Department of Environmental Protection, National Weather Service, FERC, and many CWA personnel. The events were facilitated by a CWA consultant.

### Hydrologic Investigations and Modeling

As a result of planning and executing the EAP exercises, the Authority identified a need for additional hydrologic investigations and computer modeling to improve flood forecasting. CWA engaged a consultant to perform this work: estimate discharges from the Octoraro Reservoir over the Pine Grove Dam in the event of a 100-year-or-greater flood; estimate associated water surface elevations; and assess potential impact of flooding on Treatment Plant facilities under various conditions of gate operation on the dam.

In 2011, the consultant completed the following steps:

- Site field survey
- Review of stream gauge network and recalibration
- Development of a computer model to predict downstream flow discharge from the Octoraro Reservoir and downstream water surface elevation

This project will be completed in 2012, enabling CWA to revise its EAP and improve flood response planning.



### Protecting Our Source Water Quality

CWA designs, operates, maintains, and upgrades our water treatment system, and rigorously tests finished water to ensure that it meets all regulatory standards. However, it is also important that the raw water we treat be of generally good quality, and that the contaminants and their concentrations fall within the spectrum of contaminants that our treatment processes are equipped to handle. The Authority owns the Octoraro Reservoir, but it does not own or control the surface water and ground water sources that feed the Octoraro Reservoir and which ultimately determine the quality of the water in the reservoir.

The ownership and control of these waters reside with others, including watershed residents, businesses and farmers, local governments, county conservation districts, the Pennsylvania Department of Environmental Protection (PADEP), and other regulatory agencies. PADEP has developed a Source Water Technical Assistance Program to assist public water suppliers in Pennsylvania with obtaining voluntary cooperation from others to protect public drinking water sources.

In October, the Authority’s Board of Directors approved CWA’s participation in this program. CWA will lead the initiative to develop a source water protection plan for the surface and ground waters that supply our Octoraro Reservoir. Next, CWA will begin organizing the steering committee that will include conservation districts and the Susquehanna River Basin Commission. In 2012, CWA will organize a steering committee, which will include representatives of county conservation districts, local residents, townships, watershed associations, and other interested agencies, to guide and provide input to the plan.

The process will include development of a hydrogeologic model for the 139-square-mile Octoraro Watershed above CWA’s intake. The anticipated consultant expenses of \$70,000 will be paid directly by PADEP.



### **Water Main Rehabilitation Serves Upper Chichester**

The Authority completed the 2011 Water Main Rehabilitation Project in Upper Chichester Township, Delaware County. The \$3-million project rehabilitated or replaced cast iron water mains that date from 1915 to 1917 and 1925 to 1927, and which serve approximately 400 customers.

#### **Project components included:**

- Replacement of approximately 800 feet of 4-inch-diameter water main along Huddle Avenue with 8-inch-diameter water main, and renewal of associated valves, fire hydrants, and services
- Rehabilitation of approximately 11,100 feet of 4-, 6-, 10-, and 12-inch-diameter water main using a cleaning and cement-lining process

The project rehabilitated approximately 2,100 feet of 6- and 8-inch-diameter water main along Chichester and Malatesta Avenues using cured-in-place pipe (CIPP). This is the first time CWA has used the CIPP process, in which a structural liner is installed within the existing host pipe and cured without the need for pipe replacement. This was a cost-effective, minimally disruptive alternative to open-cut renewal for this section of the project along heavily traveled roads.

In addition, the 2011 project rehabilitated two 8-inch-diameter water mains, one attached to the Chichester Avenue bridge and the other attached to the Melrose Avenue bridge in the City of Chester. Both bridges span Interstate 95, and the Melrose Avenue bridge also crosses railroad tracks. In total, approximately 560 feet of the existing mains were slip-lined with fusible polyvinyl chloride (PVC) pipe. CWA coordinated this part of the project with the Pennsylvania Department of Transportation (PennDOT) and CSX Railroad, completing the project without affecting Interstate 95 or railway operations.



Under a separate contract, CWA also completed a water main renewal project along Mill Road in Upper Chichester Township. The project replaced approximately 1,150 feet of 6-inch-diameter water main, originally installed in 1950, and with a long history of main breaks, with 8-inch-diameter ductile iron water main. This will provide more reliable service to approximately 30 customers. In conjunction with this Mill Road project, CWA installed approximately 3,000 feet of 8-inch-diameter water main as a system reinforcement along Sunnydell and Egypt Roads in New Garden Township to improve service to our customers throughout New Garden Township.

Since 1974, CWA has invested \$60.1 million in the rehabilitation of approximately 52.2 miles of water main as well as renewing associated valves, service lines, meters, and fire hydrants. As a result, residual water pressures and hydrant flows increase, pipe leakage decreases, and water quality is improved.

### Working with PennDOT to Improve Infrastructure

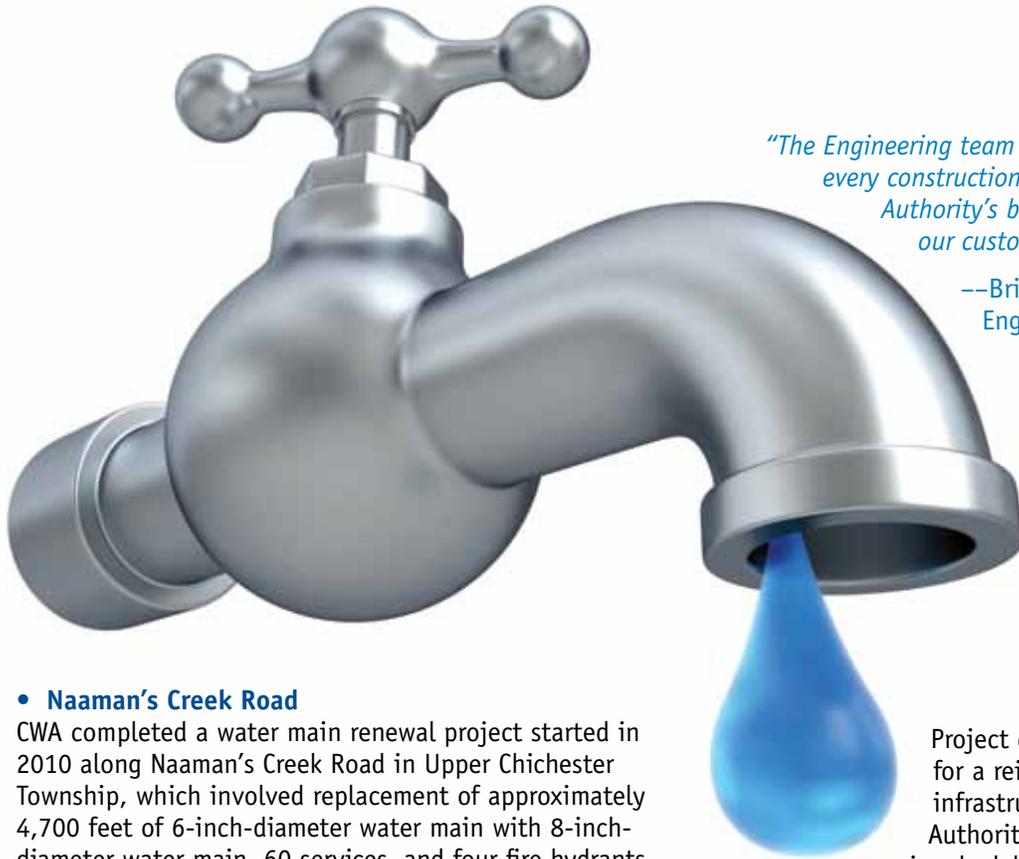
The Authority worked on four water infrastructure projects in conjunction with Pennsylvania Department of Transportation (PennDOT) bridge and highway construction, reconstruction, and relocation projects. Through agreements with PennDOT, the Authority will be reimbursed for at least 50 percent of the cost of these water infrastructure projects, which had a combined total cost of \$1,953,000.

- **US Route 52 Relocation:**

CWA completed the relocation of approximately 100 feet of 8- and 12-inch-diameter water main, associated water services, and a fire hydrant near the junction of a new section of US Route 52 with US Route 1 in Kennett Township. This PennDOT project was undertaken to relocate a section of US Route 52 in the vicinity of Longwood Gardens and widen a section of US Route 1. CWA's water infrastructure relocation was necessary to accommodate the new stormwater drainage system and the widened road. Total cost: \$125,000 (less 50 percent reimbursement).

- **9th Street Bridge Renewal:**

In conjunction with PennDOT, CWA started a two-phase project for the reconstruction of the 9th Street Bridge over Chester Creek in the City of Chester. In Phase 1, PennDOT will install a temporary water main across the temporary pedestrian bridge until PennDOT completes the installation of approximately 250 feet of new 6-inch-diameter water main on the new bridge. In Phase 2, CWA will relocate approximately 260 feet of 6-inch-diameter water main on the east and west approaches to the bridge. Total cost: \$250,000 (less 50 percent reimbursement).



*"The Engineering team designs, schedules, and manages every construction project with our eyes focused on the Authority's bottom line: fulfilling our obligations to our customers, regulators, and bondholders."*

—Brian P. MacEwen, P.E., Director of Engineering

#### • Naaman's Creek Road

CWA completed a water main renewal project started in 2010 along Naaman's Creek Road in Upper Chichester Township, which involved replacement of approximately 4,700 feet of 6-inch-diameter water main with 8-inch-diameter water main, 60 services, and four fire hydrants. This project renews our facilities prior to PennDOT's total full-depth reconstruction of Naaman's Creek Road. Total cost: \$995,000 (less 50 percent reimbursement).

#### • Concord Road at Baldwin Run

In 2011, CWA began the relocation of 1,800 feet of 18-inch diameter water main in conjunction with the Concord Road relocation project under construction by PennDOT in Chester Township and Aston Township. Total cost: \$583,000 (less 57 percent reimbursement).

### Main Extension Supports "Oxford Commons"

The Authority began a water main extension project to support development of "Oxford Commons," a new retail center at Route 10 off the US Route 1 Bypass in Lower Oxford Township. Water usage is projected at 25,000 gallons per day, representing new commercial revenue for CWA.

The project comprises 17,700 feet of 12-inch-diameter main, 5,800 feet of 8-inch-diameter main, a new below-ground booster station with two 600-gallon-per-minute (GPM) pumps and one 150 GPM pump, and a 500,000-gallon ground-level water storage tank at the development site. Initially the water storage tank will be used by one of the anchor stores as a source for its fire-booster pumps.

Project costs are paid by the developer except for a reimbursement to the developer for infrastructure costs in accordance with the Authority's rules and regulations. The project is scheduled for completion in 2012.

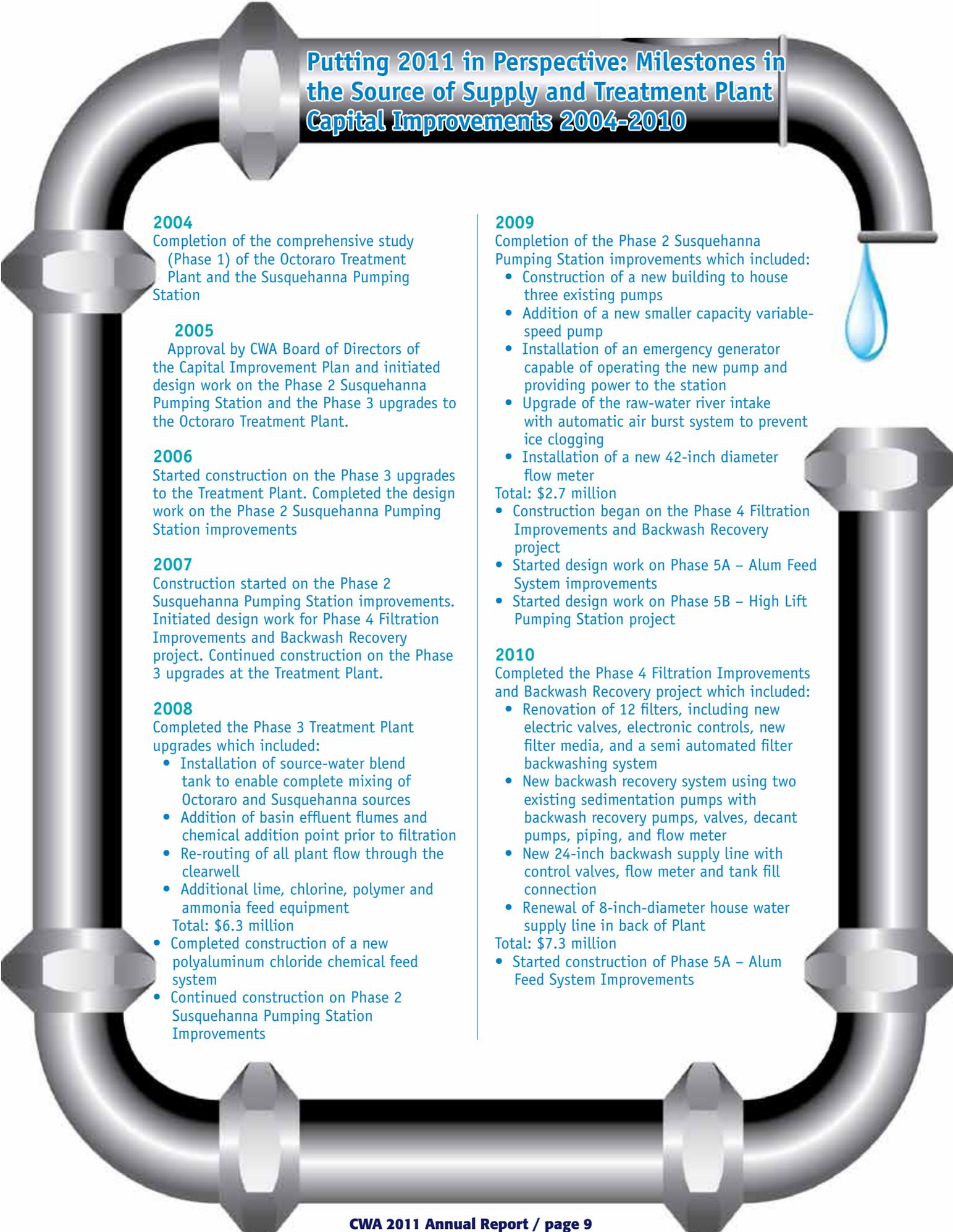
### Concord Booster Station Main Reinforcement

CWA awarded a contract for a project to bring a redundant water supply to the Concord Booster Station. This is a critical booster station serving a large area in Concord Township and Thornbury Township, as well as water utilities served on a contract basis. Approximately 1,300 feet of new 12-inch-diameter main will be installed. We will then be capable of supplying the booster station from the transmission main backfed from the Village Green Tank Farm.



The main will run through Newlin Grist Mill, a 150-acre natural and historic park along the west branch of Chester Creek. Located off US Route 1 in Concord Township, the park is operated by

the Nicholas Newlin Foundation, a nonprofit charitable organization.



## Putting 2011 in Perspective: Milestones in the Source of Supply and Treatment Plant Capital Improvements 2004-2010

### 2004

Completion of the comprehensive study (Phase 1) of the Octoraro Treatment Plant and the Susquehanna Pumping Station

### 2005

Approval by CWA Board of Directors of the Capital Improvement Plan and initiated design work on the Phase 2 Susquehanna Pumping Station and the Phase 3 upgrades to the Octoraro Treatment Plant.

### 2006

Started construction on the Phase 3 upgrades to the Treatment Plant. Completed the design work on the Phase 2 Susquehanna Pumping Station improvements

### 2007

Construction started on the Phase 2 Susquehanna Pumping Station improvements. Initiated design work for Phase 4 Filtration Improvements and Backwash Recovery project. Continued construction on the Phase 3 upgrades at the Treatment Plant.

### 2008

Completed the Phase 3 Treatment Plant upgrades which included:

- Installation of source-water blend tank to enable complete mixing of Octoraro and Susquehanna sources
  - Addition of basin effluent flumes and chemical addition point prior to filtration
  - Re-routing of all plant flow through the clearwell
  - Additional lime, chlorine, polymer and ammonia feed equipment
- Total: \$6.3 million
- Completed construction of a new polyaluminum chloride chemical feed system
  - Continued construction on Phase 2 Susquehanna Pumping Station Improvements

### 2009

Completion of the Phase 2 Susquehanna Pumping Station improvements which included:

- Construction of a new building to house three existing pumps
- Addition of a new smaller capacity variable-speed pump
- Installation of an emergency generator capable of operating the new pump and providing power to the station
- Upgrade of the raw-water river intake with automatic air burst system to prevent ice clogging
- Installation of a new 42-inch diameter flow meter

Total: \$2.7 million

- Construction began on the Phase 4 Filtration Improvements and Backwash Recovery project
- Started design work on Phase 5A – Alum Feed System improvements
- Started design work on Phase 5B – High Lift Pumping Station project

### 2010

Completed the Phase 4 Filtration Improvements and Backwash Recovery project which included:

- Renovation of 12 filters, including new electric valves, electronic controls, new filter media, and a semi automated filter backwashing system
- New backwash recovery system using two existing sedimentation pumps with backwash recovery pumps, valves, decant pumps, piping, and flow meter
- New 24-inch backwash supply line with control valves, flow meter and tank fill connection
- Renewal of 8-inch-diameter house water supply line in back of Plant

Total: \$7.3 million

- Started construction of Phase 5A – Alum Feed System Improvements

# Distribution Department

Operating, maintaining,  
and upgrading our  
distribution system for  
reliable performance



*“CWA’s leak detection survey has saved millions of gallons of water and tens of thousands of dollars annually in associated water treatment costs. This proactive process saves the Authority additional money—and prevents interruptions in service to our customers—by avoiding main breaks and resulting damage, emergency repairs, and insurance claims.”*

—David J. Krupiak, Chief of Distribution

## A Final Turn of the Wrench: AMR Program Completed

In 2011, CWA completed our 13-year Automated Meter Reading (AMR) program, which replaced a total of 42,900 non-AMR customer water meters with AMR technology. The remaining 4,300 non-AMR meters were replaced in 2011, thanks to an accelerated effort that began in July 2010.

The program got a final push after CWA's Business Office concluded that accelerating the pace of the program in-house would be more cost-effective than outsourcing and would give CWA better control over amending the data in our Customer Information System (CIS).

With AMR technology, CWA meter readers use an electronic device to activate a radio-controlled device on the water meter to automatically record the current reading. Fast, accurate, and efficient, AMR enables the Authority to obtain an actual reading without stopping at or entering a customer's home or office. This avoids inconveniencing customers and eliminates estimated readings, improving billing accuracy.

## CWA Transitions to In-House Leak Survey

The Distribution Department conducted the Authority's annual leak-detection survey of the water main system to identify underground leaks that have not surfaced. This proactive survey yields quantifiable savings in treated water, as well as savings associated with avoidance of main breaks and resulting damage, emergency repairs, and insurance claims. In 2011, CWA's consultant performed the survey on approximately 260 miles of water main in the oldest areas of our distribution system in Delaware County.

In 2011, CWA began a transition to performing this survey in-house with the purchase of a leak correlator, which detects the sound of a water leak using sound amplification and transmitting devices and then calculates the location of the leak. By performing the survey in-house, CWA will have greater control over the timing and cost of the annual leak detection survey. In addition, the Distribution Department will be able to more conveniently use this device throughout the year, as needed, if a leak is suspected.

CWA's leak detection survey has saved millions of gallons of water annually and hundreds of thousands of dollars in associated water treatment costs, with additional savings from avoidance of main breaks and resulting damage, emergency repairs, and insurance claims.

The leak correlator was purchased through COSTARS, the Commonwealth of Pennsylvania's cooperative purchasing program. COSTARS uses the combined purchasing power of public entities to gain more competitive pricing and choice than individual purchasers might be able to obtain on their own.



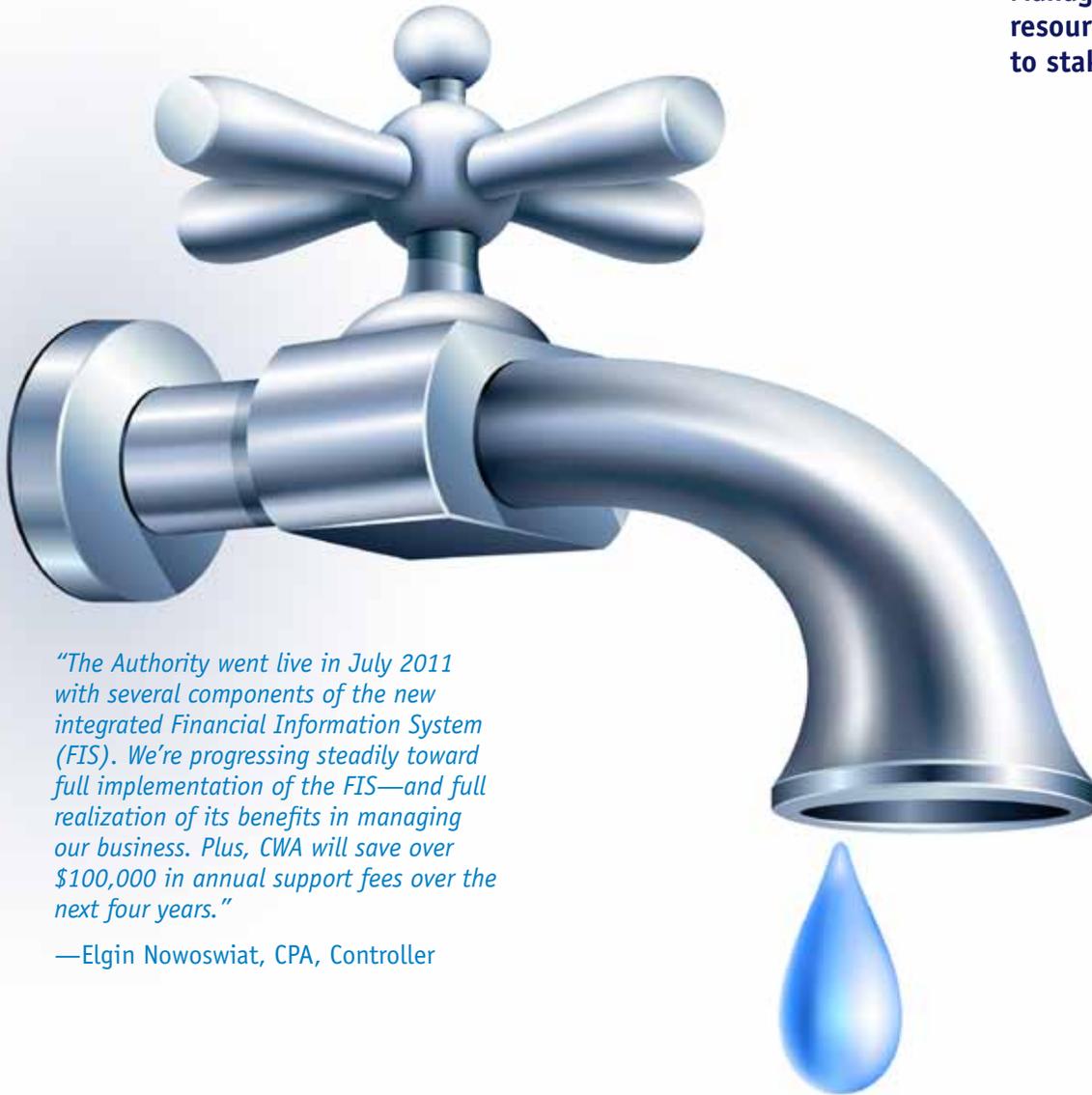
## Distribution System Projects: Statistics at a Glance

### Leak Detection Survey:

- Approximately 260 miles in the City of Chester, Chester Township, Aston Township, Upper Chichester Township, Lower Chichester Township, Trainer Borough, and Marcus Hook Borough, Delaware County
- 47 leaks identified and repaired
- 96 million gallons of water saved annually
- Approximate cost of survey consultant: \$71,200
- Approximately \$96,000 saved annually (i.e., total cost of water treatment) with additional savings from avoidance of main breaks and resulting damage, emergency repairs, and insurance claims

### AMR Program Completed:

- Approximately 4,300 non-AMR meters replaced with AMR technology in 2011
- Approximately 42,900 non-AMR meters replaced from 1998 through 2011
- Total investment: approximately \$12,000,000



*"The Authority went live in July 2011 with several components of the new integrated Financial Information System (FIS). We're progressing steadily toward full implementation of the FIS—and full realization of its benefits in managing our business. Plus, CWA will save over \$100,000 in annual support fees over the next four years."*

—Elgin Nowoswiat, CPA, Controller

## Integrated Financial, Payroll/HR System Rolls Out

CWA began the roll-out of an integrated Financial Information System (FIS) with Payroll/Human Resources (HR) components, which replaced two separate systems that were outdated and costly to support.

The Accounting and Finance staff went live in July 2011 with the successful conversion of the purchase order (PO), inventory, and general ledger components of the FIS. Users completed training on PO, inventory, and receipting. The Accounting and Finance team is working with users to gain the most benefits from the system's management reporting function. Next, CWA is scheduled to roll out the fixed assets, physical inventory, and HR/payroll components.

The integrated FIS is designed by our vendor to meet the financial management and reporting needs of government organizations of CWA's size and scope. Built on the "Microsoft.NET" framework, the new FIS is designed for use by most new applications created for the Windows platform. Moreover, the new system will save CWA over \$100,000 in total annual support fees over the next four years.

## Keeping Our Customers Satisfied

Ninety percent of CWA's customers are satisfied or very satisfied with the Authority's overall performance, based on the results of a telephone customer survey conducted in November. The survey followed up on residential customers' satisfaction with recent improvements in customer service, including telephone and online bill payment, which were introduced based on results of the prior survey in 2007. This year's survey also asked respondents about water quality, household information, and overall customer satisfaction.

The Authority engaged a research and polling consultant to design and conduct a telephone survey of CWA customers in all service areas: Chester City, Delaware County, Western Delaware County, and Chester County. A total of 2,250 residential customers responded in the survey, a statistically representative percentage of CWA's residential customer base.

The 90+ percent approval rating was fairly consistent across the four different sections, and consistent with the results of two prior surveys. The Authority received 1,738 compliments and only 195 complaints. Some of the complaints regarded long hold times for telephone customer service, and CWA has already taken steps to correct this problem.

The use of a telephone rather than mail survey reduced the overall cost of the survey. It also helped CWA to verify our telephone number information for use with the emergency Cooper Industries Roam Service Alert Network (RSAN) system. E-mail addresses were also received from 29 percent of the respondents.

As an incentive for each participating customer, the Authority reduced their subsequent water bill by \$5.00.

## Business Office

**Enhancing customer service and improving operational efficiency**

*"Our branch office in Kennett Square makes it more convenient for customers in our western service area to do business with CWA, and more cost-effective for us to schedule and complete service calls."*

—Thomas A. Zetusky, Sr., Director of the Business Office Department

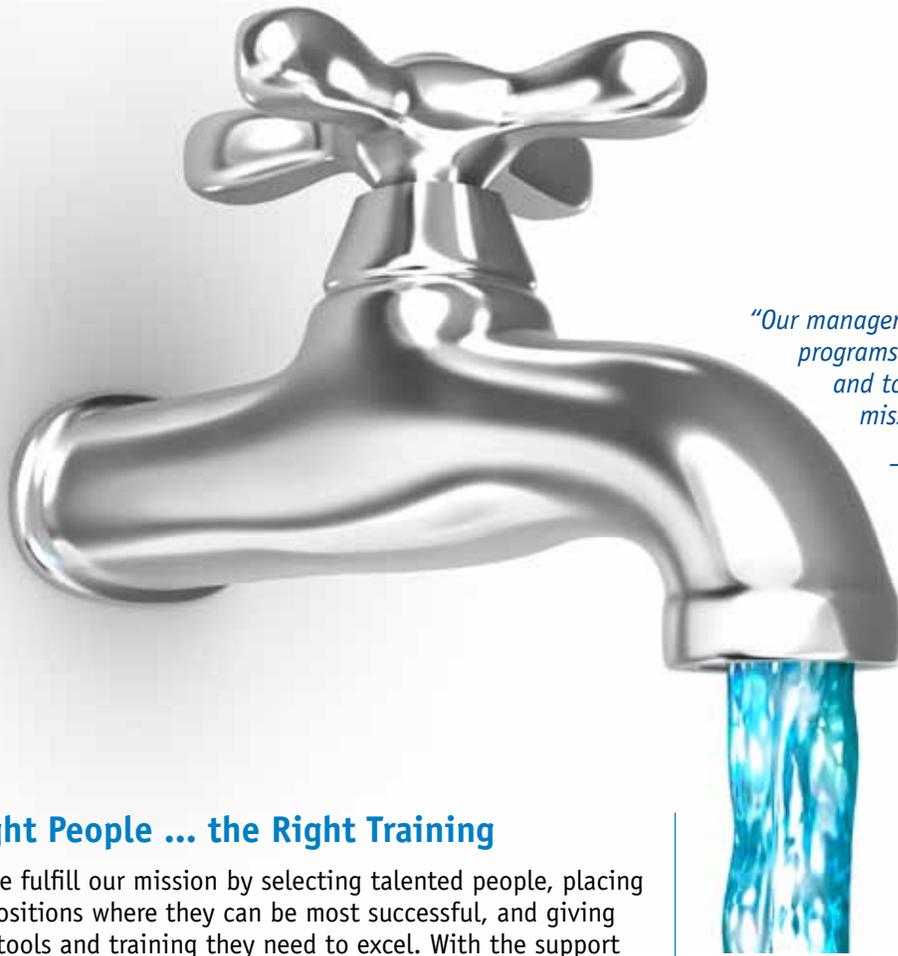


## Meeting Our Customers on Their Turf

On October 24, CWA cut the ribbon on a branch office at The Liberty Place at Kennett Square, which is located in the Borough of Kennett Square at 148 West State Street. The office is staffed with two customer service representatives and one meter service technician. The office was established to provide a more convenient location for our Chester County customers to be able to visit to transact business and enable us to more efficiently serve our customers.

Formerly, customers in CWA's western service area—roughly 7,000 customers, or almost 17 percent of our customer base—have needed to travel to Chester to conduct business in person. With the opening of our branch office, CWA has responded to their interest in a centrally located office to improve customer service. Customers appreciate the privacy afforded by visiting a conveniently located office to establish a new account, set up a payment plan, or discuss a service or billing issue in person with a customer service representative.

Locating a meter service technician in the branch office reduces travel time between Chester and our customers in the central and western suburbs by at least one hour, increasing productivity and reducing gas use and mileage on service vehicles. It enables the customer service office to set up a service appointment for as early as 8:30 a.m. CWA's wireless work order management system supports this initiative.



*“Our managers and supervisors participate in programs designed to build leadership excellence and to enhance CWA’s ability to fulfill our mission: Quality, Service, and Value.”*

—Robyn S. Bennett, PHR, Manager of the Human Resources Group

## The Right People ... the Right Training

At CWA, we fulfill our mission by selecting talented people, placing them in positions where they can be most successful, and giving them the tools and training they need to excel. With the support of organizational development consultants, our in-house training specialist, and department leaders, CWA completed a range of training initiatives from leadership development to safety.

- **Understanding the “Letter of the Law”**

Our managers and supervisors participated in training on the regulations of Affirmative Action, Equal Employment Opportunity, and Fair Labor Standards Act. They were joined by all of our employees in training on general human resources compliance, including diversity and inclusion. This process ensures that our managers, supervisors, and employees are fully aware of and understand federal guidelines related to the workplace and their roles in contributing to a fair, diverse, and inclusive workplace.

- **Cultivating Leadership**

CWA managers and supervisors participated in leadership development using a leadership and organizational development consultant. The program is designed to build leadership excellence and to enhance CWA’s ability to fulfill our mission: Quality, Service, and Value. Our first-level supervisors participated in a webinar on the DiSC®, a self-assessment tool designed to improve work productivity, teamwork, and communication.

- **Promoting Workplace Safety**

Employees participate in monthly workplace safety training activities to ensure that we are collectively meeting the objectives set by our Workplace Safety Committee. Comprised of managers and staff from all departments and levels of the organization, the committee meets monthly to discuss safety issues and opportunities for improvement.

## Human Resources

**Supporting CWA’s most important resources—our employees**

- **Getting the Most Out of Microsoft Office®**

In association with the planned purchase and rollout of Microsoft Office 2010® in 2012, CWA began planning for in-house training of users for this suite of products. These steps will ensure that CWA gets the most functionality and value out of the new Office software to meet our goals for efficiency.

- **Extending Customer Service Training**

Based on CWA’s recent customer survey results, in which respondents ranked us highly on service, we have started a training initiative for our Customer Service Representatives and will extend training beyond our in-house employees, to include our field technicians who regularly have contact with our customers.

- **Training the Trainer**

Our internal training specialist continues to participate in “train-the-trainer” programs and self-directed education to further develop these capabilities and skills.

## Remaining Focused on Our Mission During a Period of Change

In September, residents of the state and region, including CWA managers and staff, read with concern the news that Sunoco Inc. and ConocoPhillips intended to sell or close their refineries located in the Boroughs of Marcus Hook and Trainer. An article in *The Philadelphia Inquirer* on Dec. 20 sparked some hope when it reported that "Sunoco Inc. and ConocoPhillips are shopping their Delaware River refineries to a small group of potential buyers who might keep them open, saving about a thousand threatened jobs. ... Public officials have rallied support to keep the plants open and to try to find a buyer."

Certainly, the Authority hopes that buyers can be found for both of these refineries and production will remain as high as historic averages. Realistically, CWA must anticipate and prepare for the loss of these two major industrial accounts, which would deprive the Authority of 20 percent of daily demand, and an associated loss of revenue. (Please see Table 3, "Demands by Type of Customer," on page 16.)

## Serving an expanding customer base in Chester County.

The loss of these key industrial customers unfortunately comes during a period of historic low levels of customer growth. Please see Figure 1, "Customer Growth Rate," on page 16. On the plus side, CWA experienced an increase in residential demand from 5.69 million gallons per day (MGD) to 6.20 MGD from 1985 through 2011. In particular, the substantial expansion of CWA's residential customers from 1997 through 2007 into Chester County provided the Authority with a substantial increase in the total number of customers and much additional revenue.

With this in mind, in October the Authority opened a branch office in the Borough of Kennett Square. The office provides a more convenient location for our Western Delaware County and Chester County customers, who comprise approximately 17 percent of our customer base, to be able to visit to transact business. This is one of the new initiatives in our ongoing commitment to Service. (Please see "Meeting Our Customers on Their Turf," on page 13.)

## Customers respond to CWA's Service commitment.

Confirming the importance of CWA's Service commitment, the Authority received an outstanding customer satisfaction rating in a customer service survey conducted in November. Of the 2,250 customers who responded in the telephone survey, at least 90 percent were "somewhat" or "very" satisfied with the Authority's service, which was fairly consistent across service areas. The approval rating is consistent with the results of two mail surveys that were conducted over the 1993-1995 and 2005-2007 time periods. (Please see "Keeping Our Customers Satisfied," on page 13.)

## Actively seeking expansion, new customers.

The Authority is actively exploring various strategies to expand our service area and market our services to acquire new customers. At the same time, the Authority's rates remain approximately 40 percent lower than those of neighboring for-profit water companies, even as we invest significant capital in our groundbreaking facility improvement projects, thanks to CWA's ongoing commitment to Quality, Service, and Value.



## A LOOK AT CHESTER WATER AUTHORITY IN 2011

### 2011

Average Daily Pumpage: (in gallons)	31.30
Total Customers:	42,516
Distribution Main (in miles):	655.64
Total Operating Revenue:	\$43,877,982
Average Annual Residential Bill:	\$ 437.17
Total Operating Expenses:	\$36,645,748
Bonds Payable Long Term:	\$45,980,000
Total Net Assets:	\$197,432,708

## 2011 Milestones

- CWA marked 144 years of service.
- The Authority supplied water to 42,516 active customers in western Delaware County and southern Chester County, as well as to water utilities in Pennsylvania and Delaware.
- Contractors broke ground for a new high-lift pumping station at the Octoraro Treatment Plant, located on a site selected to protect this capital asset from flooding.
- CWA completed improvements to the liquid alum feed system at the Octoraro Treatment Plant, a component of the 10-year Capital Improvement Program for the Octoraro Treatment Plant and Susquehanna Pumping Station.
- The Authority began rollout of an integrated Financial Information System that is designed to meet the financial and reporting needs of government organizations of CWA's size and will save over \$100,000 total in annual support fees over the next four years.
- The Authority opened a branch office in Kennett Square to better serve customers in our western service area.
- The Automated Meter Reading (AMR) program began in 1998 and was completed in 2011. A total of 42,900 non-AMR customer water meters have been replaced with AMR technology between 1998 and 2011.

### AVERAGE DAILY CONSUMPTION (Millions of Gallons)

**TABLE 1: TOP TEN COMMERCIAL & INDUSTRIAL CUSTOMERS**

	2010	2011
Conoco Phillips	4.00	3.48
Sunoco	2.30	1.74
Covanta	1.68	1.60
PQ Corporation	1.10	1.06
Kimberly Clark	0.75	1.00
Epsilon Products	0.35	0.34
Concord Beverage Co.	0.29	0.28
Crozer-Chester Medical Center	0.21	0.20
George W. Hill Correctional Institution	0.20	0.20
PA Dept. of Corrections	0.20	0.19
<b>TOTALS</b>	<b>11.09</b>	<b>10.09</b>

**TABLE 2: OTHER WATER UTILITIES**

	2010	2011
Artesian Water Company	2.94	2.92
United Water Company-Bethel	1.02	1.03
Aqua America Water Company	0.73	0.67
Borough of Kennett Square	0.40	0.40
London Grove Twp. Municipal Authority	0.21	0.23
Borough of Oxford	0.10	0.17
United Water Company	0.25	0.15
<b>TOTALS</b>	<b>5.55</b>	<b>5.57</b>

**TABLE 3: DEMANDS BY TYPE OF CUSTOMER**

	1985	2011
	MGD (%)	MGD (%)
Industrial	11.01 (40)	9.91 (32)
Commercial	1.32 (5)	4.05 (13)
Residential	5.69 (20)	6.20 (20)
Other Water Utilities	4.76 (17)	5.57 (18)
Other	0.42 (2)	0.94 (2)
Uncounted-for Water	4.32 (16)	4.63 (15)
<b>TOTALS</b>	<b>27.52</b>	<b>31.30</b>

## 2011 FINANCIAL ANALYSIS

### Condensed Statements of Net Assets

	December 31, 2011	December 31, 2010
Current assets	\$ 15,218,021	\$ 15,235,544
Restricted cash and investments, and deferred expenses	24,126,917	29,238,478
Capital assets – net of accumulated depreciation	<u>207,674,307</u>	<u>200,749,978</u>
Total assets	<u>247,019,245</u>	<u>245,224,000</u>
Current liabilities	6,151,572	6,118,767
Noncurrent liabilities	<u>43,434,965</u>	<u>48,448,220</u>
Total liabilities	<u>49,586,537</u>	<u>54,566,987</u>
Net assets:		
Invested in capital assets – net of related debt	161,694,307	149,894,978
Restricted	23,186,367	28,139,533
Unrestricted	<u>12,552,034</u>	<u>12,622,502</u>
<b>Total Net Assets</b>	<b><u>\$ 197,432,708</u></b>	<b><u>\$ 190,657,013</u></b>
<b>Total Liabilities and Net Assets</b>	<b><u>\$ 247,019,245</u></b>	<b><u>\$ 245,224,000</u></b>

### Condensed Statements of Revenues, Expenses, and Changes in Net Assets

	Year Ended December 31, 2011	Year Ended December 31, 2010
Operating revenues	\$ 43,877,982	\$ 43,334,281
Operating expenses	<u>36,645,748</u>	<u>31,369,983</u>
Operating income	<u>7,232,234</u>	<u>11,964,298</u>
Non-operating income:		
Interest income	190,516	248,713
Other	<u>415,473</u>	<u>331,397</u>
Total non-operating income	<u>605,989</u>	<u>580,110</u>
Total non-operating expenses	<u>2,129,612</u>	<u>1,985,589</u>
Income before contributions	5,708,610	10,558,819
Capital contributions	<u>1,067,085</u>	<u>1,108,874</u>
Increase in net assets	<u>\$ 6,775,695</u>	<u>\$ 11,667,693</u>

### Selected Statistical Information

	2011	2010	CHANGE	
			Amount	%
Full-time positions at year-end	147	146	1	0.70
Average full-time employees	147	145	2	1.40
Water customers at year-end:				
Residential	39,720	39,676	44	0.11
Commercial	2,219	2,231	(12)	-0.54
Industrial	51	55	(4)	-7.27
Fire protection	516	506	10	1.98
Other water utilities	<u>10</u>	<u>10</u>	<u>0</u>	<u>0.00</u>
Total	<u>42,516</u>	<u>42,478</u>	<u>38.0</u>	<u>0.09</u>
Average residential bill	\$ 437.17	\$ 416.00	\$ 21.16	5.10%
Water consumption (millions of gallons):				
Residential and commercial	3,941.9	3,844.0	97.90	2.50
Industrial	3,398.8	3,950.6	(551.80)	-14.00
Other water utilities	2,035.8	2,026.5	9.30	0.50
Fire protection	<u>12.0</u>	<u>9.1</u>	<u>2.90</u>	<u>31.90</u>
Total	<u>9,388.5</u>	<u>9,830.2</u>	<u>(441.70)</u>	<u>-4.50</u>
Operating Revenue per 1,000 gallons consumed	\$ 4.67	\$ 4.41	\$ 0.26	5.90
Operating Expenses per 1,000 gallons consumed	<u>\$ 3.90</u>	<u>\$ 3.19</u>	<u>\$ 0.71</u>	<u>22.26%</u>

# MANAGEMENT'S DISCUSSION AND ANALYSIS FOR 2011

This section presents management's analysis of the Chester Water Authority's (the Authority) financial condition and activities for the year. This information should be read in conjunction with the financial statements.

## CWA Mission

The mission of Chester Water Authority is to provide quality water to all of our customers, when they need it, at a reasonable cost.

Our water meets or exceeds all the criteria established by the Pennsylvania Department of Environmental Protection (PA DEP), the United States Environmental Protection Agency (US EPA), and the American Water Works Association (AWWA).

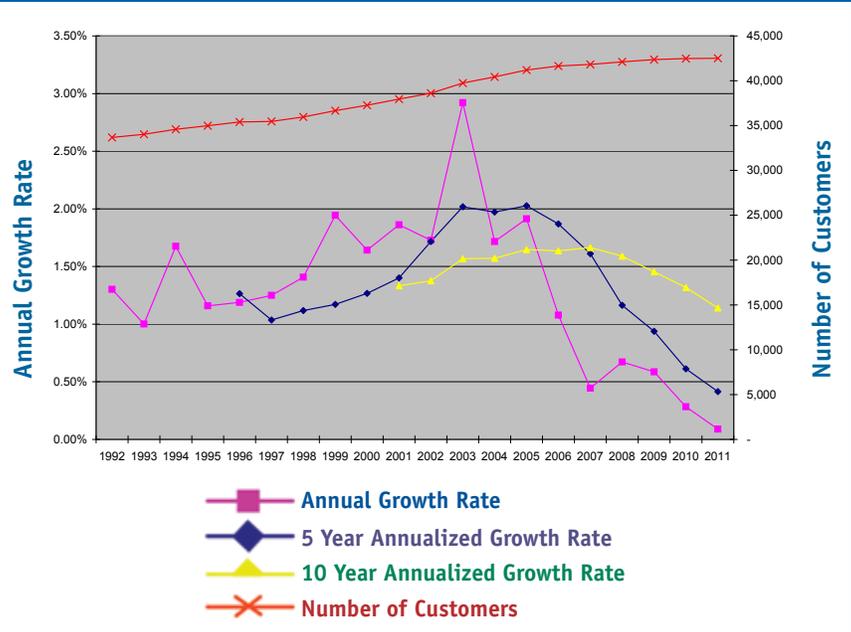
We not only satisfy the water needs of our current customers, but we anticipate and plan for the needs of future customers through orderly growth. We charge the lowest practical rates to cover operation and maintenance costs, capital requirements, and bond obligations.

## Financial Highlights

Management believes the Authority's financial condition is strong. The Authority is well within its debt covenants and the more stringent financial policies and guidelines set by the Board and management. The following are key financial highlights for 2011:

- The Authority's rates remained the same compared to last year. The Authority's water rates are still lower than those charged by neighboring private water companies.
- During the year, the long term debt decreased by \$5,045,000 or 11%.
- Property, plant and equipment cost value, excluding depreciation and net of disposals are increased by \$12,671,001 in 2011 compared to \$12,006,988 in 2010.
- On March 21, 2011, the Authority issued Refunding Water Revenue Bonds, Series of 2011 in the aggregate principal amount of \$9,945,000. The 2011 Bond proceeds were used to: (1) refund all of the Authority's Refunding Water Revenue Bonds, Series A of 2005 outstanding in the principal amount of \$2,440,000 (the "2005A Bonds"); (2) refund a portion of the Authority's Water Revenue Bonds, Series of 2006 Bonds outstanding in the principal amount of \$8,650,000 (the "2006 Bond") of which \$7,300,000 was refunded (the "Refunded 2006 Bonds"); and (3) pay the cost and expenses of issuing 2011 Bonds.

## CUSTOMER GROWTH RATE (as of 12-31-2011)



- On September 22, 2011, the Authority paid off remaining (not refunded portion) 2006 Bonds. The remaining principal and interest portions were \$1,350,000 and \$17,589, respectively.
- On December 31, 2011 and 2010, total assets were \$247,019,245 and \$245,224,000, respectively; total liabilities were \$49,586,537 and \$54,566,987, respectively; and net assets were \$197,432,708 and \$190,657,013, respectively.
- For the year 2011, the Authority sold 9.389 billion gallons of water, compared to 9.830 billion gallons of water in 2010. The year 2011 provided 61.12 inches of rain compared to 44.64 inches in 2010. The average rainfall for the water treatment plant area was 45.21 in 2011 and 44.87 in 2010.
- Operating income for the year was \$7,232,234 representing a \$4,732,064 decrease compared to 2010. This decrease was due to the Authority making an unfunded actuarial accrued liability contribution to the Authority's pension plan during 2011.
- Administrative expenses are increased by \$4,557,595 in 2011 compared to 2010 due to the Authority's unfunded actuarial liability contribution to the Authority's Pension Plan.
- Changes in net assets were \$6,775,695 for the year ended December 31, 2011, which includes \$1,067,085 of developer contributions.
- The operating ratio (operating revenues divided by operating expenses less depreciation) was 1.44 in 2011 versus 1.74 in 2010.

## Overview of Annual Financial Report

Management's Discussion and Analysis ("MD&A") serves as an introduction to, and should be read in conjunction with, the basic audited financial statements and supplementary information. The MD&A represents management's examination and analysis of the Authority's financial condition and performance. Summary financial statement data, key financial and operational indicators used in the Authority's strategic plan, budget, bond resolutions and other management tools were used for this analysis.

The financial statements report information about the Authority using full accrual accounting methods, except as noted in Note 2 to the financial statements, as utilized by similar business activities in the private sector. However, rate-regulated accounting principles applicable to private sector utilities are not used by most governmental utilities. The financial statements include statements of net assets; statements of revenues, expenses, and changes in net assets; statements of cash flows; and notes to financial statements.

The statement of net assets presents the financial position of the Authority on a full accrual historical cost basis. The statement of net assets presents information on all of the Authority's assets and liabilities, with the difference reported as net assets. Over time, increases and decreases in net assets are one indicator of whether the financial position of the Authority is improving or deteriorating.

While the statement of net assets provides information about the nature and amount of resources and obligations at year-end, the statement of revenues, expenses, and changes in net assets presents the results of the business activities over the course of the fiscal year and information as to how the net assets changed during the year. All changes in net assets are reported as soon as the underlying event giving rise to the change occurs, regardless of the timing of the related cash flows. This statement also provides certain information about the Authority's recovery of its costs. Rate setting studies use revenue requirements and cost allocation methods in order to generate sufficient revenues to recover the Authority's operation and maintenance expenses, the provisions for renewals, replacements, reserve operations and debt service requirements.

The statement of cash flows presents changes in cash and cash equivalents, resulting from operational, financing, and investing activities. The statement presents cash receipts and cash disbursement information, without consideration of the earnings event, when an obligation arises, or depreciation of capital assets.

The notes to financial statements provide required disclosures and other information that are essential to a full understanding of material data provided in the financial statements. The notes present information about the Authority's accounting policies, significant account balances and activities, material risks, obligations, commitments, contingencies and subsequent events, if any.

The financial statements were prepared by the Authority's staff from the detailed books and records of the Authority. The financial statements were audited and adjusted, if material, during the independent, external audit process.

## Summary of Organization and Business

The Authority was created under the Pennsylvania Municipality Authorities Act of 1935, being the Act of June 28, 1935, P.L. 463, as amended by the Act of May 20, 1937, P.L. 739, as amended by Act 85, approved May 17, 1939, as a public, nonprofit corporation to acquire and distribute supplies of fresh water for industrial and domestic purposes within its service area. The Authority was incorporated on July 6, 1939 and is now governed by the "Act" and a Board that consists of five members who are appointed by the City of Chester, Delaware County, Pennsylvania and now supplies water in a service area which includes all or portions of 32 municipalities in Delaware and Chester Counties, Pennsylvania.

The Authority has no taxing power. Operational and maintenance costs are funded from customer fees and charges. The acquisition and construction of capital assets are funded by the issuance of municipal bonds, capital contributions from customers, including other utilities and developers, and customer revenues.

## Source of Supply/Water Treatment Facilities

The Authority provides reliable high quality supplies of potable water used for drinking, irrigation, fire protection and other purposes. The Authority has an adequate source of water supply, pursuant to an agreement and permits, which authorize it to withdraw a total of 30 million gallons per day ("MGD") from the Susquehanna River at a point approximately 50 miles west of the City of Chester. This source of supply together with the 30 MGD that the Authority may withdraw from its raw water reservoir on Octoraro Creek in Chester County, Pennsylvania will provide the Authority with an adequate quantity of water. The Water System of the Authority includes a Treatment Plant located near Octoraro Reservoir. The Octoraro surface water plant is the sole treatment facility, using the Octoraro Creek and the Susquehanna River as its sources of supply. The Authority has the ability to withdraw 60 million gallons per day (MGD) from these sources. The capacity of the filters at the Treatment Plant is approximately 75 MGD. The Authority has constructed a chemical storage building having a capacity for a 10-14 day supply of chemicals (based on 60 MGD operating rate). The level of treatment complies with the current regulations under the Federal Safe Drinking Water Act.

## Transmission Facilities

The capacity of treated-water pumps at the Treatment Plant is 54 MGD (not including 35 MGD in standby facilities). The treated water is pumped from the Treatment Plant to the three Oxford Summit storage tanks five miles from the Treatment Plant. From the storage tanks water flows by gravity 34 miles to the demand center in Delaware County, Pennsylvania. This gravity transmission main originally had a capacity of 37 MGD. In order to increase the capacity, The Authority constructed 2 pumping stations (Rosedale and Kelton Pumping Stations), which increased the capacity of the transmission main first to approximately 44 MGD and then to 54 MGD.

The table at the top of page 20 illustrates the stable trends of average daily pumpage for the Water System over the past ten years:

Years	Average Daily Pumpage for the Year MGD
2001	35.64
2002	33.98
2003	33.71
2004	33.71
2005	34.20
2006	34.21
2007	33.99
2008	32.93
2009	31.43
2010	32.42
2011	31.30

### Storage Facilities and Distribution System

The Authority has covered storage facilities with an aggregate capacity of 105.5 million gallons of treated water representing a supply for approximately three days' average use. The distribution system including transmission main comprises approximately 656 miles of pipelines varying in diameter from 48-inch down to 3/4-inch.

The following table presents the Authority's storage facilities:

Storage Facilities	Million Gallons
Village Green Tanks	87.70
Oxford Summit Tanks	9.00
Harrison Hill Tank	4.00
Brinton Lake Tank	2.50
Norway Tank	1.00
Jennersville Tank	0.45
Newark Road Tank	0.25
Broadmeadows Tank	0.30
Bethel Tank	0.30
<b>TOTAL</b>	<b>105.50</b>

### The Service Area

The Authority delivers public water supply in the City of Chester, Western Delaware County and Southern Chester County. The population served directly or indirectly is estimated to be 200,000.

The Authority supplies water service to the following seven water utilities and municipalities on a wholesale contract basis: Borough of Oxford; Borough of Kennett Square; London Grove Township Municipal Authority; United Water Company-Bethel; Aqua PA; Artesian Water Company and United Water Company, Delaware.

### Employees

The Authority now has 147 full time employees, 71 of which belong to the Service Employees International Union Local 32 BJ, Mid Atlantic District. The current Union contract expires December 31, 2014.

### Water Rate Covenant

The Authority covenants in the Bond Resolution that it will fix and charge water rates and charges upon the users of the Water System, which will be sufficient to provide for:

1. The reasonable expenses of the Authority for operating, maintaining and repairing the Water System; and
2. A debt service fund sufficient for the payment of interest on the outstanding Bonds and principal thereof at maturity.

The Authority has met all covenants of the Bond Resolution in each year, including 2011.

### Financial Analysis

The comparative condensed financial statements and other selected information (see tables on page 16) serve as the key financial data and indicators management uses in monitoring and planning. The Authority is reporting in compliance with GASB 33 and 34.

### General Trends and Significant Events

The population growth rate in Delaware and Chester Counties over the last five years has been approximately 0.6% and 8.8%, respectively. Total customer accounts increased 0.09% from 2010 to a total of 42,516 in 2011.

During 2011, the average rainfall for the water treatment plant area was 45.21 inches per year. Rainfall recorded at the water treatment plant for 2011 was 61.12 inches. The summer months received more rain in 2011 compared to 2010.

The volume of water sold in the year 2011 was approximately 9.389 billion gallons, a decrease of 4.5% from the year 2010. Water consumption was lower in 2011 compared to 2010 due to Delaware and Chester Counties having rainy August and December months as well as two late summer tropical systems (Storms Irene and Lee) affecting our service areas. In addition, two of the Authority's Industrial customers decreased their annual water usage approximately 25% due to idling their Delaware County plants so that they could sell or close them during 2012.

Residential and Commercial water customers accounted for 42% in 2011 as compared to 39.1% in 2010 of the volume sold, and 54% in 2011 as compared to 53% in 2010 of the revenue earned on water sales.

### Financial Condition

The Authority's financial condition remained strong at year-end with adequate liquid assets and unrestricted net assets. Management believes that the current financial condition, technical support staff capabilities, and operating and expansion plans to meet anticipated customer needs are well balanced and under control.

Total assets grew \$1,795,245 from 2010 or 0.7%. This balance sheet increase was primarily related to additions to property, plant and equipment, net of accumulated depreciation of \$6,924,329 offset by the decrease in unrestricted and restricted investments of \$5,539,055. The investments were used to finance The Authority's capital projects.

## Results of Operations

**Operating Revenues:** Revenues from operations fall into water services and ancillary charges. Ancillary charges include tapping fees, delinquency turnoff fees, engineering and inspection services and charges for other miscellaneous services. The Authority has five classes of water customers: residential, commercial, industrial, fire protection and other water utilities.

### Operating Revenue from Water Services and Other Fees:

	2011	2010	Change	%
Residential	\$ 17,364,490	\$ 16,505,313	\$ 859,177	5.2
Commercial	6,354,927	6,443,829	(88,902)	-1.4
Industrial	8,918,921	9,329,564	(410,643)	-4.4
Fire Protection	3,400,555	3,326,281	74,274	2.2
Other Water Utilities	6,784,190	6,565,069	219,121	3.3
Capacity, Flat Fees, and Late Fees	<u>1,054,899</u>	<u>1,164,225</u>	<u>(109,326)</u>	-9.4
<b>Total</b>	<b><u>\$ 43,877,982</u></b>	<b><u>\$ 43,334,281</u></b>	<b><u>\$ 543,701</u></b>	<b>1.3%</b>

Capacity, flat and late fees decreased by \$109,326 or 9.4% mainly due to capacity charges decreasing from \$229,649 in 2010 to \$152,539 in 2011 as a result of decrease in new real estate development and new housing down turn in our service area footprint due to the economy.

**Top Ten Customers:** The top ten industrial and commercial customers (excludes other water utilities) account for approximately 20.52% of total operating revenues, of which the largest user represents 6.97% of 2011 total operating revenues.

Total annual billings to top ten largest customers as of December 31, 2011, 2010, 2009 and 2008 were \$9,002,763, \$9,347,320, \$8,454,526 and \$8,338,026, respectively.

**Annual Budget:** The Authority prepares an annual budget which is presented to the Authority Board. The budgeted revenues and expenses and changes in net assets for 2011 did not materially vary from the actual results except for the one-time board approved unfunded liability contribution to the Authority's pension plan and paying off remaining outstanding 2006 Bonds.

**Capital Contributions:** The Authority collects water capacity fees in order to ensure that current customers do not bear the entire burden of growth. These fees are paid by new customers and represent, on a residential equivalent unit basis, the cost of the water capacity represented by the new account. Most of these fees are paid for units of capacity purchased by residential and commercial real estate developers.

The Authority also receives and records additions to its distribution system from developers. Prior to GASB 33 and 34 implementation, the money and system assets received from the developers were recorded as direct contributions to the Authority's equity. GASB 33 and 34 require reporting the amounts through the

statement of revenues, expenses, and changes in net assets. Developers convey these residential systems and extensions to the Authority upon completion of projects in accordance with plans and specifications approved by the Authority. In 2011, developers contributed \$1,067,085 in system extensions, of which \$146,550 was received in cash to reimburse the Authority for its capital outlays. These contributions are not budgeted as they are of limited relevance to rate setting and the timing is not subject to Authority control. Developer-contributed system extensions were \$1,108,874 in 2010, \$2,899,792 in 2009; \$3,614,179 in 2008, \$6,704,948 in 2007 and \$3,736,565 in 2006.

**Expenses:** The Authority operates and maintains a potable water treatment and delivery system. All of the water production occurs at its 60 million gallons per day conventional surface water Octoraro treatment plant.

Operating expenses increased by \$5,275,765 and 17% in 2011 compared to 2010. The increase was mainly due to the following: a) one-time board approved unfunded actuarial accrued liability contribution to the Authority's pension plan in the amount of \$4,731,488, b) increase in allowance for uncollectible aged accounts in the amount of \$310,000, c) increase in legal defense related expenses in the amount of \$473,000.

The authority had a total of 87 breaks in 2011 compared to 77 breaks in 2010. In 2011, more than 50% of the main breaks were 6 inches or more in diameter.

## Changes in Property, Plant, and Equipment Cost Value

Property, plant and equipment cost value, excluding depreciation, increased by \$12,671,001 net of disposals, of which \$11,571,000 was funded by the Authority's capital funds and operations and \$1,100,000 was funded from developer contributions (excluding tapping fees). The Authority's major capital asset additions during 2011 were as follows: a) \$854,000 new mains, b) \$7,360,000 for general plant and equipment including Octoraro Water Pumping Upgrade Phase IV jobs closed out, c) \$1,093,000 for service renewals and new additions d) \$266,000 for distribution structure including Lexington Point Booster job closed out, and e) \$1,229,000 for residential meter renewals.





Chester Water Authority

**Chester Water Authority**

**P.O. Box 467**

**Chester, PA 19016**



**Quality.**

**Service.**

**Value.**