

**Chester Water Authority**

**2004 Annual Report**

**Thinking Globally,  
Acting Locally**



**Chester Water Authority**



## Board of Directors



### Thinking Globally... Acting Locally

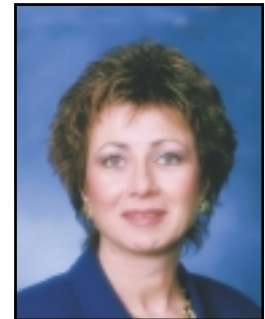
**P**rotecting water resources and ensuring safe drinking water are critical issues we face as a global community.

Locally, our Octoraro Reservoir and the area surrounding it is a beautiful environment that is home to eagles, fish, and other wildlife. Chester Water Authority (CWA) has worked with the Octoraro Watershed Association for more than 30 years, as well as with the Octoraro Nitrate Task Force, and is helping to preserve this precious water resource for future generations.

CWA consistently meets and exceeds state and federal regulations for drinking-water quality. We voluntarily participate in the Partnership for Safe Water, meeting even more stringent standards to earn the Partnership Director's Award in early 2004.



**Donald F. Tonge**  
*Chairman*



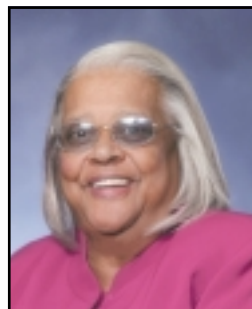
**Linda A. Cartisano, Esq.**  
*Vice Chairman*



**Norma Jean Holmes**  
*Treasurer*



**Mary Smith**  
*Secretary*



**Earline R. Mann**  
*Assistant Secretary/  
Assistant Treasurer*



**Arthur Levy, Esq.**  
*Solicitor*

## 2004 Report to Bondholders

*In 2004, Chester Water Authority (CWA) completed its 65th year of service as a municipal authority and its 137th year of service as a water provider. The Authority continued to expand our customer base — reaching a milestone of 40,000 active customers — while focusing on our mission of providing “Quality, Service, and Value” in all aspects of our operation.*

*This was the second consecutive year of much higher than average precipitation, with a total rainfall of 54.48 inches recorded at our Octoraro Treatment Plant. The annual average for our area is 44 inches. Yet, even with higher-than-average rainfall totals during 2004, CWA was able to meet our projected total revenue and expense goals within 1.0 percent and increase operating revenues to \$27,337,456. Moreover, the Authority was still able to provide water service to our customers at approximately 65 percent of the cost charged to customers of neighboring private utilities.*

*The CWA Financial Statement for 2004 is presented in a condensed form as part of this report. Complete financial statements in conformity with U.S. Governmental Accounting Standards Board (GASB) Statements 33 and 34 are available on request.*

*A significant financial event was the issuance of a \$6 million bond issue, which was settled on December 15, 2004. Bond issues such as this one, along with our revenue surplus, sustain our capital reinvestment program, which in 2004 was \$7.65 million. The Authority also initiated a rate study, looking toward the possible implementation of a rate increase in the summer of 2005 to bolster our cash reserves.*

*The purpose of the CWA proactive capital construction program is to ensure that the water we deliver is provided in strict compliance with all U.S. Environmental Protection Agency (EPA) and Pennsylvania Department of Environmental Protection (PA DEP) regulations that pertain to public water suppliers.*

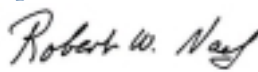
*The current financial and physical conditions of the Authority are a credit to the Board of Directors and a work force dedicated to our mission of providing “Quality, Service, and Value” to our customers and fiscal responsibility to our bondholders.*

*After 28 years of service and responsibility for the financial affairs of the Authority, Controller William A. Atlee, Jr., retired on August 1, 2004. Elizabeth A. McGoldrick, who has been with the Authority since 1983, was appointed by the Board of Directors to replace Mr. Atlee.*

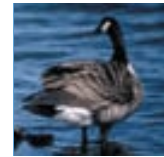
*The management and Board of Directors recognize the contributions of our employees and retirees in continuing to accomplish our mission in 2004.*



Donald F. Tonge  
Chairman of the Board



Robert W. Naef  
Executive Manager &  
Chief Engineer



### Chester Water Authority 2004 milestones

- **137 years of service**
- **Water supplied to more than 40,000 active customers — at about half the cost of neighboring private utilities**
- **Rate study initiated**
- **\$6 million bond issue settled**
- **Information Systems Department moved to renovated Kriebel House**
- **Water-bottling facility under construction**

### **Our local actions make good environmental and economic sense;**

treating clean water is far less costly than treating polluted water. Protecting our watershed means savings, which helps us keep our rates below those of all other local water companies. We are investing in our plant, equipment, processes, and people to ensure that we continue to provide “Quality, Service, and Value” to our 40,000 customers today and tomorrow, and to even more customers in the future.



## **OCTORARO TREATMENT PLANT: Meeting Changing Regulations**

### **Treatment Plant Comprehensive Review Completed**

Pending approval by the Board of Directors, in 2005 CWA plans to begin a 10-year capital improvement program for the Octoraro Treatment Plant, based on the recommendations of a comprehensive review that was completed in 2004.

The Octoraro Treatment Plant was constructed in 1951 to treat 18 million gallons per day (mgd) of water. Its design was based on the treatment concept of removing particulates and disinfecting the water, a concept that had prevailed since the late 1930s, well before the establishment of the Environmental Protection Agency (EPA) and passage of the Safe Drinking Water Act and numerous other federal and state regulations.

Over the past 53 years, the Octoraro Treatment Plant has been modified to meet evolving federal and state regulations, such as those pertaining to disinfection by-products and turbidity. The plant was ultimately expanded to 60 mgd to meet the growing demand for capacity. Anticipating that these trends will continue, the Authority asked a consultant to perform a comprehensive review of the treatment plant, examining existing facilities and treatment capabilities.

Completed in 2004, the study found no existing shortcomings at the Octoraro Treatment Plant, but recommended an intensive modernization plan to meet future regulatory requirements and improve efficiencies. Recommendations include improvements to the process of blending raw water from the Octoraro Reservoir and the Susquehanna River, additional chemical feed locations, automation of processes, upgrades in sedimentation and mixing capacity, and upgrades of the high-service pumping system feeding the transmission main.

Based on the study's findings, the Authority plans a three-phase modernization program. The first phase of the program will add a fourth pump to the Susquehanna Pumping Station and a generator for back-up power. The variable-speed pump will have a capacity of 5 to 8 mgd and will deliver raw water to the treatment plant when nitrate levels in the Octoraro Reservoir are above the regulatory limits of 10 parts per million (ppm). The Authority anticipates completing design and obtaining all permits in 2005, with construction taking place in 2006.

### Water Supply Study Findings Presented to Susquehanna River Basin Commission

In May 2004, the Authority presented to the Susquehanna River Basin Commission (SRBC) and the Pennsylvania Department of Environmental Protection (PA DEP) the findings of a study to identify a viable option to augment our supply of raw water. The study, which was completed in December 2003, concluded that modification of our existing permit with the SRBC would allow us to better manage our raw water sources.



The Authority's current permit allows us to withdraw 30 million gallons per day (mgd) from the Susquehanna River. However, if the Authority were permitted to withdraw up to 40 mgd (yet maintain an annual average of 30 mgd or less), then we could increase the amount of raw water available for treatment by 15 to 20 percent during a drought. Although planning and preparedness enabled the Authority to provide our customers with clean, quality drinking water throughout the severe drought of 2002, a 40 mgd permit would have provided greater flexibility.

The SRBC, which has regulatory oversight over our Susquehanna River allocation, and the PA DEP would have to agree on a request to modify our allocation permit. The May 2004 meeting was a preliminary step to a formal application for modification of our permit. In fall 2004, the Authority followed up with a letter asking the SRBC for feedback.

The water supply study assessed the feasibility of using ground water and alternate surface water sources and concluded that modification of our Susquehanna River allocation and use of our existing infrastructure is the most cost-effective option.

### Automation of Filter #1 Completed; Model for All 12 Filters

The Authority completed construction on the automation of water filter #1 in May 2004. This successful conversion is serving as the model for retrofitting the remaining 11 filters at the Octoraro Treatment Plant. Manually operated hydraulic valves on the filters were converted to electrically operated valves with electronic controls to improve operational efficiency, automate control, allow for remote monitoring capabilities, and provide greater consistency of operation. Individual flow control of each of the two filter bays and automated backwash programming help to optimize filter performance in the production of finished water.



## Tainter Gate Bulkhead Engineering Design Completed

In 2004, CWA completed the analysis and engineering design for the refurbishment and maintenance of the Tainter gates on the Pine Grove Dam, which creates the Octoraro Reservoir. The Federal Energy Regulatory Commission (FERC) requires all owners of dams with Tainter gates in the United States to assess the gates' structural soundness and correct any deficiencies.

Construction bids are scheduled to be opened in March 2005, and the construction phase is anticipated to begin in May 2005. The contractor will design and fabricate a steel floating bulkhead to the gates' exact dimensions. In 2006, the bulkhead will be launched into the reservoir. It will be placed upstream of the gates to enable the gate area to be de-watered and the inspection and repair work to proceed. Steel-plate reinforcement will be added to the sides of the Tainter gate beams to satisfy current FERC requirements. At the same time, the gate-lifting chains will be replaced and the upstream faces of the gates will be repaired. The upstream faces of the Tainter gates have been in continuous service since the reservoir was filled in 1951.

### Completed Surge Facility Performs Well “Under Pressure”

A state-of-the-art surge valve facility completed by the Authority in June 2004 provides more reliable protection from the costly damage that can occur as a result of unexpected power outages, such as those of last summer and fall. Unexpected loss of power can create hydraulic pressure surges in the 42-inch transmission mains. These surges can create a “water hammer” effect that can severely damage our water transmission mains. The consolidated facility contains five new, electronically controlled surge valves, replacing three separate surge facilities, two of which dated to 1951.

The new facility includes a video link to the Octoraro Treatment Plant’s control room, providing live video picture that shows the status of the valves at the conclusion of a surge event. Before being put into service, the new facility was tested under simulated power outage conditions, and was inspected and approved by the PA DEP. In compliance with current PA DEP regulations, the new facility also dechlorinates water released by the surge valves into the Octoraro Creek, thereby protecting aquatic life.

### Chlorine Scrubber Project Under Construction

Construction is underway on a chlorine scrubber system. This system will contain, neutralize, and prevent the release of chlorine in the unlikely event that a chlorine cylinder is damaged or malfunctions. We anticipate that this safety-enhancement project will be completed, and the system will begin operating, in the spring or summer of 2005. CWA has used chlorination to disinfect finished water at the Octoraro Treatment Plant since 1951. Proper management of this key element in our treatment process is essential to ensure safety in the local area.



### Susquehanna Intake Modifications Increase Reliability

In 2004, CWA completed modifications to the Susquehanna River intake, increasing the size of the intake opening approximately 30 percent, and adding an air blower system that surrounds the intake. These modifications reduce the accumulation of ice, leaves, and other debris on the intake grate, making it less susceptible to clogging and improving the reliability of our secondary raw water source. This is particularly important in the winter months, when rising nitrate levels in the Octoraro Reservoir necessitate blending the Susquehanna raw water with the Octoraro water to reduce overall nitrate levels going to our treatment plant.

### Automated Nitrate Monitoring Undergoes Field-Testing

CWA continually investigates automation technology for its potential to improve our operations, including efficiency in data collection. Before purchasing and installing a new technology, the Authority conducts field tests to determine the equipment’s accuracy and reliability. For example, following successful field-testing in 2002, we completed automation of the stream- and rain-gauging stations throughout our 140-square-mile watershed. This provides real-time data on stream flow to our plant operators and eliminates the time-consuming process of manual data collection.

In late 2004, we began field-testing three automated nitrate analyzers. Nitrate levels are of particular interest during the cold winter months, when they tend to rise. After the field test, we selected one unit that performed reliably and have since installed the unit to monitor our Octoraro raw water source.



## **ENGINEERING: Planning and Designing Capital Improvements**

### **Completed Hydraulic Models Support Analysis and Planning**

In 2004, CWA completed our upgrades of the hydraulic models of all boosted areas of our water-distribution system in western Delaware County and southern Chester County. The project, which began in 2001, supports the continuation of excellent service to the communities in our growing service area. As a mathematical representation of the distribution system, the hydraulic model provides the Authority with information essential to making cost-effective decisions about extensions and renewals of the system by allowing our engineers to ask unlimited “What if?” questions and to see the results.

The Authority is using updated hydraulic models to size equipment for the New London Booster Station, which is in the design phase. We also used these models to determine how to provide greater reliability and back-up for our booster stations, and to enhance fire-flow capability. For example, we have determined the hydraulic benefits of interconnecting the New London Booster Station and the Creek Road Booster Station. (See “Anticipating and Responding to Growth in Chester County,” below.)

Our engineers are using the Authority’s Geographic Information System (GIS) to develop, map, and display the results of the models, replacing hand-plotted model results. This improves the efficiency of the process and enhances information-sharing among our departments. Implemented in 1998, the GIS provides detailed electronic maps of the Authority’s service areas, including land topography, roads, and water-distribution infrastructure.

### **Anticipating and Responding to Growth in Chester County**

Thanks to our commitment to ongoing planning, CWA has the capacity to respond to population growth in our service area. Chester County, in particular, is experiencing a population boom. From 1990 to 2000, the population of Chester County increased by 15.2 percent, to 433,501 people — making it the seventh-most-populated county in the state. In 2004, the Authority responded to developers’ requests to study capacity for 37 new developments, involving approximately 2,300 potential new services in Chester County. In addition, the Authority signed 15 main-extension agreements with developers and acquired 489 new services in the county.

In 2004, CWA also planned and designed a number of distribution-system improvements to serve current and future customers in growing areas of southern Chester County.

A new booster station will be located in New London Township on the border of Franklin Township. As part of this project, a main extension involving approximately 9,500 feet of new 12-inch-diameter main will tie the distribution system that is served by the New London Booster Station into the existing distribution system served by the Creek Road Booster Station. To provide interim service to a new development in Franklin Township, the Authority installed a temporary booster pump. In addition, two existing water mains in Penn Township will be connected with the installation of approximately 4,700 feet of 12-inch-diameter main along Corby Road, reinforcing service to these customers.

### East Marlborough System Expanded and Reinforced

In 2004, the Authority continued a multiphase expansion and reinforcement project to tie together two existing distribution systems in East Marlborough, Chester County. The project will enhance reliability for our customers in the area. Phase 1 of this project was completed in 2003, providing service to some existing homes and the Kennett Square Golf and Country Club. The Distribution Department recently completed Phase 2 of the project, installing approximately 7,000 feet of new water main — 1,900 feet of 12-inch-diameter ductile-iron, cement-lined (DICL) water main and 5,100 feet of 8-inch-diameter DICL water main. In December 2004, our Distribution Department began Phase 3 of the project, which involves installation of an additional 4,000 feet of water main. Phase 4 will involve the installation of approximately 4,500 feet of 12-inch-diameter water main and a pressure-reducing/check valve pit, which will complete this project.



### DISTRIBUTION: Preserving and Expanding Our Infrastructure

#### Village Green Tank Renovations Completed

In 2004, CWA cleaned, repaired, and repainted concrete tanks #2, #3, and #4, thereby completing the exterior renovations of all nine storage tanks at the Village Green Tank Farm in Delaware County — a process that began in 1998. In addition, the Authority completed security and safety upgrades on the three concrete tanks: installation of new vandal-deterrent ladders, new clog-resistant roof vents, and closure chains at the platforms and roof safety railings; removal of existing bottom safety cages; and modifications to the roof manhole on tank #3. The renovations are expected to preserve the excellent condition and reliability of our tanks for at least 15 to 20 years. Over the last six years, the Authority has invested a total of \$5.28 million in these renovations.

Ongoing preventive maintenance of our storage tanks has preserved and protected these valuable assets since the Tank Farm was constructed in 1950. This critically important facility not only provides for the daily water requirements of customers in Delaware County, it also provides a three- to four-day supply of water in the event of a transmission-main outage. The Village Green Tank Farm contains nine tanks with a total capacity of 90,000,000 gallons, which equates to a three-day supply of water.

#### Significant Progress on Route 291 Main Renewal

In 2004, CWA completed renewal of 7,500 feet of 6- and 10-inch-diameter cast-iron water main, as well as associated hydrants and services, as part of the Pennsylvania Department of Transportation's (PennDOT) Route 291 Phase 2 highway reconstruction project in the City of Chester. Phase 1 of the project was completed in 1999. In 2003 and 2004, the Authority substantially completed another key element of the project: the relocation and renewal of 3,650 feet of 20-inch-diameter cast-iron water main, which was replaced with 20-inch-diameter ductile-iron water main.

The project calls for CWA to replace 10,250 feet of 6- and 10-inch-diameter cast-iron water main with 8-inch-diameter water main along Route 291 and some side streets, with the work scheduled for completion in 2005. The total estimated cost of the water main renewal and relocation work associated with PennDOT's work is \$2.8 million, of which PennDOT has agreed to pay \$1.5 million.

The Phase 2 highway reconstruction project will make Second Street from Franklin to Trainer Streets into a five-lane highway by widening it from two to four lanes, plus a center turning lane. The Route 291 PennDOT project is an integral part of the public infrastructure improvement plan for the City of Chester's waterfront area and is an important contributor to Chester's overall revitalization. The water main renewal work represents the single largest water main renewal and relocation project undertaken by the Authority. This complex project has benefited from close coordination of the schedule between the Authority and PennDOT.

## **New Radio System Ensures Reliable Communications**

CWA has replaced our existing radio system with a new wireless radio system that will provide consistent, reliable communications between our office and field personnel throughout our service area, as well as direct communications with emergency management centers in four counties — even if cellular and land-line telephone services fail during a power outage.

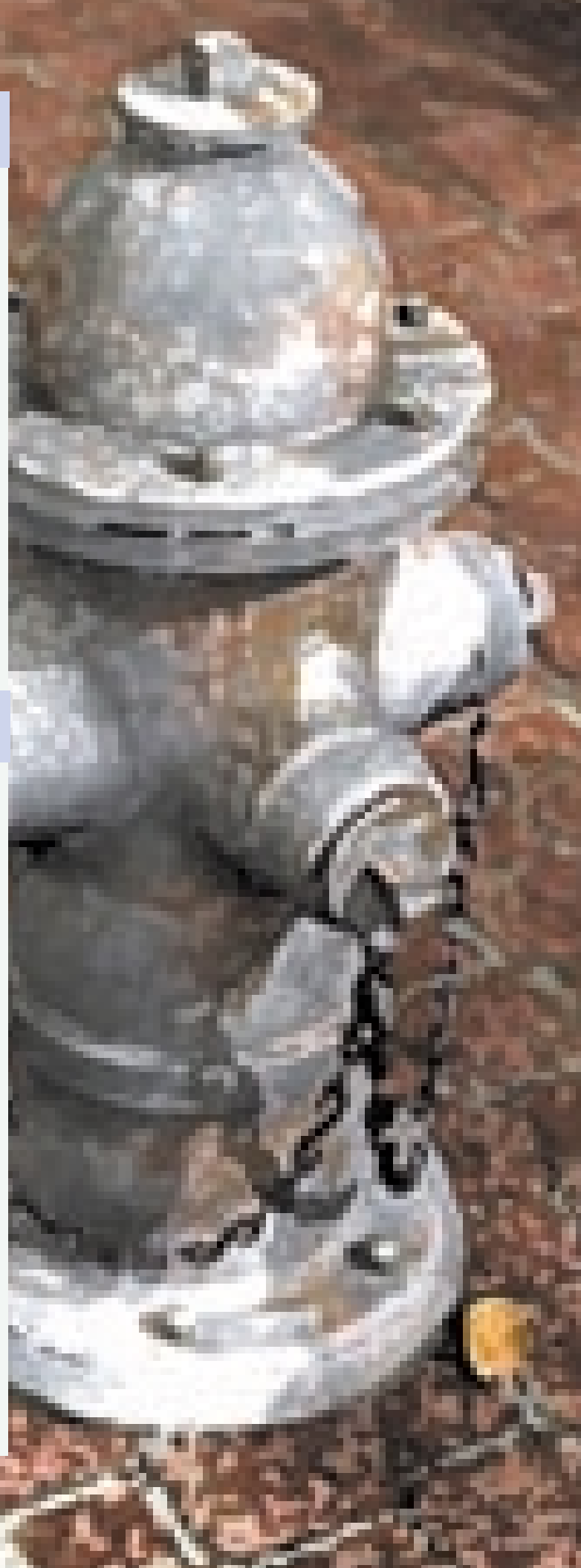
The Authority's original radio system in Delaware County was installed in 1966, and the portion in Lancaster County was installed in 1985. Even with upgrades over the years, the system remained highly dependent on land phone lines. If land lines were out of service, communications became questionable. Similarly, cellular phones can fail without emergency generator power at communication centers or in overload emergency conditions. The new system, which has been in operation since the end of 2004, has a high degree of reliability because of back-up generator power at our antenna sites during emergencies.

## **Team Approach Increases Efficiency of Hydrant Inspections**

Until recently, inspecting and flushing the 2,400 fire hydrants in CWA's water-distribution system was like repainting the Benjamin Franklin Bridge: it was a full-time job, best done at night to avoid customer inconvenience, and impossible to do in freezing weather. Thanks to the Authority's new team approach, the nighttime hydrant inspection and flushing process is now completed within three months, by the end of October, allowing time for day crews to make any needed repairs before winter.

Before 2003, the Authority assigned one or two employees in one vehicle to inspect and flush our fire hydrants. Scheduled at night to avoid the customer inconvenience associated with pressure reductions and discolored-water episodes, the process took the better part of a year.

CWA's new strategy assigns three crew members to go out in three vehicles and work as a team, "leap-frogging" one another to inspect and flush each hydrant. From August to October 2004, the team completed the process on all 2,400 hydrants. Our Distribution Department coordinated these efforts with the Authority's Human Resources/Public Relations Department, which mailed scheduling notices to municipalities, fire chiefs, and county fire boards, as well as to newspapers in our service areas.



### **Automated Meter Reading Program Surpasses 24,000**

In 2004, CWA installed 2,728 Automated Meter Reading (AMR) meters, including new meters and conversions, bringing the total installed to date to 24,553 meters out of a total of 40,000 active customers. With AMR, our meter reader uses a hand-held or truck-mounted electronic device to activate a radio-controlled device on the water meter and record the current reading. Fast, accurate, and efficient, AMR enables the Authority to obtain an actual reading without entering a customer's home or office. This avoids inconveniencing customers and eliminates estimated readings, improving billing accuracy.

The AMR program began in 1996 with a pilot project of 600 readers in New Garden Township, Chester County. Unlike many water utilities, which hire outside contractors to replace meters, the Authority has had our own employees perform all conversions and new installations since the conclusion of the pilot project, enhancing our control over the pace, quality, and cost of the project.

### **Leak Study Completed on 100 Miles of Water Main**

CWA completed our annual leak survey of the older sections of water main system, where leaks are more likely to occur. Our consultant surveyed 100 miles of water main, using electronic leak-detection equipment to find underground leaks that have not surfaced. This process discovers leaks when they are relatively small, enabling us to repair them before they cause major problems, such as a sinkhole. The survey is performed during the summer to provide time to make repairs before winter. The \$40,000 cost of the survey is equal to or exceeded by the savings in preventing main breaks and associated damage, and water leakage.

### **Water-Quality Monitoring Equipment Linked to SCADA**

CWA completed several expansions of our Supervisory Control and Data Acquisition (SCADA) system, which enables remote monitoring and management of vital points throughout our distribution system. The Authority installed and linked to SCADA water-quality monitoring equipment at the Jennersville Booster Station and the Brinton Lake Booster Station, where we are monitoring and developing trend data on residual chlorine content; and at the Village Green Booster Station, where we are monitoring and developing trend data on residual chlorine, pH, and turbidity. Full-time remote monitoring of these important parameters enables rapid response to potential water-quality issues on a day-to-day basis. It also enhances security preparedness in the unlikely event that someone might deliberately attempt to introduce contaminants into the distribution system. For the same reason, the Authority installed security devices at our facilities that are managed by SCADA.

Accessible from many Authority computer stations or laptops, SCADA permits rapid identification of changing conditions and quick response to emergencies. It provides the detailed data essential to understanding water-system operations and designing system improvements. SCADA is also capable of sharing data with the Authority's other information-management systems, contributing to an integrated picture of our operations.

### **Expanding the Infrastructure Management System**

Timely preventive maintenance keeps CWA's infrastructure operating at optimal efficiency. The Authority's electronic Infrastructure Management System (IMS) is a key to effective planning, scheduling, and tracking of maintenance activities. Implemented in 1987, the IMS manages information about the maintenance of our water mains, fire hydrants, valves, and service lines. For example, Distribution personnel can easily access a customer's address and see the service history on the service line; they can analyze accumulated pressure and flow data for a fire hydrant; or they can look up the manufacturer and model number of a piece of equipment so that field crews know what parts to take along for an efficient repair.

Over the past seven years, the Authority has continued to expand this data-management system to include additional equipment. In 2004, our facility maintenance staff began using the IMS to track maintenance and repairs on pumps, motors, pressure-reducing valves, altitude valves, and tanks. Meter shop personnel began using the system for their commercial and industrial meters, building a database that will help them schedule and track meter change-outs. Moreover, a link with the Accounting Department's inventory system allows the Distribution Department to electronically track the costs of materials, paving, and permits.



## **ACCOUNTING AND INFORMATION SYSTEMS: Managing and Reporting Financial Data**

### **Information Systems Moved to Kriebel House**

CWA's purchase and renovation of the historic "Kriebel House" has provided approximately 3,000 square feet of modern office space for the Information Systems Department of the Authority's Administrative Group, while preserving a noteworthy building in the City of Chester. Located on the corner of 4th and Crosby Streets, the twin residential structure was constructed in the 1840s. The renovation project restored the exterior of the building and provided up-to-date mechanical, electrical, and information systems within the building in a completely modern office setting. The Authority purchased additional properties on the block to consolidate the area around our Main Office for possible future use.

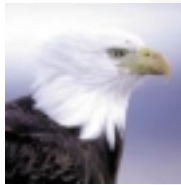
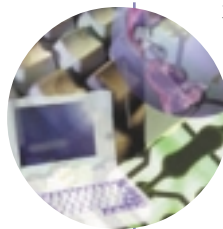
### **New Web-Based HR/Payroll Package in Place**

In 2004, CWA completed the purchase, testing, and implementation of a new, Web-based Human Resources/Payroll information system. The Kronos Workforce Central Suite is an integrated system that includes an electronic time-sheet application. It replaced the Authority's existing HR/Payroll system, providing for enhanced technical support, future upgrades, and the flexibility and power of Web-based technology.

### Asset Accounting Process Completed Ahead of Schedule

In 2003, CWA completed a calculation of depreciation and fixed assets dating back to 1939 — exceeding the requirements of the U.S. Governmental Accounting Standards Board's (GASB) new reporting standard ("GASB Statement 34") for state and local governments as well as completing the process a year ahead of schedule. In 2004, the Authority continued to make progress in entering this data into the fixed-assets model of our Financial Information System (FIS), which is being used to track depreciation going forward.

GASB issued the new reporting standard in July 1999. Under the new standard, government entities must depreciate their assets each year and report total asset value less accumulated depreciation (i.e., net asset value) on their financial statements. The change was first reflected on our 2003 financial statement. Although GASB Statement 34 required the Authority to review and estimate our asset records only as far back as 1983, we chose to delve back further to enhance the data on our infrastructure for analysis and planning purposes.



### EXECUTIVE OFFICE: Vision and Leadership

### Bond Issues Help Advance Our Capital Program

In December 2004, CWA settled a \$6 million bond issue, and we are planning a \$9.7 million bond issue for early 2005, along with a rate increase in the summer of 2005. Bond issues are an integral source of funding for our capital improvement program — the investments we make in our infrastructure for the continuing benefit of our current and future customers.

In 2004, our capital spending on new facility construction, system expansion, and refurbishment of existing infrastructure was \$7.65 million. This investment ensures that we have the capacity to meet current and future customer needs, meet evolving federal and state regulations, and provide the highest value to our customers.

### Water Bottling Facility Is a Unique Solution

CWA has taken another proactive step to ensure that we can always provide the best possible service to our customers: construction of a 3,000-square-foot water-bottling facility at our Distribution Headquarters. The facility provides a systematic way to produce quality bottled drinking water for customers in the event of a disruption in service so that they need not purchase bottled water from a store. The decision to build the facility also anticipated possible future regulations covering provision of water to customers during an outage. With construction of the bottling facility, the Authority is providing a unique solution to this issue — we do not know of another water company or municipal authority in our area that is bottling its water for this purpose. Bottled water also enables us to supply samples of our high-quality product for potential new customers and to promote the Chester Water Authority promise of "Quality, Service, and Value."

Operating under the Authority's general permit, the bottling and storage facility has the capacity to produce 1,500 bottles per hour. Initially, we plan to produce 16.9-ounce and 24-ounce bottles, which can be delivered to residential customers in six-packs in the event of an outage. Production is expected to be intermittent, requiring no additional staff. The facility will also be used to consolidate storage of equipment from a number of sites, improving the inventory, monitoring, and control of this equipment.

# Management Staff



**Robert W. Naef, P.E.**  
*Executive Manager and  
Chief Engineer*



**Russell C. Williams, P.E.**  
*Director, Engineering/  
Assistant Executive Manager*



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



**David J. Krupiak**  
*Chief of Distribution*



**Mitchell A. Kaplan**  
*Director,  
Information Systems*



**Brian P. MacEwen, P.E.**  
*Director, Capital Programs*



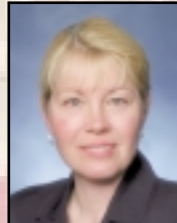
**Elizabeth A. McGoldrick**  
*Controller*



**Theodore J. Pawlik,  
S.P.H.R.**  
*Director, Human Resources/  
Public Information*



**Diane M. Shull**  
*Director,  
Business Office Group*



**Sandra L. Hunt**  
*Executive Administrator*



## MANAGEMENT'S DISCUSSION AND ANALYSIS FOR 2004

This section presents management's analysis of the Authority's financial condition and activities for the year. The audited financial statements of Chester Water Authority as of December 31, 2004, are available upon request at the Authority's office.

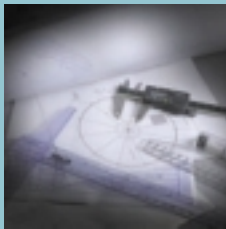
### Financial Highlights

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 2004:

- The Authority issued \$6,000,000 of water revenue bonds in December 2004. The Authority also issued \$9,700,000 of water revenue bonds in March 2005. At December 31, 2004 the indebtedness of the Authority was \$42,330,000. The 2004 and 2005 bond proceeds will be used for the Authority's capital program.
- The Authority adopted a general rate increase of approximately 10.0% for all consumers effective January 1, 2003. In January 2005, the Authority adopted a rate increase of 10.3% effective July 1, 2005 to support an active Capital Construction Program and continue with the traditional on-going proactive maintenance program.
- At December 31, 2004 and 2003, total assets were \$176,110,356 and \$169,181,308, respectively; total liabilities were \$45,197,319 and \$42,283,557; and net assets were \$130,913,037 and \$126,897,751.
- For the year 2004, the Authority delivered 10.435 billion gallons of water, compared to 10.486 billion gallons of water in 2003. The year 2004 was a wetter year than normal, with 54.48 inches of rain compared to normal precipitation of 43.9 inches. Industrial usage decreased and one industrial customer changed its operating procedures.
- Operating revenues were \$27,337,456, an increase over year 2003 of \$275,033.
- Operating expenses were \$24,567,413, an increase of \$1,387,367 or a 6.0% increase over 2003. This increase was due to an increase in salary and social security of \$458,758, depreciation of \$232,747, electric, diesel, and gas of \$151,976, Susquehanna River Basin Commission charges of \$55,248, and a reduction in overhead credit of \$94,793. Increases in contracted services, insurances, and other miscellaneous expenses made up the balance of \$393,841.
- Operating income for the year was \$2,770,043 representing a \$1,112,334 decrease over 2003. Net assets increased \$4,015,286, which includes \$2,582,802 of developer contributions.
- The operating ratio (operating revenues divided by operating expenses less depreciation) was 1.39 in 2004, versus 1.46 in 2003.

### 2004

<b>Average Daily Pumpage (gal.)</b>	33.7 million
<b>Total Customers</b>	40,427
<b>Distribution Main (miles)</b>	602
<b>Total Operating Revenue</b>	\$27,337,456
<b>Average Annual Domestic Bill</b>	\$265.05
<b>Total Assets</b>	\$176,110,356
<b>Funded Debt, net</b>	\$42,200,995
<b>Total Operating Expenses</b>	\$24,567,413



## 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 portions of 39 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.

The Authority provides reliable high quality supplies of potable water used for drinking, irrigation, fire protection and other purposes. 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 from these sources.

## Financial Analysis

The following comparative condensed financial statements and other selected information serve as the key financial data and indicators of management, monitoring and planning. The Authority is reporting in compliance with GASB 33 and 34.

## Condensed Statement of Net Assets

	December 31, 2004	December 31, 2003
Current and other assets	\$ 24,464,573	\$ 23,311,054
Capital assets—net of accumulated depreciation	<u>151,645,783</u>	<u>145,870,254</u>
Total assets	176,110,356	169,181,308
Current and other liabilities	<u>45,197,319</u>	<u>42,283,557</u>
Net assets	<u>\$ 130,913,037</u>	<u>\$ 126,897,751</u>

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

	Year Ended December 31, 2004	Year Ended December 31, 2003
Operating revenues	\$ 27,337,456	\$ 27,062,423
Operating expenses	<u>24,567,413</u>	<u>23,180,046</u>
Operating income	<u>2,770,043</u>	<u>3,882,377</u>
Nonoperating income:		
Capital contributions	2,582,802	2,982,108
Interest income	411,637	642,312
Other	<u>24,782</u>	<u>21,840</u>
Total nonoperating income	<u>3,019,221</u>	<u>3,646,260</u>
Total nonoperating expenses	<u>1,773,978</u>	<u>1,983,255</u>
Increase (decrease) in net assets	<u>\$ 4,015,286</u>	<u>\$ 5,545,382</u>

## Selected Statistical Information

	2004	2003	Change Amount	Change %
Full-time positions at year-end	142	142	0	0.0
Average full-time employees	141.6	141	0.6	0.4
Water customers at year-end:				
Residential	37,808	37,190	618	1.7
Commercial	2,151	2,113	38	1.8
Industrial	61	59	2	3.0
Fire protection	396	372	24	6.5
Other water utilities	<u>11</u>	<u>11</u>	<u>0</u>	0.0
Total	<u>40,427</u>	<u>39,745</u>	<u>682</u>	1.7
Average Residential Bill	<u>\$ 265.05</u>	<u>\$ 267.97</u>	<u>\$ ( 2.92)</u>	(1.1)
Water consumption (millions of gallons):				
Residential & commercial	3,813.5	3,806.6	6.9	0.2
Industrial	4,527.7	4,613.5	(85.8)	(1.9)
Other water utilities	2,067.2	2,039.9	27.3	1.3
Fire Protection	<u>26.6</u>	<u>25.5</u>	<u>1.1</u>	4.3
Total	<u>10,435.0</u>	<u>10,485.5</u>	<u>(50.5)</u>	(0.5)
Revenues per 1,000 gallons consumed	<u>\$ 2.57</u>	<u>\$ 2.58</u>	<u>\$ (0.01)</u>	(0.4)
Expenses per 1,000 gallons consumed	<u>\$ 2.35</u>	<u>\$ 2.21</u>	<u>\$ 0.14</u>	6.3



## General Trends and Significant Events

The population growth rate in Delaware and Chester Counties over the last decade has been approximately 0.6% and 15.2% respectively. Total customer accounts increased 1.7% from 2003 to a total of 40,427 in 2004.

Weather temperatures during 2004 remained consistent with historical averages, but rainfall was somewhat high for the second consecutive year. The average rainfall for the area is 43.9 inches per year. Rainfall recorded at the water treatment plant for 2004 was 54.48 inches, more than 10.0 inches greater than the historical average.

The volume of water sold in the year 2004 was approximately 10.435 billion gallons, a very slight decrease of 0.5% from the year 2003. Although the Authority's service area continues to experience growth, customer response to the previous year's water conservation messages and higher than normal rainfall resulted in slightly lower demand in 2004. Retail water customers (Residential/Commercial) accounted for 36.5% as compared to 36% in 2003 of the volume sold, and 51.8% as compared to 51% in 2003 of the revenue earned on water sales.

## Financial Condition

The Authority's financial condition remained strong at year-end with adequate liquid assets, a reliable plant and system to meet demand and a reasonable level of unrestricted net assets. 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 \$6,929,048 from 2003 or 4.1%. This increase was primarily related to the addition of capital assets, including work on year 2004 capital improvement program, developer contributions, and other asset acquisitions. Accounts receivable at year-end were \$307,604 more than year-end 2003 due to progress and final invoices on State projects which was \$377,838 and a decrease of \$70,538 in customer accounts receivable.

## 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:

	2004	2003	Change	%
Residential	\$10,051,202	\$ 9,905,354	\$ 145,848	1.5
Commercial	3,834,264	3,774,413	59,851	1.6
Industrial	6,087,454	6,203,197	(115,743)	(1.9)
Fire Protection	1,953,423	1,841,575	111,848	6.1
Other Water Utilities	4,882,049	4,788,227	93,822	2.0
Capacity and Flat Fees	<u>529,064</u>	<u>549,657</u>	<u>(20,593)</u>	(3.7)
Total	<u>\$27,337,456</u>	<u>\$ 27,062,423</u>	<u>\$ 275,033</u>	1.0

Revenues remained relatively flat due to no increase in rates. Increases in residential, fire protection and other water utilities were offset by a decrease in industrial revenue.

## Capital Contributions and Grants:

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 or records additions to its distribution system from developers. Prior to GASB 33 and 34 implementation, the money and system assets received were recorded as direct contributions to the Authority's equity. GASB 33 and 34 define these fees as non-operating revenues and requires 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 2004, developers contributed \$2,275,229 in system extensions, of which \$815,782 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.

### 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.

Total operating expenses of the Authority increased \$1,387,363, and operating revenues increased, \$275,033.

Operating income was \$2,770,047 for 2004 compared to \$3,882,377 for 2003, a decrease in operating margin of \$1,112,330. Operating expenses, including depreciation, for 2004 and 2003 were \$24,567,409 and \$23,180,046 respectively.

Operating expenses increased 6% in 2004 compared to 2003. Wages and fringe benefits increased 5.55% from 2003 to 2004. The Authority granted approximately a 3.25% cost of living wage increase at the beginning of the year for both non-union and union personnel. The number of full time positions for 2004 and 2003 was 142.

### Cash Flow Activity

The following table shows the Authority's ability to generate operating cash and the use of that cash in the Authority's capital spending program. Amounts are shown both in total dollars and as a percentage of operating revenues.

	2004		2003	
Total operating revenues	\$ 27,337,456	100.0 %	\$27,062,423	100.0%
Net cash provided by operations	\$ 7,205,385	26.4 %	\$ 8,573,306	31.5 %
Operating cash used for acquisition of property, plant and equipment	(5,551,940)	20.3 %	(7,644,276)	(28.1)%
Net operating cash available for other purposes	\$ 1,653,445	6.1 %	\$ 981,793	3.6 %

### Capital Assets and Debt Administration

The investment in plant and equipment, net of related debt, grew \$7,755,034 during 2004. Property, plant and equipment in service, excluding depreciation, increased \$10,633,645 with \$2,806,476 funded by bond proceeds, \$2,275,229 from developer contributions (excluding tapping fees), \$371,920 funded by capacity fees and the remaining from surplus revenues in the Capital Additions Fund. General equipment purchases were \$1,258,533, primarily for electrical pumping equipment, vehicles and other general operating equipment, and \$391,686 for information technology equipment.

### 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 for 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 2004 and 2003.

