THOMAS, LONG,
NIESEN & KENNARD
*Attorneys and Counsellors at Law*

CHARLES E. THOMAS, JR.
Direct Dial: 717.255.7615
cthomasjr@thomaslonglaw.com

November 22, 2010



Rosemary Chiavetta, Secretary
Pennsylvania Public Utility Commission
Commonwealth Keystone Building
400 North Street
P.O. Box 3265
Harrisburg, PA 17105-3265

In re: Docket No. R-2010-2166212, *et al.*
Pennsylvania Public Utility Commission, *et al.* v. Pennsylvania American Water Company, Coatesville Wastewater Operations

Dear Secretary Chiavetta:

We are counsel for the City of Coatesville, the Borough of Parkesburg and the Township of East Fallowfield (collectively the City/Borough Alliance" or "CBA") in the above matter. In accordance with Chief Administrative Law Judge Rainey's Recommended Decision served in the matter by Secretarial Letter dated November 17, 2010 and the Motion for Admission of Testimony and Exhibits filed on behalf of the active parties to the proceeding on November 17, 2010 and granted by Judge Rainey on the same date, we are herewith filing two copies of each of the following statements of testimony and exhibits sponsored in the proceeding by the City/Borough Alliance:

(1) CBA Statement No. RDA-1 containing the prepared direct testimony of Robert D. Ambrose with attachments 1 and 2 and accompanying exhibits, CBA Exhibit No. RDA-1 and CBA Exhibit No. RDA-2;

(2) CBA Statement No. RDA-1-Supplemental containing the prepared supplemental testimony of Robert D. Ambrose and accompanying exhibits, CBA Exhibit No. RDA-1-Revised and CBA Exhibit No. RDA-2-Revised;

(3) CBA Statement No. WGR-1 containing the prepared direct testimony of Wayne G. Reed with attachments WGR-1 and WGR-2;

(4) CBA Statement No. RDA-2-R containing the prepared rebuttal testimony of Robert D. Ambrose and accompanying exhibit CBA Exhibit No. RDA-3; and

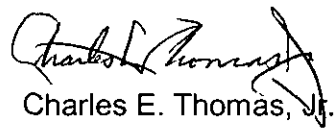
(5) CBA Statement No. RDA-3-SR containing the prepared surrebuttal testimony of Robert D. Ambrose and accompanying exhibit CBA Exhibit No. RDA-4.

In further accord with Judge Rainey's Recommended Decision and the Motion he granted for the Admission of Testimony and Exhibits, the enclosed statements of testimony, attachments and exhibits are to be admitted into the evidentiary record of the proceeding upon their filing with your office.

If the Commission should have any questions or need any additional information regarding the filing and admission of the enclosed statements of testimony, attachments and exhibits, please do not hesitate to contact the undersigned.

Very truly yours,

THOMAS, LONG, NIESEN & KENNARD

By 

Charles E. Thomas, Jr.

Encls.
cc: *Certificate of Service*
Gilbert L. Hamberg, Esquire

101119 Chiavetta (Motion for Admission Testimony and Exhibits).wpd

**BEFORE THE**
**PENNSYLVANIA PUBLIC UTILITY COMMISSION**

| | | |
|---|---|---|
| **Pennsylvania Public Utility Commission, *et al.*** | : | |
| | : | |
| **v.** | : | **Docket No. R-2010-2166212 *et al.*** |
| | : | |
| **Pennsylvania American Water Company, Coatesville Wastewater Operations** | : | |

## CERTIFICATE OF SERVICE

I hereby certify that I have this 22nd day of November, 2010, served a true and correct copy of the foregoing letter, upon the persons and in the manner set forth below. The active parties in the proceeding were previously served with copies of all City/Borough Alliance statements of testimony and exhibits.

## BY EMAIL AND FIRST CLASS MAIL

Honorable Charles E. Rainey, Jr.
Administrative Law Judge
Pennsylvania Public Utility Commission
801 Market Street
Suite 4063
Philadelphia, PA 19107
crainey@state.pa.us

Charles Daniel Shields, Esquire
Carrie B. Wright, Esquire
Office of Trial Staff
Pennsylvania Public Utility Commission
Commonwealth Keystone Building
400 North Street
P. O. Box 3265
Harrisburg, PA 17105-3265
chshields@state.pa.us
carwright@state.pa.us

Anthony DeCusatis, Esquire
Thomas Gadsden, Esquire
Catherine G. Vasudevan, Esquire
Morgan, Lewis & Bockius LLP
1701 Market Street
Philadelphia, PA 19103-2921
adecusatis@morganlewis.com
tgadsden@morganlewis.com
cvasudevan@morganlewis.com

Susan Simms-Marsh, Esquire
Rod Nevirauskas, Director of Rates
Pennsylvania-American Water Company
800 West Hersheypark Drive
Hershey, PA 17033
susan.marsh@amwater.com
rod.nevirauskas@amwater.com

Lauren M. Lepkoski, Esquire
Assistant Small Business Advocate
Office of Small Business Advocate
Suite 1102, Commerce Building
300 North Second Street
Harrisburg, PA 17101
llepkoski@state.pa.us

Dianne E. Dusman, Esquire
Senior Assistant Consumer Advocate
Shaun A. Sparks, Esquire
Assistant Consumer Advocate
Office of Consumer Advocate
555 Walnut Street
Forum Place, 5th Floor
Harrisburg, PA 17101-1923
ddusman@paoca.org
ssparks@paoca.org

Seth A. Mendelsohn, Esquire
Pennsylvania-American Water Company
800 West Hersheypark Drive
Hershey, PA 17033
Seth.Mendelsohn@amwater.com

Kenneth R. Myers, Esquire
Thomas D. Rees, Esquire
High Swartz LLP
40 East Airy Street
P.O. Box 671
Norristown, PA 19404
kmyers@highswartz.com
trees@highswartz.com

Charles E. Thomas, Jr., Esq.
PA Attorney I.D. No. 07262

CBA Statement No. RDA-1
Docket No. R-2010-2166212 *et al.*
Witness: Robert D. Ambrose, P.E.
Date Distributed: August 5, 2010
Date Admitted:

**THE CITY/BOROUGH ALLIANCE**

**Prepared Direct Testimony of**

**ROBERT D. AMBROSE, P.E.**

***Concerning Rate Base & Rate Design***

**(Prepared August 2010)**

**PREPARED DIRECT TESTIMONY OF**
**ROBERT D. AMBROSE, P.E.**

**Q. Please state your full name and business address.**

A. My name is Robert D. Ambrose, P.E. My business address is 369 East Park Drive Harrisburg, PA 17111.

**Q. By whom are you employed?**

A. I am employed by Herbert, Rowland & Grubic, Inc., a consulting engineering firm.

**Q. Please describe the services you provide in this capacity.**

A. I am a utility rate consultant engaged in a range of rate and financial studies, including valuation of utility property, revenue requirement studies, cost of service allocation studies, economic feasibility studies, and revenue adequacy studies for engineering certifications. When required, I provide expert testimony in support of my studies and findings.

**Q. Briefly state your formal education.**

A. I studied engineering at Regent Street Polytechnic and Brixton School of Building in London, England. Courses included engineering courses in calculus, surveying, applied math, theory of structures and structural design. I subsequently earned a Bachelors Degree in Business Administration from the University of Pittsburgh and a Masters Degree in Business Administration from Lebanon Valley College. I have attended numerous workshops and conferences related to utility valuation and ratemaking. I am a Registered Professional Engineer in the Commonwealth of Pennsylvania.

**Q. Briefly summarize your professional experience.**

A. I have been engaged in utility rate and financial services for more than thirty five years. An outline of my experience is presented in Attachment 1 to my testimony.

**Q. Have you provided testimony before the Pennsylvania Public Utility Commission and other regulatory agencies?**

A. Yes. I have testified before the Pennsylvania Public Utility Commission, the Delaware Public Service Commission, the Maryland Public Service Commission, the Public Service Commission of West Virginia, and in several court proceedings concerning utility rate issues.

**Q. On whose behalf are you testifying in this proceeding?**

A. I am testifying on behalf of the City/Borough Alliance. The Alliance consists of the City of Coatesville ("City") and the Borough of Parkesburg ("Borough").

**Q. How did these municipalities come to be a party to these rate proceedings?**

A. Pennsylvania-American Water Company – Coatesville Operations ("PAWC") renders wastewater service within these communities on a retail basis. In April 2010, PAWC filed an application with the Pennsylvania Public Utility Commission ("Commission") requesting an overall increase in wastewater rates of 197.3 percent. The proposed increase to the residential class of customers is 227.6 percent. Given the extraordinary magnitude of the proposed rate increase, the City and the Borough felt the need to seek

the advice of regulatory counsel and engage a rate consultant to review the filing. Formal complaints in opposition to the proposed increase were subsequently filed by the City and the Borough. As explained in more detail in the testimony of Wayne G. Reed

**Q. What is the purpose of your testimony?**

A. The purpose of my testimony is to comment on the application of PAWC, specifically the rate base and rate design proposed by PAWC. I have also been advised by counsel that the City/Borough Alliance will be supporting the positions of other parties on various ratemaking issues.

**Q. Do you have any comments as a result of your review?**

A. Yes. In my review of PAWC Exhibit No.7-A, containing a Cost of Service Allocation Study, sponsored by Paul Herbert, PAWC proposes to apply the rate increase in conformance with Mr. Herbert's allocated cost of service study.

**Q. Do you agree with the proposed rate design?**

A. No. PAWC has proposed a one-time adjustment to rate structure that results in a sudden and significant shift in the revenue burden. The **Water Environment Federation Manual of Practice No. 27**, which is a commonly used manual for the design of wastewater rates and specifically Chapter 8, Development and Design of a Schedule of Rates and Charges p.162, discusses rate transitioning and proposes "phasing in cost-based rates over a limited time period to allow customers time to plan and adjust to the

new rates and avoid 'rate shock'." A copy of pages 161 and 162 from the manual is appended to my testimony as Attachment 2. The Commission consistently has upheld the concept of gradualism, whereby shifts in the revenue burden should be implemented over a period of time.

**Q. Is it your opinion that PAWC's proposed rate structure results in rate shock to residential customers?**

A. Most definitely. Residential customers will incur rate shock based upon PAWC's proposed rate structure that shifts the revenue burden in a single rate adjustment resulting in an increase to the residential customer class of 227.6 percent.

**Q. What considerations have been used traditionally by regulatory agencies for designing utility rates?**

A. Over the years, many criteria have been applied by regulatory agencies and courts in the rate design process to develop rates. The application of these criteria have resulted in rates designed to:

- recover the full cost of service.
- promote revenue stability.
- avoid abrupt shifts in the revenue requirement from one class to another in a single rate proceeding.
- reflect cost of service guidelines.
- be readily understood.

- promote conservation.
- reflect the value of service.

No single criterion provides sound guidance for rate design. Local circumstances and factors relevant to the community should be taken into account, such as **affordability of service,** as discussed on page 161 of **Water Environment Federation Manual of Practice No. 27**

**Q. Did Mr. Herbert acknowledge these concepts in his testimony?**

A. Yes, but he ignored them in designing PAWC's proposed rates. Mr. Herbert's testimony, page 9, lines 14 – 16, states "one should consider the allocated costs of service, the impact of radical changes from the present rate structure, the understandability and ease of application of the rate structure, community and social influences, and value of service." The proposed rates by customer class, however, reflect only cost of service. Referring again to PAWC Exhibit 7-A, Schedule A of the Cost of Service Allocation Study, column (3) shows the percent of the allocated cost of service by customer class. Column (5) shows the percent of revenue recovered under present rates by class. For example, the residential class based on the cost of service represents 51.6 percent, whereas, the residential class under the present rate structure contributes 47.3 percent of the cost. Applying the gradualism principle, the difference should be closed over several rate proceedings, rather than as proposed in column (7) which shows 57.6 percent, the same as in column (3). I also believe that it is not sound rate design to increase the

residential class by 227.6 percent and the industrial class by 111.2 percent. Again, revenue burden should be implemented over a period of time.

**Q. Do you have any suggestions regarding an alternative rate design?**

A. Yes. I recommend that PAWC's rates should be designed to move towards the allocated cost of service by class over a period of several rate increases to avoid a radical shift in the revenue burden and to minimize the effect of rate shock. I believe five rate proceedings would be appropriate to avoid rate shock.

As a further consideration, a gradual shift is warranted, because over time, the allocated cost of service by customer class tends to changes due to changes in customer mix and customer usage characteristics. To implement a radical rate structure change to align the revenue and costs at today's allocated cost of service may require a shift in the opposite direction in a future rate case. In my opinion, it is better to move incrementally towards the indicated cost of service.

**Q. What would be the effect on the average residential customer under your proposal to gradually shift the revenue burden over five rate proceedings?**

A. Assuming a closing of 20 percent, the residential revenue burden would be 48.16 percent. (47.3 + (51.6-47.3) / 5)) resulting in residential revenue at proposed rates of $5,860,024, ($12,167,825 x .4816) a reduction of $415,424. ***The reduction, for the average residential customer for this rate structure change would be approximately $70 per year.***

**Q. Does PAWC charge Capacity Reservation fees in its Coatesville wastewater system operations?**

A. Yes.

**Q. In your experience, is this an unusual practice for a regulated utility?**

A. Yes it is. Capacity Fees typically are charged by municipally owned and operated water and wastewater utilities. In Pennsylvania, such fees are referred to as tapping fees in the Pennsylvania Municipality Authorities Act.

**Q. What is the purpose of Capacity Reservation Fees.**

A. A Capacity Reservation Fee is a front-end charge. The objective is to avoid charging existing customers for costs associated with growth. Such costs include capital costs associated with capacity in the treatment, collection and disposal system. The American Water Works Association Manual AWWA M1 *Principles of Water Rates, Fees, and Charges*, page 328 [Fifth Edition] defines system development charge (a term comparable to Capacity Reservation Fee) as "[a] contribution of capital toward existing or planned future back-up plant facilities necessary to meet the service needs of new customers to which such fees apply." The definition goes on to state that "[v]arious terms are used to describe these charges in the industry, but these charges are intended to provide funds to be used to finance all or part of capital improvements necessary to serve new customers."

**Q. PAWC has stated that there is no excess capacity in the Coatesville wastewater treatment plant and that the capacity is required by PA DEP. Do you agree?**

A. In my opinion, there is a distinction between the engineering capacity for purposes of design, which properly should include provision for growth and the cost of capacity that can be properly charged for rate purposes to existing customers. In my opinion, the cost to be charged to existing customers should be based upon current flow requirements. My concern is that existing customers should not be charged for capacity reserved for future customers.

**Q. What brings you to the conclusion that there is currently extra capacity in the treatment plant?**

A. My conclusion is based upon a comparison of the average daily flows for 2010 of 34,260 (100 gallons) shown on Schedule C, page 1 column (6) of PAWC Exhibit No. 7-A, and the projected flow for 2017 of 74,724 (100 gallons) on page 4 of Schedule C. I agree that a plant where future growth is anticipated cannot continue to operate at the existing capacity, and it is sound engineering to design for the anticipated growth. On the other hand, it is not the responsibility of existing customers to carry costs associated with capacity that will benefit and be used by future customers.

**Q. How does PAWC propose to recover the capital costs on the plant that includes capacity for future customers?**

A. PAWC has included provision for annual depreciation and return for the treatment plant expansion in the rate base in the future test year. This cost will be borne by existing customers until new customers connect to the system. At that time, PAWC will charge each new customer a Capacity Reservation Fee when the customer applies for service. Funds received from the Capacity Reservation Fee will be treated as contributed property and will not be included in rate base. It is during the interim period until future customers connect that PAWC will receive the additional revenue.

**Q. Is PAWC's proposal a reasonable ratemaking approach?**

A. I do not believe that charging existing customers the cost by including depreciation and return in the rate claim and subsequently charging the reservation capacity fee to new customers is consistent with acceptable ratemaking for several reasons:

- It appears that this approach will result in a windfall for PAWC at the expense of existing customers, because not only will the cost be recovered by charging the Capacity Reservation fee, but also PAWC will earn a return and recover depreciation upon the plant currently until future customers connect to the system.
- There is also the matter of revenue matching. By revenue matching, I mean that the revenue, expenses and capital costs should all fall within the same time frame. As proposed by PAWC, existing customers will be carrying the cost of annual depreciation and return until future customers connect.

- Taken to the extreme, a utility would be indifferent as to whether new customers ever connect - - if it is guaranteed a return and depreciation upon capacity that never is fully utilized.

**Q. Under your recommendation, PAWC would not recover the capital costs of capacity reserved for new customers until the new customers connect to the system, is that correct?**

A. Yes, that is correct. ***The utility should assume the business risk of its investment.*** I do not agree that the utility should avoid the risk entirely by recovering *"carrying costs"* until new customers connect and then be compensated at the time new customers apply for service.

**Q. Do you recommend that the *"carrying cost"* (depreciation and return on the extra capacity) should be split between existing customers and PAWC?**

A. I advocate a 50/50 split as a reasonable approach. In the long run, existing customers will receive a benefit as new customers connect, because there will be an expanded customer base to distribute administrative costs, and the benefit of economies of scale in that it becomes more efficient to operate a plant at full capacity.

**Q. Do you have any recommendations pertaining to how the *"extra capacity"* should be treated for rate purposes?**

A. Yes. Since the Capacity Reservation Fee is a measure of the capacity that one equivalent residential unit (ERU) requires for service, I recommend that 50% of future capacity reservation fees should be deducted from the rate base at a present day value.

**Q. Have you prepared exhibits to demonstrate how you would evaluate such an adjustment to rate base?**

A. Yes, City/Borough Alliance Exhibit No. RDA-1 shows a calculation of ERUs anticipated between 2009 and 2017 by each municipality. The change or increase in the ERUs is the difference in flows as taken from the I/I study, Appendix Q and R. For purposes of this analysis, it is assumed that one ERU is equal to 350 gallons per day. The ERUs in the fourth column were calculated by dividing the change in volume in the third column by 350 resulting in an increase in ERUs of 11,524 by 2017. Funds from the ERU connections are calculated by multiplying the number of connections by the Capacity Reservation Fee shown on City/Borough Alliance Exhibit No. RDA – 2.

The distribution by year of new customer connections is estimated as a percent in column (2). In column (3), the number of ERUs by year is calculated by multiplying the total ERUs of 11,524 by the percent in column (2).

Assuming that the future customers consist of customers connecting after November 14, 2008 (the date of settlement in the last rate case), the Capacity Reservation Fee is $2,000. Since the calculated amount will come in a stream of future dollars, the amount will be discounted to a present day value at a 10.0 percent discount factor (assumed average inflation over the projected period). The calculation is shown on the schedule.

The resulting discounted value of the Capacity Reservation Fees is $ 13,918,687, as shown on City/Borough Alliance Exhibit No. RDA - 2. I propose that the deduction from the proposed rate base should be 50 percent of the present value of future Capacity Reservation Fees or $6,959,343.

**Q. Have you calculated an estimate of the impact of your capacity adjustment on the average residential bill?**

A. Yes. The overall decrease in PAWC's proposed rate increase would be approximately $647,218 calculated as follows:

| | |
|---|---|
| Return @ Proposed ROR | $6,959,343 x 7.3% = $508,032 |
| Annual Depreciation (assuming 50 yrs. average service life) | |
| | $6,959,343 / 50 = $139,186 |
| Estimated Reduction (not considering income taxes) | $647,218 |

Based upon this adjustment, the overall percent of increase would be reduced to approximately 185 percent, or a reduction of approximately 15 percent from PAWC's request.

The impact on residential customers for this adjustment would be a reduction in the average residential bill of approximately $50 per year.

**Q. Do you have any additional general recommendations regarding implementation of the proposed rate increase?**

A. Yes. I would also recommend that given the magnitude of the rate increase in this case, the current economic conditions and the low income circumstances of residents as detailed in Mr. Reed's testimony, any increase should be phased in over a period of three years, with 1/3 of the increase to be placed in effect this year and the remaining increase to be placed in effect equally over the next two years.

**Q. At PAWC's proposed level of revenue, what would be the effect of your recommended adjustments on the average residential annual bill?**

A. My recommended adjustments would reduce the average annual residential bill by approximately $120. If the phase-in of the rate increase over a three year period is adopted, there would be an additional reduction until year three.

**Q. Does this conclude your testimony?**

A. Yes.

# Attachment 1

HRG
Herbert, Rowland & Grubic, Inc.
Engineering & Related Services

# ROBERT D. AMBROSE, P.E., MBA

## NCIAL SERVICES ENGINEER/RATE SPECIALIST

**EDUCATION:**
M.B.A., Lebanon Valley College, 1992

B.S., Business Administration, University of Pittsburgh, 1972

Studies, Structural Engineering Courses, Brixton School of Building, London

Studies, Engineering Courses, Regent Street Polytechnic, London

**REGISTRATION(S):**
Professional Engineer, PA

15503E Issued 1969

**AFFILIATION(S):**
American Water Works Association

Mr. Ambrose is a financial services engineer/rate specialist with Herbert, Rowland & Grubic, Inc. (HRG). His responsibilities include the development of financial plans for water and wastewater utilities that may be used for planning the timing and magnitude of rate increases. The plan answers what if questions and provides a tool for matching utility resources with anticipated construction costs. Additional responsibilities include preparation of Original Cost and utility valuation studies, rate studies and rate design for regulated investor and municipally owned utilities, class cost of service studies, economic feasibility analyses and expert testimony on utility rate issues.

**PREVIOUS EXPERIENCE**

From January 2007 to August 2007, Mr. Ambrose was the executive director of The Harrisburg Authority. The major focus of Authority activity was developing a strategy to get the troubled waste to energy facility operating; a process complicated by a series of political disputes, law suites and controversy of Authority Board appointees.

From 2004 to 2006, Mr. Ambrose was a rate analyst with the Delaware Public Service Commission. His assignments include review of rate filings submitted by investor owned water and wastewater utilities, development of tariff regulations and minimum standards governing wastewater service in Delaware and preparation of Commission staff position on issues concerning rates, utility valuation and testimony on rate issues. His duties included preparation of data requests and analysis of responses as well as supervising and training of water and wastewater staff.

From 1996 to 2004, Mr. Ambrose was a senior consultant with Black & Veatch, Inc. He was engaged in the preparation of revenue requirement studies, cost of service studies, rate design bond feasibility studies to test the adequacy of rates, valuation of utility property for purposes of acquisition and economic feasibility studies for investor owned and municipally owned water and wastewater utilities.

From 1980 to 1996, Mr. Ambrose was a consultant with Buchart-Horn, Inc. He prepared revenue requirement studies, cost of service studies, rate design bond feasibility studies to test the adequacy of rates, valuation of utility property, preparation of loan applications and economic feasibility studies. In addition, he presented expert testimony on rate issues before regulatory agencies and in Court.

From 1978 to 1980, Mr. Ambrose was a fixed utility industry advisor with the Pennsylvania Public Utility Commission. He reviewed cost of service allocation studies and valuation studies prepared by regulated water and wastewater utilities proposing increases in rates. Responsibilities included presentation of testimony on rate issues in connection with staff findings.

From 1972 to 1978, Mr. Ambrose was a valuation engineer with Gannett Fleming Corddry & Carpenter. He prepared revenue requirement studies, cost of service allocation studies, rate design and testified on revenue, expense and valuation issues.

**PROJECT EXPERIENCE (Previous Employers)**

*City of Wilmington, Delaware. Water System and Stormwater Utility*
Managed study to develop the Revenue Requirement for water system and prepared a feasibility analysis to investigate formation of a stormwater utility. Additional work included review of Artesian Water Company's Cost Allocation study to assess the equity of rates charged to an industrial customer that previously was served by the City and prepared exhibits and direct testimony that was filed with the Delaware Public Service Commission.

*City of Wheeling, West Virginia. Financial Plan and Rate Study for Water and Wastewater Systems*
Managed a comprehensive long-range financial plan for the water and wastewater systems. The assignment included projection of revenue and expenses and incorporated the impact of the City's Capital Improvement Plan. The purpose of the study was to identify the timing and magnitude of rate increases to support the operations and the construction program over a ten year planning period.
The assignment for the wastewater system included a detailed Cost of Service study to allocate costs between sanitary and storm water service and to the several customer classes including wholesale service outside the City. The Cost of Service study indicated a significantly greater increase applicable to the whole sale class outside the City. The findings of the study were upheld by the Public Service Commission upon review.

*City of Fairfax, Virginia. Strategic Plan and Valuation of Goose Creek Water System Facilities.*
Managed a study to provide the City of Fairfax with a working plan to guide the City with selection of sound long-term decisions that offered the best economic benefit for the City and its residents. The issue was whether the City should continue to operate

and maintain the Goose Creek water system facilities and invest in increasing the capacity of the impounding reservoir, pumping and treatment facilities, or alternatively, sell the facilities to Loudoun County, Virginia and purchase water on a wholesale basis from the County. The analysis compared the long-term impact of the two alternatives based on a present value analysis, comparing the impact on the average residential bill and comparing the unit cost before and after the Goose Creek improvements.

A component of the analysis required a determination of the *fair market value* of the Goose Creek Water Treatment System including impounding reservoirs, transmission mains, treatment plant and associated pumping facilities.

Additional assignment included developing a report on conservation pricing strategies. Presented findings to the City Council who decided to retain facility ownership and initiated new contract development with a wholesale customer.

*City of Falls Church, Virginia. Determination of Fair Market Value of Water System*

Managed a study to estimate the *fair market value* of the City's water system consisting of distribution and pumping facilities. The value was based on Original Cost less depreciation that assumes that an investor owned utility would purchase the facilities. Original Cost was used to recognize the fact that for a regulated utility, the earning potential is established on an Original Cost basis. If the system were to be condemned by the County, fair market value would be considered for valuing the facilities, and may include such other factors as going-concern and good will as well as reproduction cost. Tasks for the assignment included assembling data from several source documents in the City files, estimating service lives based of lives characteristic of comparable utility property in similar circumstances, developing the cost measure of value and preparation of the valuation report.

*Charleston Sanitary Board, West Virginia. Cost of Service Allocation Study*

Managed preparation of a detailed class Cost of Service allocation study. The study included compiling data, developing appropriate allocations and development of a bill analysis to restructure the rates consistent with the indicated cost of service guidelines.

*Comprehensive Water and Sewer Rate Study, Annapolis, Maryland.*

Managed a comprehensive long-range financial plan employing the use of revenue bonds, cost of service by customer class, and rate design study for the City. Presented the draft report to City representatives. Study services included an update of the initial study which reflected City comments on the initial study, revisions to the water and sewer utilities capital improvement programs, a revised financial plan employing the use of City-requested general obligation bonds, and development charges for service based on the City's existing policy. Analyzed three rate increase options: one to meet all revenue requirements with a single increase and two that phase the increases in over the planning period.

*Main Extension Dispute with Water Utility, Toll Brothers, Inc., Huntingdon Valley, PA.* Toll Brothers proposed to develop residential housing within the water company's service area. Toll Brothers agreed to advance funds for the construction; however, as a matter of fairness,

Toll Brothers required refunds from the water company as new customers connect to the system.
Responsible for review of Main Extension policies in the water company tariff, PUC Rules and Regulations (52 PA.Code Chapter 65 and 69) and policies set forth in several other regulated water company tariffs, review of draft agreement, responses to interrogatories, preparation of list of additional data requests, and preparation of schedules to demonstrate the economic impact of connecting additional customers using discounted cash flow analysis.

*Marietta Gravity Water Company, Marietta, PA.* Prepared water rate filing proposing increased water rates for the Marietta Gravity Water Company, a regulated utility in central Pennsylvania. Reviewed expenditures to transfer improperly classified items to appropriate operating or capital accounts and to identify nature of expenses for developing proforma adjustments. Prepared customer usage analysis as proof of revenue and for use to restructure rates. Developed rate base; calculated target rate of return; developed proforma adjustments to revenue, expenses and taxes to establish the revenue requirement for rate making purposes; prepared rate study report, tariff supplement, and customer notice. Prepared responses to PUC data requests, participated at settlement conference, reviewed settlement agreement and proof of revenue at settlement rates.

*The Columbia Water Company, Columbia, PA.* Prepared water rate filing proposing increased water rates for the Columbia Water Company. Reviewed expenditures to transfer improperly classified items to appropriate operating or capital accounts and to identify nature of expenses for developing proforma adjustments. Prepared customer usage analysis as proof of revenue and for use to restructure rate. Developed rate base; calculated target rate of return; developed proforma adjustments to revenue, expenses and taxes to establish the revenue requirement for rate making purposes; prepared rate study report, tariff supplement, and customer notice. Prepared responses to PUC data requests, participated at settlement conference, reviewed settlement agreement and proof of revenue at settlement rates.

*Analysis of Economic Feasibility to Extend Utility Service to New Corporate Center, CAN DO, Inc. (PA, Financial Consulting).* Updated an economic feasibility study concerning an extension of water and sewer service to a new corporate center. The original study was performed by RD Ambrose while an employee of Buchart-Horn, Inc. The update was performed to reflect changes in the projected customer base and anticipated water system demands. Copies of the analysis were submitted to the client and the client attorney. The attorney submitted the application to extend service with the necessary documents including the Black & Veatch analysis to demonstrate the viability of serving the new service area. The analysis demonstrated the need for an overall water system rate increase which was subsequently prepared, submitted and approved by the PUC. In the case of the sewer system, a separate rate structure was developed for the new service area. By Docket No. A-211135, the PUC approved the application to extend service.

*Water Rate Study, CAN DO, Inc.* Prepared a water rate study proposing an increase in rates. CAN DO, Inc. is a regulated utility and must receive approval from the Pennsylvania Public Utility Commission (PUC) to change rates, rules and conditions of service. Work completed included development of revenue requirements, customer bill analysis, preparation of tariff supplement and preparation of responses to the PUC interrogatories. Subsequently, the PUC

approved the proposed rate increase. (Prepared water and wastewater rate and related studies for CAN DO as requested for a period exceeding 20 years.)

*Review of Water & Sewer Rates Charged by Eaton Sewer & Water Company, PA Wal-Mart Stores.* Reviewed the water and sewer rates proposed by Eaton Sewer & Water Company (Eaton). The utility is regulated by the Pennsylvania Public Utility Commission (PUC). Eaton, a newly formed small utility located near Tunkhannock, Pennsylvania renders service to a residential development of townhouses and single family homes and eight commercial establishments adjacent to the development. The company proposed to offer lower rates to residential customers at the expense of commercial customers. Wal-Mart through its rate counsel, Jim Dougherty of McNees, Wallace & Nurick, filed a complaint with the PUC protesting the rate increase and subsequently engaged Black & Veatch to provide technical expertise on rate and rate structure issues. Our review of Eaton=s application and other documents indicated that the proposed rates were inflated and clearly discriminatory. The issues raised included the following: (1) Rates were calculated using current level of sales volume which is approximately 30% of the system capacity. Significant residential customer use is projected at build-out. (2) Wal-Mart does not benefit from the distribution lines serving residential customers. Eaton=s proposal spreads such costs to all customers which increased the charges to Wal-Mart. (3) Water used for fire fighting in the residential section would be drawn from public hydrants. In the case of Wal-Mart, water for filling Wal-Mart=s dedicated fire protection and privately owned tank is metered and would be charged at the metered rate. This differential results in an inequitable basis of charging fire protection between the residential class and Wal-Mart. Based on Wal-Mart=s intervention, other complaints filed in this case, and settlement discussions with the parties, Eaton agreed to reduce the level of revenue increase and to introduce a two block structure which reduces the bills for large volume water and sewer customers. The settlement will result in a reduction of approximately 26% for Wal-Mart. Wal-Mart elected not to proceed further with litigation of the case that potentially could have produced greater savings.

*Harrisburg International Airport.* Prepared rate studies in 1996 to establish the cost of providing water and sewerage service to customers of the Harrisburg International Airport. The study set forth proposals for increasing rates to recover the current level of operations and for several alternative options that incorporate capital improvements to the systems.

*Fairfax County, Office of Waste Management, Virginia.* Assessed the reasonableness of a rate increase for Colchester Public Service Corporation, VA, a sewer utility, owned and operated by Utilities, Inc. Evaluated the level of revenue at existing and proposed rates, reviewed expenses and rate base and demonstrated that the revenue increase and rate of return fall within the rate increase limits provided for in the Agreement between Colchester and the County.

*General Rate Increase Bureaus of Water and Sewer, City of Lancaster, Pennsylvania.* Prepared rate studies and supporting data proposing increases in water rates in 1981, 1982, 1983, 1989, 1992 and 1994 and in sewer rates for 1985, 1987 and 1992 applicable to service outside the City that is regulated by the Pennsylvania Public Utility Commission (PUC) and for rate increases for water and sewer applicable to non-regulated service inside the City in 1995. PUC rate filings included classification of accounts to conform with the PUC system of accounts, allocation of operating and capital costs to regulated service area, valuation of utility

plant, verification of customer billing, restructuring of water rates, preparation of responses to PUC interrogatories.

*General Rate Increases for Water System, City of Harrisburg, Pennsylvania*. Prepared rate studies and supporting data proposing increase in water rates in 1984 and 1988 applicable to service outside the City that is regulated by the Pennsylvania Public Utility Commission. PUC rate filings included classification of accounts to conform with the PUC system of accounts allocation of operating and capital costs to regulated service area, valuation of utility plant, preparation of responses to PUC interrogatories.

*General Sewer Rate Increase, City of Johnstown, Pennsylvania*. Prepared rate study supporting data proposing increase in sewer rates in 1995 and 2001 for City of Johnstown applicable to service regulated by the Pennsylvania Public Utility Commission and non-regulated service inside the City. PUC rate filings included development of revenue requirements, bill analysis, rate design development of unit cost of treatment and preparation of responses to PUC interrogatories.

*General Water Rate Increases, The Columbia Water Company, Pennsylvania*. Prepared rate studies and supporting data proposing increases in water rates in 1982, 1983, 1986, 1988 and 1992. Rate filings included analysis of revenue and expenses, development of original cost rate base, development of proforma revenue and expenses for rate making purposes, preparation of responses to PUC interrogatories and preparation of direct testimony in support of 1989 rate filing.

*General Water Rate Increases, The Chatham Water Company, Woolrich, Pennsylvania*. Prepared rate studies and supporting data proposing increases in water rates in 1983, 1988 and 1991. Rate filings included analysis of revenue and expenses, development of original cost rate base, development of proforma revenue and expenses for rate making purposes, preparation of responses to PUC interrogatories and preparation of unit production cost of service.

*General Rate Increase North East Heat & Light Company, Pennsylvania*. Prepared rate studies and supporting data proposing increases in gas rates in 1981 and 1983. Rate filings included development of revenue requirement, valuation, customer bill analysis, development of proforma revenue and expenses for rate making purposes, preparation of responses to PUC interrogatories.

*General Rate Increases Shavertown Water Company, Pennsylvania*. Prepared rate studies and supporting data proposing increases in water rates in 1982 and 1988. Rate filings included analysis of revenue requirement valuation, customer bill analysis, proforma revenue and expenses for rate making purposes, responses to PUC interrogatories, and preparation of direct testimony in support of the rate filing.

*General Rate Increase Eastern Shore Gas Company, Maryland*. Prepared rate studies and supporting data proposing increases in gas rates. Rate filings included development of revenue requirement, cost allocation, rate design, valuation, customer bill analysis, proforma revenue and expenses responses to Maryland Public Service Commission interrogatories, preparation and presentation of testimony in support of the rate filing.

*General Rate Increase Water & Supply Company, Georgetown, Delaware*. Prepared several rate studies and supporting data proposing increases in water rates. Rate filings included development of revenue requirement, cost allocation, rate design, valuation, customer bill analysis, proforma revenue and expenses for rate making purposes, responses to PSC interrogatories and preparation and presentation of testimony in support of the rate filings.

*Allocation of Water System Costs, City of Cumberland, Maryland*. Presented testimony before Public Service Commission on issues of allocation of water system operating and capital costs to certain customers of the system who are served beyond the City municipal limits.

*Cost Allocation Study, Woolrich, Inc., Pennsylvania*. Prepared sewer rate study to establish the cost of providing sewer service to Woolrich Mill by the Pine Creek Municipal Authority in 1994.

*Rate Study, U.S. Department of Justice*. Prepared rate study report concerning reasonable level of charges for an additional person in excess of two persons per dwelling and testified in federal court concerning the basis of establishing charges.

*State College Borough Water Authority, Pennsylvania.* Prepared rate study, capital requirements study and cost allocation study performed for the Authority in 1992. Developed five-year projection of the cost of providing utility service incorporating operating expenses, capital improvement program and projected rate increase requirements. Study required calculation of tapping fee consistent with the requirements of Act 203 of 1990, determination of utility annual usage, maximum day demands and peak hour demands, classification of capital and operating costs to cost functions, allocation of costs to customer category, development of recommendations for rate restructuring, preparation of rate study report and presentation to Authority Board.

*Review of Management Audit of General Water Works, Pennsylvania.* As a water utility advisor for the Pennsylvania Public Utility Commission, reviewed and reported on a management audit prepared by Ernst & Ernst of water utilities owned and operated by General Water Works in Pennsylvania.

*Valuation of Water System Facilities for City of Wilmington.* Managed study to develop estimated value of City water system, including collecting data, developing approach, preparation of report and presentation of findings to Public Works management. Supplemental study included development of provision for renewals and replacements of water distribution system considering age of facilities and cost of replacements

*Valuation of Water System Facilities for City of Easton, PA*. Performed several assignments for the City, including an estimate of the current value of the water system and developing a justification for transfer of funds from the water system to the General Fund based on the value of the facilities and an explanation of other factors that have been used to demonstrate the reasonableness of such transfers. Prepared direct testimony and exhibits to justify the transfers. The testimony was filed with the Court of Common Pleas Northhampton County,

Pennsylvania, and was subsequently settled.

*Valuation of Water and Sewer Systems for County and City of Roanoke, VA.* Assignment required the valuation of the County's and City's water and wastewater systems to determine the relative equality in facility contribution value to the Western Virginia Water Authority. Directed sub-consult engineering firm's development of separate property inventories and Original Cost values for the four systems. Developed Reproduction Cost Less Depreciation values for the four systems and their water resources as a fair and equitable basis for demonstrating each party's equitable contributions of utility property to the Authority. On a per customer served basis, the parties' resulting contributions were within $100 of each other.

*Washington Suburban Sanitary Commission, MD.* Prepared appraisal report to establish the fair market value of the water and sewer systems owned and operated by Utilities, Inc. of Maryland serving the Marlboro Meadows subdivision in Prince Georges, County, Maryland. Subsequently called for deposition in connection with condemnation proceeding.

*Original Cost Valuation of Water Distribution Facilities Serving Customers Outside City of Harrisburg, PA, The Harrisburg Authority.* Managed a study to establish a value of the facilities that United Water (an investor owned regulated utility) would be willing to pay for the facilities based on Public Utility Commission (PUC) rate making practice, i.e., depreciated Original Cost less contributed plant. Depreciation calculation computed using estimated service lives consistent with comparable water system facilities based on the 4% compound interest method.
Responsible for the development of original cost by year of installation; calculation of accrued depreciation and depreciated original cost for plant in service, and developer contributed plant; and preparation of valuation report.

*The Columbia Water Company, Columbia, PA* Prepared an Original Cost Study report on the water distribution system owned and operated by the Borough of Mountville for purposes of acquisition by the Columbia Water Company, an investor owned water utility, regulated by the Pennsylvania Public Utility Commission. Columbia required documentation of the Original Cost which was not available from the records of the Borough. An inventory of facilities by PUC Account and estimated years of installation was provided by others and was not the responsibility of Black & Veatch. Assigned service lives based on experience characteristic of water utility property, computed current cost of mains, meters, services and hydrants for plant in service and for developer contributed plant. Calculated accrued depreciation. Developed summary of Original Cost value including estimate for organizational costs. Prepared report and submitted to client.

*Original Cost Study, Penn Utility Company and Stroud Water Company, Pennsylvania.* Developed original cost of utility plant in service for Penn Utility Company and Stroud Water Company for purposes of acquisition by Utilities Inc.

*Philadelphia Suburban Water Company (now Aqua America), Pennsylvania.* On behalf of the Philadelphia Suburban Water Company (PSWC), analyzed the original cost of several small investor-owned utilities as a basis for estimating the value of the system from which a purchase price could be established. (Five completed during B&V employment and one prior)

*The Harrisburg Authority, Pennsylvania.* Determined the value of the water system in connection with acquisition by the Authority in 1990, when the Harrisburg water system was sold to The Harrisburg Authority. Prepared water and sewer rate studies since 1990 through 2006. Additional studies have included; capital fee recovery studies for the water and sewer systems, review of developer agreements and economic feasibility studies to demonstrate the adequacy of revenues and billing audit studies.

*Borough of Elizabethville, Pennsylvania.* Analyzed operating and capital costs to establish a purchase price for the Elizabethville Water System. Evaluated existing water rates and adjustments to operating expenses to reflect municipal ownership, identified major system deficiencies and estimated the cost to correct deficiencies.

*Steelton Borough, Pennsylvania.* Evaluated an offer made by General Waterworks, Inc., to the Borough for the purchase of the water system. Assessed of the reproduction cost new, original cost and capitalized income valuations and a comparison of the benefits of sale versus the impact on customer rates under private ownership.

*Chatham Water Company, Pennsylvania.* Prepared an economic evaluation of several alternatives to establish alternative that resulted in least cost to customers of the water company over the long term. Alternatives considered included sale of portions of system, construction of wells and construction of treatment plant.

*Monroe Township, Pennsylvania.* Valuated a privately owned sewer system for acquisition by the Township. Reviewed revenues and expenses, plant costs, PUC rate filing, as well as development of adjustments to reflect operations under municipal operation. Subsequently presented expert testimony concerning the value of the utility before the Court of Common Pleas in Cumberland County, Pennsylvania.

*West Whiteland Township, Pennsylvania.* Investigated several alternatives to establish alternative that resulted in least cost to customers of the water system over the long term. Responsible for economic evaluation of alternatives including sale of system, purchase of water from other suppliers and construction of treatment plant.

*City of Bethlehem, Pennsylvania.* Prepared original cost value of facilities owned by the City that render sewage service to customers outside the City. Identified cost of facilities less associated grants, allocation of cost of joint-use facilities including treatment plant and conveyance lines.

*Kane Gas Company, Pennsylvania.* Developed fair market value for Kane Gas Company as of December 31, 1995 in connection with acquisition of system. The report was used in the Court of Common Pleas (Pennsylvania) to substantiate the acquisition price.

ROBERT D. AMBROSE, P.E., MBA

## PAPERS AND PRESENTATIONS

Co-authored paper entitled "Weathering *the Storms of a Combined Sewer System through Equitable Allocation of Costs a Case Study Wheeling West Virginia* " and presented paper at 2002 WEF Annual Conference in Chicago.

Co-authored paper entitled "Water *System Valuations and The Market"* and presented paper at the AWWA National Conference in Washington, DC in June 2001.

Presented paper entitled *"Economic Approaches to Repair/Replacement/Rehabilitation"* at the AWWA Infrastructure Conference in Orlando, FL, March 2001.

Co-authored paper entitled *"Pricing Wholesale Water Service,"* presented by others at 2000 AWWA Annual Conference, Denver, CO, June 14, 2000.

Presented paper, *"If Asked, What Would You Say Your Utility is Worth?"* presented at the Chesapeake Section AWWA/WWOA/CWEA TAC 2000 Conference in Hunt Valley, MD, August 2000.

Prepared paper entitled *"Do Your Utility Rates for Wholesale Customers Reflect The Nature of Service Provided?"* published in the Pennsylvania Municipal Authorities Association Magazine, The Authority, June 1999.

## COMMITTEES/MANUALS OF PRACTICE

AWWA Private Sector Financing Subcommittee (Former Chair): Participated in preparing and coordinating a Chapter on private sector financing for the AWWA Manual M47 *"Construction Contract Administration."* (First Edition published 1996).

AWWA Financial Analysis Subcommittee (Former Member): Contributed to Chapter 6, addressing "Special Considerations for Investor-Owned Utilities" for the AWWA Manual M29, Water Utility Capital Financing, (First Edition published 1988), and development of AWWA, Water Utility Accounting, (Third Edition published 1995.

## AWARDS

1997 - Recipient of Ivan M. Glace Award in recognition of "Distinguished Achievements and Contributions" to the Water Works Profession. Awarded by the Water Works Operators' Association of Pennsylvania.

1994 - Recipient of Harry, J. Krum Award for "Distinguished Service in The Water Supply Field". Awarded by the Water Works Operators' Association of Pennsylvania.

# Attachment 2

own billing services, it should only be billed for transporting the wastewater from the connection point to the treatment plant and for handling and treating the wastewater.

## POLICY-BASED ADJUSTMENTS

Rates based on cost-of-service provide a benchmark for evaluating the effects of more policy-driven approaches. To the extent that these policy approaches result in inter- or intraclass subsidies, it is important to be able to quantify these transfers and gauge customers' potential responses. A public involvement program that provides opportunities for community members to actively evaluate and provide input on approaches will generate rate structures that integrate policy-based adjustments with technical considerations.

**LOW-INCOME AFFORDABILITY.** As utility rates continue to increase nationwide, concerns about the affordability of service, particularly for low-income customers, are prevalent in many communities. One option for addressing this concern has been the implementation of "lifeline" rates, whereby income-qualifying ratepayers are subject to a lower rate to ensure affordability of basic services. Fixed charges that include a quantity allowance that is priced below actual cost-of-service have also been used to address affordability concerns, though such allowances produce a number of significant complications because the reduced costs for minimum service are provided to all ratepayers.

The question of affordability is particularly difficult to address in the context of establishing systemwide or customer class rates. Low-income customers are generally not readily identifiable from customer billing records and, therefore, are generally not segregated into separate customer classes. In the absence of class identification, rates that provide discounts to low-income users will necessarily result in somewhat higher charges to other users to fully recover all costs. In some communities, the provision of affordable service has been attempted through under-pricing of low-volume use. While this may help ensure the affordability of minimum usage, this practice may not achieve the desired goals as a correlation between low-income customers and low-volume use is by no means assured. A further discussion of the critical issue of low-income affordability, including both rate design and programmatic approaches, is provided in Chapter 12.

**ECONOMIC DEVELOPMENT AND BUSINESS RETENTION.** Discounted wastewater rates have been used as one of many inducements for siting decisions for industrial and commercial facilities or for helping to discourage plant relocations. This rate policy deviates from cost-of-service principles and contemplates subsidization of selected business interests by other utility ratepayers in exchange for other tangible benefits. Explicit economic development rates are relatively uncommon and are generally placed in effect for a limited term. If used, these rates often require negotiation with affected parties to ensure that community economic development objectives will be advanced in exchange for utility revenue losses.

**RATE TRANSITIONING.** In many instances, the implementation of cost-based rates will result in significant shifts in cost responsibilities within and across customer classes. In this case, utilities must weigh the equity gains of an immediate shift to cost-based rates, with issues related to affordability and customer budgeting challenges. A multiyear rate-transitioning period can generally accomplish both objectives by phasing in cost-based rates over a limited time period to allow customers time to plan and adjust to the new rates and avoid "rate shock". However, such a policy will result in rates being below the cost-of-service for some users and above cost for others during the transition period, which will perpetuate inequities embedded in current rates.

## IMPLEMENTATION ISSUES

As a practical matter, selection of any form of utility rate design requires consideration of a variety of implementation issues, in addition to technical and policy issues.

**DATA AND BILLING SYSTEM CONSTRAINTS.** Perhaps the single most important practical rate design constraint is the absence of broadly available, accurate, customer-specific data on service usage. Whereas long-distance telephone utilities collect data on each call made including location, duration, and period (peak vs off-peak), wastewater utilities are limited in the type and frequency of data collected. Direct measurement of wastewater flows and strengths are generally limited to relatively few large customers, and indirect data from water metering is limited to monthly or bimonthly intervals. As a consequence, wastewater rates generally must be established wherein the billing determinants are restricted to volume of use (as

CBA Exhibit No. RDA-1
Docket No. R-2010-2166212 *et al.*
Witness: Robert D. Ambrose, P.E.
Date Distributed: August 5, 2010
Date Admitted:

**THE CITY/BOROUGH ALLIANCE**

**EXHIBIT NO. RDA-1**

**Calculation of ERUs by Municipality**

Pennsylvania American Water Company
Coatesville Wastewater Operations
Docket No. R-2010-2166212
Calculation of ERU's by Municipality

Exhibit No. RDA-1

| | 100 Gallons 2009 (a) (1) | 100 Gallons 2017 (b) (2) | 100 Gallons Change (3) | ERU's (c) (4) |
|---|---|---|---|---|
| **Valley Township** | 638,709 | 1,242,890 | 604,181 | 1,726 |
| **West Brandywine Township** | 146,477 | 864,500 | 718,023 | 2,051 |
| **Caln Township** | 190,451 | 612,269 | 421,818 | 1,205 |
| **Sadsbury Township** | 131,141 | 520,175 | 389,034 | 1,112 |
| **PAWC Direct Customers** | 1,100,987 | 2,888,379 | 1,787,392 | 5,107 |
| **I / I** | 70,682 | 77,570 | 6,888 | 20 |
| | 1,088,057 | 1,194,098 | 106,041 | 303 |
| | 72,536 | 72,536 | - | - |
| **Total** | **3,439,040** | **7,472,417** | **4,033,377** | **11,524** |

(a) I/I Study Appendix Q

(b) I/I Study Appendix R

(c) 1 ERU = 350 gallons per day per customer

CBA Exhibit No. RDA-2
Docket No. R-2010-2166212 *et al.*
Witness: Robert D. Ambrose, P.E.
Date Distributed: August 5, 2010
Date Admitted:

**THE CITY/BOROUGH ALLIANCE**

**EXHIBIT NO. RDA-2**

**Present Value of Future Capacity Reservation Fees**

Pennsylvania American Water Company
Coatesville Wastewater Operations
Docket No. R-2010-2166212
Present Value of Future Capacity Reservation Fees

Exhibit No. RDA-2

| Year | Assumed Percentage Distribution of ERUs* | 11,524 ERUs | $2,000 Amount $ | Discount Factor** | Present Value $ |
|---|---|---|---|---|---|
| 2010 | 5% | 576 | 1,152,400 | 0.909 | 1,047,532 |
| 2011 | 5% | 576 | 1,152,400 | 0.826 | 951,882 |
| 2012 | 10% | 1,152 | 2,304,800 | 0.751 | 1,730,905 |
| 2013 | 10% | 1,152 | 2,304,800 | 0.683 | 1,574,178 |
| 2014 | 15% | 1,729 | 3,457,200 | 0.621 | 2,146,921 |
| 2015 | 15% | 1,729 | 3,457,200 | 0.564 | 1,949,861 |
| 2016 | 20% | 2,305 | 4,609,600 | 0.513 | 2,364,725 |
| 2017 | 20% | 2,305 | 4,609,600 | 0.467 | 2,152,683 |
| | **100%** | **11524** | **23,048,000** | | **13,918,687** |

*Reflects impact of economic conditions.

**Assume discount factor of 10%.

CBA Statement No. RDA-1-Supplemental
Docket No. R-2010-2166212 *et al.*
Witness: Robert D. Ambrose, P.E.
Date Distributed: August 12, 2010
Date Admitted:

**THE CITY/BOROUGH ALLIANCE**

**Supplemental *Testimony of***

**ROBERT D. AMBROSE, P.E.**

***Concerning Rate Base and Rate Structure Design***

**(Prepared August 2010)**

CBA Statement No. RDA-1-Supplemental
Docket No. R-2010-2166212 *et al.*
Witness: Robert D. Ambrose, P.E.
Date Distributed: August 12, 2010
Date Admitted:

**THE CITY/BOROUGH ALLIANCE**

**Supplemental Testimony of**

**ROBERT D. AMBROSE, P.E.**

***Concerning Rate Base and Rate Structure Design***

**(Prepared August 2010)**

# SUPPLEMENTAL TESTIMONY OF ROBERT D. AMBROSE, P.E.

**Q. Are you the same Robert D. Ambrose who previously submitted prepared direct testimony in this proceeding?**

A. Yes. My prepared direct testimony was served on August 5, 2010 and pre-marked for identification as CBA Statement No. RDA-1.

**Q. Do you have an additional comment to supplement your direct testimony?**

A. Yes. I propose the following amendments to my direct testimony:

- I am changing the gallons to be included as an ERU (Equivalent Residential Unit) from 350 gallons to 225 gallons per day per customer. ERU is synonymous with EDU (Equivalent Dwelling Unit), which is the term used in Pennsylvania American's wastewater tariff and the term I will use in my supplemental testimony to conform to the tariff.
- I am adding two additional present value factors.

**Q. Why have you made the change in the gallons for the EDU?**

A. Since I prepared my direct testimony, I became aware during the course of informal discovery and further review of the rate filing that the Pennsylvania American tariff defines one EDU as 225 gallons per customer per day, which is more applicable to the Coatesville system than 350 gallons per customer per day.

**Q. What is the effect of your proposed change to the EDU?**

A. The proposed change to the EDU will increase the number of EDUs and consequently the number of future connections. As reflected on page 12, lines 6 to 18 of my original testimony, the impact of using a factor of 350 gallons resulted in a reduction in the average residential bill of approximately $50 per year. Substituting a factor of 225 gallons into my calculations results in a reduction of the average annual residential bill of approximately $82 per year, not including income taxes. If the income tax impact were considered, then the reduction would be greater. Using 225 gallons and, assuming a 10% present value factor, my calculations would decrease PAWC's proposed rate increase by approximately $1,006,772, as calculated below.

| | |
|---|---|
| Return @ Proposed ROR | $10,825,512 x 7.3% = $ 790,262 |
| Annual Depreciation (assuming 50 year average service life) | |
| | $10,825,512 / 50 = 216,510 |
| Estimated Reduction (not considering income taxes) | $1,006,772 |

Based upon this adjustment, the percentage increase to the residential class would be approximately 173%, as opposed to PAWC's proposed increase of 227.6%.

As previously stated, the impact on the average residential customer's bill would be approximately $82 per year, as calculated below.

| | |
|---|---|
| Decrease Applicable to Residential | |
| | $1,006,772 x [0.473 – (0.516-0.473) x 20%] = $484,257 |
| Decrease to Average Residential Bill | $484,257 / 5,879 = $82 |

**Q. Have you also revised your exhibit to reflect this change?**

A. Yes. Attached Exhibit No. RDA-1 (Revised 8-12-10) increases the EDU to 17,926. I also have changed the fourth numerical column from ERUs to EDUs to conform with the tariff definition.

**Q. You utilized a present value factor of 10% for the purpose of your calculation in Exhibit No. RDA-2 as initially presented. Have you revised this exhibit to include value factors?**

A. Yes. In my initial Exhibit No. RDA-2, I assumed a discount factor of 10%. I have revised my initial testimony to change the reference to "discount factor" to now read "present value factor," which is the more accurate term. In attached Exhibit No. RDA-2 (Revised 8-12-10), I also have added two additional factors, 6% and 8%, to demonstrate the effect of each on the present value and provide alternative factors for the Commission's consideration. Using a 6% present value factor, the impact on the average annual residential bill would be a reduction of $100.00. Using an 8% factor would decrease the average annual residential bill by $90.00 I have not set forth the intermediary calculations to reflect these figures as I did above for the 10% present value factor, but they are available on request. I also have changed the footnote and Column 5 heading in Exhibit RDA-2 (Revised 8-12-10) as follows: * * * Assume Present Value Factor in place of * * * Assumed Discount Factor.

**Q. Does this conclude your supplemental testimony?**

A. Yes.

CBA Exhibit No. RDA-1 (Revised 8-12-10)
Docket No. R-2010-2166212 *et al.*
Witness: Robert D. Ambrose, P.E.
Date Distributed: August 12, 2010
Date Admitted:

**THE CITY/BOROUGH ALLIANCE**

**Revised**
**EXHIBIT NO. RDA-1**

Utilizing 225 Gallons Per Day Per Customer
For the EDU Calculation

Pennsylvania American Water Company
Coatesville Wastewater Operations
Docket No. R-2010-2166212
Calculation of Future EDUs

Exhibit No. RDA-1
Revised 8-12-10

| | 2009 (a) (1) | 2017 (b) (2) | Change (3) = (2)-(1) | EDUs (c) (4) = (3) / 225 |
|---|---|---|---|---|
| Valley Township | 638,709 | 1,242,890 | 604,181 | 2,685 |
| West Brandywine Township | 146,477 | 864,500 | 718,023 | 3,191 |
| Caln Township | 190,451 | 612,269 | 421,818 | 1,875 |
| Sadsbury Township | 131,141 | 520,175 | 389,034 | 1,729 |
| PAWC Direct Customers | 1,100,987 | 2,888,379 | 1,787,392 | 7,944 |
| I / I | 70,682 | 77,570 | 6,888 | 31 |
| | 1,088,057 | 1,194,098 | 106,041 | 471 |
| | 72,536 | 72,536 | - | - |
| **Total** | **3,439,040** | **7,472,417** | **4,033,377** | **17,926** |

(a) I/I Study Appendix Q
(b) I/I Study Appendix R
(c) 1 EDU = 225 gallons per day per customer

CBA Exhibit No. RDA-2 (Revised 8-12-10)
Docket No. R-2010-2166212 *et al.*
Witness: Robert D. Ambrose, P.E.
Date Distributed: August 12, 2010
Date Admitted:

**THE CITY/BOROUGH ALLIANCE**

**Revised**
**EXHIBIT NO. RDA-2**

**Utilizing Assumed Present Value Factors of 6%, 8% and 10%**

**(Prepared August 2010)**

Pennsylvania American Water Company
Coatesville Wastewater Operations
Docket No. R-2010-2166212
Present Value of Future Capacity Reservation Fees

Exhibit No. RDA-2
Revised 8-12-10

| Year | Assumed Percentage Distribution of EDUs (a) | 17,926 EDUs | $2,000 Amount (b) $ | 6% Present Value Factor (c) | Present Value $ | 8% Present Value Factor (d) | Present Value $ | 10% Present Value Factor (e) | Present Value $ |
|---|---|---|---|---|---|---|---|---|---|
| 2010 | 5% | 896.3 | 1,792,600 | 0.943 | 1,690,422 | 0.926 | 1,659,948 | 0.909 | 1,629,473 |
| 2011 | 5% | 896.3 | 1,792,600 | 0.890 | 1,595,414 | 0.857 | 1,536,258 | 0.826 | 1,480,688 |
| 2012 | 10% | 1,792.6 | 3,585,200 | 0.840 | 3,011,568 | 0.794 | 2,846,649 | 0.751 | 2,692,485 |
| 2013 | 10% | 1,792.6 | 3,585,200 | 0.792 | 2,839,478 | 0.735 | 2,635,122 | 0.683 | 2,448,692 |
| 2014 | 15% | 2,688.9 | 5,377,800 | 0.747 | 4,017,217 | 0.681 | 3,662,282 | 0.621 | 3,339,614 |
| 2015 | 15% | 2,688.9 | 5,377,800 | 0.705 | 3,791,349 | 0.630 | 3,388,014 | 0.564 | 3,033,079 |
| 2016 | 20% | 3,585.2 | 7,170,400 | 0.665 | 4,768,316 | 0.583 | 4,180,343 | 0.513 | 3,678,415 |
| 2017 | 20% | 3,585.2 | 7,170,400 | 0.627 | 4,495,841 | 0.540 | 3,872,016 | 0.467 | 3,348,577 |
| | **100%** | **17,926.0** | **35,852,000** | | **26,209,605** | | **23,780,632** | | **21,651,023** |

(a) Reflects estimated impact of economic conditions.

(b) Charge per EDU $2,000 x EDUs for year

(c) Assume Present Value Factor 6%

(d) Assume Present Value Factor 8%

(e) Assume Present Value Factor 10%

CBA Statement No. RDA - 2-R
Docket No. R-2010-2166212 *et al*,
Witness: Robert D. Ambrose, P.E.
Date Distributed: August 26, 2010
Date Admitted:

# THE CITY/BOROUGH ALLIANCE

## REBUTTAL TESTIMONY
OF
ROBERT D. AMBROSE, P.E.

*CONCERNING*

*Rate Base & Rate Structure Design*

(Prepared August 2010)

# REBUTTAL TESTIMONY
# ROBERT D. AMBROSE, P.E.

**Q. Please state your name and business address.**

A. My name is Robert D. Ambrose, P.E. My business address is 369 East Park Drive, Harrisburg, Pennsylvania 17111.

**Q. Are you the same Robert. D. Ambrose who previously presented Direct Testimony and Supplemental Direct Testimony *in this proceeding*?**

A. Yes. This Rebuttal Testimony is submitted on behalf of the City of Coatesville, the Borough of Parkesburg and East Fallowfield Township. For ease of reference, I will continue to refer to our group as the City/Borough Alliance, even though one of our members is a township.

**Q. What is the nature of your Rebuttal Testimony in this proceeding?**

A. The Municipal Service Group (MSG) proposes an alternative approach for allocating costs which benefits the bulk customers. The Office of Small Business Advocate (OSBA) recommends lowering the Customer Service Charge and advocates designing rates to incorporate the full cost of service guidelines by customer class. The Office of Consumer Advocate (OCA) proposes a lower customer service charge.

I will address: the effects of the hybrid allocation methods proposed by Pennsylvania American Water Company (PAWC) and the functional approach recommended by MSG; and several rate structure matters raised by OSBA and

the OCA. In addition, I will address the Office of Trial Staff's (OTS) proposed phase in as clarified in response to an interrogatory.

**Q. Please describe the two cost of service allocation approaches advocated by PAWC and MSG.**

A. As presented in the response to Interrogatory MSG 2-4, the functional approach advocated by MSG uses operational data such as contemporary flow data to allocate operating and capital costs. . To illustrate, in its response to MSG 2-4, sewage treatment operating expenses allocated to the residential class are allocated on the basis of Factor 1, (0.4941). The allocated amount for Account 601.3 Salaries and Wages, an expense account, is $126,792 ($256,612 x 0.4941). Depreciation, a capital cost, for Account 354.40, Structures and Improvements – Treatment (facilities related to average flow) allocates $528,625 ($1,069,875 x 0.4941). **The same allocation factor is used for operating expense and depreciation under the functional approach**.

For comparison, under the hybrid approach as used by PAWC's rate consultant, Paul Herbert, a different factor is used for allocating capital costs. Operating expenses are allocated using contemporary flow data, the same as the functional approach, however, capital costs are allocated "based on projected average and peak volumes" that relate to 2017. (p.7, line 6, Paul Herbert Direct Testimony) This difference is demonstrated as follows:

Operating expense Account 601.3, Salary and Wages is allocated $126,792 to residential, the same as the functional approach, whereas, Account 354.40,

Structures and Improvements – Treatment (facilities related to average flow) is allocated $452,129 ($1,069,875 x 0.4226). The difference between the allocation methods for this account is $74,496. ($528,625 - $452,129)

**Q. What is the impact of the different allocation approaches?**

A. The functional cost approach (MSG 2-4) ***reduces*** the allocated cost of service to Bulk Users and the VA Hospital by $623,705 annually, with an ***increase*** to the residential class over PAWC's cost of service allocation study of $512,600 and an increase to the remaining classes of $111,105. Based on the functional cost approach, this would increase a residential customer's bill in the residential class on average by $88.62 ($512,600 / 5,727 Herbert Exhibit No. 7-A Schedule C, p.7) annually in addition to the increase proposed by PAWC.

The overall change over existing rates is an increase to Bulk Users and the VA Hospital of 139.3% using the functional approach advocated by the MSG's consultant, as compared with an increase of 177.6% based on the hybrid approach as shown in Mr. Herbert's Exhibit No. 7-A.

The overall change to the residential class based on the functional cost approach advocated by MSG results in an indicated increase of 254.3%, (100 x ($6,786,696 - $1,915,433) / $1,915,433). This is much greater than PAWC's proposed increase of 229% and would contribute even more to residential class rate shock.

**Q. Why do you believe that the hybrid approach for allocating costs is the more equitable approach in this proceeding?**

A. I believe that the hybrid approach is more equitable, because the nature of costs to be allocated are associated with two different time frames. Operating expenses are projected to occur during the future test year 2010, whereas, capital costs are associated with the capacity for facilities designed to meet flow requirements projected for 2017.

**Q. Have you made a comparison of the impact on the average residential customer's bill under the functional (MSG) and hybrid (PAWC) approaches?**

A. Yes. Based on the average monthly water metered residential consumption (the bases for wastewater billing) of 42.53 (100 gallons) (2,930,981 100 gallons / 68,911 bills Sch. G cost of service study), the monthly bills are calculated as follows:

| | | |
|---|---|---|
| Existing | ($4.50 + 42.53 x $0.5392) | = $27.43 |
| Hybrid | ($20.00 + 42.53 x $1.6520) | = $90.26 |
| Functional | ($90.26 x ($6,786,696/$1,915,433*) | = $97.63 |

**Ratio of increase in average residential bill based on ratio of cost to serve residential customer class (functional approach) to residential revenue at existing rates. *See* revised response to MSG 2-4.

**Q. Please explain why bulk customers (i.e. the MSG municipalities) are allocated less cost based on the functional cost approach.**

A. As previously explained, the functional cost approach allocates operating and capital costs on contemporary operating data, whereas, the hybrid approach allocates operating expenses on a contemporary basis and capital costs on a

design criteria that reflects costs associated with capacity to benefit future customers.

The reason why bulk customers are allocated less cost using the functional approach is that although the bulk customer class service areas will be where most of the growth is projected to occur (PAWC's I&I Study, Table IV-I, March 2010), the allocation process uses contemporary flow data which does not include future projected flows. Therefore, the future capacity costs are allocated to all classes, and thus, ignoring the specific class responsibility for growth.

**Q. Please clarify your position with respect to the impact of PAWC's proposed increase to residential customers of 229% as compared with MSG's increase of 254.3%.**

A. Let me be clear. I believe that the hybrid approach is a more equitable basis for the allocation of costs; however, I do not agree with the magnitude of the overall rate increase. If the Commission were to adopt all of the reductions to the proposed increase being sponsored by the various opposition witnesses, then the overall increase should be less than $5 million, which I could support being phased in over three years.

**Q. Do you have any comments regarding the recommendations to lower the customer service charge proposed by OSBA witness Brian Kalcic and OCA witness Scott Rubin?**

A. Yes. I agree with the recommendations to lower the service charge for residential customers from $20.00 per month in this case. The Manual of Practice No. 27, *Financing and Charges for Wastewater Systems*, p. 146, provides for including infiltration and inflow costs when a quantity allowance is included in the minimum charge, which is not the case for the Coatesville wastewater system. In addition, I believe that the negative economic circumstances of many of the residential customers who reside in the Coatesville service area that were made so vividly clear during the public input hearings held on August 24, 2010 warrant a lower customer charge in this case.

There would be an added benefit of increasing the usage or volumetric rate. To recover the same amount of revenue a decrease in the customer charge requires an increase in the usage charge. A reduction in the customer charge and an increase in the volumetric charge would encourage customers to conserve water usage, and thereby result in reduced wastewater discharge to the treatment plant. In turn, there would be corresponding incremental reductions in purchased power, chemical expense, and sludge removal and disposal expenses. Conservation therefore would reduce certain of PAWC's expenses.

My rate structure recommendation also should include a determination of the increase in the usage rate and a comparison of bills over a range of usage levels to evaluate the impact on the total customer bill. So far, the associated increases in usage rates by class, caused by reducing the customer charge, are not reflected in either the OCA or the OSBA Direct Testimonies.

**Q. Have you made a calculation to estimate the usage rate and the impact on the average residential customer?**

A. Yes. Attached Exhibit No. RDA–3 shows a calculation of the increase in the usage rate if the residential service charge is changed to incorporate the service charges by meter size as presented on Mr. Kalcic's Schedule BK-3. The calculations are based upon the full increase without any of the reductions being advocated by the various parties.

The change in the service charge revenue is calculated by meter size and divided by the meter sales volume to calculate the increase. The increase in the rate is added to PAWC's proposed usage rate -- resulting in a usage rate of $1.9242 per 100 gallons.

As shown on Exhibit No. RDA-3, the increase in the residential usage rate would be approximately $0.29 per 100 gallons using Mr. Kalcic's recommended Service Charges on his Schedule BK-3. The usage rate would be $1.942 per 100 gallons. ($1.652 + $0.29) -- assuming a revenue neutral rate adjustment for the residential class.

The monthly bill to the average residential customer using 42.53 (100 gallons) per month would be $90.24, approximately the same as under PAWC's proposed rates. Residential customers using less would pay less than proposed by PAWC, and customers using more would pay more. To demonstrate, a residential customer using 20 (100 gallons) per month with a 5/8" meter would pay $46.49 ($7.65 + 20 x $1.942), less than the PAWC proposed bill of $53.04 ($20.00 + 20 x $1.652).

A residential customer using 80 (100 gallons) per month with a 1" meter would pay $167.36 ($12.00 + 80 x $1.942), more than the PAWC proposed bill of $152.16 ($20.00 + 80 x $1.652).

**Q. Do you agree with Mr. Kalcic's recommendation on page 4 of his Direct Testimony to "move all classes to full cost of service."**

A. No, and I do not believe it has been the Commission's practice to require that this be done in one giant step. Moving to the full cost of service would violate the generally accepted ratemaking principle of "gradualism" and result in a significant shift in the revenue burden to residential customers in a single rate adjustment. I have explained my reasons for supporting gradualism in my direct testimony.

**Q. At the beginning of your Rebuttal Testimony, you stated that you would address the OTS' proposed phase in as clarified in an interrogatory response. Please explain further your proposed phase in plan and how it differs from that proposed by the OTS.**

A. As explained in my Direct Testimony, pages 12 to 13, I recommend that the total amount of the rate increase, as assessed by the Commission, be phased in gradually in equal parts over several years. With reductions to the overall increase, I am prepared to support a three year phase in. For example, suppose the total increase is $4.5 million. In year one, rates would increase by $1.5 million, in year two, rates would increase by another $1.5 million, and in year

three, rates would increase by another $1.5 million -- for a total of $4.5 million. This would help create a cushion for customers (many of whom are residential and lower income) to offset the impact of dramatic price increases and would recognize the rate making principle of a more gradual shift in the revenue burden to avoid rate shock caused by large and abrupt price increases.

My approach contrasts starkly with the phase in concept being advocated in this case by the OTS. In response to PAWC's Interrogatory 1, OTS witness Joseph Kubas states that if the Commission were to approve the entire rate increase of $8,156,652 sought by PAWC, then that amount should be phased in over two years as follows: $5,405,212 in year one, and the remainder of $2,752,196 in year two; further, if the Commission sets the total rate increase at an amount between $5,405,212 and $8,156,652, then Mr. Kubas recommends that $5,405,212 still should be allowed in year one, with the remainder allowed in year two. I oppose Mr. Kubas' recommendation. Standard phase in adjustments do not permit two/thirds of the total rate increase ($5,505,212/$8,156,652) to be assessed in the first year. Such strict front loading is not generally done and would not mitigate the rate shock in any meaningful way. Mr. Kubas' recommendation violates the very core of the gradualism principle. Gradual increases should mean gradual. That is why I recommend increases in equal parts by the total number of years of the phase in.

**Q. Do you have any further comments on this issue?**

A. Yes. I would reaffirm the need to minimize "rate shock" by spreading the increase over a three year period with the increase distributed equally each year. The public input hearings made it clear in my mind what the public interest requires. Although phasing-in an increase is not a normal ratemaking practice, I believe that the **current economic circumstances (including high unemployment and elderly on fixed income) call for a gradual increase as a matter of policy**. I also believe that it is not in PAWC's interests to pursue an aggressive rate increase policy in the economically distressed community of Coatesville for several reasons:

- The matter of affordability.

  If an increase of the proposed magnitude is imposed, then there is the probability that delinquent accounts will increase, and PAWC will fall significantly short of target revenue projections. There is the further possibility that service terminations will result, and occupancy permits will be removed thereby creating untold economic damage to customers and municipalities within the service territory.

- PAWC's purchase of additional municipal wastewater systems.

  It is my understanding that PAWC is or intends to pursue purchase of other municipal wastewater systems in Pennsylvania. Negative publicity of huge rate increases for the Coatesville system, regardless of the merits, will discourage other municipalities from negotiating with PAWC and

may work to the advantage of competitive utilities who also wish to purchase these same municipal wastewater systems.

Thus, a phase in would be in PAWC's own best interest, as well as in the public interest.

**Q. Does this conclude your rebuttal testimony?**

A. Yes.

Exhibit No. RDA-3

Calculation of Increase in Residential
Usage Rate with Change in Service Charge

Pennsylvania American Water Company — Exhibit No. RDA - 3
Coatesville Wastewater Operations
Docket No. R-2010-2166212
Calculation of Increase in Residential Usage Rate with Change in Service Charge

| Meter Size | Number of Residential Meters* | | PAWC Proposed | | SBA Sch BK-3 | | | Monthly Change in Revenue |
|---|---|---|---|---|---|---|---|---|
| 5/8" | 5,727 | ( | $20.00 | - | $7.65 | ) | = | 70,728 |
| 3/4" | 9 | ( | $20.00 | - | $9.10 | ) | = | 98 |
| 1.0" | 32 | ( | $20.00 | - | $12.00 | ) | = | 256 |
| 1.5 " | 4 | ( | $20.00 | - | $19.20 | ) | = | 3 |
| 2.0" | 12 | ( | $20.00 | - | $27.90 | ) | = | (95) |
| | 5,784 | | | | | | | 70,990 |

Annual Change in Revenue for Service Charge

70,990 x 12 = 851,880

*Annual Residential Metered Sales Usage* 2,930,981 *(100 gallons)*

Increase in Usage Rate per 100 gallons 851,880 / 2,930,981 = $ 0.29

*Herbert Exhibit No. 7-A Sch. G, p.1

CBA Statement No. RDA - 3-SR
Docket No. R-2010-2166212 *et al*,
Witness: Robert D. Ambrose, P.E.
Date Distributed: September 8, 2010
Date Admitted:

# THE CITY/BOROUGH ALLIANCE

## SURREBUTTAL TESTIMONY
OF
## ROBERT D. AMBROSE, P.E.

*CONCERNING*

***Rate Base & Rate Structure Design***

**(Prepared September 2010)**

# SURREBUTTAL TESTIMONY
# ROBERT D. AMBROSE, P.E.

**Q. Please state your name.**

A. My name is Robert D. Ambrose.

**Q. Are you the same Robert D. Ambrose who previously submitted testimony in this proceeding?**

A. Yes. My prepared direct testimony was served on August 5, 2010 and pre-marked for identification as CBA Statement No. RDA-1. I also submitted Supplemental Direct Testimony (CBA Statement No. RDA-1-Supplemental) and Rebuttal Testimony (CBA Statement No. 2-R) in these proceedings.

**Q. Have you reviewed the rebuttal testimony submitted by other parties in these proceedings?**

A. Yes, I have.

**Q. Do you have any comments concerning the rebuttal testimony that you have reviewed?**

A. Yes. I have comments concerning the rebuttal testimony submitted by Paul Herbert (Rate Consultant for PAWC) and David Kaufman (Witness for PAWC concerning capacity issues)

**Q. Please address your comments with respect to the rebuttal testimony of Paul Herbert.**

A. Mr. Herbert is opposed to my recommendation of a five rate case adjustment to close the gap between the existing rate structure and the rate structure indicated by the class cost of service.

He is concerned that it could take ten years or longer to close the gap. In this respect, we have a difference of opinion. A longer period provides an opportunity to review the trends of customer class responsibility, which may change with changes in the customer mix and growth in surrounding communities. Therefore, it is probable that on-going future restructuring will be needed regardless of whether the cost of service rate structure proposed by PAWC for this filing is adopted. In other words, although perfect alignment of costs by customer class is a desirable goal, it typically never is achieved, because utility operations constantly change, and analysis of costs by customer class is not an exact science. However, as a practical matter, since a phase-in of the proposed rate increase is under consideration, I believe it would be reasonable to coordinate the rate restructuring with the rate increase phase-in over a shorter period.

**Q. You stated that you have comments in response to the rebuttal testimony of David Kaufman.**

A. Yes, I do. I accept Mr. Kaufman's adjustments to the data that I used in my exhibits. His adjustments follow from using a different source of data for flow data and actual payment data for capacity fees. Based on a different starting point

the analysis will result in a different result. However, I do not agree entirely with his calculation for the following reasons:

I question the timing of capacity fee payments. Referring to his exhibit (Revised Exhibit No. RDA-2), he has distributed the 4,354 EDU's that already have been paid over a six year period and then discounted the fees. In his rebuttal testimony, he states that, "Of the total EDUs above the five-year average, 4,354 have already been paid" (p. 35 lines 2-3). If these fees have been paid, then PAWC already has the money, and these fees should not be discounted. In effect, his calculation understates the adjustment by at least $67,402.

I note also that he assumes that all of the $525 EDU fees are paid before any of the $2,000 capacity reservation fees are paid. I think that this is an unrealistic assumption. His exhibit shows all the $2,000 capacity reservation fees being paid in 2016 and 2017. At the present value, the 2016 and 2017 fees total $4,936,663, compared to $9,530,000 if the fees were not discounted. Although at this time we do not know the timing of future EDU fees that have not been paid, it is a reasonable expectation that some would be paid during earlier years. I point this out to demonstrate that Mr. Kaufman's estimated reduction of $305,347 to the revenue requirement is understated by at least $67,402 plus the impact of $2,000 capacity fees being spread over years 2010 to 2017, rather than just 2016 and 2017.

**Q. Have you prepared an exhibit to demonstrate the effect of the capacity fee payments?**

A. Yes. My Exhibit RDA – 4 (revised Exhibit No. RDA – 2) is attached.

**Q. Please explain Exhibit No. RDA – 4.**

A. Exhibit No. RDA – 4 is a recalculation of my previous exhibit and incorporates adjustments acceptable to me that Mr. Kaufman identified with respect to my original Exhibit RDA – 2. In addition, I have reflected the adjustments for fees that already have been paid and an adjustment assuming that the $2,000 fees will be paid over the period 2010 to 2017 – based on the assumed percentage distribution of EDUs set forth in my Exhibit No. RDA No. – 2. The distribution represents a conservative assumption for distribution of ERUs to reflect smaller percentages in early years based on the current economic conditions. I also propose that the adjustment should be reduced by 50% of the Present Value of the Capacity Reservation Fee, which splits the adjustment between customers and PAWC. I propose the split to account for any inaccuracies in my assumptions. If, however, the housing industry recovers at a more rapid rate than I assumed, then the Present Values will be greater than calculated, and the downward adjustment to the revenue requirement also would be greater. In other words, PAWC would need correspondingly less of an increase. Referring to my Exhibit No. RDA – 4, the calculated adjustment to the revenue requirement would be a reduction of $458,354 (not including the effect of income taxes). This compares with $1,006,772 (*see* my Supplemental Direct Testimony, page 2, line 13), as I previously proposed, and with $305,347, as Mr. Kaufman has calculated in his Rebuttal Testimony. Note: If the Capacity Reservation Fee is increased, there

would be a corresponding increase in the adjustment reducing the revenue requirement.

**Q. Is it likely that the housing industry for the tributary municipalities will grow at a more rapid rate than your conservative assumption?**

A. I do not know. However, Mr. Kaufman on page 29, lines 12 and 13, states, "At all times, members of the MSG and other tributary municipalities continue to forecast growth in their areas." He also states on page 29, lines 17-20, that "the 7.0 MGD plant capacity satisfactorily accommodates growth in the tributary municipalities for a period of between five and ten years." These statements suggest that growth in these areas will not slow-down, and the capacity fees will occur at a more rapid rate than I have assumed in Column (1) of my Exhibit No. RDA – 4. As stated previously, the reduction to the revenue requirement correspondingly would be greater than I show on Exhibit No. RDA – 4.

**Q. Do you have any other comments concerning Mr. Kaufman's rebuttal testimony?**

A. Yes. Mr. Kaufman explains at length (pages 31-33 of his rebuttal testimony) that the plant is sized properly, and the capacity is consistent with Act 537 requirements. I have proposed no adjustment based on the design of the plant, whether it is used or useful or "just in time" approach to capacity. In fact, I state in my direct testimony, page 8, line 16, "it is sound engineering to design for anticipated growth." That does not mean that the existing customers should be

burdened with capacity costs that will benefit future customers. Also, PAWC will recover a portion of the cost through Capacity Fees, especially, when PAWC is paid the fees in advance and has the benefit of the money for a period of time until the customer comes on line. Not only does PAWC want to earn a return on facilities that will benefit future customers, but also it will receive the capacity fees in advance and have the use of the funds for possibly several years.

**Q. You earlier mentioned the $2,000 capacity reservation fees.**

A. Yes and in doing so, I do not want anyone to infer that I believe that $2,000 is an appropriate capacity reservation fee.

**Q. Please explain the effect of increasing the Capacity Reservation Fee.**

A. The effect would be to recover all or part of the cost of capacity needed to serve new customers from those customers that will need the additional capacity. The concept is "growth pays for growth." As an upper limit, the proposed increased fee should not be greater than the cost of capacity associated with serving one EDU.

**Q. Do you have an opinion as to what would be an appropriate fee?**

A. I have made no study to determine what the cost of capacity is to serve one new customer. It is my understanding that an amount of $4,000 is under consideration after discussions with local developers. I think that a competitive basis to determine the fee is reasonable. Based on the magnitude of the project in this case, I would expect $4,000 to be well below the cost. If adopted, then it would

double the existing fee of $2,000. A fee significantly greater than $4,000 would tend to discourage developers and hamper growth, even if it could be cost justified.

**Q. Are you in favor of increasing the Capacity Reservation Fee?**

A. Yes, I believe that increasing the fee has merit, because it would recover a greater amount from new customers responsible for the additional capacity at the time that the new customer is added to the system. To the extent that new customers connect to the wastewater system, the cost of service to existing customers will be reduced.

**Q. Please explain how a higher capacity fee will reduce the cost of service to existing customers.**

A. Increasing the fee will have no initial effect. However, as new customers connect, the fee would be deducted from the rate base for rate purposes. This will result in reducing the depreciation, return, and corresponding income taxes in future rate proceedings. Depreciation, return, and income taxes are components of the cost of service recovered in rates and charged to customers.

**Q. Does this conclude your surrebuttal testimony?**

A. Yes.

Pennsylvania American Water Company
Coatesville Wastewater Operations
Docket No. R-2010-2166212
Present Value of Future Capacity Reservation Fees
Exhibit No. RDA - 4 (Revised Exhibit RDA - 2)

| Year | Assumed % Distribution of EDUs* (1) | Already Paid EDUs $525 (2) | EDUs ** to be Collected $525 (3) | EDUs ** to be Collected $2,000 (4) | Amount $ (5) | 10% Present Value Factor (6) | Present Value $ (7) |
|---|---|---|---|---|---|---|---|
| | | 4,354 | | | 2,285,850 | 1.000 | 2,285,850 |
| 2010 | 5% | | 286 | 238 | 626,860 | 0.909 | 569,816 |
| 2011 | 5% | | 286 | 238 | 626,860 | 0.826 | 517,786 |
| 2012 | 10% | | 573 | 477 | 1,253,720 | 0.751 | 941,544 |
| 2013 | 10% | | 573 | 477 | 1,253,720 | 0.683 | 856,291 |
| 2014 | 15% | | 859 | 715 | 1,880,580 | 0.621 | 1,167,840 |
| 2015 | 15% | | 859 | 715 | 1,880,580 | 0.564 | 1,060,647 |
| 2016 | 20% | | 1,146 | 953 | 2,507,440 | 0.513 | 1,286,317 |
| 2017 | 20% | | 1,146 | 953 | 2,507,440 | 0.467 | 1,170,974 |
| | | | **5,728** | **4,765** | **14,823,050** | | **9,857,065** |

| | | | | | | |
|---|---|---|---|---|---|---|
| Return @ Proposed Rate of Return | *** | 9,857,065 | x | 7.30% | = | 719,566 |
| Annual Depreciation (50 year average service life) | *** | 9,857,065 | / | 50 | = | 197,141 |
| | | | | | **$** | **916,707** |

**Proposed Adjustment 50% of Present Value** $ 916,707 / 2 = **$ 458,354** [not including impact of income taxes]

* As shown on RDA Exhibit No. 2.

** Use assumed distribution of EDUs as shown in column (1).

*** Assume split between customer and PAWC.

CBA Statement No. WGR-1
Docket No. R-2010-2166212 *et al.*
Witness: Wayne G. Reed
Date Distributed: August 5, 2010
Date Admitted:

**THE CITY/BOROUGH ALLIANCE**

**Prepared Direct Testimony of**

**WAYNE G. REED**

***Concerning Economic Characteristics of Residential Customers in Coatesville And Impact of Proposed Rate Increase***

**(Prepared August 2010)**

# PREPARED DIRECT TESTIMONY OF WAYNE G. REED

**Q. Please state your full name and business address.**

A. My name is Wayne G. Reed. My business address is One City Hall Place, Coatesville, PA 19320.

**Q. By whom are you employed?**

A. I am employed by the City of Coatesville, PA. I am its Interim City Manager. Since 2010, I have been employed in this capacity.

**Q. What is the purpose of your testimony?**

A. As Interim City Manager, I am quite familiar with the City and its residents, especially in the area of economics. Many of the residential customers of Pennsylvania American Water Company's Coatesville Wastewater Operations ("PAWC"), who reside in Coatesville, are economically disadvantaged. Under present rates, the monthly average bill for a residential customer is under $30.00. These residential customers already struggle to pay their wastewater bills. If rates to these customers increase to just over $90.00 per month, as proposed by PAWC in this rate case, then many of them will be unable to pay for service. Inevitably PAWC will terminate their water and sewer services and these customers will not have water or sewer service at their residences. It is unlikely that these customers will be able to reside in their residences without water or sewer service. A monthly increase of this magnitude could have extremely dire consequences to these residential customers who reside in Coatesville and to the

economy of the City. The Pennsylvania Public Utility Commission (the "Commission") needs to factor in these facts of economic reality in Coatesville when it makes its decision whether to approve all or some of the proposed rate case increase. I should add that the proposed increase will also negatively impact future residential and commercial development within the City.

Q. **What does the latest available U.S. Census data state about the economic characteristics of the residents of Coatesville?**

A. Please refer to Attachment WGR-1 to my testimony which contains tables from the 2000 U.S. Census: Coatesville and Chester County, PA. This is the latest census data available. Coatesville is in Chester County. The table about Coatesville states that it has a population of 10,838. The median household income is $29,912, which is about 25% less than the U.S. figure of $41,994. The per capita income is only $14,079, which is about 33% less than the U.S. figure of $21,587. There are 2,400 persons below the poverty level, which is roughly 22% of all people residing in Coatesville. This compares with the U.S. rate of 12.4%.

Now, compare those same categories with all residents of Chester County. In 2000, there were 433,501 residents of Chester County. The median household income was $65,295, which is about 25% more than the U.S. figure of $41,994. It is more than twice the $29,912 median income for residents in Coatesville. The per capita income in Chester County is $31,627, which is about 33% more than the U.S. figure of $21,587. It is roughly twice the figure for residents in Coatesville. There are 3,529 persons below the

poverty level, which is only about 3% of all people residing in Chester County. This compares with the U.S. rate of 12.4%. Coatesville residents account for roughly 66% of all Chester County residents below the poverty level.

As one can see, in comparison to the rest of Chester County and the United States as a whole, Coatesville is an economically depressed area. Many of our residents have very low incomes. Each dollar earned is very dear to them. With such low annual incomes, every dollar of increased charges can have a severely detrimental impact upon their lives.

**Q. Please describe the typical situation now under current rates for economically deprived Coatesville residents who are PAWC customers and cannot afford to pay current monthly bills of about $30.00.**

A. These PAWC customers now struggle to pay their monthly invoices. When they lack the disposable income to pay the $30.00 to $60.00 (one or two months charges in arrears), then PAWC eventually terminates their water and sewer services due to non-payment. Generally speaking, however, the termination for some has a short duration. Even though some of these residents somehow are able to obtain the disposable income to pay the $30.00 to $60.00 past due amount and the sewer services (and water) are reconnected in due course, the proposed increases will likely remove any ability for a terminated customer to obtain a reconnection.

**Q. What is your understanding about the proposed residential rates in the instant rate case?**

A. First, the average monthly residential bill will increase from under $30.00 to just over $90.00, representing an increase in excess of 225%. Second, there is a discount proposed in the monthly minimum bill ($7.00 per month, instead of $20.00 per month) for qualifying residential customers (i.e. customers must be within 150% of the U.S. poverty level and pay all proposed monthly invoices timely and fully); however, there will be no discount of the per gallon consumption charge.

**Q. If the monthly residential invoice roughly increases to either $90.00 (most residential customers) or $77.00 (qualifying low income customers), as opposed to the present invoice amount of less than $30.00, then what in your opinion will be the impact upon the economically deprived residents of Coatesville?**

A. Whether the monthly bill becomes about $77.00 with a low income discount or $90.00, as proposed (as opposed to the present amount of less than $30.00), there could be dire consequences. The difference between $77.00 and $90.00 may be mostly academic. Many of these economically deprived customers simply will not have enough disposable income to pay the increased bills (assume increases of either about $47.00 or $60.00). These customers then will be terminated due to non-payment of one to two months of bills (assume $154.00 to $180.00). It definitely will take them a lot longer to obtain the disposable income to pay the past due amounts plus the reconnection fees. They will be without water and sewer service for much greater periods of time. It is my understanding that the only way to disconnect sewer service, due to non-payment, is to disconnect water service as well. That means that many residents of Coatesville could face living without

water and sewer service for long periods of time. That could lead to chaos in Coatesville and have dire economic consequences for the City.

**Q. Do you have any figures showing the breakdown of PAWC customers for the Coatesville Wastewater Operations by the various municipalities which it serves?**

A. Yes I do. Attachment WGR-2 to my testimony contains numbers and breakdowns by municipality provided to me by PAWC. There were 6,045 PAWC – Coatesville Operations customers as of June 1, 2010. Of that amount, 3,717 (about 60%) are in Coatesville, including residential, commercial, and industrial. However, of the 3,717, the vast majority are residential customers. As I have stated, many are economically deprived.

**Q. Beyond substantially reducing the amount of the proposed increase, do you have a recommendation about how to help the economically disadvantaged residential customers of PAWC who qualify for the special low income rate?**

A. Yes, I think that PAWC should waive the current $30.00 reconnection fee for these customers. This would help somewhat when the low income customers scramble for ways to obtain the extra disposable income to pay for the increased amounts of monthly sewer invoices, which they are unable to pay, and then they are disconnected.

**Q. As Interim City Manager of Coatesville, what else do you wish to bring to the attention of the Commission with respect to the proposed rate increase by PAWC?**

A. I searched for more recent data about the economic characteristics of the residents of Coatesville and Chester County, but I was unable to find any. The most recent census was in 2010, and those figures have not been published yet. I work in Coatesville every day. From my personal, daily experience, I can tell you that the impoverished and economically distressed condition of the residents of Coatesville has continued since the 2000 Census. Many of our residents are unemployed. If you live in Coatesville and have water or sewer service, then you are a PAWC customer. No other utility provides either water or sewer service within the City of Coatesville. I respectfully suggest that the Commission in reaching its decision in this case needs to consider the very likely adverse impact an increase of great magnitude will have upon some of the lowest income citizens in Chester County, who live in Coatesville. Also, I am concerned about the potential adverse impact that a rate increase of great magnitude may have upon other residential customers, who are above the poverty line, but still lack substantial amounts of disposable income. They too may be unable to pay monthly PAWC invoices with increases in excess of 225%. Finally, if large enough numbers of economically deprived residential customers in Coatesville do not pay their monthly PAWC invoices, then I am concerned there will be a negative rebounding effect upon all other residential customers and other classes of customers. Most likely, PAWC will seek recovery of revenue shortfalls and propose even higher rates based in part upon higher levels of bad debt expenses and cash working capital requirements to be imposed upon all other, remaining customers. Imposing higher rates in the future to recoup the losses from the economically deprived residential customers in Coatesville who are financially unable to

pay their PAWC invoices makes little sense and could be very harmful in the future to these other customers as well as to the City.

**Q. Does this conclude your testimony?**

A. Yes.

# Attachment WGR-1

to the

Testimony of Wayne G. Reed

**2000 Census Data**

U.S. Census Bureau
American FactFinder

FACT SHEET

## Coatesville city, Pennsylvania

View a Fact Sheet for a **race, ethnic, or ancestry group**

Census 2000 Demographic Profile Highlights:

| General Characteristics - show more >> | Number | Percent | U.S. | | |
|---|---|---|---|---|---|
| Total population | 10,838 | | | map | brief |
| Male | 5,061 | 46.7 | 49.1% | map | brief |
| Female | 5,777 | 53.3 | 50.9% | map | brief |
| Median age (years) | 31.4 | (X) | 35.3 | map | brief |
| Under 5 years | 928 | 8.6 | 6.8% | map | |
| 18 years and over | 7,399 | 68.3 | 74.3% | | |
| 65 years and over | 1,317 | 12.2 | 12.4% | map | brief |
| One race | 10,467 | 96.6 | 97.6% | | |
| White | 4,542 | 41.9 | 75.1% | map | brief |
| Black or African American | 5,327 | 49.2 | 12.3% | map | brief |
| American Indian and Alaska Native | 39 | 0.4 | 0.9% | map | brief |
| Asian | 57 | 0.5 | 3.6% | map | brief |
| Native Hawaiian and Other Pacific Islander | 3 | 0.0 | 0.1% | map | brief |
| Some other race | 499 | 4.6 | 5.5% | map | |
| Two or more races | 371 | 3.4 | 2.4% | map | brief |
| Hispanic or Latino (of any race) | 1,165 | 10.7 | 12.5% | map | brief |
| Household population | 10,657 | 98.3 | 97.2% | map | brief |
| Group quarters population | 181 | 1.7 | 2.8% | map | |
| Average household size | 2.70 | (X) | 2.59 | map | brief |
| Average family size | 3.33 | (X) | 3.14 | map | |
| Total housing units | 4,360 | | | map | |
| Occupied housing units | 3,940 | 90.4 | 91.0% | | brief |
| Owner-occupied housing units | 1,801 | 45.7 | 66.2% | map | |
| Renter-occupied housing units | 2,139 | 54.3 | 33.8% | map | brief |
| Vacant housing units | 420 | 9.6 | 9.0% | map | |

| Social Characteristics - show more >> | Number | Percent | U.S. | | |
|---|---|---|---|---|---|
| Population 25 years and over | 6,439 | | | | |
| High school graduate or higher | 4,551 | 70.7 | 80.4% | map | brief |
| Bachelor's degree or higher | 653 | 10.1 | 24.4% | map | |
| Civilian veterans (civilian population 18 years and over) | 905 | 12.1 | 12.7% | map | brief |
| Disability status (population 5 years and over) | 2,561 | 25.7 | 19.3% | map | brief |
| Foreign born | 556 | 5.1 | 11.1% | map | brief |
| Male, Now married, except separated (population 15 years and over) | 1,502 | 41.1 | 56.7% | | brief |
| Female, Now married, except separated (population 15 years and over) | 1,427 | 33.2 | 52.1% | | brief |
| Speak a language other than English at home (population 5 years and over) | 1,175 | 11.8 | 17.9% | map | brief |

| Economic Characteristics - show more >> | Number | Percent | U.S. | | |
|---|---|---|---|---|---|
| In labor force (population 16 years and over) | 4,536 | 58.4 | 63.9% | | brief |
| Mean travel time to work in minutes (workers 16 years and over) | 26.7 | (X) | 25.5 | map | brief |
| Median household income in 1999 (dollars) | 29,912 | (X) | 41,994 | map | |
| Median family income in 1999 (dollars) | 36,375 | (X) | 50,046 | map | |
| Per capita income in 1999 (dollars) | 14,079 | (X) | 21,587 | map | |
| Families below poverty level | 489 | 18.3 | 9.2% | map | brief |
| Individuals below poverty level | 2,400 | 22.1 | 12.4% | map | |

| Housing Characteristics - show more >> | Number | Percent | U.S. | | |
|---|---|---|---|---|---|

| | | | | | |
|---|---|---|---|---|---|
| Single-family owner-occupied homes | 1,785 | | | | brief |
| Median value (dollars) | 77,500 | (X) | 119,600 | map | brief |
| Median of selected monthly owner costs | (X) | (X) | | | brief |
| With a mortgage (dollars) | 1,043 | (X) | 1,088 | map | |
| Not mortgaged (dollars) | 328 | (X) | 295 | | |

(X) Not applicable.
Source: U.S. Census Bureau, Summary File 1 (SF 1) and Summary File 3 (SF 3)

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U.S. Census Bureau
American FactFinder

FACT SHEET

## Chester County, Pennsylvania

View a Fact Sheet for a race, ethnic, or ancestry group

Census 2000 Demographic Profile Highlights:

| General Characteristics - show more >> | Number | Percent | U.S. | | |
|---|---|---|---|---|---|
| Total population | 433,501 | | | map | brief |
| Male | 212,739 | 49.1 | 49.1% | map | brief |
| Female | 220,762 | 50.9 | 50.9% | map | brief |
| Median age (years) | 36.9 | (X) | 35.3 | map | brief |
| Under 5 years | 29,330 | 6.8 | 6.8% | map | |
| 18 years and over | 319,919 | 73.8 | 74.3% | | |
| 65 years and over | 50,677 | 11.7 | 12.4% | map | brief |
| One race | 428,890 | 98.9 | 97.6% | | |
| White | 386,745 | 89.2 | 75.1% | map | brief |
| Black or African American | 27,040 | 6.2 | 12.3% | map | brief |
| American Indian and Alaska Native | 645 | 0.1 | 0.9% | map | brief |
| Asian | 8,468 | 2.0 | 3.6% | map | brief |
| Native Hawaiian and Other Pacific Islander | 140 | 0.0 | 0.1% | map | brief |
| Some other race | 5,852 | 1.3 | 5.5% | map | |
| Two or more races | 4,611 | 1.1 | 2.4% | map | brief |
| Hispanic or Latino (of any race) | 16,126 | 3.7 | 12.5% | map | brief |
| Household population | 418,757 | 96.6 | 97.2% | map | brief |
| Group quarters population | 14,744 | 3.4 | 2.8% | map | |
| Average household size | 2.65 | (X) | 2.59 | map | brief |
| Average family size | 3.15 | (X) | 3.14 | map | |
| Total housing units | 163,773 | | | map | |
| Occupied housing units | 157,905 | 96.4 | 91.0% | | brief |
| Owner-occupied housing units | 120,428 | 76.3 | 66.2% | map | |
| Renter-occupied housing units | 37,477 | 23.7 | 33.8% | map | brief |
| Vacant housing units | 5,868 | 3.6 | 9.0% | map | |

| Social Characteristics - show more >> | Number | Percent | U.S. | | |
|---|---|---|---|---|---|
| Population 25 years and over | 285,816 | | | | |
| High school graduate or higher | 255,240 | 89.3 | 80.4% | map | brief |
| Bachelor's degree or higher | 121,352 | 42.5 | 24.4% | map | |
| Civilian veterans (civilian population 18 years and over) | 38,103 | 11.9 | 12.7% | map | brief |
| Disability status (population 5 years and over) | 53,023 | 13.3 | 19.3% | map | brief |
| Foreign born | 23,770 | 5.5 | 11.1% | map | brief |
| Male, Now married, except separated (population 15 years and over) | 103,575 | 63.3 | 56.7% | | brief |
| Female, Now married, except separated (population 15 years and over) | 101,982 | 58.3 | 52.1% | | brief |
| Speak a language other than English at home (population 5 years and over) | 35,414 | 8.8 | 17.9% | map | brief |

| Economic Characteristics - show more >> | Number | Percent | U.S. | | |
|---|---|---|---|---|---|
| In labor force (population 16 years and over) | 229,631 | 69.1 | 63.9% | | brief |
| Mean travel time to work in minutes (workers 16 years and over) | 27.5 | (X) | 25.5 | map | brief |
| Median household income in 1999 (dollars) | 65,295 | (X) | 41,994 | map | |
| Median family income in 1999 (dollars) | 76,916 | (X) | 50,046 | map | |
| Per capita income in 1999 (dollars) | 31,627 | (X) | 21,587 | map | |
| Families below poverty level | 3,529 | 3.1 | 9.2% | map | brief |
| Individuals below poverty level | 22,032 | 5.2 | 12.4% | map | |

| Housing Characteristics - show more >> | Number | Percent | U.S. |
|---|---|---|---|

| | | | | | |
|---|---|---|---|---|---|
| Single-family owner-occupied homes | 106,254 | | | | brief |
| Median value (dollars) | 182,500 | (X) | 119,600 | map | brief |
| Median of selected monthly owner costs | (X) | (X) | | | brief |
| With a mortgage (dollars) | 1,505 | (X) | 1,088 | map | |
| Not mortgaged (dollars) | 460 | (X) | 295 | | |

(X) Not applicable.
Source: U.S. Census Bureau, Summary File 1 (SF 1) and Summary File 3 (SF 3)

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# Attachment WGR-2

to the

Testimony of Wayne G. Reed

Pennsylvania American Water Company
Coatesville Wastewater Operations

**Customers by Municipality**

Coatesville - 3,717
East Fallowfield - 977
Highland - 2
Parkesburg - 1,131
West Caln - 181
West Sadsbury - 33