

Philadelphia Water Department
FY 2009-12 Rate Hearings
Filing of the Water Department
Standard Interrogatories

1. Please explain the major reasons for the proposed water/wastewater rate increase.

Answer: The need for the requested rate relief for the period FY 2009-2012 (“Rate Period”) is caused by five major cost factors which are listed below in descending order:

- increased personnel costs (wages, pension, health care and fringe benefits) – contributing 43.3% to need for additional revenues;
- increased debt service associated with existing capital program (existing capital program) – 19.3% of increased revenue need; and
- increased fuel, utilities & chemicals – 19.2% of increased revenue need;
- increased cost of other services & supplies and general inflation – 9.6% of increased revenue need; and
- increased costs associated with flood mitigation program – 8.6% of increased revenues.

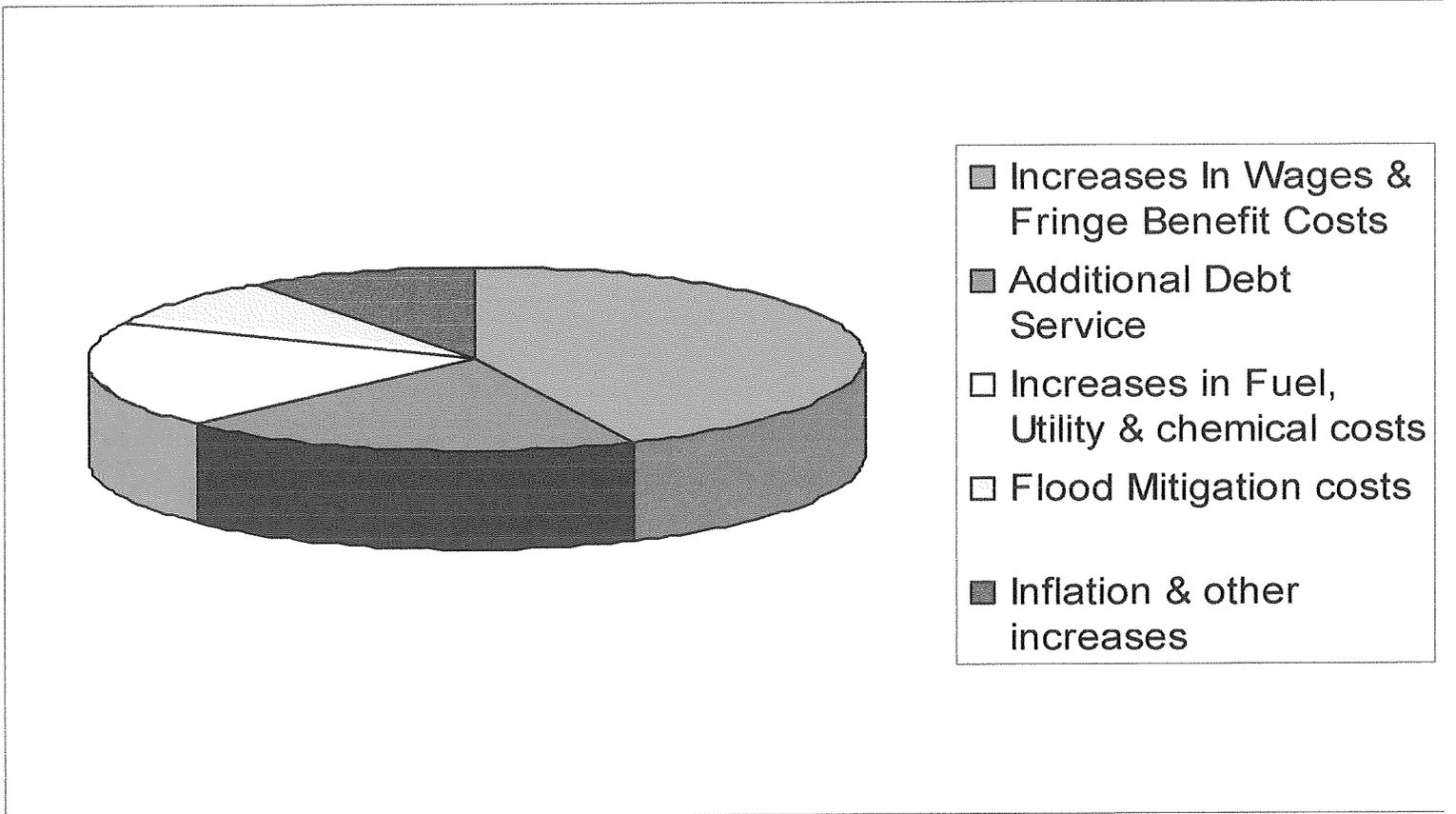
The proportionate increase relative to the major costs factors is depicted in attached Table A.

As summarized above, the major costs driving the budget and the need for rate relief include those for personnel (salaries and benefits), increased O&M expenses, debt service and storm mitigation program costs. The most telling example of increased costs relates to personnel costs which have increased by 17.02% over FY 2005 actual obligations and fringe benefits have escalated by 32.42%. In addition, increased materials, supplies and equipment costs require the Department to spend 45.48% more now than in FY 2005. Similarly, the cost of outside services supplied to the Department for electricity, telephone, natural gas, biosolids transportation/disposal and other services provided by outside vendors have increased in the aggregate by 46.78%. All of the foregoing are explained in detail in the rate filing.

It should also be noted that the above referenced budgetary growth is occurring during a period when Philadelphia is continuing to annually lose a small portion of its population and businesses. Needless to say, this continuing trend has the effect of eroding the Department’s customer base. Needless to say, this customer loss has caused the Department’s high fixed costs (related to maintenance of water mains, sewer mains, pumping stations, treatment plants, sewer inlets, etc.) to be spread over fewer customers. The above budgetary and demographic factors in combination with (a) the loss of the state subsidy for wastewater operations; (b) future additional regulatory costs to meet additional environmental requirements (e.g., costs attributable to meeting the Interim Enhanced Surface Water Treatment Rule and programs; the watershed based storm water management program; and combined sewer overflow program; are all contributing to the need for rate relief at this time.

Table A

MAJOR COST FACTORS DRIVING THE RATE INCREASE



Rate Requirement Elements (\$ Millions)

Increase in Wages/Fringe Benefit Costs	\$137.2	43.3%
Additional Debt Service	\$61.3	19.3%
Increase in Fuel, Utility and Chemical Costs	\$60.9	19.2%
Flood Mitigation Costs	\$27.3	8.6%
Inflation and Other Increases	\$30.2	9.6%
Total Rate Requirement	\$316.9	100.0%

The revenue impact of the Department's request over the Rate Period is summarized in Table 11 from the Black & Veatch Report which is attached to this response. The annual percentage revenue increase is 6.975% annually during FY 2009-2012 for our typical 5/8inch meter customer.

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2. Please state the percentage increase projected for the typical residential customer in FY 2009.

Answer: See attached Table 38 from the testimony of J. Rowe McKinley, Exhibit JRM-1.

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- 3. Please provide a summary of proposed water and sewer charges in connection with this proceeding.**

Answer: See Tables 24, 25 and 37 from the testimony of J. Rowe McKinley, Exhibit JRM-1.

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- 4. Please state when the Water and Sewer Regulations were changed for ratemaking purposes.**

Answer: General water and sewer rates (as well as fire connection charges) were last changed on August 1, 2005 and included annual changes in rates that became effective on that date and thereafter on July 1, 2006 and July 1, 2007. Miscellaneous water and sewer charges were last changed effective August 1, 2005.

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5. Please state whether miscellaneous regulations are proposed to be changed in this proceeding.

Answer: Miscellaneous regulations are proposed to be changed as a part of this rate filing. The proposed changes are summarized in the direct testimony of James Palladino.

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6. Please state whether the senior citizen discount will continue in its present form.

Answer: Eligible senior citizens will continue to receive water/sewer service at a 25% discount. However, the income test threshold for eligibility for this discount is proposed to increase from its present level of \$26,700 to \$28,600, effective as of the implementation date of new rates. This change reflects the estimated increase in the Consumer Price Index since the income threshold was last adjusted. Subsequent adjustments in the proposed rates will be accompanied by appropriate revisions of the Senior Citizen Income Test to reflect the changes in the latest available Consumer Price Index.

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7. Please provide the Department's Financial Statements for FY 2006 and 2007.

Answer: See attachment. (Attachment 1)

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8. Please provide a copy of the Department's most recent Official Statement.

Answer: See attached Official Statement from the Department's Series 2007A/B Bonds issued in March, 2007. (Attachment 2)

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9. Please state the Department's current bond ratings.

Answer: The Department's current bond ratings are as follows:

Standard & Poor's	A-
Fitch	A-
Moody's	A3

The most recent rating agency reports are attached to the response to Standard Interrogatory 42.

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10. Please state the Department's plans to issue bonds during the Rate Period.

Answer: The Department has authorization to issue revenue bonds in the amount of approximately \$325 million.

This new money issue may be comprised of several series as described below:

- 1) Pennworks Loan Authorization and Grant - \$3 million loan, \$2 million grant;
- 2) \$180 million is subject to a "Rate Lock Agreement" in February 2007 (modified and extended in December 2007);
- 3) \$142 million to be issued in approximately February 2009 in connection with the settlement on the Rate Lock Agreement.

Pennworks Loan Authorization and Grant

The "Pennworks" financing is a grant/ loan from the Pennsylvania Department of Community and Economic Development. The offer was originally received formally on or about October 30, 2006 and is for a "Pennworks" grant in the amount of \$2,000,000 and a loan in the amount of \$3,000,000 at 2% interest with a 20 year term. The project number assigned is C000022981. The work involves rehabilitation of the water and sewer utilities in the central business core of the Navy Yard. At the present time these utilities are under the ownership and control of PIDC/PAID but are operated under contract by the Water department. Transfer of ownership and control of the Navy Yard utilities to the Department has been discussed for some time but has been delayed pending the upgrade of the system to Department standards. Since PIDC/PAID have been the direct recipients of a substantial amount of Pennworks funding for economic development purposes, it was not possible to have this grant/loan directly awarded to them. There is a substantial amount of both new and replacement water and sewer utility work to be done at the Navy Yard beyond the \$5 million covered by this financing. It has been anticipated that a portion of the proceeds from the "new river city" project would be utilized for this purpose. Since the Navy Yard Utilities have not technically been turned over to the Department, we believe it would be fair and appropriate to reduce the Navy Yard "New River City" funding dedicated to the Navy Yard by \$5 million and move these funds to PWD's capital program in return for our acceptance of the Pennworks loan/grant.

Swap Agreements (Rate Lock)

On December 5, 2002, the City entered into an ISDA Master Agreement and Schedule and a separate Confirmation for each of the Series 1993 Bonds and the Series 1995 Bonds (collectively, the "2002 Swap Agreement") with Citigroup Financial Products Inc., as successor to Salomon Brothers Holding Company, Inc. (the "2002 Swap Provider").

In connection with the anticipated issuance of the 2008 New Money Bonds, on February 21, 2007, the City entered into two separate forward starting interest rate swap transactions, each evidenced by an ISDA Master Agreement, Schedule and a Confirmation (collectively, the "2007 Swap Agreements," and together with the 2002 Swap Agreement, the "Swap Agreements"), between the City and each of Merrill Lynch Capital Services, Inc. and Wachovia Bank, National Association (the "2007 Swap Providers," and together with the 2002 Swap Provider, the "Swap Providers"). The 2007 Swap Agreements are intended to hedge the interest rate risk on \$180,000,000 aggregate principal amount of the 2008 New Money Bonds, split equally between the 2007 Swap Providers. Under the 2007 Swap Agreements, commencing on February 1, 2008, the City will pay interest to the 2007 Swap Providers on the notional amount thereof at a fixed interest rate of 3.999%, and the 2007 Swap Providers will pay interest to the City on such notional amount at a variable interest rate equal to the Bond Market Association Rate or the Securities Industry and Financial Markets Association Rate, each as defined therein.

The City's regularly scheduled payments under the Swap Agreements are secured on a parity basis by a lien on and a security interest in all Project Revenues for the benefit of each of the Swap Providers, as the Swap Provider, and, with respect to the 2002 Swap Agreement, Financial Security Assurance Inc., as the bond insurer. All other obligations of the City under each of the Swap Agreements, including payments due upon the early termination of a Swap Agreement, are secured by a lien on and security interest on all Project Revenues subordinate to the lien described in the preceding sentence.

Under certain conditions, each of the Swap Agreements may be terminated prior to its stated termination date in which case the City may be obligated to make a substantial payment to, or may be entitled to receive a substantial payment from, the applicable Swap Provider. There can be no assurance that a Swap Provider will pay or perform its obligations under the applicable Swap Agreement in accordance with the terms thereof, or that a Swap Provider will be able to pay any termination payment which it may be required to pay upon the occurrence of certain events of default or termination events under the applicable Swap Agreement. The City recently extended the 2007 Rate Lock agreement until February 17, 2009. Plans to issue all or part of the planned 2008 New Money issue in February 2008 as originally planned have been delayed until sometime during the second half of FY 2009.

Other Planned Financings:

The Department currently anticipates issuing new money revenue bonds in approximately January 2009 (\$325,000,000 including the rate lock described above) and \$350,000,000 in approximately January 2012 to finance the projects included in its current capital program. The Councilmatic ordinance authorizing the \$325,000,000 has already been approved. Additional councilmatic authorization for the \$350,000,000 is anticipated in approximately September of 2009.

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11. Please explain why the proposed rate increase is necessary to maintain the Department's credit rating.

Answer: The proposed rate increase is the minimum increase that will provide adequate realized revenues to meet the Department's 1.20x coverage requirement (senior debt) with its investors and the its 90% covenant with certain bond insurance companies (FGIC/FSA Covenant). Absent rate the proposed rate relief, estimated coverage levels would fall below minimum required levels as stated below:

<u>Fiscal Year</u>	<u>Senior Debt Coverage</u>	<u>Total Debt Coverage</u>
2009	1.02	0.91
2010	0.87	0.79
2011	0.70	0.63
2012	0.52	0.47

Debt service coverage levels are managed to required levels with the proposed rate relief as provided below:

<u>Fiscal Year</u>	<u>Senior Debt Coverage</u>	<u>Total Debt Coverage</u>
2009	1.20	1.07
2010	1.20	1.08
2011	1.20	1.08
2012	1.20	1.08

Rating agency concerns related to maintaining coverage levels and related issues are set forth in the rating agency reports attached to the response to Standard Interrogatory 42.

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12. Please describe the Department's covenants with investors.

Answer: The Department's principal covenants¹ are set forth in and required by the General Ordinance and the FGIC/FSA Covenant entered into in connection with the issuance of Series 1993 and 2003 Bonds.

The rate covenant contained in the General Ordinance requires the Department to establish rates sufficient to yield Net Revenues in each fiscal year (after payment of operating expenses) at least equal to 1.20 times the Debt Service Requirements for such fiscal year (both as defined in the General Ordinance). In addition, net revenues in each fiscal year must be at least equal to 1.00 times (i) Debt Service Requirements for such fiscal year; (ii) amounts required to be deposited in the Debt Reserve Account during such fiscal year; (iii) principal or redemption price of and interest on General Obligation Bonds issued by the Department and payable in such fiscal year; (iv) debt service requirements on interim debt payable in such fiscal year; and (v) the Capital Fund Deposit Amount for such fiscal year, less amounts transferred from the Residual Fund to the Capital Account during such fiscal year.

For each fiscal year ending on or after June 30, 2000, the Department is required by the Fiscal Agent, for the benefit of Financial Guaranty Insurance Company ("FGIC") and thereafter to Financial Security Assurance, Inc. ("FSA") through their insurance on the Series 2003 bonds, to establish rates and charges for the use of the water and wastewater systems sufficient to yield Net Revenue (excluding amounts transferred from the Rate Stabilization Fund into the Revenue Fund during the fiscal year) at least equal to 90 percent of the Debt Service Requirements (excluding Debt Service due on any Subordinated Bonds) in such fiscal year for so long as the Series 1993 Bonds insured by FGIC and Series 2003 Bonds insured by FSA are outstanding.

¹ The Department's bond covenants are enacted by Ordinance of City Council and then made a part of the transaction for the issuance of long-term debt. These covenants are binding upon the Department as prescribed by City Council and enforceable by bondholders as a part of the contract embodied in the bond. See, General Water and Wastewater Revenue Bond Ordinance of 1989 (Ordinance of City Council, approved June 24, 1993 – Bill No. 544). Supplemental Ordinances are enacted with each bond transaction.

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13. Please provide the Mayor's Operating Budget and supporting detail for FY 2008-2009.

Answer: See attachment. (Attachment 3)

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14 Please provide the basis for all major budget assumptions in the rate filing.

Answer: Operation and Maintenance Expense Assumptions – The projected operation and maintenance expense for Fiscal Year 2009 is based on Black & Veatch’s estimate of operation and maintenance expense for the fiscal year. The estimate is based primarily on the Department’s budget for Fiscal Year 2009, adjusted to recognize an analysis of past years’ actual expenses versus budgeted operation and maintenance expense. With the exception of personal services, power, and chemicals, the projection of operation and maintenance expenses in future years is based on the estimated expense for Fiscal Year 2009 plus an allowance of 3.0 percent per year for inflation and new programs in Class 200-400. For electric power (Class 220), a 2.5 percent increase has been used for Fiscal Year 2010, 11.9% increase has been used for Fiscal Year 2011, and a 7.5% annual increase has been used for Fiscal Year 2012. This reflects the loss effective at the beginning of calendar year 2011 in the current beneficial electric rate discounts from PECO which the Department presently has in effect. For Chemicals (Class 307) an annual increase of 9.0 percent has been used. Salaries were projected to increase as follows: a 5.2 percent cost increase effective on 7/1, 2008, reflecting a higher actual to budget factor for Operations Division salaries plus an allowance a one-time bonus as a result of the new labor agreement, this latter factor in keeping with the most recent labor agreement settlements. For the latter fiscal years the assumptions reflect 2.5 percent effective on 7/1, 2009, 3.5 percent effective on 7/1, 2010, and 4.5 percent effective on 7/1, 2011, recognizing the levels and patterns of increases approved in the past two labor union contracts for Department employees and anticipated increases in staffing levels. Fringe benefits were projected at 70.0 percent of direct and indirect class 100 costs for FY 2009, 72.8 percent for FY 2010, 75.8 percent for FY 2011, and 78.8 percent for FY 2012 based on the actual 2007 fringe benefits rate and the projections reflected in the City’s FY 2009 Five year financial plan.

Capital Improvement Program – The projection of capital improvement program expenditures for the Period of FY 2009 – FY 2014 is based on the Department’s Fiscal Year 2009 – 2014 Capital Budget. Projected costs for the capital improvement program are at Fiscal Year 2009 cost levels. Accordingly, an annual inflation allowance of 4.0 percent has been recognized beginning with Fiscal Year 2010. An additional cash flow adjustment is made to recognize the net result of carrying forward costs which are encumbered in one year, but which do not become cash expenditure until a subsequent year. The Department’s projected capital improvement program on an encumbrance basis for the study period totals \$985,783,000. A copy of the City’s Capital Improvement Program, including the Water Department section, is included in Interrogatory #41. After adjustments for inflation and the timing of actual expenditures, the capital improvement program totals \$917,999,000 for the study period of Fiscal Years 2009-2014.

Debt Service – The capital improvement financing program projects that the Department will issue \$325 million in revenue bonds in approximately February 2009, an additional

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approximately \$350 million in February 2012 and an additional \$365 million in approximately February 2014. The revenue bonds are assumed to have a term of 30 years, an average interest rate of 5.0 percent for the proposed 2009 series bonds, an average interest rate of 5.5 percent for the proposed 2012 and 2014 series bonds, and equal annual principal interest payments.

Capital Improvement Financing – In addition to revenue bonds, capital improvement program financing projections assume that \$114,939,000 will be transferred to the Construction Fund through the annual Capital Account Deposit, required by the department's bond indenture, and that an additional \$120,000,000 in discretionary Residual Fund account balances will be transferred to the Construction Fund from the Residual Fund during the rate period.

A copy of the City's Five-Year Financial Plan, including the Water Department section, is included in Interrogatory #38. A new Five-Year Financial Plan incorporating Black & Veatch's latest estimates and this rate plan may be filed during the rate proceeding should it become necessary to do so due to changes in the adopted budget or the underlying economic assumptions.

The following other assumptions were reflected in the formation of the FY 2009 Water fund operating budget:

The Water Department began in summer 2003 a process to move to an entirely Class A biosolids process, and one that could operate in Philadelphia without odors. It entered into a contract with the engineering consultant firm Camp, Dresser & McKee to assist with procurement of facilities and services for Philadelphia to operate for 20 years the dewatering station and to construct new facilities to produce Class A biosolids products. Alternative processes identified for this procurement process included fully-enclosed composting systems and heat drying technologies. The Request for Qualifications was released in August 2003, and, in response, the City received qualification statements from four teams, of which two were found qualified and invited to receive a Request for Proposals. One team, Philadelphia Biosolids Services, submitted a proposal on November 24, 2004. This team offered to build a pair of sludge dryers.

The Department has negotiated a long term contract with Philadelphia Biosolids Services (PBS) for improvements to the Biosolids Recycling Center. The contract includes a provision for interim operation of up to five years, during which PBS will take over operation of the existing BRC and immediately eliminate the composting operation. Within the first three to five years PBS will finance, design, build, own, and operate a thermal drying facility that will handle all of the sludge processed by the PWD and make a Class A product in the form of pellets that can be used as fertilizer. PBS will be responsible for the utilization of the Class A pellets. The Class A period of operation will last twenty years with a five year renewal at the option of PWD. The project has an estimated net present value of about \$102 million over the life of the contract.

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Ordinances requesting City Council approval of the service agreement and companion lease have been introduced by the Administration. Council hearings by the Finance Committee were held in December 2006 and the Committee has scheduled an additional hearing on January 31, 2007. The Department has provided sufficient funds in its FY2008 budget to continue the in-house operation of the biosolids recycling center in the event that the PBS contract is not approved by City Council. Additional class 200 funds were also budgeted in the event the PBS contract is approved and proceeds as proposed.

The FY2008 budget also reflected the assumption that composting operations at BRC will be phased out during the period from March 2007 through September 2007. As a result, staffing at the BRC facility was reduced to a filled level of 60 positions. The FY2009 budget request also reflects the assumption that disposal quantities and the cost per ton for Biosolids disposal will decrease from the FY2008 budgeted levels (\$1,641,000 class 205 decrease and \$7,400,000 class 250 increase to provide for contract operations).

The FY2009 budget also reflects the assumption that the department will continue its recently initiated Flooding mitigation program which will provide for the department to bear the cost of installation and costs directly related to certain flood mitigation devices in certain flood prone properties. (an overall \$3,000,000 class 264 increase)

The FY2009 budget also reflects the assumption that electricity costs will increase due to the discontinuance of the cogeneration contract arrangement at the Northeast and Southwest Wastewater plants and due to inflation and increases in energy prices. (\$973,000 increase in class 220)

The FY2009 budget also reflects the assumption that significant cost increases above the rate of inflation will occur in the cost of natural gas and treatment chemicals due mainly to the rising costs of energy products. (\$110,000 in class 221 and \$3,804,000 in class 307). Black & Veatch has also adjusted the FY 2008 budget to actual projections to reflect a more realistic assumption for diesel fuel and gasoline above the amount stated in the budget for the Fleet Management unit (\$500,000 increase).

The FY2008 budget also reflected the assumption that payments to the department's automatic meter reading vendor will increase by \$600,000 based on additional large meter AMR installations and costs related to the fixed network installed for modeling water loss and pressure. This increase was continued into FY2009.

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The FY2009 budget also reflects the following new programs:

Leadership Development	\$72,000
Stormwater Reallocation implementation	\$200,000
Update of Strategic Plan	\$100,000
Leasehold Improvement to PWD Headquarters	\$500,000
Preparation of Long Term Financial Plan	\$200,000
LIMS Software Acquisition	\$425,000
Nutrient/PCB/TMDL	\$150,000
On-Line Development website	\$1,000,000
Increase in Stormwater Plan Technical Review	\$500,000
PWD On-line master development manual	\$250,000
Stormwater Reallocation Technical Assistance	\$500,000
Act 167 Stormwater Management Plan	\$ 50,000
LID Projects Source water Protection	\$750,000
Online Water Quality Monitoring	\$110,000
Water Security Grant	\$4,290,152
BRC Contract Operations	\$7,400,000
Flooding Mitigation/Backflow Prevention	\$2,200,000
Street Side Work Order System	\$599,880
New Billing System Support	\$250,000

These items are detailed in the Water Department FY2009 budget detail provided as an attachment to Standard **Interrogatory #13**.

The FY2009 does not provide any amount for a potential wage increase (\$3,471,440) as well as increases in increments (\$191,055), longevity (\$47,395) and lump sum severance payments (\$985,000).

Note: The FY2008 New River City program costs are covered by revenues related to the substitution of a portion of the funds in the department's sinking fund reserve with a bond. This program is more fully described in standard Interrogatory #51.

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15. Please provide the most recent summary of inter-departmental charges.

Answer: See attached. (Attachment 4)

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16. **Please provide the basis for payments to the General Fund as set forth in the Department's budget for (A) Managing Director's Office; (B) Street Department; (C) Department of Public Property; (D) Department of Records; (E) Finance Director's Office; (F) Revenue Department; (G) City Treasurer's Office; (H) Procurement Department; (I) Civil Service Commission; (J) Personnel Services; (K) City Controller's Office; (L) Mayor's Office of Information services; and (M) Office of Fleet Management.**

Answer: The basis for inter-departmental payments is explained below.

a. Managing Director's Office:

provides policy direction, coordinates interdepartmental responsibilities and monitors operating departments to ensure the efficient and effective provision of City services. It also assists City departments in labor relations practices and procedures. Costs are allocated based on the number of full time equivalent employees in each City department.

b. Streets Department:

- i. Repaving of PWD street excavations. Consists of labor, material and equipment charges.
- ii. Surveys: surveyor work performed for PWD projects such as grading of repaved curbs. Labor only.
- iii. Rock Salt: rock salt used by PWD in the winter, which is purchased by the Streets Department.

Costs are allocated based on the cost of the actual services rendered to each City department.

c. Department of Public Property:

- i. Radio Service: repair and maintenance to PWD's radios, walkie talkies, base stations, satellite receivers, receiver voters, chargers consoles, and other miscellaneous equipment. Labor only.
- ii. Telephone: PWD's "phone bill" for land lines and cell phones.
- iii. Parking: center city parking fees.
- iv. Rents:

[Be advised that rents and electricity for ARAMARK Tower are no longer paid via interfunds. They are separate appropriation to Public Property's budget.]

Parking, rent and telephone usage costs are allocated based on the cost of the actual services rendered to each City department. Other costs are allocated based on the number of telephone instruments or radios for the department.

d. Department of Records:

- i. Archives and records management: provides for the storage of PWD documents. Costs are allocated by the number of labor hours afforded each department.
- ii. Forms: costs for designing, standardizing and ordering forms. Costs are allocated by the number of labor hours.
- iii. Central duplicating: costs distributed by the number of copies made for each department.

e. Finance Director's Office:

- i. Finance function:
 1. Review of operating expenditures, revenues, purchases and daily account balances for propriety and accuracy. Costs are allocated by the number of such expenditures.
 2. Administration of City's accounting systems. Costs are allocated by the number of accounting transactions processed.
 3. Personnel and employee benefits related accounting duties. Costs are allocated by the number of full-time equivalent employees.
- ii. Budget Bureau: responsible for the preparation and oversight of the City's operating budget. Provides forecasting and assumptions for the City's five-year financial plan, monitors City legislation affecting appropriations and reviews and analyzes all City department's requests for spending and hiring. Time reports track the effort afforded various City departments and agencies, and costs are allocated based on the percentage of effort supporting these departments and agencies during the year.
- iii. Minority Business Enterprise Council: monitors all City contracts to assure compliance with contract terms by prime and subcontractors, provides certification evaluations to assure that only bona-fide firms are admitted to the program, provides technical assistance to vendors to increase participation of minority firm on City contracts, bids, proposals and requisitions reviewed and processed.
- iv. Accounting Bureau: processes all payments to vendors providing goods and services, bi-weekly payrolls and associated fringe benefit payments, provides financial reporting daily and monthly, prepares annual financial reports and centrally administers all grant related activity. Provides all

- accounting services necessary for the City's pension plan. Costs are allocated by the number of accounting transactions.
- v. Risk Management: manages indemnity claims, employee disability programs and work safety programs. Costs are distributed based on full-time equivalent employees.
- f. Revenue Department:
- i. "Lock Box" Operations: for the "backroom" operation of receiving and processing of water/sewer bill payments, received by mail.
 - ii. Administration: administrative, budgeting, payroll and personnel support of Water Fund employees within the Revenue Department. Costs are assigned based on the ratio of Water Fund employees to total Revenue Department employees.
 - iii. Mail Center: the center processes and mails city billings, including all water/sewer bills. A prorated allocation of costs is made for the labor costs. The Water Fund is charged directly for its postage costs.
- g. City Treasurer's Office: deposits, invests, manages and disburses all funds. Assists as custodian of the City's cash and securities. Performs all debt management function of the City and provides citywide financial planning and analysis. Costs are allocated by the number of accounting transactions processed.
- h. Procurement Department: purchases, through a competitive bidding process, all equipment, supplies, services and goods required for municipal services and capital programs. Costs associated with citywide purchasing are allocated by the number of purchase requisitions or public works contracts processed for each department. Advertising costs are allocated directly to the departments for which they are employed.
- i. Civil Service Commission: provides overall human resources administration. Reviews and monitors employee classification and pay concerns, approves new job contracts, reviews residency waivers and issues numerous opinions related to employee dismissals, lay-offs, injuries, etc. Costs are allocated based on the number of full-time equivalent employees.
- j. Personnel Department: responsible for the overall conduct of the City's Personnel Management Program. Costs are allocated based on full-time equivalent employees.
- k. City Controller's Office: reviews and approves all vouchers for payment, audits all funds, monitors income and expenses, bank records and the budget. Performs special investigations, as needed.
- i. Post-audit: audits performed after the expenditure is made. Includes compliance examination with applicable laws and regulations, and

performance review for efficiency and economy. Costs are allocated based on audit hours expended performing each audit.

- ii. Pre-audit: audits before the expenditure is made. Generally, these are the accounting, payroll and employee benefits transactions. Costs are allocated based on the number of accounting transactions processed.
- iii. Special investigations: investigation of alleged residency violation, employee misconduct and conflicting employment, and irregularities involving departments and contracts let. Costs are distributed based on the number of full-time equivalent employees.

There no longer is an interfund payment to the Law Department. PWD now provides them with a separate appropriation. The Excess Interest payment is no longer shown in the end of the FY interfund payments. Also, the Water Revenue Bureau receives a separate appropriation. However, we do pay an interfund to the Mayor's Office of Information Services (MOIS), and to the Office of Fleet Management (OFM), which came into existence since the last rates hearings. Below, are bases or payments for these departments:

- 1. MOIS: Provides information processing support.
 - i. Data Processing Operations: this is machine related support, and costs are allocated based on Central Processing Unit (CPU) time devoted to a department, as recorded by MOIS.
 - ii. Accounting operations: this is for non-payroll accounting transactions processed for the department. Costs are allocated based on the ratio of total accounting transactions performed.
 - iii. Payroll and benefits system: all employee benefits, payroll reports and human resources applications transactions. Cost are allocated as a ratio of the total number of transactions performed.

- m. Office of Fleet Management (OFM): prior to the formation of OFM, PWD provided its own fleet maintenance at four separate garages. When OFM was formed, PWD transferred its garage employees to OFM's budget and continued to fund them via a separate appropriation. OFM continued to use PWD's garages, for which PWD charges rent utilities and maintenance. This interfund charge capture OFM's "administrative overhead" and rectifies costs where:
 - i. General Fund vehicles may have been serviced or gassed at Water Fund garages, and vice versa.
 - ii. General Fund invoices may have been paid by the Water Fund or vice versa.
 - iii. Materials that may have been transferred from one fund's garage to the other's.
 - iv. Vehicles purchased on the water fund and retired, were transferred to the General Fund, i.e., the water fund received no residual value reimbursement for the vehicles, which are usually auctioned, and the selling price credited to the water fund.
 - v. Auction services for water fund vehicles retired from service and sold at auction.

All OFM charges are tracked through various accounting systems, except for “administrative overhead” costs, which are allocated by the ratio of vehicles in PWD’s fleet vs. the total City fleet.

Philadelphia Water Department
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17. Please state the number of Department employees for FY 2009 broken down by operating unit.

Answer: See attached table. (Attachment 5)

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18. Please provide the most recent collective bargaining agreements with District Council 33 and 47.

Answer: See attachment. (Attachment 6)

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19. Please describe any changes in regulatory requirements that will increase operating expenses during the Rate Period.

Answer: The latest revised NPDES permits for the three wastewater treatment plants (incorporating total chlorine residual limits for effluent) will increase annual operating costs for the Department. The compliance date for these requirements is January, 2008. Current NPDES permits for the Northeast, Southeast and Southwest WPCPs were issued on August 15, 2007, became effective on September 1, 2007 and are scheduled to expire August 31, 2012. The new permits require the PWD to update its CSO LTCP (LTCPU) and capital improvement program to provide additional projects that reduce CSO frequency and volume. The Department expects to have increased capital and operating expenses as the result of the new permits and the implementation of the LTCPU.

Title V permits requiring of no odors beyond our fence line at wastewater treatment facilities has caused a \$2.8 million increase for the purchase of odor control at the Northeast Wastewater Control Plant which reflected in the FY 2008 budget. There is the potential for additional costs if the work, currently underway to prevent the odors from occurring, is not successful.

The conversion of our disinfection facilities from liquid chlorine to sodium hypochlorite (for safety & security) has resulted in increases in operating costs for both the water and wastewater plants. The additional chemical costs will increase Department FY 2008 expenditures by \$1.2 million.

Pursuant to Section 303(d) of the Clean Water Act the Delaware River has been declared impaired for an organic chemical known as polychlorinated biphenyls (PCBs). As a result of this the Delaware River Basin Commission is performing a Total Maximum Daily Load (TMDL) analysis. The TMDL will define how severely the river is impaired and will set forth a plan to reduce loadings of PCBs into the river. Based on our current understanding, the river exceeds its allowable loadings by three orders of magnitude (that is 1000 times greater than allowed). Loadings come from virtually every source imaginable, e.g., sediments, air, runoff from land, contaminated sites as well as point sources which include our three wastewater treatment plants. The level and extent of clean up that will be required by each source category is currently being evaluated by the Implementation Advisory Committee (IAC) set up by the DRBC. At a minimum, the Department will be required to implement best management practices to reduce its loadings. This could involve additional staff to track down the sources of PCBs coming into the plant and to devise programs to reduce the loadings coming to our plant. If additional technology should be required it could run into the hundreds of millions of dollars. It is expected that the IAC will make its recommendations by the fall of 2008 at which time we will have more precise estimate of both operating and capital costs required to address this issue.

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20. Please provide City Controller Reports concerning the Department issued since the last rate filing.

Answer: See attached City Controller Reports issued since the last rate case.
(Attachment 7)

Philadelphia Water Department
FY 2009-12 Rate Hearings
Filing of the Water Department
Standard Interrogatories

21. Please provide the Department's Capital Budget for FY 2008 and Forecast Period.

Answer: See attachment. (Attachment 8)

Philadelphia Water Department
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22. Please indicate the level of capital expenditures for each of the fiscal years 2005 to 2007.

Answer: See attached tables depicting the Department's capital expenditures for the above period. (Attachment 9)

Philadelphia Water Department
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Filing of the Water Department
Standard Interrogatories

23. Please state whether the Department is in compliance with all consent decrees and other regulatory requirements in connection with the operation of water and wastewater facilities.

Answer: Water and Wastewater Plant Operating Permits – The Department is generally in compliance with its water and wastewater plant operating permits and except for several air violations at our Northeast Plant which are fully described in the paragraphs below and in its official statement to its investors, its plants have received the following recent awards:

The employees of the Southeast Water Pollution Control Plant received the Association of Metropolitan Sewerage Agencies (AMSA) Gold Award in 2002 for perfect NPDES permit compliance.

In 2002/2003 the Philadelphia Water Department was the proud recipient of the U.S. Environmental Protection Agency (EPA) Region III Source Water Protection Award, the American Water Works Association's (AWWA) Clean Water Partners Award, and the AWWA Exemplary Source Water Protection Award.

The employees of the Southwest Water Pollution Control Plant received the Association of Metropolitan Sewerage Agencies Platinum Award in 2002 for perfect operating permit compliance over five years. In addition, the plant received a National Fish and Wildlife Foundation grant to support landscaping for wildlife habitat on the plant grounds.

The employees of the Northeast Water Pollution Control received the Association of Metropolitan Sewerage Agencies Gold Award in 2005 for perfect operating permit compliance over five years.

The employees of the Northeast Water Pollution Control received the Association of Metropolitan Sewerage Agencies Gold Award in 2006 for perfect operating permit compliance over five years.

The employees of the Southwest Water Pollution Control received the Association of Metropolitan Sewerage Agencies Gold Award in 2005 for perfect operating permit compliance over five years.

The employees of the Southeast Water Pollution Control received the Association of Metropolitan Sewerage Agencies Gold Award in 2006 for perfect operating permit compliance over five years.

The department's regulatory compliance is more fully described in the paragraphs below excerpted from the 2007a/b official statement:

Regulatory Achievements- Water System

The water provided by the Water System meets all physical, chemical, radiological and bacteriological water quality standards established by the United States Environmental Protection Agency (“EPA”) under the Safe Drinking Water Act and by the Pennsylvania Department of Environmental Protection (“PaDEP”). The Water Department is aware of recent proposed and planned state and federal regulations relating to drinking water quality and has initiated research and monitoring efforts with respect to the content and status of these regulations so that it will be able to comply with such regulations when adopted.

The EPA has promulgated two sister rules, the Interim Enhanced Surface Water Treatment Rule (“IESWTR”) and the Stage 1 Disinfectant/Disinfection By-Product Rule (“D/DBP”), both of which took effect January 1, 2002. The Water Department complied with these rules by implementing improvements at its treatment facilities. Several major changes contribute to the department’s continuing tradition of supplying safe and healthy drinking water: the introduction of pH control systems, moving and adding chlorine application points, renovation of several flocculation basins, the rebuilding of several filters and the installation of on-line turbidimeters for each filter. These major projects were supported by many smaller ancillary projects that made these changes effective. In January 2006, EPA promulgated the Long Term Stage 2 Enhanced Surface Water Treatment Rule (LT2ESWTR) and the Stage 2 Disinfection and Disinfection Byproducts Rule (Stage 2 D/DBP). Full implementation of these regulations is not required until 2012, but the Water Department, through previous treatment changes believes it is ready to comply with these new rules. Water quality improvements, especially in the area of reducing disinfection byproduct formation, will still be pursued. Further modification of pH, the use of powdered activated carbon, and moving disinfection back in the treatment process will all be evaluated.

The Water Department continues to participate in the Partnership for Safe Water (“PfSW”), a national, joint program of the EPA and the water industry. The Water Department has completed several phases of that program and in 2004 was awarded the Five Year Director’s Award for achieving a finished water quality of less than 0.10 NTU, which meets PfSW goals for five straight years. The finished water effluent turbidity at all three plants averages less than 0.06 ntu, which is five times lower than the current standard of 0.3 ntu. This, in combination with a multibarrier approach, guards against outbreaks of water contamination. The Water Department continues to operate within guidelines that are far more rigorous than Commonwealth or federal laws require.

An additional example of this “more rigorous than required” approach is the Water Department’s Microbial Communication Plan. This plan describes what communication will be taken at each level of treatment so that the multibarrier system is always enforced and that appropriate personnel are notified of actions taken. This also includes notification and involvement from the primary agency (PaDEP), in addition to the City’s Health Department. It is important to note that these efforts are all for events that are not covered by regulations (sub-regulatory events).

The department pursues its proactive position within the community by developing a risk communication plan. This plan is in place to develop tools that explain to the public issues of concern. The basic elements of the process are: collection of pertinent “up to date”, detailed information, often by conducting cutting edge research. The department then shares this information with preselected citizen groups able to discuss scientific issues. This collaboration are followed by the creation of public friendly versions of information to share universally.

PWD continues to prepare for future regulations regarding the distribution system. PWD has already laid the groundwork through employing district metered zones and water system hydraulic monitoring. PWD also responded to inquires about state wide notification rules, for chemical additions and loss of pressure.

Lead and Copper Rule Compliance History

Beginning in 1992, the Water Department has conducted eight rounds of in-home sampling for compliance with the Lead and Copper Rule (“LCR”) as summarized in the table below. During the first round of sampling, in 1992, the Water Department was above the action level (“AL”) for lead. The AL for lead is defined as less than or equal to 0.015 mg/L in 90% of the home tap samples. The AL for copper is defined as less than or equal to 1.3 mg/L in 90% of the home tap samples. The Water Department has never exceeded the AL for copper in any of the eight rounds of sampling. Following that initial round, PWD made various changes in its corrosion control strategy, based on in-house research and industry knowledge, and has lowered its lead levels below the regulatory action level for over 13 years. In subsequent rounds Philadelphia met the action levels for both lead and copper. Since 1998 the department has been on a reduced monitoring schedule, conducting LCR monitoring once every three years.

Lead and Copper Monitoring History

Year	Samples required	Homes sampled	Lead		Copper	
			90 th Percentile	Action level	90 th Percentile	Action level
Jan-Jun 1992	100	162	0.021 mg/L	0.015 mg/L	0.9 mg/L	1.3 mg/L
Jul-Dec 1992	100	143	0.015 mg/L		0.8 mg/L	
Jan-Jun 1997	100	118	0.014 mg/L		0.4 mg/L	
Jul-Dec 1997	100	108	0.011 mg/L		0.4 mg/L	
Jun-Sep 1998	50	78	0.010 mg/L		0.3 mg/L	
Jun-Sep 1999	50	59	0.009 mg/L		0.3 mg/L	
Jun-Sep 2002	50	63	0.013 mg/L		0.3 mg/L	
Jun-Sep 2005	50	107	0.009 mg/L		0.3 mg/L	

Water Treatment Pilot Studies

The Water Department continues to conduct pilot scale investigations to enable it to respond to upcoming regulations and to investigate effects of proposed process changes. The initial phase of the pilot plant study was conducted to investigate changing the coagulant dose, the pH of coagulation and point of chlorination. This work was completed and integrated into the current water treatment process, as mentioned above. The pilot plant research continued with the investigation of the practicality of using ozone to inactivate *Cryptosporidium oocysts*. The

conclusions from this extensive phase indicate that ozonation for inactivation is very expensive, estimated at \$140 million, and subsequent work indicated that the Water Department will be able to meet regulations relative to *Cryptosporidium* without additional treatment be it ozone or ultraviolet light inactivation. The next phase of the research conducted by the pilot plant was to investigate the limits of the use induced oxide coated media to remove manganese from drinking water. Similar studies followed that were based on a biologically active filter's ability to control Mn. These projects are AWWARF sponsored research.

The pilot plant was used to test new water treatment technology. This technology In Fiscal Year 2006 and Fiscal Year 2007 pilot plant studies will focus the effectiveness of coagulants other than ferric chloride. The Water Department is stressing the evaluation of alternative coagulants in comparison to ferric chloride on the basis of performance and cost. Also the use of iron based coagulants is based largely on their ability to remove dissolved organic matter. The removal of the organic matter prior to chlorination reduces the water's ability to produce disinfection by products. The pilot plants are testing a new technology that removes the dissolved organic matter prior to the addition of the coagulant. This process will enhance organic removal achieved by iron salt coagulants and will make the use of aluminum based coagulants possible. The results are promising with a 50% reduction of DBPs and 70% reduction of coagulant however, this technology is expensive. This expense is offset by the reducing of solid production for the water treatment plant.

The Water Department participated in two AWWARF Pharmaceuticals and one internal study to gain a better understanding of the barely detectable levels of pharmaceuticals, hormones and other chemicals of potential concern found at the city's drinking water intakes. The results revealed that Philadelphia, like all other areas, has low low levels of these compounds which do not pose a risk to human health AWWARF, in conjunction with the Southern Nevada Water Authority, is conducting an in depth analysis of our water supply over the course of a year, conducting toxicological experiments, and providing us with data as compared anonymously with other participating U.S. water utilities. The work will be completed in early 2008.

The Water Department has been investigating the biostability of its finished water in the distribution system. That project is entitled the biodegradable organic matter ("BOM") project. An innovative way to measure the amount of biodegradable organic carbon (BDOC) is to pass water through biologically active column (bioreactors) measuring the amount of carbon going into the reactor and the amount coming out. The lower the BDOC the more biologically stable. The more stable the water the better the water quality and the less chlorine required to suppress unwanted biological activity. This research has been improved and increased by the inclusion of direct biofilm analysis, using molecular biological tools (aka genetic work). These tools make it possible to detect microorganisms that are not detectable using conventional plating technology. The work PWD is doing is ground breaking (literally) and is focused on only one section of the distribution system. The process includes the collection of actual pipe biofilm, the generation of pipe biofilm in annular reactor, the collection of bulk water microorganisms all combined with the data generated with the BDOC columns. This highly specialized work is being done in conjunction with three major universities. The ultimate objective of this understanding is to begin to use distribution specific control technology to keep the water quality in all areas of the distribution system of the highest quality possible.

Drought Management

The Water Department has been a participant in the development of drought management plans, which allocate Delaware River Basin water resources during drought periods among jurisdictions

dependent on the Delaware River for water supply. These plans have been used to effectively manage drought emergencies declared in the past and are expected to adequately address future drought emergencies. In addition, the City is able to draw water supply from both the Schuylkill and the Delaware River systems and is not therefore dependent on a single source of supply. Currently, the City and State of Pennsylvania are not under a drought watch or warning.

Capital Facilities Assessment Program

The Department has developed a comprehensive assessment program for its water, wastewater, pumping, and biosolids recycling facilities which proactively addresses future capital funding requirements. The program is called The Capital Facilities Assessment Program ("CFAP") and its intention is to complement the established maintenance program at each facility by instituting a framework for the periodic assessment of major infrastructure. The Water Department initiated the program by assessing the physical condition of three selected pilot facilities: Queen Lane Water Treatment Plant, Southeast Water Pollution Control Plant, and Lardners Point Water Pumping Station. These facilities serve as the template on which the remaining Water Department facilities are based. This initial assessment gave the Water Department the physical condition, re-inspection schedule and inspection methodology for each infrastructure asset. All of this information is organized and documented in the Water Department's computerized maintenance management software program, which will aid the plant managers in scheduling O&M and capital inspections.

CFAP has been implemented at each of the Water Department's water treatment and water pollution control facilities. Water conveyance has also implemented CFAP at its sixteen (16) potable water distribution system pumping stations.

A key component of CFAP is the training that is provided for each facility's personnel in inspecting and re-inspecting concrete structures. This training is provided by the American Society of Civil Engineers ("ASCE"). Each training session includes one day of classroom instruction and one day of "in the tank" identification of concrete structural defects. Personnel from each of the facilities in which CFAP has received this training and are implementing this diagnostic tool in the assessment of CFAP infrastructure at the respective facilities. Training by ASCE will be offered on a periodic basis as needed.

The Wastewater System

The federal Water Pollution Control Act, as amended (the "Clean Water Act"), provides for the restoration and maintenance of the chemical, physical and biological integrity of the nation's waters. To that end, the Clean Water Act establishes the National Pollution Discharge Elimination System ("NPDES"), a permit system administered by EPA in conjunction with the states. The EPA has delegated the NPDES program for the Commonwealth to the PaDEP. PWD is subject to the requirements of the Clean Water Act and the conditions set forth in the NPDES permit applicable to each of the WPCPs. In addition, the City is subject to regulation by PaDEP, which exercises regulatory authority over municipal sewage treatment operations, and to regulation by the Delaware River Basin Commission ("DRBC"), which exercises regulatory authority over withdrawals from and discharges into the Delaware and Schuylkill Rivers. Current NPDES permits for the Northeast, Southeast and Southwest WPCPs were issued on August 15, 2007, became effective on September 1, 2007 and are scheduled to expire August 31, 2012. The PaDEP recognizes that the PWDs approach to long-term management and control of combined sewer overflows is integrated into a comprehensive watershed management program. The PWD will continue to lead efforts that seek to integrate pertinent environmental federal, state, and local

legislative/regulatory programs in a concurrent and holistic fashion to minimize duplication of effort and to maximize water use benefits. PWD shall continue to implement technology-based improvements to reduce CSO volume and improve the quality of the receiving water and associated aquatic habitat according to its Long Term Control Plan.

The Clean Water Act requires that publicly owned treatment works such as the treatment portions of the Wastewater System achieve levels of secondary treatment as defined in the Clean Water Act, or, where applicable, more stringent levels of treatment required to meet water quality standards established pursuant to any Commonwealth or federal law or regulation. By order of the DRBC issued in 1969, the City is required to achieve effluent limitations which are considered more stringent than those required to achieve secondary treatment levels as defined in the Clean Water Act.

The three WPCPs have maintained high levels of treatment such that they have been recognized by the National Association of Clean Water Agencies (NACWA), formerly the Association of Metropolitan Sewerage Agencies (“AMSA”), with either Silver, Gold or Platinum awards over the past decade. The three WPCPs met all permit requirements in calendar year 2006 and will be applying for NACWA gold awards. In calendar year 2005, all three wastewater treatment plants were awarded GOLD Awards which recognizes perfect NPDES effluent compliance. In 2004 the Southeast WPCP received a Platinum Award representing zero NPDES permit violations for five consecutive years covering the period of 2000 through 2004. The Southeast Plant joins the Northeast (2001) and Southwest (1999) plants in reaching this milestone.

While the three WPCPs have continued their high levels of performance, the costs of operating them have been contained to less than a 3% annual increase between fiscal years 2000 and 2006. This has occurred despite wage increases. Currently, as part of its strategy to reduce overflows from combined sewers, PWD is treating a greater quantity of collected stormwater that at one time was discharged to tributaries, removing pollutants at little additional cost for treatment. Optimization in the dosage of treatment chemicals, electricity use, reduced staffing levels and improved maintenance management practices have all contributed to this cost containment.

The wastewater improvement program has effectively and significantly improved the water quality of the Delaware River, thereby fostering both public and private development of the riverfront for commercial, residential and recreational uses.

Sewer Infrastructure Assessment Program

Completed in FY05, a \$6 million pilot sewer assessment program evaluated the condition of sewer system infrastructure using video technology to inspect over 215 miles of sewers, and use this information to build a database and ranking system to prioritize needed improvements. Trained PWD personnel are continuing the sewer assessment surveys from FY07 to FY11. In FY06 and FY07, the Department began to use data collected through the sewer assessment program to prioritize needed sewer reconstruction and repair, and schedule this work in the capital and operating budgets. This project has already helped to identify sewers that were in immediate need of repair, and it is anticipated that over time this project will result in a reduction of costly and disruptive emergency sewer repairs, such as those that occur when a sewer collapses. In FY08, \$4.5 million is budgeted to continue the video inspections and to perform additional excavations and repairs.

Clean Air Act.

The federal Clean Air Act ("CAA"), as amended, sets forth requirements for the regulation of certain air emissions. In January 1994, PaDEP published regulations pursuant to the CAA's mandates for the control of Volatile Organic Compounds ("VOC") and Nitrogen Oxides ("NO_x") emissions from major stationary sources. The Northeast WPCP and the Biosolids Recycling Center/Southwest WPCP complex were found to be a major source of VOC and NO_x emissions, while the Southeast WPCP is a Natural Minor source. The Office of Philadelphia Air Management Services ("AMS") issued the Water Department a Title V State Operating Permit for the NE and BRC/SW facilities on June 1, 2001. The State's Odor Emission Limitation Regulations are included as part of these permits. During Calendar Year 2005, AMS has issued nine odor violations at the Northeast facility and none at the SW/BRC facility. During Calendar Year 2006, AMS issued six violations at the Northeast facility and three at SW/BRC. Due to these odor incidents, the Water Department developed a long-term odor control strategy which included process modifications and identification of an industrial discharge containing the precursors of odor producing compounds. The initial efforts of this strategy has already proven successful with AMS issuing two odor violation at NE and none at SW/BRC if calendar year 2007.

The original June 1, 2001 permit expired on June 1, 2006 and we are currently in negotiations with AMS for the renewal permits. AMS has requested an Administrative Consent Order for odors at NE and the SW/BRC facilities before it issues the Water Department its new Title V permits. Discussions with AMS regarding the scope and content of the Administrative Consent Order have already taken place and regular odor tours of the facility have been conducted with both AMS and PWD staff. The Water Department continues to operate its facilities in a manner that maximizes treatment while minimizing odors.

The CAA also has a Risk Management Plan (RMP) component which is required for all facilities where regulated substances (chlorine, ammonia, methane) are stored above designated levels. The RMPs are designed to minimize the impact of a process accident on the surrounding community. In June 1999, the Water Department submitted to EPA, their RMPs for covered facilities – the Northeast, Southwest and Southeast WPCPs as well as the Baxter and Belmont WTPs. To date the Water Department has successfully de-listed all of the previously identified facilities; Southeast WPCP was de-listed in June 2002, Northeast and Southwest WPCPs in October 2003, the Baxter WTP in August 2005 and the Belmont WTP in February 2007. So the Department has completed eliminated all chemical covered by this program and no longer has any regulatory requirements under the RMP.

Wastewater Treatment Studies

Major work is being conducted in association with the utilization of digester gas, which is in large part methane. A small grant has been received to purify the gas to "pipe line" quality which can then be used in departmental facilities with the excess being made available to other city facilities. The intention is to utilize the excess gas production as an income generator and to reduce the departments carbon foot print

Pursuant to the idea the anaerobic digester gas is capable of generating revenue, research into co-digestion is being conducted, specifically the digestion of airport deicing fluids (ADF) and other sludges. In addition to co-digestion, digester optimization studies have been initiated. The idea is to improve the percent solids that can be fed into the digesters thereby increasing the gas production and increasing the over all plant capacity to process solids.

Within the auspices of the engineering division the capacity to conduct computational fluid dynamic (CFD) modeling has been generated. This tool allows for better design and analysis of hydraulic processes, which are the majority of processes utilized in water and waste water treatment. This engineering service is offered to both the water and waste water side of the department. For example it is being used to determine the efficacy of a post filtration chlorine contactor at all three WTPs and it is being used to analyze the influent velocity patterns of a primary settling tank at the NE WPCP.

In an effort to treat more wet weather flow from its combined sewer systems as described in that section, the department is increasing the capacity of its WPCP facilities. Initial analysis has been focusing on the expansion of the NE WPCP since it has under utilized primary settling capacity and can be expanded relatively quickly. For future expansion analysis wet weather sewage sampling is taking place to determine the solids and BOD loads. These data will enable proper design of additional treatment processes.

Biosolids Treatment and Utilization

Biosolids Treatment and Utilization. The City is required by federal and Commonwealth law, administered by the EPA and PaDEP, respectively, to treat and dispose of biosolids captured during wastewater treatment at the City's WPCPs. Biosolids from the three WPCPs are treated at the Biosolids Recycling Center (the "BRC"). The BRC contains a dewatering station and a compost facility. The BRC produces two grades of biosolids, as defined by state and federal regulations. These are Class A biosolids compost and Class B dewatered biosolids cake. Class B biosolids are used on farmlands and at mine reclamation sites. Class A compost is put to a variety of local uses, including garden and horticultural applications and recreation sites.

The Water Department's biosolids recycling program is widely recognized in the wastewater industry for its long-term successes. The Water Department has been acknowledged twice by the EPA: in 1995 with a National First Place Award for "outstanding operational and emissions studies of composting," and in 1998 with a Special National Award for "sustained excellence in mine land reclamation using biosolids." The Water Department's recycling program was also recognized jointly by the Pennsylvania Water Environment Association and the PaDEP with its 1999 Biosolids Award.

Biosolids processing and distribution is governed at the national level by regulations that the EPA published at 40 CFR Part 503 regulations in February 1993 (the "Part 503 Regulations"). The Part 503 Regulations require, among other things, certain record keeping and monitoring procedures and compliance with technical standards for pathogen reduction, vector attraction reduction and pollutant limits. These regulations are self-implementing and directly enforceable, in that the EPA can initiate enforcement actions for non-compliance even in the absence of the EPA's issuance of permits under the NPDES permitting program. In September 2002, the Water Department submitted to Region 3 EPA an application for a 'sludge-only' permit covering its biosolids treatment and use program; EPA's current policy is to accept such permit applications as informational, and to not proceed with permit review and approval. The Water Department believes it is in full compliance with the technical standards in Part 503. For the most part, these standards have been adopted by Pennsylvania and New Jersey in those states' regulation of biosolids quality and use.

The Water Department operates the BRC under permits and orders issued by PaDEP. In 1997, the PaDEP issued a renewal of the waste-processing permit for the BRC; the term of the permit is ten years. The Water Department has operated the BRC in compliance with this permit,

staying fully within the boundaries of its permitted processing area and having no excess inventory of biosolids products.

The Water Department's program for biosolids disposition consists of various land-based applications conducted in accordance with requirements of the state environmental agencies in which its biosolids products are applied. The Water Department has permits and orders from PaDEP, the New Jersey Department of Environmental Protection and the Maryland Department of the Environment necessary to ensure complete disposition of its biosolids products. From PaDEP, the Water Department has permits or approvals for the agricultural utilization of biosolids at over 40 farms. These approvals are given through Chapter 275 provisions of the April 9, 1988, Pennsylvania Municipal Waste Management regulation, and through General Permit No. PAG 080004, under amended regulations of January 27, 1997. The first five-year registration period for Philadelphia's Class B biosolids under this General Permit was complete on December 12, 2002, and the Water Department renewed the registration for a second five-year period. The Water Department also received approval in 2000 from the Maryland Department of the Environment to distribute its biosolids cake for use on Maryland farmland, and has maintained compliance with monthly reporting requirements and the submission of annual fees.

The Water Department also has coverage for its biosolids-derived compost distribution program in Pennsylvania and New Jersey. In Pennsylvania, Class A biosolids distribution is allowed under the General Permit for Beneficial Use of Exceptional Quality Sewage Sludge by Land Application (PAG-07). The Water Department's biosolids compost, a Class A material, is registered under this general permit. Regulations governing biosolids use were promulgated by the New Jersey Department of Environmental Protection on May 5, 1998, and the Water Department received approval from New Jersey in 2000, opening markets in this state for sale of this Class A biosolids compost. The Water Department submitted in spring 2003 its application for renewal of the distribution permit for its compost, and this was issued by New Jersey in October 2003. At present, the Water Department is working with New Jersey to have the Department's laboratory certified for microbiological analyses of the compost for the purpose of meeting New Jersey requirements for testing of biosolids compost.

Improvements to the BRC have been completed that were designed to further reduce costs and improve reliability. These include replacement of four dewatering centrifuges to accomplish a reduction in the mass of biosolids materials and replacement of all feed pumps for liquid sludge and polymer. The installation of a vehicle wash system and replacement of centrate return lines have improved reliability of operations. Pumps have been replaced for the feed of liquid sludge and polymer to the centrifuges. A new gas heating system for the Dewatering and Mixing Building has been installed that reduces reliance on oil supplies. The entire electrical system for the compost screening system was replaced and the screening system restored to full service, and the weigh scale equipment was substantially rehabilitated in the summer of 2005. A significant initiative over the past five years has been to improve practices for the procurement and use of polymers used in the dewatering process. This has resulted in 50% lower annual expenditures in FY 2005 (a \$1.2 million savings) compared to polymer expenditures in the late 1990s, despite today's higher unit costs. An additional project, one which will accommodate the plan to eliminate composting activities, consists of adding side walls to the Drying Structure to make it suitable for temporary holding of cake prior to shipment.

The Water Department has been active in national and regional biosolids programs. The Water Department has been affiliated with the National Biosolids Partnership (the "NBP"). The NBP is a collaboration of the Water Environment Federation (the "WEF") and NACWA, with support of the EPA. The Water Department is also a founding member of the Mid-Atlantic

Biosolids Association (the “MABA”), a regional group of biosolids producers and users that was formed in 1999 to increase professionalism, to support regionally-relevant research, and to promote public acceptance. At the state level, the Water Department is represented on the Biosolids Committee of the PWEA, and is a participant in the Organics Committee of the Professional Recyclers of Pennsylvania (the “PROP”).

While the Water Department has been successful in using Class B biosolids over the last twenty-five years, the nation has witnessed continuing health and environmental concerns raised by the public with Class B biosolids recycling. Over the past several years, though agricultural use of biosolids has expanded, the program for mine reclamation was significantly reduced, in part from local community objections to odors and perceived health risks. The Water Department has responded by contributing to research, both nationally and locally, in the areas of odors, pathogens, and phosphorus. Nevertheless, the long-term sustainability of its current Class B is questionable. What is more, the Water Department has made a commitment to reduce odorant emissions from the BRC itself, which affects both current Class B cake programs and its composting program.

With the goal of improving biosolids quality and reducing potential nuisances, the Water Department has undertaken several initiatives. It has hosted installation of a process evaluation facility for the demonstration of innovative drying and gasification technology. The Department has worked with several suppliers of odor control products on full-scale performance trials at the BRC to test for odor mitigation effectiveness. The Department has also undertaken preliminary evaluation of improvements to its anaerobic digestion facilities from mesophilic to thermophilic operations to accomplish increased solids destruction, gas production and pathogen control. Also, the Department has experimented with using existing equipment at BRC to produce a pathogen-free biosolids cake with alkaline amendments that is suitable as an ingredient in topsoil manufacturing. In 2007, the Department anticipates ending the composting process, a step that will significantly reduce odorant releases from the BRC, expanding other disposition programs, especially co-disposal with municipal trash.

The Water Department began in summer 2003 a process to move to an entirely Class A biosolids process, and one that could operate in Philadelphia without odors. It entered into a contract with the engineering consultant firm Camp, Dresser & McKee to assist with procurement of facilities and services for Philadelphia to operate for 20 years the dewatering station and to construct new facilities to produce Class A biosolids products. Alternative processes identified for this procurement process included fully-enclosed composting systems and heat drying technologies. The Request for Qualifications was released in August 2003, and, in response, the City received qualification statements from four teams, of which two were found qualified and invited to receive a Request for Proposals. One team, Philadelphia Biosolids Services, submitted a proposal on November 24, 2004. This team offered to build a pair of sludge dryers.

The Department has negotiated a long term contract with Philadelphia Biosolids Services (PBS) for improvements to the Biosolids Recycling Center. The contract includes a provision for interim operation of up to five years, during which PBS will take over operation of the existing BRC and immediately eliminate the composting operation. Within the first three to five years PBS will finance, design, build, own, and operate a thermal drying facility that will handle all of the sludge processed by the PWD and make a Class A product in the form of pellets that can be used as fertilizer. PBS will be responsible for the utilization of the Class A pellets. The Class A period of operation will last twenty years with a five year renewal at the option of PWD. The project has an estimated net present value of about \$102 million over the life of the contract. Ordinances requesting City Council approval of the service agreement and companion lease have

been introduced by the Administration. Council hearings by the Finance Committee were held in December 2006 and the Committee has scheduled an additional hearing on January 31, 2007. The Department has provided sufficient funds in its FY2007 budget and its FY2008 budget request to continue the in-house operation of the biosolids recycling center in the event that the PBS contract is not approved by City Council.

Watershed Management

The Water Department's Office of Watersheds ("OOW"), created by the Water Department in Fiscal Year 1999, is working to achieve viable and measurable improvements to the region's waterways by implementing planning and management strategies that foster good science, public involvement and fiscal responsibility. Its goal is to meet regulatory requirements while enhancing the health and aesthetics of the environment. OOW has been charged with the mission of integrating traditionally separate tasked programs, including Philadelphia's Combined Sewer Overflow (CSO) program, the Stormwater Management Program, and its Source Water Protection Program, to maximize the resources allocated to these programs and to ensure the comprehensive achievement of each of their goals. The Office of Watersheds organization is composed of staff from the Water Department's planning and research, collector systems, laboratory services, and other key function groups, allowing the recently established organization to combine resources to realize the common goal of watershed protection. OOW is formulating watershed management plans for the City's receiving waters through the establishment of regional watershed partnerships. These partnerships act as a forum for participating members to work together to develop a watershed strategy that meets state and federal regulatory requirements but that also embraces the environmental/public sensitive approach to improve stream water quality and quality of life in communities. The Water Department has implemented an approach to water quality management that seeks to reduce water pollution from all sources in a manner that is based on measurable results, be it improvements to the dissolved oxygen and fecal coliform levels of the stream, or streambank restoration and the addition of riparian buffers to the adjoining park land, or a mixture of both. These improvements translate into a fair and equitable distribution of the costs related to pollution abatement and achieving water quality goals. The Water Department has also successfully engaged urban and suburban communities to explore inter-regional cooperation based on an understanding of the impact of land use and human activities on water quality. Watershed Management Plans have been completed for the Cobbs Creek Watershed and the Tookany/Tacony-Frankford (TTF) Watershed and are currently in the first five year implementation stage of these 20 year plans. The TTF Partnership recently established itself as a registered 501c3 non-profit entity and the Board hired an executive director in March 2007 to oversee the implementation of the plan. The Wissahickon Watershed Partnership was launched in November 2005 with a targeted plan completion date in Spring 2008. Similar plans are in development for the Pennypack Creek Watershed, launched in fall 2007 and for the Poquessing Creek Watershed which will start in fall 2008. Simultaneously,, the office completed complementary river conservation plans for the Pennypack and Poquessing creeks. A river conservation plan was initiated for the Delaware Direct Watershed, within the city's boundaries, in fall 2007.

Combined Sewer Overflow Program.

A combined sewer system is a wastewater collection system owned by a municipality which transports wastewater from homes, businesses and industry, stormwater from storm drains on our city streets and property roof leaders through a single-pipe system to a Water Pollution Control Plant (WPCP).

In the City of Philadelphia, during dry weather conditions (when it is not raining) and during very small storm events, combined sewers can adequately transport this mixture of sanitary wastewater and stormwater to one of the City's three WPCPs for treatment.

Under heavier rainfall conditions, however, the flow in combined sewers may exceed the capacity of the pipe or treatment facility. As a result, a portion of the wastewater and stormwater may be diverted directly to a nearby stream or river to prevent the flooding of homes and streets. This is what is known as a Combined Sewer Overflow (CSO). During heavy rainfalls or sudden snowmelts, Philadelphia may experience these overflows in various locations throughout the city from any of its 164 permitted combined sewer outfalls. Overflows from combined sewers may exceed water quality standards (WQS), threaten aquatic life and habitat, and impair the use and enjoyment of the water body.

The fundamental goal of the PWD combined sewer overflow program is to improve and preserve the water environment in the Philadelphia area and to fulfill the PWD's obligations under the Clean Water Act and the Pennsylvania Clean Streams Law by implementing technically viable, cost-effective improvements and operational changes.

The PWD's strategy to attain these goals has three primary phases: the first involves the aggressive implementation of a comprehensive program for Nine Minimum Controls (NMCs); second, planning, design and construction of numerous capital projects that would further enhance system performance and reduce CSO volume and frequency. The third involves the commitment of significant dollars for services and resources toward comprehensive watershed based planning and analyses that would identify additional priority actions to further improve water quality in Philadelphia area water bodies.

These three phases successively provide comprehensive programs that follow the direction of the EPA CSO Policy and its guidance documents and are consistent with the requirements of the Clean Water Act. The NMCs and the capital improvement program have resulted in implementation of cost-effective, technology-based improvements. They have provided a reduction in CSO volume and frequency and a greater percentage of combined sewer flow transported and treated at the PWD's three wastewater treatment plants.

The PWD wants to transform Philadelphia's urban landscape into a vibrant, green community where people want to live and work. By merging the vision of a "green city" with "clean water" we can benefit not only our watershed environment, but the region's economic health, quality of life and sustainability.

The PWD is well suited to the development and implementation of a watershed approach to CSO. The PWD owns and operates the City's sanitary sewers, storm sewers, combined sewers and wastewater treatment plants. In cooperation with the Philadelphia City Planning Commission, the PWD regulates stormwater management during the construction and post-construction phases of most development and redevelopment projects.

In 2007, the PWD began to reevaluate its CSO Long Term Control Plan (LTCP) and capital improvements program to integrate additional projects that will reduce CSO frequency and volume. The CSO Long Term Control Plan Update (LTCPU) involves the development of additional management alternatives to ensure capture and treatment of sanitary sewer system flows and the reduction of discharges from CSOs by building on the experience and progress gained from the implementation of our original CSO LTCP.

The resources, amenities and socioeconomic impacts that could result from the implementation of watershed management approach are endless. A “Green Cities - Clean Waters” strategy will stimulate tourism, recreation, and riverfront development, along with achieving economic benefits and creating jobs. Cleaner rivers create increased civic pride in the riverfront area, higher property values, and greater potential for valuable riverfront projects.

Philadelphia’s CSO LTCPU seeks to implement the regulatory requirements of the National CSO Control Policy through a comprehensive watershed-based approach. The Long Term Control Planning Guidance set forth by the U.S. EPA supports the implementation of a comprehensive watershed management approach. It recognizes that the major advantage in using such an approach is that it identifies multiple solutions (land-water-infrastructure based) that are cost effective measures which result in site specific improvements to problems caused by the impacts of CSO and non-CSO sources of pollution on water quality.

PWD is committed to implementing a balanced “land-water-infrastructure” approach to achieve its watershed management and CSO control goals. This method includes infrastructure-based approaches where appropriate, but also includes a range of land-based stormwater management techniques and the physical reconstruction of aquatic habitats, where appropriate.

The ultimate goal of PWD’s approach is to restore and protect our rivers and streams including the floodplains, riparian buffers, stream channels, streambeds, wildlife, vegetation and other biomarkers that define a healthy stream ecosystem that has been degraded as a result of urbanization within the City of Philadelphia and in the surrounding counties, while achieving full regulatory compliance in a cost-effective manner. The “Land-Water-Infrastructure” enable the PWD to accomplish its goals under the CSO LTCPU.

Stormwater Management.

The Water Department delivers many of the City’s storm water management services, including maintenance of the City’s 619 miles of separate storm sewers, 1,599 miles of combined sewers, and approximately 75,000 storm water inlets. In recent years, changes in work practices and investment in new equipment have enabled the Water Department to steadily increase the number of inlets cleaned annually from 47,391 in Fiscal Year 1995 to 91,875 in Fiscal Year 2002. In Fiscal Year 2005, the department cleaned 81,588 inlets, removing over 9,000 tons of debris. In Fiscal Year 2006, the department cleaned 77,603 inlets, removing over 20,000 tons of debris. In Fiscal Year 2007, the Department cleaned 76,561 inlets, removing over 16,500 tons of debris.

In 1987, the Clean Water Act was amended to address discharges from municipal separate storm sewer systems. Municipal separate storm sewer systems collect storm water from homes, businesses, streets, and other sources and convey it directly to rivers and creeks without treatment. Cities whose separate storm sewer systems serve a population of over 100,000 were required under these amendments to obtain a NPDES permit for their discharges. The Clean Water Act requires dischargers to reduce any contaminated flow in the storm sewer system to the maximum extent practicable.

PaDEP issued the City its initial storm water permit on September 29, 1995, effective for five years. The permit requires the City to implement four management programs to reduce the discharge of pollutants from its municipal separate storm sewer systems. The management programs require the City to reduce pollution from (1) commercial and residential areas; (2) illicit connections; (3) industrial facilities; and (4) construction sites.

The initial 5-year NPDES Phase I storm water permit issued in 1995 was scheduled to expire in September, 2000. The Water Department applied for a new permit in March, 2000 as required. The department finalized a new stormwater permit in 2005. This permit complements the philosophy and implementation strategies of the City's CSO permit. The department has also been a municipal partner in the state sponsored Act 167 Stormwater Management Plan for the Darby-Cobbs Watershed (completed in 2005) and the Tookany/Tacony-Frankford Watershed (due for completion in 2007).

Most importantly, these planning efforts resulted in groundbreaking revisions to the City's Stormwater Regulations, which went into effect on January 1, 2006. There are four main components of the Regulations: Water Quality, Channel Protection, Flood Control, and Nonstructural Site Design. All projects with more than 15,000 square feet of earth disturbance must comply with all four of the components. Some redevelopment projects may be exempt from the channel protection and flood control requirements. In 2006, the department's Stormwater Team reviewed 294 conceptual plans for stormwater zoning permits, 198 final technical plans for stormwater building permits, over 80 coordinated reviews with the state Department of Environmental Protection, and 297 erosion and sediment control site inspections. In 2007, the department's Stormwater Team reviewed 297 conceptual plans for stormwater zoning permits, 221 final technical plans for stormwater building permits, over 80 coordinated reviews with the state Department of Environmental Protection, and 698 erosion and sediment control site inspections. Plans reviewed over the past two years cover 1.13 square miles of earth disturbance, in which the first one inch of rainfall is required to be captured or infiltrated. The completion of these plans will equate to the removal or detention of almost 20 million gallons of stormwater from the department's combined sewer/stormwater collection system.

Source Water Protection

Based on the assessment findings and identification of top priorities for source water protection, the Water Department facilitated the formation of the Schuylkill Action Network (SAN) in spring 2003 to focus on drinking water quality issues of the Schuylkill River Watershed, which covers parts of 11 counties in southeastern Pennsylvania. The SAN team members include the US Environmental Protection Agency Region III, the Pennsylvania Department of Environmental Protection, the Philadelphia Water Department, the Delaware River Basin Commission, conservation districts, locally elected officials, watershed organizations, and other stakeholders assisting with crafting local solutions. In 2004, the SAN was awarded a \$1.5 million grant from the Environmental Protection Agency's Targeted Watershed Program --- one of only 13 awarded nationally in 2004. Funding from the grant is being applied to priority projects identified by the SAN's working groups.

The SAN working groups include a Steering Committee, a Planning Workgroup, and Technical Workgroups to address the complex issues in the Schuylkill River watershed. SAN has been developing and implementing projects that restore and protect the watershed as a regional drinking water source; promoting stewardship and education; transferring the experience and lessons learned to other communities; and enhancing intergovernmental communication and coordination.

Most notably, the SAN initiated the first Early Warning System (EWS) of its kind. The early notification of changes in river water quality is important to public water suppliers with drinking water intakes on both the Schuylkill and Delaware Rivers. The Delaware Valley Early Warning System, which covers both the Schuylkill and lower Delaware Rivers, is a fully integrated computer-based system that includes three major components: a telephone-based

notification system, the website and data management system, and a water quality monitoring network. The system provides a secure and centralized location through which the EWS participants, including water utility personnel, emergency responders, government agencies and industry representatives, can share information about source water quality and emergency or contamination events.

In addition, the SAN also launched the first recreational advisory system of its kind in the summer of 2005. The Philly RiverCast System is a forecast of water quality that predicts potential levels of pathogens in the Schuylkill River between Flat Rock Dam and Fairmount Dam (i.e., between Manayunk and Boathouse Row). The Philly RiverCast System uses a three-tier color scale to designate the suitability of water quality for contact recreational activities.

- Green: Water quality is suitable for all recreational activities.
- Yellow: Water quality may not be suitable for activities involving direct contact with the river
- Red: Water quality is not suitable for activities involving direct contact with the river.

Since its launch in 2005, RiverCast has experienced approximately 109,000 visits. The interest this site provides the department will the ability to gauge the public's interest in the recreational use of the Schuylkill River, an essential component to encouraging public stewardship of the river's natural resources.

Based on the success of the Source Water Protection Program, the Water Department has been awarded the USEPA Region III (Mid Atlantic States) 2002 Source Water Protection Award, the American Water Works Association's 2003 Exemplary Source Water Protection Award and the 2005 American Council of Engineering Companies Diamond Award for the Schuylkill River Source Water Assessment. These awards recognize the Water Department as the model for the region and country in the area of Source Water Protection.

Investigation and Mitigation of Flooding

Several areas of the City (South Philadelphia, Northern Liberties, Washington Square West) have experienced significant basement flooding during intense rain events. The frequency and intensity of flood producing rain events have increased over the last two years. As a result of these events, the Water Department has initiated an intensive study of the basement flooding situation. The Water Department has initiated a hydraulic analysis of the sewer system in the flood prone areas in order to understand the cause of the basement flooding as well as to determine possible solutions. The Water Department has begun and will continue to schedule flood relief capital projects into its capital program as determined by the hydraulic analysis. Thus far the Water Department has programmed flood relief projects in Snyder Avenue (\$10M), in South Philadelphia, and in (\$15 M) in Washington Square West. These projects by their complex nature will take many years to design and construct. In order to provide relief for properties as quickly as possible while the capital solutions are identified, designed, and constructed, the Water Department has budgeted \$3 Million for FY 2008 for a Backwater Valve installation program.

This Backwater Valve installation program will consist of the Water Department, through private plumbers, evaluating flood prone properties to determine if they would benefit from the installation of a backwater valve(s). If the determination is positive, then a backwater valve configuration shall be engineered for that particular property and installed by a private plumber at

the Water Department's cost. The property owners must agree to accept maintenance responsibility for the backwater valve(s). The details of the program are being discussed and pilot installations are being planned in anticipation of the development of a formal program in FY 2008.

Moratorium on Additional Connections to the Poquessing Intercepting Sewer & Corrective Action Plan

PWD has determined that a manhole located along the Poquessing Creek Interceptor overflows and discharges into the Poquessing Creek in Northeast Philadelphia during extreme wet weather events. This manhole's monitoring and maintenance designation is PC-30. The Poquessing Interceptor not only serves the City but also accepts flow from three suburban Townships, namely Lower Southampton, Bensalem and Lower Moreland. The discharge of sanitary waste and stormwater from PC-30 into the Poquessing Creek constitutes a violation of Pennsylvania's Clean Streams Law and the Clean Water Act. PWD has been working along with PADEP to understand the causes of the overflow and discharge and to develop a plan to correct the discharge.

It has been determined that the root cause of the discharge from PC-30 stems from the fact that during extreme wet weather events, the amount of stormwater discharged into the Interceptor by the City, Lower Southampton, Bensalem and Lower Moreland exceeds the carrying capacity of the City's conveyance system. PC-30 thus becomes a relief point overflowing and discharging into the Poquessing Creek. Since the City's conveyance system is exceeded in these extreme wet weather events, PADEP has asked the City, pursuant to the Pennsylvania Sewage Facilities Act, commonly known as Act 537, to place a moratorium on the addition of any new connections to the Poquessing Interceptor until the City submits a Corrective Action Plan (CAP) to address the overflow and a Connection Management Plan (CMP) to ensure that newly allowed connections won't have a materially adverse impact on the environment.

The City has agreed and has submitted its CAP and CMP to PADEP. PADEP has approved both documents. The City's CAP involves the building of a 3.75 million gallon storage tank to capture the overflow. The estimated cost of the tank is 24 million dollars and its estimated completion date is December 2011. The City's CAP will address both the environmental issue under the Clean Streams Law as well as the requirements under Act 537. The City's CMP will allow for and manage new connections to the Poquessing Interceptor. In addition, the City is working along with Lower Southampton, Bensalem and Lower Moreland to either share the costs of the overflow tank or to have these Townships build their own tanks so that their wet weather flows do not exceed their contractual limits. Further, the City is requiring, and the Townships are implementing, an I&I program to reduce infiltration into the Township's sewers thus reducing the flows into the Poquessing Interceptor.

Moratorium on Additional Connections to the Manayunk Main Intercepting Sewer & Corrective Action Plan

PWD has determined that the Main Intercepting Sewer located along the Schuylkill River overflows during extreme rain events and discharges into the Schuylkill River in the Manayunk Section of the City. This overflow is referred to as Relief Point R-20. The Main Intercepting Sewer serves the Northwest section of the City. The discharge of sanitary waste and stormwater from R-20 into the Schuylkill River constitutes a violation of Pennsylvania's Clean Streams Law and the Clean Water Act. PWD has been working along with PADEP to understand the causes of the overflow and discharge and to develop a plan to correct the discharge.

It has been determined that the root cause of the discharge from R-20 stems from the fact that during extreme wet weather events the amount of stormwater discharged into the Interceptor by the City exceeds the carrying capacity of the City's conveyance system. Since the City's conveyance system is exceeded in these extreme wet weather events PADEP has asked the City, pursuant to the Pennsylvania Sewage Facilities Act, commonly known as Act 537, to place a moratorium on the addition of any new connections to the Main Intercepting Sewer until the City submits a Corrective Action Plan (CAP) to address the overflow and a Connection Management Plan (CMP) to insure that newly allowed connections won't have a materially adverse impact on the environment.

The City has agreed and has submitted its CAP and CMP to PADEP. PADEP is in the process of reviewing both documents. The City's CAP involves the building of a 3.0 million gallon storage tank on Venice Island along the Main Interceptor to capture the overflow. The estimated cost of the tank is 25 million dollars and its estimated completion date is December 2010. The City's CAP will address both the environmental issue under the Clean Streams Law as well as the requirements under Act 537. The City's CMP will allow for and manage new connections to the Main Interceptor. This project is also incorporated into the Department's current draft NPDES Permit.

Energy

The department has convened an energy committee tasked with the development of a comprehensive energy policy. The cost of energy and the rate structure associated with it have determined how the department traditionally thinks about energy. The department is frugal and has controlled energy cost well by monitoring electrical demand and reducing waste. However, deregulation of electricity with projected cost increases, volatile natural gas markets, wet weather pumping scenarios and carbon footprint reduction have initiated this work and a fresh look is required at all policies and procedures to conserve energy and identify alternative sources.