

COMMONWEALTH OF PENNSYLVANIA
DRINKING WATER STATE REVOLVING FUND
FY 2008 INTENDED USE PLAN

WORKPLAN FOR USE OF SET-ASIDE FUNDING
UNDER SECTIONS 1452 (g) AND 1452 (k)
OF THE
FEDERAL SAFE DRINKING WATER ACT

PREPARED BY
BUREAU OF WATER STANDARDS AND FACILITY REGULATION
PA DEPARTMENT OF ENVIRONMENTAL PROTECTION

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Approved July 1 2008 changes are in red and underlined

Proposed revisions to address EPA July 08 comments are in blue, in italics and underlined

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FIGURES

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1452(k)(1) 15%

I. INTRODUCTION

A. Intent of this Workplan

This workplan identifies Pennsylvania's intended uses of Drinking Water State Revolving Fund (DWSRF) program support set-aside funds, under Sections 1452(g) and 1452(k) of the 1996 Amendments to the Federal Safe Drinking Water Act (SDWA).

This is a multi-year, multi-grant workplan that addresses spending of federal DWSRF set-aside funds. The elements of this workplan are expected to continue into the foreseeable future, regardless of which fiscal year set-aside funds are used. As these elements are carried out, available set-aside funds will be drawn down through the EPA automated clearing house process. It is the intention to utilize all the funding from one fiscal year grant within a four-year time frame. As Pennsylvania applies for future set-aside funds, certain aspects of this workplan will be revised to reflect completion of previously funded activities, or new/revised activities to meet this requirement.

If there is a need to significantly revise any elements of this workplan, these revisions will be subject to public review and comment, followed by EPA review, prior to implementing any changes. Such changes will be handled as a formal amendment to the capitalization grant agreement.

B. Relationship to the Public Water Supply Supervision (PWSS) Program Grant

Starting with the FY2006 DWSRF Grant, Pennsylvania will be utilizing set-aside funds to support and enhance PWSS-funded activities. The following core elements of Pennsylvania's program will be complemented with funding support from the DWSRF grant:

- Program Management
- Program Development and Implementation
- Data Management
- Compliance Assessment

This workplan represents a significant addition to the above activities carried out under Pennsylvania's PWSS program.

C. Changes to the Workplan for FY 2008-2009

Changes have been made to reflect anticipated spending increases or decreases for certain activities, to keep within planned state budget levels and to insure expenditure of all grant funds within a four year time frame.

The following activities were added for FY2007-2008:

- Technical Assistance To Small Systems -- 1452(g)(2) 2%
 - **Capability Enhancement**
 - (1) Addition of 1 Capability Enhancement Facilitators in the Ebensburg District Office

- Assistance to State Programs – 1452(g)(2) 10%
 - **Source Water Protection**
 - (1) Optimization of Publicly Owned Treatment Works (POTWs) (2 FTEs)
 - (2) Occurrence of Unregulated Contaminants (1 FTE)
 - (3) Stream Re-designations and Surface Water Assessments (2 FTEs)
 - (4) Public Water Supply Designated Use Project
 - (5) Pennsylvania Drinking Water Information System (1 FTE)
 - (6) Set-Aside Grant Management and Program Analysis (1 FTE)
 - **Operator Training and Certification**
 - (1) Operator Certification Program Compliance (1 FTE)
 - (2) Web-based Training Course Development (2 FTEs)
 - **Capability Enhancement**
 - (1) Contractor support for eFACTS
 - (2) Maintenance of the Earthwise Academy
 - (3) Global TAPS and Training Provider Program Development
 - (4) PWSS Laboratory Support
 - (5) Staff Training Conference
 - (6) Community Water System Collaboration Project
 - (7) Sustainable Infrastructure Initiative
 - (8) Drinking Water System Compliance Assistance (10 FTEs)
 - (9) Water Resource Planning and Protection Initiative (3 FTEs)

- Other Authorized Programs – 1452(k)(1) 15%
 - **Capability Enhancement**
 - (1) Drinking Water Protection Initiative (13 FTEs)
 - (2) The transferal of the funding of 12 existing FTEs for Source Protection from the Assistance to State Programs (10%) Category to this category under Capability Enhancement. (This component of the workplan serves as a supplement to Pennsylvania's Capability Enhancement Program Strategy. [A draft strategy was submitted to EPA for review and comment in May, 2008. The strategy was also published in the Pennsylvania Bulletin on June 28, 2008 for a 30-day public comment period. The final strategy will be published upon final EPA approval.](#))

The following activities are added starting FY2008-2009:

- Technical Assistance to Small Systems – 1452(g)(2) 2%
 - **Capability Enhancement**
 - (1) Small Systems Managerial and Financial Capability Enhancement Program

- Other Authorized Programs – 1452(k)(1) 15%
 - **Source Protection**
 - (1) Wellhead Protection Program (previously funded from the 106 grant)
 - (2) Distribution Optimization Program (previously funded from the PWSSP grant) (1 FTE)

The following activities have been completed or eliminated from previous workplans:

- Technical Assistance to Small Systems – 1452(g)(2) 2%
 - **Capability Enhancement**
 - (1) Rural Community Assistance Program grant to provide financial assistance to small systems
 - (2) Consolidation Grant Program – this program never got started
- Other Authorized Programs – 1452(k)(1) 15%
 - **Capability Enhancement**
 - (1) Tracer Study, GDF, Inc.
 - **Operator Training and Certification**
 - (1) Pennsylvania State Association of Township Supervisors contract for training development.
 - (2) SumTotal Systems contract for support and maintenance of the DEP Web-based University, the EarthWise Academy

D. Format and Level of Detail Provided

This workplan consists of:

- A General Overview which describes the nature of programs and activities to be funded, and their relationship to Pennsylvania's existing program;
- A Funding and Workplan Summary which further describes categorical spending of set-aside funds;
- An overall Spending Plan Summary that aggregates the individual categorical set-aside spending summaries.

To the extent practicable, the level of detail provided is consistent with EPA's *Final Guidelines for the Drinking Water State Revolving Fund program (2/97)*, EPA Region III's *Supplemental Guidance for States* issued as Interim Final in April 2001 and EPA Region III's *Drinking Water State Revolving Fund Program Set-Aside Workplan Supplemental Guidance* issued as Interim Final in June 2006. The general goals, objectives, outputs, deliverables and agency responsibilities for each set-aside activity are identified in this workplan.

Additional details on project requirements and deadlines will be contained in the various contracts and grant agreements with sub-recipients of set-aside funds. Each contract or grant agreement will incorporate a particular process for evaluating progress and results; and, where water monitoring and analysis are involved, will include a quality assurance (QA) plan which is based upon DEP's overall QA plan in effect for such activities (with modifications, as needed, for the projects in question).

Semi-annual progress reports will be provided to EPA for the January-June and July-December time periods. These reports will identify accomplishments over the past six months and will project activity levels for the next twelve months. These progress reports will also include a summary of actual expenditures for the six month period in the same spreadsheet format as the budget spreadsheets attached to this workplan. These reports will be submitted within 45 days after the end of each six-month period.

E. Evaluation of Outputs and Outcomes

Beginning in July 2006, in accordance with supplemental guidance developed by EPA, specific outputs were defined for each activity. These outputs are definitive products generated through the implementation of the project that will have a significant impact on the achievement of the defined program outcomes for each set-aside category. Progress towards finalizing these outputs will be documented in the semi-annual progress reports.

Also in accordance with supplemental guidance developed by EPA, program outcomes were also defined for each set-aside category. They are further divided into the eligible funding programs of Operator Training and Certification, Capability Enhancement (Capacity Development) and Source Water Protection; depending on the types of activities funded in each set-aside category. Since many of these outcomes are also defined performance measures for the drinking water and state revolving loan fund programs, progress made towards achievement of these outcomes will be evaluated and documented as part of the state annual budgetary process. Results of this analysis and changes to the workplan will be documented in future workplans as part of the Drinking Water State Revolving Loan Fund grant application.

II. GENERAL OVERVIEW

A. Major Areas Addressed by this Workplan

The SDWA established new program responsibilities for states in the following major areas:

- Drinking water source assessment and protection
- Capability enhancement (technical, financial and managerial)
- Operator training and certification

The Department of Environmental Protection (DEP) has ongoing programs that address the above areas and proposes to expand and improve these programs in order to implement these new responsibilities through a combination of:

- Partnerships with outside organizations for:
 1. Training and technical/financial/managerial assistance
 2. Public Education
- Technical and financial support for small systems, using:
 1. Contractor support
 2. Equipment
 3. Innovative technology support
- Equipment, supplies and travel necessary to support the above activities.

B. Source Water Assessment

Using 1452(g)(2) funds, DEP staff have delineated wellhead protection areas (WHPAs) and conducted assessments for all high priority groundwater sources, and have conducted assessments of all low priority surface water sources. Using 1452(k) funds, contractors and grantees have conducted assessments for the remaining surface water sources serving public water systems in accordance with the state Source Water Assessment and Protection Program (SWAP) plan. Another contractor developed a statewide assessment for all lower priority groundwater sources and provided support to regional staff through a Geographical Information System (GIS) analysis. All reports have been made available to the water suppliers and summaries have been posted for the community water systems. Staff are maintaining the assessments and incorporating new sources into the program. GIS tools developed through these initiatives are being placed in a web environment for access and use by all field staff as a real-time application.

The delineation and assessment of source water protection areas provides the basis for many other municipalities and public water supply systems (PWSs) to develop local source water protection programs. DEP staff will continue source water assessments through the permitting process, sanitary survey process and by providing site-specific source water assessments for the previously considered low priority ground water systems.

For groundwater sources serving PWSs, the SWAP program will continue to rely upon Pennsylvania's approved wellhead protection program (WHPP). The SWAP will also be coordinated with other existing local and state efforts designed to encourage the development of water systems in an efficient, cost-effective manner to protect public water supply sources from contamination. GIS technology will be used extensively for source water assessments and protection management and program integration.

C. Source Water Protection

Pennsylvania's approved WHPP is a key component of DEP's source water protection efforts. The WHPP is based on statutory and regulatory requirements for water suppliers to find the best source available and to take those measures necessary to protect that source and ensure a continual and safe water supply. Wellhead Protection Areas (WHPAs) for all PWSs and sanitary surveys of these areas are established in regulation. Much of the authority and responsibility to protect public health and safety via source water protection is already in place in Pennsylvania through DEP programs and local government controls.

To further support and enhance Pennsylvania's WHPP, several efforts have been, or will be funded, out of the 1452(g)(2) and 1452(k) set-asides, including:

- Public education and involvement are crucial to developing an effective source water protection program. Grants or contracts have been developed to educate and promote the concepts of source water protection and development of local source water protection programs.
- Funding was provided to the Susquehanna River Basin Commission (SRBC) to: (1) develop and promote public education programs relating to source water protection and land use management; and (2) to develop and provide guidelines for communities to follow when developing land use management programs. The pilot was conducted in the Swatara Creek watershed. Starting in FY2008-2009, additional funds will be provided to build upon this effort and provide additional assistance to communities in the Lower Susquehanna River Basin to develop source water protection plans.
- Initial development and implementation of local, voluntary source water protection programs was supported through grants to municipalities and water suppliers. Most of these grants are now completed. Additional support was developed through the selection of a contractor through the Commonwealth's Request for Proposals process. This contractor is now responsible for the development of local water protection programs in the future.
- Pennsylvania Rural Water Association (PRWA) has been funded to provide additional technical assistance to small and medium size water systems to develop local wellhead protection programs. PRWA is providing public education and assistance in establishing a source water protection committee, conducting contaminant source inventories, developing management and contingency plans, and planning for inclusion of new sources in the program. PRWA is providing operator training on source water assessments and protection.

- The League of Women Voters - Community Education Fund is conducting outreach and support for development of community based education projects for local source water protection efforts, and for statewide education and promotion of source water protection throughout the Commonwealth.
- A Source Water Protection Guidebook was developed to assist with the development of local source water protection programs. This workbook is available on DEP's web site and on CD.
- Starting July 1, 2008, funding for the implementation of the state's Wellhead Protection Program will be covered through the 15% Other Authorized Activities. These activities were funded by the Chapter 106 grant in the past. Transferal of these program activities to the Set-Asides will result in more effective use of both funding sources and resolve some shortfall problems with the Chapter 106 grant.

The Water Resources Planning Act (Act 220) was passed in November 2002. Act 220 requires the development of a State Water Plan by March of 2008, with subsequent revisions every five years. In developing this plan, it became obvious that there is a very strong link between the Source Water Assessment and Protection Programs, the Capability Enhancement Program and the State Water Plan. The integration of these program elements is instrumental in insuring the long-term sustainability of Pennsylvania's drinking water infrastructure by providing a focus on the technical, managerial and financial capabilities of drinking water systems within a watershed approach. For this reason, the state's Capability Enhancement Program was modified to incorporate a number of activities in this workplan including the:

- Transference of 12 of the 15 FTEs devoted to source assessment in the 10% set-aside to the 15% set-aside to achieve improvements in the technical and managerial capability of drinking water systems through the development and implementation of source water protection plans.
- Addition of 3 FTEs in the 10% set-aside to DEP's Water Planning Office to create a section that will focus on water resource planning and protection efforts, such as the very successful Schuylkill Action Network. This section will also facilitate the development and implementation of the State Water Plan and the identification of critical water planning areas. These areas will then be the focus of more intense evaluation and plan implementation to protect the limited water resources in these watersheds.

To accomplish this initiative, the state's Capability Enhancement Program strategy was revised and submitted to EPA for review in May 2008. This draft strategy was published in the Pennsylvania Bulletin on June 28, 2008. Until the public participation process is completed and final approval from EPA is received, this workplan is considered a supplement to the state's strategy.

In addition, a significant amount of work to implement surface water source protection initiatives is accomplished through the state's Filter Plant Performance Evaluation Program, Nonpoint Source Program, Chesapeake Bay Program, River Basin Commissions' projects, the development of Total Maximum Daily Loads (TMDLs) for identified impacted streams, and other state and local watershed management initiatives.

D. Capability Enhancement

As required by Section 1420 of the 1996 Amendments to the Safe Drinking Water Act, Pennsylvania's Capability Enhancement Program includes five phases of implementation:

- The *Assessment Phase* to identify and prioritize systems for participation in the Capability Enhancement Program and to identify initiatives to be implemented in more of a global context, rather than system specific.
- The *Comprehensive Evaluation Phase* to complete a detailed evaluation of the priority systems to identify the technical, managerial, financial issues hindering the system's capability.
- The *Plan Development Phase* to work with priority system personnel, Regional and Central Office staff and appropriate assistance providers to develop a plan to address the issues found in the comprehensive evaluation.
- The *Implementation Phase* to implement the Capability Enhancement Assistance Implementation Plan
- The *Reassessment Phase* to reassess progress made and to reprioritize systems for participation in the program.

A combination of 1452(g) and 1452(k) set-aside funds is used to bolster Pennsylvania's Capability Enhancement program. Uses of these set-aside funds include:

- Contracts with water supply related organizations to provide training and hands-on, site-specific technical, managerial and financial assistance to system owners and operators, including application of water treatment fundamentals, the application of affordable treatment technologies and business planning techniques.
- The use of DEP's wage payroll system to hire certified operators and others with specialized expertise on a part-time basis to provide training and hands-on, site-specific technical, managerial and financial assistance to system owners and operators, including application of water treatment fundamentals, the application of affordable treatment technologies and business planning techniques.
- Contracts for training course development and delivery and related software development.
- A contract(s) with **private consultant(s)** to provide engineering expertise and assistance in the design and application of affordable treatment technologies, legal assistance to promote regionalization and consolidation concepts where appropriate, financial management assistance to develop appropriate rate structures, business plans and long-term budgets and technical assistance to implement asset management programs.

- The enhancement of DEP's Filter Plant Performance Evaluation Program and implementation of the Area Wide Optimization Program to prepare surface water systems for future regulations, and identify factors that impair surface water system capability.
- DEP's participation in the National Partnership for Safe Water, a voluntary effort that seeks to encourage public water systems to survey their facilities, treatment processes, operating and maintenance procedures, and management oversight practices.
- Staff resources for the development and implementation of critical water planning area resource plans and source water protection initiatives such as the Schuylkill River Action Network.

E. Operator Training and Certification

The goal of the Operator Certification Program is to maximize public health protection, compliance and system operation through improvement of the knowledge, skills and abilities of more than 5300 drinking water system operators. There is a direct relationship to DEP's Capability Enhancement Program efforts by enhancing the technical competence of water system operators. A combination of 1452(g)(2) and 1452(k) set-aside funds is used to enhance the drinking water system operator components of this program, including:

- Contracts and grants for technical, financial, managerial training for operators.
- The operation of the Penn State Harrisburg Environmental Training Center and the purchase of pilot and test equipment for hands-on training applications at the center.
- The implementation of the Training Approval Process of courses for operators to meet the basic training and continuing education requirements of the program.
- The implementation of the Outreach Assistance Provider Program, or Environmental Training Partnership, by hiring certified operators on a part-time basis to provide training and on-site, hands-on assistance.

III. FUNDING AND WORKPLAN SUMMARY

Use of set-aside funds for each federal fiscal year with available funds is broken down into the following categories:

		FY2001	FY2002	FY2003	FY2004	FY2005	FY2006	FY2007	FY2008
1452(g)(2) (2%)	Technical Assistance to Small Systems								
	Capability Enhancement	\$490,118	\$518,612	\$515,496	\$534,752	\$533,620			\$548,740
	Subtotal	\$490,118	\$518,612	\$515,496	\$534,752	\$533,620	\$554,370	\$554,380	\$548,740
1452(g)(2) (10%)	Assistance to State Programs								
	Source Water Protection	\$1,705,454	\$1,806,325	\$1,790,745	\$1,871,632				
	Operator Training/ Certification	\$584,053	\$616,630	\$616,630	\$641,702				
	Capability Enhancement	\$161,083	\$170,105	\$170,105	\$160,426				
	Subtotal	\$2,450,590	\$2,593,060	\$2,577,480	\$2,673,760	\$2,668,100	\$2,771,850	\$2,771,900	\$2,771,900
1452(k)(1) (15%)	Other Authorized Activities								
	Source Water Protection	\$1,215,851	\$1,283,565	\$1,283,565	\$1,323,511				
	Operator Training/Certification	\$334,863	\$353,563	\$353,563	\$360,958				
	Capability Enhancement	\$2,125,171	\$2,252,462	\$2,229,092	\$2,326,171				
	Subtotal	\$3,675,885	\$3,889,590	\$3,866,220	\$4,010,640	\$0	\$0	\$0	\$4,115,550
	TOTAL Set-Aside Funds	\$6,616,593	\$7,001,262	\$6,959,196	\$7,219,152	\$3,201,720	\$3,326,220	\$3,326,280	\$7,436,190

Expenditures using the previously reserved FY2005 2% monies are now included in this workplan. The FY2006 and 2007 2% and the FY2005, 2006 and 2007 10% monies remain reserved for future use. The FY2005, 2006 and 2007 15% Set-Aside money is to be converted to the clean water fund for wastewater treatment system and combined sewer overflow projects. Priority, where possible, will be given to those CSO projects that have been identified as a priority due to their impact on a nearby drinking water intake.

Note: The above spending amounts are as accurate as possible, but they may change depending upon the rate of expenditures that occur for spending categories (and activities within those categories) under each major set-aside. These amounts have been developed based upon the information contained in **Appendix A**, which portrays the cumulative expenditure of set-aside funds.

The spending plan spreadsheets included in this Section of the workplan are organized on a state fiscal year (7/1-6/30) basis.

TECHNICAL ASSISTANCE TO SMALL SYSTEMS 1452(g)(2) 2%

These set-aside funds will be used to enhance ongoing program efforts, primarily related to capability enhancement. These funds need not be matched with state resources.

A summary of actual expenditures and encumbrances for this set-aside is presented in Figure 1.

OUTCOMES:

- The elimination of public water systems that are not technically, managerial or financially capable to operate in compliance with all existing and new drinking water regulations through the consolidation with another system.
- The elimination of public water systems that are not technically, managerial or financially capable to operate in compliance with all existing and new drinking water regulations through the design and construction of needed system upgrades and the improvement of system staff capabilities.
- A decrease in the number of high priority water systems as identified by the Capability Enhancement Program priority process.

CAPABILITY ENHANCEMENT

EXISTING STAFFING

Program: Capability Enhancement Program

Number of FTEs: Five, located in Central Office or the Regional Offices as follows:

1. Capability Enhancement Facilitator (Northcentral Regional Office)
2. Capability Enhancement Facilitator (Harrisburg Central Office)
3. 2 FTEs in Harrisburg for program coordination and development and project management.
4. 1 FTE for the development and revision of outreach assistance tools, guidance documents and fact sheets for use by the facilitators and regional office staff in working with the systems to insure compliance with regulatory requirements.

Goal: Program development, administration and assistance and outreach to small water systems.

Outputs:

- (1) A summary of progress made and finalized work products will be included in the semi-annual progress report
- (2) The annual Capability Enhancement Report due by November 15 of each year
- (3) Approximately 20 drinking water systems per year participate in the program

NEW STAFFING

Program: Capability Enhancement Program

Number of FTEs: One Capability Enhancement Facilitator, located in the Ebensburg District Mining Office

Goal: Expand and enhance program assistance to drinking water systems by expanding the number of Capability Enhancement Facilitators

Outputs:

- (1) A summary of progress made and finalized work products will be included in the semi-annual progress report

(2) Increase the number of drinking water systems participating in the program by 10 to a average total of 30 systems per year.

GRANTS

~~**Project:** Financial Assistance to Small Systems~~

~~**Grant Recipient:** Northeast Rural Community Assistance Program (RCAP)~~

~~**Estimated Expenditure in State FY 06-07:** \$100,000~~

~~**Program with RCAP will end July 1, 2007**~~

~~**Goal:** To enhance DEP's capability to provide financial and managerial assistance to small systems by: (1) providing one-on-one assistance in the development of business planning and budgeting, (2) developing and delivering a complete training curriculum for system owners, managers, and local officials that focus on managerial and financial capability issues and (3) coordinating the completion of the Available Operator Forms as part of COAP.~~

~~**Deliverables and Outputs:**~~

- ~~(1) A copy of the completed training modules for financial and managerial capability.~~
- ~~(2) A Request For Proposals to continue this initiative that allows other entities to participate and further promote the basic principles of sustainable infrastructure through managerial and financial capability enhancement, and small system consolidation. This project will be integrated into the Small System Consolidation Grant Program described below.~~

~~**Project:** Small System Consolidation Grant Program~~

~~**Grant Recipient:** To be determined~~

~~**Estimated Expenditure in FY07-08:** \$100,000~~

~~**Four Year Pilot Program Starting July 1, 2007**~~

~~**Goal:** To provide assistance to small systems through the consolidation of services. This money shall be used to support organizational activities, business plan development and legal instrument execution.~~

~~**Deliverables and Outputs:**~~

- ~~(1) Progress will be summarized as part of the semi-annual progress reports.~~
- ~~(2) Success stories as part of the Capability Enhancement Program Annual Report.~~
- ~~(3) Participation of five systems the first year of the program.~~

CONTRACTS

Project: Engineering Assistance for Small GUDI Systems

Contractor: Alfred Benesch & Co.

Estimated Expenditure in State FY 07-08: \$202,300

Project Ends October 1, 2008

Goal: To provide engineering assistance to small systems that have been identified as a Groundwater Under the Direct Influence system (GUDI) through DEP's Surface Water Identification Protocol (SWIP). Current SWIP results indicate that approximately 103 PWSs have been determined to be a GUDI system. Alternatives for these systems will be evaluated, feasibility studies completed and recommendations and solutions developed for PWSs needing to address their GUDI source(s). Assistance will also be provided to implement final recommendations.

Deliverables and Outputs:

- (1) Complete engineering assessments and/or feasibility studies to recommend actions that each PWS needs to take to address the GUDI source(s). Assistance will be provided to approximately 6 GUDI systems per year.
- (2) Project summaries for each completed project will be included as part of semi-annual progress reports.

Project: Small Systems Managerial and Financial Capability Enhancement Program (Surface Water)

Contract Recipient: To be determined using RFP

Project Begins: October 1, 2008

Estimated Expenditures in FY08-09: \$200,000

Goal: This project is not a new activity, but a combination of services provided in previous workplans by RCAP, Engineering Services and Consolidation Grants Program. Services to be provided include engineering expertise and assistance in the design and application of affordable treatment technologies, legal assistance to promote regionalization and consolidation concepts where appropriate, financial management assistance to develop appropriate rate structures, business plans and long-term budgets and technical assistance to implement asset management programs.

Deliverables and Outputs:

- (1) A Request For Proposals to solicit private consultants and engineering firms to provide the services listed to systems and further promote the basic principles of sustainable infrastructure through managerial and financial capability enhancement, and small system consolidation.
- (2) Project summaries for each completed project will be included as part of the semi-annual progress reports.
- (3) Success stories will be included in the Capability Enhancement Program Annual Report.

EQUIPMENT AND SUPPLIES

See Appendix B. A separate spreadsheet is provided that lists all the anticipated equipment and supplies purchases. If additional equipment or supplies is needed, the procedure for pre-approval of these purchases by EPA will be followed.

A summary and justification for the supplies and equipment is as follows:

1 vehicle (FY07/08)

Justification: This vehicle is for the new Capability Enhancement Facilitator assigned to the Ebensburg District Office. In order to accomplish the goals of this program this person will need to travel to different systems in at least two different regions. Without a vehicle assigned to the facilitator this will not be possible.

2 vehicles (FY08/09)

Justification: The vehicles assigned to the two existing Capability Enhancement Facilitators in the Harrisburg Office and the Northcentral Office were bought in 1999 and have a significant amount of mileage on them. Once these two vehicles reach over 125,000 miles they will need

to be replaced. Again, these vehicles are needed by these facilitators to accomplish the goals of the program by traveling to different systems in at least two different regions.

Personal Computers:

A desktop computer and monitor for one program management staff in central office was purchased in 2007. Another was purchased for one of the Capability Enhancement Facilitators. Laptops, docking stations and monitors are proposed for the other 2 Capability Enhancement Facilitators (1 in 2007/2008 and 1 in 2008/2009) The protocols followed for the purchase of these computers is to purchase computers for staff on a four to five year rotating timeframe.

ASSISTANCE TO STATE PROGRAMS 1452(g)(2) 10%

These set-aside funds will be used to enhance ongoing program efforts relative to source water assessment and protection, capability enhancement and operator training and certification. Starting in FY2006, a significant amount of the funds in this category is devoted to enhancing the PWSS Program. It should also be noted that protecting water sources from contamination reduces the technical complexity and financial investment in required treatment facilities. In this regard, source water protection makes a significant contribution to meeting the system capability enhancement objective of achieving technical, managerial and financial capability at small public water systems.

A summary of expenditures and encumbrances for FY1997-FY2006 set-aside funds is presented in Figure 2. These funds must be matched dollar-for-dollar by state-provided resources. EPA Headquarters has confirmed that the matching requirement can be based upon the annual expenditure level of 1452(g) funds (i.e., match as you go). State general fund expenditures in the PWSSP will be used to provide this match requirement. Actual expenditures will be documented in the annual DWSRF program report.

OUTCOMES:

Source Water Protection:

- Percent of community water systems that achieved minimized risk to public health through substantial implementation of a source water protection strategy.
- Percent of community water systems that have source water protection strategies in place.
- Percent of sources with completed Surface Water Identification Protocol evaluations.
- Reduced concentrations of *Cryptosporidium*, *E. coli*, and other acute contaminants or their surrogates at public water supply intakes as a result of optimization of upstream publicly owned treatment works (POTWs).
- Annual/seasonal trends and correlations of *Cryptosporidium*, *E. coli*, and emerging contaminant concentrations at public water supply intakes.
- Reduced numbers and types of deficiencies identified at POTWs and improved statewide performance ratings of POTWs, which will significantly reduce acute and emerging contaminants that represent a health risk to downstream public water suppliers.
- Increased population served by drinking water systems that receive improved source water quality as a result of optimization efforts at upstream POTWs.
- Criteria and standards that may be used in assessing the impact of *Cryptosporidium*, *E. coli*, and emerging contaminants on the potable water supply designated use.
- Percent of the population exposed to emerging contaminants through surface and groundwater drinking water supplies.
- Increased ability to measure and track the impact of pollutants and their sources on acute and chronic contaminants at (or in close proximity to) public water supply intakes.
- Strengthened knowledge of the relationship between point and nonpoint source contamination and their effects on public water supplies and public health.
- Reduced levels of contaminants in source waters used for public water supplies through established Total Maximum Daily Loads, when necessary.

Operator Training and Certification:

- Percent of systems in compliance with operator certification requirements.
- Number of continuing education hours delivered.

Capability Enhancement:

- Percent of population served by water supply systems that meet all health based standards.
- The ability to relate community water system infrastructure between state and federal databases.
- Nationally consistent framework for community water system data.

SOURCE WATER PROTECTION

EXISTING STAFFING

Program: Source Water Assessment and Protection Program

Number of FTEs: Three located in Central Office, Harrisburg, Bureau of Watershed Management.

Goal: Program development, administration and implementation.

Outputs:

- (1) Management of 67 grant projects for source water protection plan development.
- (2) Support the development and implementation of regional and interstate source water protection initiatives.
- (3) Support development of local source water protection (strategy) program for 8% of community water systems without a plan.
- (4) 80% of the source water protection plans submitted for review and approval each year are finalized.
- (5) A summary of progress made and finalized work products will be included in the semi-annual progress report.

NEW STAFFING

Program: Protection of Source Water Through Optimization of Publicly Owned Treatment Works (POTWs) Pilot Project

Four Year Project Starting July 1, 2007

Number of FTEs: Two located in Central Office, BWSFR, Harrisburg (in order to assure adequate field visits are achieved, these positions will possibly be located in regional offices nearest priority POTW clusters.)

Goal: POTW optimization will directly benefit drinking water suppliers and protect public health in Pennsylvania, since POTWs are significant sources of total nitrogen, *Cryptosporidium* and other pathogenic protozoa, bacteria and viruses. POTWs represent an acute public health risk to nearby downstream public water suppliers that use surface water sources. In addition, if POTWs are allowed to increase *Cryptosporidium* and *E. coli* concentrations in source waters above the thresholds specified in the Long Term 2 Enhanced Surface Water Treatment Rule, a water supplier may need to add additional treatment technologies. Consequently, water suppliers will incur millions of dollars in costs for designing and constructing new technologies, as well

as long-term operation and maintenance costs associated with these technologies. In addition, the suppliers and DEP program staff will be burdened with a substantial permitting, compliance and inspection workload. As a result, these POTW optimization efforts will maximize public health protection and help reduce burdens for public drinking water suppliers and safe drinking water program staff.

The primary objective of the program is to conduct routine, on-site evaluations at Pennsylvania's priority POTWs to reduce the levels of acute public health contaminants (e.g., *Cryptosporidium* and Nitrate-Nitrite) and emerging contaminants (e.g., hormones, antibiotics and pharmaceutical compounds) in surface water sources. Active POTWs within a five-mile radius upstream of public water supply intakes are the focus of this initiative. Specific program goals are to:

- Maximize Public Health Protection.
- Reduce Treatment Impacts at Surface Water Treatment Plants.

The development and implementation of operational optimization provisions for POTWs involve a low-cost, compliance assurance approach that is comparable to those currently being implemented in the Safe Drinking Water Program under the auspices of the Filter Plant Performance Evaluation (FPPE) and Partnership for Safe Water programs.

Initially, the staff will develop and evaluate POTW optimization techniques to determine impacts on the concentrations of acute and emerging contaminants. These efforts will be verified by collecting samples at POTWs and comparing the results with available data at downstream public water supply intakes. Available data will include the water suppliers' and DEP's *Cryptosporidium* concentrations as well as data gathered on emerging contaminants through other initiatives outlined in this workplan (see the sections on "Occurrence of Unregulated Contaminants" and "Public Water Supply Designated Use").

To estimate the workload and establish priorities, active POTWs within a five-mile radius upstream of intakes serving surface water treatment plants were identified. The five-mile criterion serves as a placeholder until staff defines a distance that best represents the potential health risks to consumers of public drinking water. The list was further refined to differentiate between POTWs listed as major discharges in the Permit Compliance System (≥ 1 MGD flow rates) vs minor discharges (<1 MGD flow rates). The initial list identifies 41 major POTWs and 46 minor POTWs with permitted discharges within 5 miles upstream of surface water filter plant intakes. Because few of these POTWs have been examined from an optimization standpoint, DEP's regional water quality management and drinking water program staff will assist in prioritizing the list. Since EPA has requested documented impacts within a 4-year time frame, initial efforts will be focused on a select group of approximately 8 systems to fully realize the benefits of the project as quickly as possible. These systems will be chosen from the 87 priority systems based on several factors including their specific proximity to the drinking water intake, treatment type (e.g. extended aeration), availability of previous data (Water Quality Network stations), discharge amount, receiving stream size, number of tributaries between outfall and intake, etc. In future years, the initial priority list is expected to expand dramatically as staff becomes more familiar with the treatment technologies, operational practices, and pathogen travel times that place downstream surface water treatment plants at higher risk. After development of staff capabilities, the staff optimization workload at the priority POTWs is expected to entail 12 sites per year and a goal involving a two- to three-year evaluation cycle. Annual performance measures (i.e., outcomes and outputs) will be developed and refined to evaluate the impacts of the program on POTWs and downstream public water suppliers. For example, with assistance from research staff (see "Occurrence of Unregulated Contaminants" in this workplan), optimization efforts at POTWs will be correlated with

concentrations of *Cryptosporidium* and emerging contaminants at downstream surface water treatment plants. In addition, staff will determine the impacts of POTW optimization on other BWSFR drinking water initiatives. The ultimate goal is to have each high-priority facility undergo an evaluation approximately once every three years. DEP's Wastewater Training Modules and portions of the Wastewater Diagnostic Program protocols will serve as the guidelines for this program. Pennsylvania's Outreach Assistance Provider Program (OAPP) will also serve as a technical resource for implementation of evaluation techniques of the collection system and various treatment technologies. OAPP staff has already instituted both operational and design evaluations that improve POTW compliance. Staff specifically evaluates the impacts of wet-weather events, blending practices, and the recovery of biological processes following these events.

Outputs:

Year 1 (July 1, 2007 through June 30, 2008):

1. Hire and Train Staff
2. Meet with regional DEP Wastewater and Drinking Water staff to discuss implementation approaches, and regional support
3. Identify and obtain applicable equipment – preferably continuously recording online models of key water quality surrogates
4. Establish feasible sampling protocol workload limits with DEP's BOL and private laboratories
5. Evaluate existing data from nearby WQN's to determine if it is usable to help establish source water baselines
6. Establish Database to track sample results, compile graphs, tables and reports
7. A summary of progress will also be included in the semi-annual progress report.

Year 2 (July 1, 2008 to June 30, 2009):

1. Begin baseline sampling at select systems
2. Further evaluate and refine system list
3. Choose 4 systems per FTE and begin site assessments including sampling at outfalls and intakes (frequency to be determined based on lab & funding capacity)
4. Develop and deliver reports (2 systems per FTE)
5. A summary of progress will also be included in the semi-annual progress report.

Year 3 (July 1, 2009 to June 30, 2010):

1. Begin follow-up assistance by OAPP at first systems evaluated
2. Re-evaluate and refine database
3. Finish up site assessments and deliver reports (2 remaining systems per FTE)
4. Continue sampling and OAPP follow-up assistance
5. Evaluate additional systems if possible
6. A summary of progress will also be included in the semi-annual progress report.

Year 4 (July 1, 2010 to June 30, 2011):

1. Focus on follow-up assistance and sampling
2. Develop data trends and reports to document progress
3. Re-evaluate and refine database
4. A summary of progress will also be included in the semi-annual progress report.

Program: Occurrence of Unregulated Contaminants

Number of FTEs: 1 located in Central Office, BWSFR, Harrisburg

Goal: Recent research has revealed that pharmaceuticals are in the environment both as a result of improper disposal of regulated drugs and the discharge of metabolized and un-metabolized excreted waste into sanitary sewers. Other studies indicate an increasing frequency in the detection of trace organic compounds. These compounds are represented by a number of different categories such as endocrinologically active compounds termed “endocrine disruptors,” pharmaceutically active compounds or drug residuals, and more recently, personal care products. For the purposes of the workplan, DEP will refer to all of these compounds as “emerging contaminants.” Many of these chemicals are not entirely removed by conventional, slow sand, diatomaceous, or direct filtration technologies. Some studies suggest that a subset of these chemicals that are present in source waters survive drinking-water treatment processes and remain present in the finished water that is delivered to the customer. DEP is also concerned about unregulated microbes, their primary point of origin, and whether surrogates adequately reflect their occurrence and concentration. Overall, the effects from these contaminants on public health are currently unknown. The primary objectives for these staffs are to characterize the occurrence and fate of pharmaceuticals, pathogens, and other related emerging contaminants in public drinking water, streams and groundwater of Pennsylvania. This includes determining the greatest public health concern, the ambient levels of exposure, and how unreasonable risks can be mitigated.

Unlike the optimization of POTWs described elsewhere in this workplan, this effort involves a wider scope with regard to emerging contaminants and pathogens. Staff will gather the data from several data sets; including Pennsylvania’s water quality monitoring network, samples gathered at POTWs, enterprise data systems, and data collected through joint funding agreements with other organizations and agencies. Finally, when necessary, staff will round out any missing data by conducting fieldwork, which will involve collecting samples of the raw and finished water at surface and groundwater drinking water supplies.

Staff will analyze the data and compare concentrations at drinking water supplies to industrial, municipal and agricultural wastewater effluents. In addition, a variety of water physical and chemical water quality conditions will be compiled, analyzed and correlated. Results and findings will be used to coordinate efforts to enhance the development of Pennsylvania’s Safe Drinking Water Program.

Outputs:

July 1, 2007 through June 30, 2008:

1. Hire and train staff.
2. A summary of progress will be included in the semi-annual progress report.

July 1, 2008 through June 30, 2009:

1. GIS-based maps delineating land uses and stream characterizations.
2. A database for data management purposes, and to compile graphs, tables and reports.
3. Interim research report on the concentrations of emerging contaminants, pathogens and surrogates.
4. The number of sample collection sites visited when staffs directly supplement the data set by conducting fieldwork (fieldwork varies depending on data gathered at Pennsylvania’s water quality monitoring network, samples gathered at POTWs located above intakes, and data collected through joint funding agreements with other organizations and agencies).
5. A summary of progress will be included in the semi-annual progress report.

July 1, 2009 through June 30, 2010:

1. A final research report on the correlations of emerging contaminant, pathogen and surrogate concentrations at drinking water supplies (surface and groundwater) and emerging contaminant sources, such as industrial, municipal and agricultural wastewater effluents.
2. A summary of progress will be included in the semi-annual progress report.

Number of FTEs: 3 located in the Water Planning Office – Basin Coordination

Program: Water Resource Planning and Protection Initiative

Goal: The Water Planning Office is responsible for directing and evaluating strategic water management issues for the Office of Water Management (Deputate). Efforts include management of market-based programs intended to improve water quality; coordination of the State Water Plan as required by Act 220 of 2002; Pennsylvania's interstate river basins and associations including compact commissions, coastal programs, the Chesapeake Bay program, Great Lakes States organizations; and all inter-Bureau projects as assigned by the Deputy Secretary.

The Special Project section focuses on a multitude of initiatives including the development of the regional components of the state water plan as required by Act 220 of 2002 as well as the designation of Critical Water Planning Areas in coordination with the Bureau of Watershed Management's Water Use Planning Division. The section will be comprised of the following:

- Environmental Group Manager (proposed): The Environmental Group Manager (EGM) will be responsible for the overall management of the section. The EGM will manage and supervise the multi-discipline staff assigned to the section. The EGM will evaluate overall planning and workload analysis.
- Program Analyst 2 (proposed): This position will be assigned to coordinate activities of the Ohio Regional Committee established under Act 220 of 2002. This position will seek to identify committee priorities and goals, develop aspects of the State Water Plan Regional Component, and coordinate work related to Critical Water Planning Areas and Critical Area Resource Plans in the Ohio Basin. The position will also coordinate special projects including analysis of designated watersheds related to the Three Rivers Wet Weather Initiatives. The position will work with the DEP Southwest Regional Watershed Management and Water Supply staff as well as the Basin Coordination staff.
- Watershed Protection Specialist (proposed): This position will be assigned to coordinate activities related to the Schuylkill Action Network (SAN), the Christina River Basin Project (CRBP), and the Delaware Regional Committee established under Act 220 of 2002. The position will integrate the SAN and CRBP efforts as well as coordinate Critical Area Planning Areas and Critical Area Resource Plans in the Delaware Basin. The Position will work with the DEP Southeast Regional Watershed Management and Water Supply staff as well as Coastal Resource and Basin Coordination staff.
- Program Analyst 3 (existing): This position will be assigned to coordinate activities related to Upper, Lower and Potomac Regional Committees established under Act 220 of 2002. The position will integrate the Chesapeake Bay Program efforts with the Pennsylvania Chesapeake Bay Coordinator as well as coordinate Critical Area Planning Areas and Critical Area Resource Plans in the Susquehanna River Basin.

The Position will work with the DEP South Central and North Central Regional Watershed Management and Water Supply staff as well as staff of the Interstate Commission on the Potomac River Basin and the Susquehanna River Basin Commission. The position will also work with the PA Source Water Protection staff on the Potomac Partnership efforts. This position will NOT be funded as part of the Set-Aside Grant, but is integral in insuring the initiative is successful.

- Program Analyst 2 (existing job share): This position will work to integrate all regional efforts in the development of the State Water Plan. This position will also work to support coastal related activities in the Delaware and Erie Basin as related to the State Water Plan. This position will NOT be funded as part of the Set-Aside Grant, but is integral in insuring the initiative is successful.

Deliverables and Outputs:

- (1) Development of the Six Regional Components of the State Water Plan
- (2) Completion of Version I of the State Water Plan along with Regional Atlas
- (3) Identification of two Critical Water Planning Areas and the Initiation of Critical Area Resource Plans
- (4) Integration of State Water Plan Regional Components with Broader Basin Program such as SAN, etc.

Program: Surface Water Assessments for Potable Water Supplies [Pilot Project](#)
Three Year [Pilot Project](#) Starting October 1, 2007

Number of FTEs: 2 located in Central Office, BWSFR

Goal: The surface water assessment components of DEP's watershed and source water protection programs are interlinked with the public health protection goals of the safe drinking water program. As part of DEP's ongoing Surface Water Assessment Program for Potable Water Supply use attainment, physical, chemical and biological information is collected to determine whether current protected Water Supply use designations are appropriate. DEP will identify environmental attributes for the protection of source waters for public water supplies, which may require special (Anti-degradation) water quality protection. These surface water assessments will determine if the potable water supply use is impaired or not impaired; and, if impairment is detected, determine the source and cause. This information is: 1) provided to the Source Water Assessment and Protection Program for the development of source water protection plans, through the completion of the contamination source inventories and susceptibility analyses and 2) used to list impaired sources in Pennsylvania's Integrated Report. Impairment listing under Section 303(d) of the Clean Water Act compliments Source Water Protection Plans by compelling contaminant load reductions through the development of TMDLs or other actions necessary to achieve compliance with water quality standards relating to the protection of the potable water supply use and ultimately drinking water regulations. The draft Quality Assurance Plan "Instream Comprehensive Evaluation Survey Protocol" (August 2005) insures that quality data is gathered and compiled.

Including these initiatives as part of the Set-Aside grant will accomplish the following objectives:

- Enhancement of DEP's capability to implement the safe drinking water program and protect public health by: 1) evaluating streams and watersheds associated with drinking water sources for the potable water supply use and 2) targeting non-attaining sources for TMDL or other appropriate pollutant load reduction actions.

- Enhancement of DEP's ability to focus on contaminants and their impact on drinking water sources by devoting staff time to insuring the collection and analysis of data from approximately 35 water bodies per year beginning with those designated as either primary or "back-up surface water sources by existing water suppliers."
- Enhancement of DEP's capabilities to insure long term infrastructure sustainability. There is a direct link between these activities and the watershed management pillar of EPA's strategy for sustainable infrastructure. A stronger link between the development of source water protection plans, the state water plan and improving the capability of treatment systems to operate their system can be made by using results of this surface water assessment initiative.
- Effective management and coordination of all available resources to meet program obligations.

Outputs:

- (1) Completion of approximately 35 surface water assessments annually using a new proposed assessment protocol as published in the Pennsylvania Bulletin on June 9, 2007.
- (2) A summary of progress made and finalized work products will be included in the semi-annual progress report.

CONTRACTS

Project: Laboratory Support

Contract Recipient: [Bureau of Laboratories](#)

Four year Project Starting October 1, 2007

Estimated expenditure in State FY 08-09: [\\$100,000](#)

Goal: To conduct the laboratory analyses for the sections in this workplan titled "Protection of Source Water Through Optimization of Publicly Owned Treatment Works" and ["Surface Water Assessments for Potable Water Supplies."](#)

Deliverables and Outputs:

- (1) Laboratory analyses

Project: Potable Water Supply Designated Use Study (one-time study)

Contract Recipient: US Geological Survey (USGS)

Four year Project Starting July 1, 2006

Estimated expenditure in each fiscal year: \$300,000

Goal: The criteria to protect and assess the potable water supply use, as specified in Chapter 93 Water Quality Standards, are dated and must be strengthened to reduce contaminants in Pennsylvania's drinking water sources. *Cryptosporidium* and other pathogenic protozoa, bacteria and viruses represent an acute public health risk to public water suppliers that use surface water sources. With the potential impact on numerous public water suppliers, another unfolding problem entails recent findings on the widespread presence of "emerging contaminants." These contaminants include a number of different categories such as endocrinologically active compounds termed "endocrine disruptors," pharmaceutically active compounds or drug residuals, and personal care products. Some studies suggest that a subset of these chemicals survive drinking water treatment processes and remain present in the finished water that is delivered to customers. To address this issue, DEP will undertake a four-year study on acute and emerging contaminants as they relate to the public water supply designated use.

A primary objective of this study is to strengthen and expand Pennsylvania's existing water quality monitoring network, enabling DEP to establish criteria and methods to assess the potable water supply use. DEP currently uses approximately 150 fixed water quality monitoring stations to gather a variety of surface water data, either monthly, bi-monthly, or during wet weather events. The base portion of the water quality monitoring network is implemented through a Joint Funding Agreement with the Pennsylvania Science Center Office of the United States Geological Survey. It entails statewide operation of Pennsylvania's fixed station Water Quality Network (WQN) to include water sample collection, stream flow measurement or calculation, invertebrate sampling and identification, purchase of sampling supplies, quality control oversight and data management. USGS staff collects and processes samples in accordance with DEP procedures. This network serves to monitor major surface waters and selected reference waters throughout the state. These data are used to: 1) report current status and trends; 2) supply reference data in support of biological metrics development; 3) supply water chemistry/flow data in support of water quality criteria development and NPDES permitting; and 4) measure nutrient and sediment loading delivered by Pennsylvania tributaries to the Chesapeake Bay. DEP will collect additional data at WQN stations located within five miles upstream or downstream of public water supply intakes. With assistance from research staff (see "Occurrence of Unregulated Contaminants" in this workplan), a quarterly analysis will include *Cryptosporidium*, *E. coli*, enterococcus, gene markers, and possibly other pathogens or their surrogates if the supplier is not currently conducting compliance monitoring for these organisms. DEP will also use the stations to supplement the data analysis proposed in this workplan under "Protection of Source Water Through Optimization of Publicly Owned Treatment Works" and "Occurrence of Unregulated Contaminants." Furthermore, DEP staffs have participated in the EPA Water Quality Standards/Community Water Systems states workgroup, an effort designed to bridge the gap between ambient water quality standards and drinking water maximum contaminant levels. Numerous conference calls occurred in 2005 to identify characteristics of ambient water quality criteria that could effectively protect public water supply use and support the use attainment assessment. Based on the results of this workgroup, DEP will include additional contaminant monitoring at the new or existing stations.

For this project, water quality network stations within a five-mile radius upstream or downstream of an intake were selected. DEP currently deems the five-mile criterion as a reasonable distance to correlate data with potential impacts on health risks to consumers of public drinking water. Out of 150 stations and 350 intakes, a GIS-based overlay (dated May 2006) shows that 21 existing stations meet the five-mile criterion. Six new stations also meet the five-mile criterion. Quarterly water quality monitoring for the above parameters will occur at these 27 stations.

Outputs—July 1, 2006 through June 30, 2007:

- (1) Develop and execute a contract with USGS.
- (2) A summary of progress will be included in the semi-annual progress report.

Outputs—July 1, 2007 through June 30, 2008:

- (1) Number and types of samples collected at the WQN stations and the number of drinking water systems affected within a defined stream segment and the total population served by these systems.
- (2) Interim reports on emerging contaminant concentrations, *Cryptosporidium*, *E. coli*, enterococcus, and possibly other pathogens and their surrogates at WQN stations near public water supply intakes.
- (3) GIS-based maps delineating land uses and stream characterizations.

- (4) A database for data management purposes, and to compile graphs, tables and reports.
- (5) A summary of progress will be included in the semi-annual progress report.

Outputs—July 1, 2008 through June 30, 2009:

- (1) Number and types of samples collected at the WQN stations and the number of drinking water systems affected within a defined stream segment and the total population served by these systems.
- (2) Interim reports on emerging contaminant concentrations, *Cryptosporidium*, *E. coli*, enterococcus, and possibly other pathogens and their surrogates at WQN stations near public water supply intakes.
- (3) GIS-based maps delineating land uses and stream characterizations.
- (4) A database for data management purposes, and to compile graphs, tables and reports.
- (5) A summary of progress will be included in the semi-annual progress report.

Outputs—July 1, 2009 through June 30, 2010:

- (1) A final research paper documenting the results of the study.
- (2) An evaluation of water quality criteria that may provide additional options for assessing the potable water supply designated use.

Project: Technical Assistance for Source Water Protection for Community Water Systems (Surface Water)

Contract: Technical Assistance

Estimated expenditure in State FY 08-09: \$480,000

Continuing Program

Goal: Provide technical assistance to community water systems and municipalities to develop and implement local source water protection programs for primarily surface water served community water system aimed at addressing susceptibility of the source to contamination. Local source water protection programs must meet the minimum elements outlined by DEP. Such programs would include features such as:

- Rigorous watershed protection area delineation
- Contaminant source inventories
- Local or regional land use planning
- Zoning ordinances
- Educational programs
- Landowner incentives

Deliverables and Outputs:

- (1) Quarterly progress reports and invoices from grantees for grants awarded through July 2006.
- (2) Finalization and award of a contract through the state's Request for Proposal process to provide services after July 2006 to community water systems and local communities to develop local source water protection programs meeting the DEP's minimum elements for program approval.
- (3) Approximately 10 projects are started each year. In addition, approximately 2 projects will be completed each year.

GRANTS

Project: Water Resources Education Network

Grant Recipient: League of Women Voters - Citizen Education Fund

Continuing Program

Estimated expenditure in State FY 08-09: \$200,000

Goal: Build local coalitions for community based education and discussion of local, source water protection policy. Provide mini-grants and training to approximately 10-14 local coalitions per year for community based education programs. The League will hold training sessions with prospective grantees on funding procedures and project management techniques. Grantees will develop a variety of educational activities, including school-based programs, "water fairs", fact sheets, videos, posters and "policy forums" with local government officials.

Deliverables and Outputs:

- (1) Products developed by grantees.
- (2) Provide grants to 10 or more local coalitions for community based education projects for local source water protection.

Project: Lower Susquehanna River Regional Basin Source Water Protection Plan

Grant Recipient: Susquehanna River Basin Commission (SRBC)

Estimated expenditure in State FY 08-09: \$125,000

Goal: Develop source water protection plans for the large public water supply systems utilizing surface water sources within the Lower Susquehanna River Basin and support substantial implementation of watershed based management approaches for common potential sources of contamination with high susceptibility to the community water supply sources. The protection plans and management program implementation will build upon the findings of the Source Water Assessments and efforts will be made to engage systems to participate in the Susquehanna Basin Early Warning System. The SRBC will promote and assist those systems with intakes on the lower Susquehanna River and major tributaries in that part of the basin without source water protection plans. The main effort is to reduce the risk to the community water system sources of the common potential sources of contamination with the highest protection priority in this portion of the basin by substantially implementing watershed wide management approaches. This is accomplished by organizing the water suppliers, watershed organizations and other agencies working in the basin to implement a strategy to reduce the potential risk of the identified potential sources of contamination. The approaches and resources to be developed will be dependent on the priorities defined by the network members.

Deliverables: There is a potential to develop source water protection plans for 12 large systems over the three years. The development of the other 4 programs will be coordinated with the SWP TAP program. But, as demonstrated by the success of the Schuylkill Action Network, to implement a watershed wide protection program for multiple systems that shows results requires longer sustained efforts by a trusted broker, and a network of committed water system and applicable agencies.

Source Water Protection plans are to be completed in accordance with PADEP Source Water Assessment and Protection Plan requirements. SRBC will confirm and correct delineations from assessments and create delineations for unassessed sources where necessary. SRBC will update PSOC coverage and susceptibility analysis from existing assessments. Provide reports and all developed GIS data in electronic form in a standard acceptable to the department.

NOTE: This project was approved by EPA on July 1, 2008. The above revisions are to further describe the initiative and to clarify deliverables.

CONTRACTS

Project: IPA

Contract: EPA

Two year Project to Begin July 1, 2008

Estimated Expenditure for FY 08-09: \$150,000

Goal: Overall development of an integrated water resource program that ties together the various water management programs utilizing the source water program and drinking water programs as a coordination vehicle. Work will also involve interpreting legislation, regulations, policies, procedures and technical guidance to identify gaps in current programs, develop, assess and deliver technical training programs for field staff or county/local government representatives, evaluate program implementation on a statewide basis, serve as a liaison with federal, state and local agencies, support various program management functions, including but not limited to, efforts such as the Potomac Drinking Water Partnership and development of an integrated statewide water resource management program of significant scope and complexity on an ongoing basis.

Deliverables:

- (1) Development of Integrated Water Resources Plans (IWRPs), to include a plan for the Schuylkill River Watershed. The Schuylkill River watershed is approximately 80 miles long and 25 miles wide, and encompasses an area of roughly 1,916 square miles. The Schuylkill River is one of the largest tributaries to the Delaware River and travels approximately 130 miles from its headwaters at Tuscarora Springs in Schuylkill County to its mouth at the Delaware River in Philadelphia. Eleven counties within the Schuylkill River watershed will be involved in the IWRP, including Schuylkill County, Carbon, Lebanon, Lehigh, Berks, Lancaster, Bucks, Montgomery, Chester, Delaware, and Philadelphia (see attached map). The plan will integrate source water protection and drinking water efforts with a framework established by the Pennsylvania Storm Water Management Act (Act 167). The IWRP will serve as guidance for integrating on-the-ground efforts to protect water sources and water quality for the eleven counties with land area in the watershed, and to provide more efficient use of state and local resources in order to protect water resources.
- (2) Outreach and training activities that will assist local and county governments in building capacity to implement plan components.

NOTE: This project was approved by EPA on July 1, 2008. The above revisions are to further describe the initiative and to clarify deliverables.

OPERATOR TRAINING AND CERTIFICATION

EXISTING STAFFING

Number of FTEs: Four located in Central Office, BWSFR, Harrisburg

Program: Operator Training Program

Goal: To develop and deliver training courses for operators in classroom and web-based formats, provide outreach assistance to operators, implement the Training Approval Process Program and develop and implement the regulatory requirements of the Operator Certification Program

Deliverables and Outputs:

- (1) Approximately 700 applications for training course approval, post presentation credit and conferences approved per year.
- (2) A summary of progress made and finalized work products will be included in the semi-annual progress report.

NEW STAFFING

Number of FTEs: One located in Central Office, BWSFR, Harrisburg

Program: Operator Certification Program Compliance

Goal: The need for drinking water systems to have a certified operator can be used as another compliance assistance tool to help water systems to improve their technical, managerial and financial capability. The first task is to coordinate the training and testing of candidate operators for certification. This involves organizing a designated number of systems in a geographical area for training and examination. This process forces water systems to deal with their technical, managerial and financial capability shortfalls. Long-term capability and sustainability issues can then be identified and addressed, since hiring a certified operator requires sufficient revenues for salary and a qualified operator that understands the physical aspects of the system. In addition, staff will be focusing on systems consolidation efforts by assisting with the development of legal mechanisms and instruments necessary to promote multiple system consolidation for the purposes of providing a certified operator, centralized billing and system maintenance. Finally, when all assistance efforts do not result in an improvement in the compliance rates, the development and implementation of a compliance and enforcement strategy will begin.

Deliverables and Outputs:

- (1) A five to ten percent increase per year in the number of systems in compliance with the requirements of the operator certification program.
- (2) A summary of progress made and finalized work products will be included in the semi-annual progress report.

Number of FTEs: Two located in Central Office, BWSFR, Harrisburg

Program: Operator Training Program

Goal: To provide additional resources to concentrate on the design and development of web-based training courses, with the objective of eventually making on-line training available on topics covering all drinking water regulations and related technical topics.

Deliverables and Outputs:

- (1) Content analysis, design and development of four Web-based training courses per year.
- (2) A summary of progress made and final products will be included in the semi-annual progress report.

CONTRACTS

Project: Web-based Training

Contract Recipient: JPL Productions

Four-year Project Starting July 1, 2006

Estimated Expenditure for FY08-09: \$243,935

Goal: With a new contract with JPL Productions continue to design, develop, and deploy web-based training courses, and train DEP staff on development of Web-based training courses using the Aspen LCMS, including development of templates in Aspen

and other technical aspects of using the software. This will increase DEP's capability to design, develop and deploy Web-based training courses quickly and effectively. These courses will focus on regulatory topics, resulting in current and accurate regulatory training that is easily accessible by operators and DEP staff. The on-line courses will not only make regulatory training available all the time, but will allow operators to earn continuing education credits while learning how to comply with the regulations. This will ensure continuously available training for the water industry without having to wait for a scheduled classroom course, increase efficiency of training, and eliminate the need for travel expenses for instructors and learners. On-line courses will also allow learners to learn at their own convenience and their own pace.

Deliverables and Outputs:

- (1) Six to eight select DEP staff to become self-sufficient in the complex skill of designing and developing on-line training courses.
- (2) Six new Web-based on-line regulatory and technical training courses per year to add to the catalog of Web-based courses on EarthWise Academy.

CAPABILITY ENHANCEMENT

NEW STAFFING

Number of FTEs: 10 located in the Regional Offices, Field Operations Deputate

Program: Drinking Water System Compliance Assistance Program

Goal: In order to deal with current and future regulations dealing with the Arsenic Rule, the Stage 2 - Disinfectant/Disinfection Byproducts Rule, the Long Term 2 Enhanced Surface Water Treatment Rule, the Groundwater Rule, revisions to the Total Coliform Rule, the Radon Rule etc., public water suppliers will need assistance understanding monitoring and reporting requirements, how compliance is determined for each rule, what happens in the event of non-compliance and what is required to return to compliance. Suppliers also need to be kept apprised of potential simultaneous compliance issues related to the new or revised regulations. In addition, these new rules further increase the need for each of these systems to have knowledgeable and certified drinking water system operator(s). To adequately cover the state, one to two additional environmental protection compliance specialists are needed in each of the six regions. The new staff is needed to ensure that the small systems can be reached and properly trained within the short implementation time periods that often accompany a new or revised regulation. They will also provide technical assistance where appropriate in dealing with systems having difficulty with meeting current regulatory requirements and work with the staff involved in COAP.

Outputs:

- (1) A Small System Newsletter to highlight upcoming regulatory changes
- (2) Two training events each year at three locations across the state. This will result in approximately 200 owners and operators receiving training each year.
- (3) A summary of progress made and finalized work products will be included in the semi-annual progress report.

Program: Pennsylvania Drinking Water Information System (PADWIS)

Number of FTEs: One located in Central Office, BWSFR, Harrisburg

Goal: Pennsylvania will use set-aside funds to support and enhance activities funded under the Public Water System Supervision grant. Staff will maintain and update compliance programming for new reporting requirements and implement automated compliance systems for new regulations. DEP uses PADWIS to maintain

detailed information about all public water systems regulated by DEP to determine compliance with the Pennsylvania Safe Drinking Water Regulations and to meet EPA's federal reporting requirements. Staff will complete the compliance programming in PADWIS for the recently promulgated Stage 2 Disinfectants/Disinfection Byproducts Rule, Long Term 2 Enhanced Surface Water Treatment Rule, and Ground Water Rule. In addition, as part of the mandatory electronic reporting requirements under the Chapter 109 General Update, staff will assist in transitioning approximately 8,000 monthly drinking water sample contaminant results data from paper forms to an electronic format. The workload and outputs of this position do not involve complex, higher level SAS and Java programming services needed to implement automated compliance systems for new regulations (see "Contracts" under "Capability Enhancement" in this workplan).

Outputs:

- (1) Hire and train staff
- (2) Program PADWIS to adhere to new reporting requirements in sufficient time to meet reporting deadlines of new rules.
- (3) Transition 8,000 monthly drinking water sample contaminant results data received on paper to an electronic format.
- (4) A summary of progress made and finalized work products will be included in the semi-annual progress report.

Program: Set-Aside Grant Management and Program Analysis

Number of FTEs: One located in Central Office, BWSFR, Harrisburg

Goal: To provide a needed focus for the management and implementation of activities and projects funded by the Set-Aside grant and to provide an overview and periodic analysis of progress made to insure resources are appropriately utilized in an expeditious manner.

Outputs:

- (1) Hire and train staff.
- (2) Periodic reports and analyses of fund expenditures and staff time coded against the grant.
- (3) Grant workplan and semi-annual progress reports.

CONTRACTS

Project: Pennsylvania Drinking Water Information System (PADWIS)

Contract Recipient: Computer Aid, Inc.

Three-year Project Starting July 1, 2006

Estimated expenditure in State FY 08-09: \$350,000

Goal: To provide SAS programming services as needed to implement automated compliance systems for new regulations. These programming services include SAS and Java for regulation changes and web-based applications. DEP uses a customized online data management system, PADWIS, to maintain detailed information about all public water systems regulated by DEP to determine compliance with the Pennsylvania Safe Drinking Water Regulations and to meet the federal reporting requirements of the EPA. In addition, data entry services are needed to record drinking water sample contaminant result data submitted on paper forms by certified laboratories. On average, the drinking water program receives 25,000 sample results monthly, and approximately

50% of these results are submitted on paper forms. Drinking water sample contaminant result data are inputs into the automated compliance systems.

Deliverables and Outputs:

- (1) Continued maintenance and data entry into PADWIS.

Project: eFACTS

Contract Recipient: Transfer Technologies

Four Year Project Starting July 1, 2006

Estimated expenditure in State FY 08-09: \$75,000

Goal: In addition to PADWIS, DEP uses eFACTS, a centralized data management system for all programs, to track permit and enforcement activities. The tracking of certificate licenses for the operation of drinking water and wastewater systems is done utilizing eFACTS. In addition to everyday maintenance and technical support, modifications and enhancements to eFACTS are needed to streamline the administrative processes for the implementation of the Operator Certification Program. This includes:

- Web enabled operator certification applications.
- Web enabled continuing education discrepancy reports.
- Electronic processing of operator certification fees.
- Electronic certification examinations. (If feasible)

Deliverables and Outputs:

- (1) Web-based application process and electronic processing of fees.
- (2) Feasibility Study for the implementation of electronic testing.

Project: Global TAPS and Training Provider Program Development

Contract Recipient: Transfer Technologies

Three Year Project to Finish: June 30, 2009

Estimated expenditure in State FY 08-09: \$75,000

Goal: To provide more efficient processing for the training approval process and enhance the capabilities of training providers a web-based data management system is needed to track the approval of training providers, training courses and the information provided by training providers upon completion of training courses. This web-based application, called "Global TAPS" will integrate an existing database used to track training approvals with the Earthwise Academy and eFACTS.

Deliverables and Outputs:

- (1) Global training approval process system ("Global TAPS") that will integrate TAPS, Aspen, and eFACTS

Project: Earthwise Academy Maintenance

Contract Recipient: Transfer Technologies

Continuing Program

Estimated expenditure in State FY 08-09: \$150,000

Goal: The Earthwise Academy is DEP's web-based university. In the past, the Academy has been hosted through a contract with SumTotal Systems. In order to more effectively manage this website, DEP has decided to host this site internally. Ongoing funding is needed to maintain the EarthWise Academy portal and Aspen software, and upgrade Aspen software when beneficial to DEP.

Deliverables and Outputs:

- (1) Web accessible information on all training sponsors and approved training courses.
- (2) Continuing education transcripts for all Pennsylvania certified operators.

- (3) Registration and administration for approximately 300 contact hours of classroom and web-based training.

Project: Laboratory Analyses for PWSS Program

Contract Recipient: DEP Bureau of Labs

Continuing Program

Estimated expenditure in State FY 08-09: \$150,000

Goal: In order to retain primacy under the PWSS Program, this project will be utilized to support and maintain DEP's laboratory capability.

Deliverables and Outputs:

- (1) Analysis of approximately 2000 samples annually collected by field staff as the result of surveillance and compliance activities at public water systems.

Project: Statewide Staff Training Conference

Contract Recipient: To be determined each year through the Commonwealth's procurement and bidding process

Continuing Program

Estimated expenditure in State FY 08-09: \$40,000

Goal: A training conference for DEP water supply staff to update staff on new regulatory initiatives, highlight new technical information, or address program compliance and data management issues each spring. A second training conference will also be held for DEP water quality staff whose work impacts water supply systems each fall. The same session will be held twice so that all staff can receive the training while still maintaining staff support in regional and district offices. Sessions will be two to three days long. Cost includes contract for training site including rooms and meals. Costs incurred for meals will be for meals that are part of a working session. The Field Operations Deputate will cover travel costs for DEP field staff.

Deliverables and Outputs:

- (1) Training for up to 200 staff, held every June and October

Project: Community Water System Collaboration Project, Phase 1

Contract Recipient: US Geological Survey, Bureau of Information Technology Contractor

Two Year Project to Start August 1, 2006

Estimated Expenditure in State FY07-08: \$ 67,455 (Phase 1)

Goal: Pennsylvania was one of three states chosen by the United States Geological Survey (USGS) to pilot an infrastructure location study. The pilot study is to identify the best community water supply (CWS) locations and develop a system for consistent locations in state databases and EPA's SDWIS database. If any metadata codes are inconsistent with the national metadata standards it will be replaced with the appropriate code. This project involves the three pilot states of Colorado, Georgia, and Pennsylvania.

Phase I will focus on (1) completing quality assurance of location data for water sources (wells and intakes), (2) developing links between the Pennsylvania version of SDWIS (PADWIS), other DEP databases, and the US Geological Survey National Water Information System (NWIS) to share information on CWS withdrawal locations, construction, and aquifer or surface water utilization and (3) using SDWIS codes in a nationally consistent manner.

This project will significantly enhance Pennsylvania's capabilities to implement the water planning and PWSS programs to promote long-term sustainability of Pennsylvania's

drinking water system infrastructure. A workplan for Phase 2 will be completed and submitted upon completion of Phase 1.

Deliverables and Outputs:

- (1) A national water-system infrastructure database with geographically referenced, accurate information on all sources for CWS that can be used by local, state, and federal program managers.
- (2) A methodology for compiling, storing, securing, and delivering critical water infrastructure information for use by local, state and federal program managers.

Project: Community Water System Collaboration Project, Phase 2

Contract Recipient: US Geological Survey, Bureau of Information Technology Contractor

Two Year Project to Start when Phase 1 is completed.

Estimated Expenditure FY08/09 (Phase 2): \$70,000

Goal: Phase 2 of the project will focus on developing a GIS application to keep PWS service areas updated. PWS service areas have been developed from paper, GIS shapefiles and AUTOCAD from 2001 to 2006. In high growth areas the polygon for any given water supplier can quickly become outdated. The application will either display the service area polygons for each public water supplier and the individual water supplier will verify through paper maps or GIS shapefiles sent to DEP or provide a means for on screen digitizing/editing the public water supply polygon with review and acceptance by DEP staff before the layer becomes a part of the master polygon layer. An up-to-date layer can be used to estimate current and projected public water supply population served and demand. This information can be compared to the water suppliers supply available to identify those systems which should build capacity to meet projected demand.

Deliverables:

- (1) GIS application which provides a means for DEP to update the Public Water Supply Service Area boundary layer on an annual basis.

Project: Sustainable Infrastructure Initiative

Contract Recipient: EPA Contractor (In-kind Services)

Project Ends: October 1, 2008

Estimated Expenditure in State FY08-09: \$15,000

Goal: Based on a national study done in 2002 by EPA; available funding sources for the long-term construction, operation and maintenance of drinking water system infrastructure is significantly less than projected need. Efforts to diminish this gap to insure the sustainability of the nation's, and Pennsylvania's, drinking water infrastructure into the future are needed. Consistent with EPA's initiative, the ultimate goal of this project is to develop enhancements to Pennsylvania's drinking water program in the four priority areas of better asset management, full-cost pricing, watershed approaches to infrastructure protection, and efficient water use. Results of this project will be incorporated into the recommendations and future implementation of the State Water Plan now being developed in accordance with Act 220, the Water Resources Act, aspects of the PWSS Program and will serve to prioritize and guide implementation activities for the many of Pennsylvania's outreach and compliance assistance programs such as the Capability Enhancement and Outreach Assistance Provider Programs. Essential elements of this study include:.

1. The completion of a pilot project for the 2008 Clean Water Needs Survey using EPA Headquarters funding and DEP program staff. Protocols developed for this pilot will

be modified to do a similar data collection effort of drinking water systems. This data collection will parallel existing efforts to collect the data for the 2007 Drinking Water Needs Survey.

2. The completion of a drinking water affordability study. Completion of a gap analysis for the financing of drinking water infrastructure for Pennsylvania that defines the cash requirements to maintain the current levels of service minus investments at current rates (user charges, private borrowing, pay-as-you-go, grants, and subsidized loans). The gap will be calculated in increments no greater than 5 years over a total period of 20 years. All calculations will be in current-year dollars. Cash requirements need to be described in terms of the five Drinking Water Needs Survey project types. Costs will be presented on a macro (statewide) scale and the regional state water planning basin level and supported, where possible, with micro (individual system) samples.
3. A survey of local officials at drinking water systems to get a better understanding of current Asset Management methods, the adequacy of current user charge structures and rates, the differences between true (as best as is understood) 20-year needs and the needs currently contained in existing planning materials such as the Drinking Water Needs Survey and the adequacy of existing operation and maintenance investments relative to cost-effective levels of operations and maintenance.
4. A final report. [*The proposed increase of \\$5,000 \(FY07-08\) and \\$15,000 \(FY08-09\) is to obtain the additional contractor support needed to analyze the data and transfer the ability to DEP staff to manipulate the database for future analyses. The additional training from the contractor will result in DEP staff being able to complete the final report without contractor support.*](#)

Deliverables and Output:

The project will be done as In-Kind Services using an approved EPA Contractor.

Outputs will include:

- (1) Data gap analysis for Pennsylvania's drinking water system infrastructure.
- (2) Affordability study.
- (3) Final report.

EQUIPMENT AND SUPPLIES

1 Vehicle -- To support the Protection of Source Water Through Optimization of POTWs Program.

Justification:

To achieve the goals of this program, new staff will need to travel a great deal across the state to complete their evaluations and work with POTWs to optimize their processes. To improve the effectiveness of these individuals, a vehicle is included in the resource request to ensure that these staff has a dedicated means to travel, store and transport the necessary field equipment and technical needed to perform their tasks. Without additional assigned vehicles, these individuals would have to compete with other staff for a very limited number of state vehicles that may or may not be available when needed, load and unload a "pool" vehicle each time it is used, etc. All of those activities take time away from the goals and objectives of these individuals and; with no guarantee that a

pool vehicle will be available, their efforts to be in the field when needed may be seriously impacted.

6 Vehicles – 1 per region to support the Drinking Water System Compliance Assistance Program.

Justification: The compliance assistance activities will require the proposed new regional staff to travel a great deal across each of the regions to individually assist small systems as they experience difficulty with each new regulatory requirement as well as to present information and training to groups of suppliers, operators, municipal officials, the public served by the impacted systems, etc. To improve the effectiveness of these individuals, vehicles are included in the resource request to ensure that these staff has a dedicated means to travel to the systems throughout the region and to store and transport the necessary field equipment and technical information needed to perform their tasks. Without additional assigned vehicles, these individuals would have to compete with other staff for a very limited number of state vehicles that may or may not be available when needed, load and unload a "pool" vehicle each time it is used, etc. All of those activities take time away from the goals and objectives of these individuals; and, with no guarantee that a pool vehicle will be available, their efforts to be in the field when needed may be seriously impacted.

1 Vehicle - Water Resource Planning and Protection Initiative

Justification: To insure coordination and implementation of water planning and source protection initiatives as part of this program, staff will need to travel to all areas of the state on a regular basis. One vehicle for the use of everyone in this new section will insure effective use of staff time by eliminating the need to compete for other "pool" vehicles and will help them with the transport of necessary AV and field equipment.

Personal Computers:

2007/2008:

Laptops with docking stations and monitors were purchased for all 10 new regional office staff. Desktops were purchased for the new PADWIS, Emerging Contaminants, Operator Certification Compliance and one of the Water Planning central office program staff, graphic workstations for the two new staff for web training, and laptops with docking stations for the two POTW program staff and two of the water planning staff. Monitors were also purchased for all.

2008/2009:

The purchase of desktop computers and new monitors are proposed for the new program analyst and one management technician whose salary is covered with state funds. The management technician is responsible for the processing of contracts and invoices of projects funded by the set-aside, oversight of the outreach assistance program funded in the 15% set-aside and will support the program analyst as needed.

Field Supplies:

The following table lists the field supplies bought for the regional office compliance specialists. This equipment is needed to facilitate and document their compliance assistance efforts and complete enforcement actions, when appropriate.

Item	Quantity	Cost per item	Total
DR 820 Colorimeter	9	674.24	\$6,068.16
DR 890 Colorimeter	6	999.60	\$5,997.60
DR Carry Case	15	89.92	\$1,348.80
DPD Free Chlorine Reagent	10	18.33	\$183.30
DPD Total Chlorine Reagent	10	18.33	\$183.30
SensION2 portable pH/ISE Meter	4	590.60	\$2,362.40
Nitrate ISE Analysis Package	4	453.00	\$1,812.00
2100P Portable Turbidimeter	4	820.26	\$3,281.04
StablCal Turbidity Standards Calibartion Kit	4	92.46	\$369.84
SensION5 Conductivity Meter	4	506.92	\$2,027.68
Digital Titrator Kit	4	219.00	\$876.00
Delivery Tubes for digital titrator	4	7.25	\$29.00
Digital Titrator Titrant	4	13.95	\$55.80
Digital Titrator Titrant Cart	4	14.15	\$56.60
Fluoride Combination Probe	4	326.00	\$1,304.00
Subtotal			\$25,955.52
FE - 310 Olympus Digital Camera	4	131.24	\$524.96
Olympus B90SU 4AA Quick Charge Kit	4	28.49	\$113.96
AC Adapter Blister Pack	4	28.49	\$113.96
1 GB XD M Pic Card	4	19.29	\$77.16
Soft Leather Camera Case	4	11.28	\$45.12
Subtotal			\$875.16
High-end Laptop - Dell w/ docking station & carrying case	10	1,910.84	\$19,108.40
2nd battery - 9 cell lithium /ion	10	87.12	\$871.20
Monitor - Dell	10	249.00	\$2,490.00
Subtotal			\$22,469.60
Etrex Legend Garmin GPS Units	10	161.00	\$1,610.00
Subtotal			\$1,610.00
Total Equipment Charges to 10% set-aside			\$50,910.28

If additional equipment or supplies is needed, the procedure for pre-approval of these purchases by EPA will be followed.

SECTIONS 1452(k)(1)(B) and (k)(1)(D) OTHER AUTHORIZED ACTIVITIES (15%)

These set-aside funds will be used to enhance ongoing program efforts relative to source water protection, capability enhancement and operator training and certification, as described below. These need not be matched with state resources.

A summary of actual expenditures and encumbrances for this set-aside is presented in Figure 3.

OUTCOMES

Source Water Protection

- Percent of source water areas for community water systems that achieved minimized risk to public health through substantial implementation of a source water protection strategy.
- Percent of source water areas for community water systems that have source water protection strategies in place.

Capability Enhancement

- Percent of population served by filter plants that have Commendable or Satisfactory Filter Plant Performance Evaluations.
- Percent of filter plants that have Commendable or Satisfactory Filter Plant Performance Evaluations.
- Percent of population served by water supply systems that meet all health-based standards.
- The elimination of public water systems that are not technically, managerial or financially capable to operate in compliance with all existing and new drinking water regulations through the design and construction of needed system upgrades and the improvement of system staff capabilities.
- A reduced risk to public health by more rapidly returning systems to compliance with regulations by addressing MCL violations, monitoring and reporting violations and operational defects identified through inspections and sanitary surveys.

SOURCE WATER PROTECTION

(NEW / EXISTING) STAFFING (FORMERLY CWA 106)

Program: Ground Water Protection (Regions)

Number of FTE's: 2.3 FTE

Goal: Implement the Ambient and Fixed Station Ground Water Quality Monitoring Program. Conduct review and make recommendations on ground water reports and permits for land application and spray irrigation of waste water and review of ground water components of municipal waste water planning. Staff responds to program related complaints.

Outputs:

Regional staff will design, plan and conduct sampling of four Ground Water Quality Monitoring networks for selected ground water basins.

Conduct permit reviews within established guidelines
Respond to complaints within established time frames.

CONTRACTS

Project: Develop an interactive data system with the SWAP GIS Tool and Source Water Information System, and conduct regional staff training.

Contract: Penn State University, Penn State Institute on the Environment (PSIE)

Estimated expenditure in State FY 08-09: \$20,000

Goal: To establish a dynamically linked data system consisting of the SWAP GIS tool output, the Source Water Information System (SWIS) and PADWIS. The SWAP GIS tool outputs on the source water assessment results will be automatically in-put to the Source Water Information System. Likewise, system and source information will be in-put to Source Water Information System and PADWIS to the SWAP GIS tool. The system will provide the necessary data for accurate and complete reporting, program management and analysis for the Source Water Assessment and Protection Program.

Deliverables:

Dynamically linked data system between the SWAP GIS Tool and SWIS
Staff Training session and necessary materials

Project: Ground Water Quality Data Analysis and Monitoring Network Tools

Contract: US Geological Survey

Estimated expenditure in State FY 08-09: \$20,000

Goal: Research and develop data analysis tools for ground water quality data analysis to provide statistically significant water quality characteristics of aquifers and geolithic units of Pennsylvania. The tools will include functions to design ground water monitoring networks. The tools will be programmed into the RBDMS Ground Water Monitoring data system.

Deliverables:

Report on the tools considered and selected for the application and rules for their use.
The data analysis tools are to be included in the Ground Water Quality Monitoring data system, RBDMS for Water.

Project: Master Well Owners Network

Contract: Penn State University - Penn State Institute on the Environment (PSIE)

Estimated expenditure in State FY 08-09: \$30,000

Goal: The Master Well Owners Network (MWON) is a network of trained volunteers dedicated to promoting the proper construction and maintenance of private water systems in Pennsylvania. MWON provides training and support to volunteers on private water wells and their construction. The MWON develops and maintains outreach and training materials. The volunteer trainers have personally provided information to over 15,000 well owners.

Deliverables:

- (3) MWON will provide training to over 100 volunteers
- (4) MWON will support the over 300 present volunteers
- (5) MWON will maintain the education and outreach materials and website .

Project: Technical Assistance for Source Water Protection for Community Water Systems (Ground Water)

Contract: Spotts, Stevens and McCoy

Estimated expenditure in State FY 08-09: \$925,485

Continuing Program

Goal: Provide technical assistance to community water systems and municipalities to develop and implement local source water protection programs for primarily ground water served community water system aimed at addressing susceptibility of the source to contamination. Local source water protection programs must meet the minimum elements outlined by DEP. Such programs would include features such as:

- Rigorous wellhead protection area delineation
- Contaminant source inventories
- Local or regional land use planning
- Zoning ordinances
- Educational programs
- Landowner incentives

Deliverables and Outputs:

- (1) Quarterly progress reports and invoices from grantees for grants awarded through July 2006.
- (2) Finalization and award of a contract through the state's Request for Proposal process to provide services after July 2006 to community water systems and local communities to develop local source water protection programs meeting the DEP's minimum elements for program approval.
- (3) Approximately 40 projects are started each year. In addition, approximately 30 projects will be completed each year.

GRANTS

GRANTS

Project: Risk Based Data Management System (RBDMS)

Grant Recipient: Ground Water Protection Council

Estimated expenditure in State FY 08-09: \$35,000

Goal: Develop a Risk Based Data Management System (RBDMS) for Water for Pennsylvania. The data management system will electronically receive, store, analyze and display the results of ground water quality monitoring data. The system will output and display in a GIS format and will export ArcGIS compatible data. The system will be interactive on the internal and external networks.

Deliverables:

- (1) Customized RBDMS for Water for Pennsylvania.
- (2) GIS functionality

Grant Recipient: PA Rural Water Association (PRWA)

Estimated expenditure in State FY 08-09: \$200,000

Continuing Program

Goal: Provide technical assistance and training to at least 20 community water systems and municipalities to develop and implement local wellhead protection (WHP) programs and watershed protection programs. Assistance to local programs includes aspects such as guiding steering committees, public participation, contaminant source inventories, protection area management and contingency planning. Training activities include local workshops and an annual statewide conference.

Deliverables and Outputs:

- (1) Assistance will continue for 30 or more water systems as documented in the semi-annual progress reports.
- (2) Training workshops for development of local source water protection programs.

CAPABILITY ENHANCEMENT

NEW STAFFING

Program: Distribution System Optimization

Number of FTEs: One located in Central Office, BWSFR, Harrisburg.

Goal: To develop a statewide Distribution System Optimization program which establishes distribution system specific best management practices and encourages water system staff to work towards water quality goals. This program will enhance the technical, managerial and financial capability of the critical distribution system portion of drinking water systems in Pennsylvania.

Central Office staff take the lead on developing, implementing and managing the program statewide. Short-term Regional office support is encouraged and ultimately knowledge, skills, and abilities will be transferred to regional office staff in the long-term.

Outputs:

- (1) Survey of distribution system operating staff.
- (2) Installation of in-line monitoring equipment in distribution systems to gather continuous monitoring data in various systems for informational purposes, introduce water system personnel to the capabilities of continuous in-line monitoring equipment and introduce water systems to the concept of additional monitoring and baseline water quality establishment, which can be used in the early detection of deteriorating water quality resulting from treatment breakdown or contamination.
- (3) Written assessment (self- and site-) procedures
- (4) Training of Regional Office staff

EXISTING STAFFING

Program: Partnership for Safe Water, Filter Plant Performance Evaluation Program, the Area Wide Optimization Program

Number of FTEs: Three located in Central Office, BWSFR, Harrisburg.

Goal: To provide statewide program development, management and coordination of these programs to enhance the technical, managerial and financial capability of drinking water systems in Pennsylvania.

Outputs: These staff supports regional office efforts to complete the evaluations. Specific outputs are delineated for the program below.

Program: Partnership for Safe Water, Filter Plant Performance Evaluation Program

Number of FTEs: Six located in the Regional Offices, Field Operations Deputate. the Area Wide Optimization Program

Goal: To implement these programs in the field to enhance individual system's technical, managerial and financial capability of drinking water systems in Pennsylvania.

Outputs:

- (1) 100 systems evaluated per year.

- (2) A summary of progress made and final products will be included in the semi-annual progress report.

Program: Source Water Assessment and Protection Program

Number of FTEs: Twelve located in the six Regional Offices, Field Operations Deputate

Goal: To conduct source water assessments for all sources serving public water systems, to provide support for surface water assessment activities, complete requirements of the Surface Water Infiltration Protocol (SWIP), support, promote, and track development and implementation of local source water protection programs, promote and facilitate inter program support of local source water protection programs and to promote the long-term sustainability of Pennsylvania's drinking water infrastructure through the implementation of the Capability Enhancement Program within a watershed approach.

Outputs:

- (1) Support development of local source water protection (strategies) programs for 8% of community water systems without a plan.
- (2) Support substantial implementation of local source water protection (strategies) programs for 8% of community water systems without substantial implementation.
- (3) Review and approve 80% of the source water protection plans submitted for each year.
- (4) Assist development of contractor work plans for 100% of CWS seeking technical assistance through SWAP TAP
- (5) Conduct source water assessments for 20% of the sources permitted after 1999 needing assessments.
- (6) Conduct source water and wellhead protection assessments for all new sources permitted for community water systems.
- (7) Update 30% of the source water assessment reports each year based on sanitary survey and inspections completed.
- (8) Report on the implementation of 30% of the source water protection programs implemented by community water systems based on sanitary survey and inspections completed.
- (9) Review and send findings to CO for all received Source Water Protection Grant Progress reports.
- (10) A summary of progress made and finalized work products will be included in the semi-annual progress report.

The work done by these 12 FTE's is incorporated into the state's Capability Enhancement Program strategy. This will enable the expansion of the Capability Enhancement Program to incorporate a watershed approach into the technical, managerial and financial assistance provided to drinking water systems. By doing this, the technical and managerial capabilities of the systems will be improved. In addition, the state's strategy parallels EPA's four-pillar approach to Sustainable Infrastructure. [This strategy was revised and submitted to EPA for review in May 2008. This draft strategy was published in the Pennsylvania Bulletin on June 28, 2008. Until the public participation process is completed and final approval from EPA is received,](#) this workplan is considered a supplement to the state's strategy.

Number of FTEs: 13 located in the Regional Offices, Field Operations Deputate

Program: Drinking Water Protection Initiative

Goal: The addition of these 13 people to the regional offices is designed to expand the capability of the PWSS Program to protect public health. The addition of these staff will

enable the PWSS Program to address the backlog of sanitary surveys and full inspections, expedite the response time to potential violations, improve the timely reporting of violations to EPA and reduce the large number of systems on the most recent list of significant non-compliance. Deliverables and outputs will be minimal for the first year due to the steep learning curve and the need for new staff training.

Deliverables and Outputs:

- (1) Completed sanitary surveys.
- (2) Responses to violations, focusing on systems that are significant non-compliers
- (3) Reviews violations entered into PADWIS.
- (4) Other activities designed to enhance the capabilities of the state's PWSSP program to protect public health.
- (5) A summary of progress made and finalized work products will be included in the semi-annual progress report.

GRANTS

Program: Partnership for Safe Water

Grant Recipient: PA Section - American Water Works Association

Continuing Program

Estimated expenditure in State FY 08-09: \$75,000

Goal: Provide public relations and public education for filtered surface water systems to participate in the national Partnership for Safe Water. Execute a partnership grant with the PA Section of the American Water Works Association (PA-AWWA) to support implementation of the national Partnership for Safe Water program in Pennsylvania. This will enable PA-AWWA to hire staff to support DEP's initiative to optimize water quality and reduce risks of a waterborne disease outbreak through active participation in the Partnership at all filter plants.

Deliverables and Outputs:

- (1) Retain membership and progressively move the existing 109 water supply partners to Phases III or IV.
- (2) Assist 46 participants in completing their Phase III self-assessments, as measured by peer-reviewed self-assessment reports.
- (3) Approximately 50 visits to Pennsylvania's surface water treatment plants to explain the benefits of the Partnership program and grow the overall membership.
- (4) Implement a Partnership media campaign to improve local public awareness of the partners and their accomplishments.

OTHER TRAINING, OUTREACH AND TECHNICAL ASSISTANCE

GRANTS

Program: Operator Training Program

Grant Recipient: The Pennsylvania State University at Harrisburg

Continuing Program

Estimated expenditure in State FY 08-09: \$105,000

Goal: To operate and maintain a drinking water training center at Penn State Harrisburg. The training center will provide state-of-the-art classroom, distance education and pilot treatment training facilities for DEP to conduct operator training and testing. Note: Initial funding for the training center was provided from the PWSS grant to partially cover construction costs. DWSRF set-aside funds are used for ongoing support of the center and purchase of related training equipment.

Deliverables and outputs:

- (1) Pilot treatment lab and additional workstations are completed.
- (2) Training courses designed around these workstations and the pilot treatment lab are completed.
- (3) Ongoing operation and maintenance of the facility to deliver approximately 120 classes using 32 different drinking water system training courses per year.
- (4) Refinement or development of one training module per year to improve system staff technical, managerial and financial capability.

SUBSIDIES

Program: Outreach Assistance Provider Program (OAPP)

Continuing Program

Estimated Expenditure for FY08-09: \$75,000

Goal: This program utilizes part-time wage payroll instructors who are certified operators to provide on-site technical, managerial and financial assistance to water system owners and operators. The program responds to system needs identified by DEP regional staff, local government associations or the system itself. On-site assistance and training is provided through a combination of water videos, classroom and web-based training, and one-on-one assistance to address specific system problems.

Deliverables and Outputs:

- (1) Approximately 40 systems per year participate in the program.

CONTRACTS

Program: Small Systems Engineering Services

Contract Recipient: Alfred Benesch & Company

Project Ends: October 1, 2008

Estimated expenditure in State FY 07-08: \$540,000

Goal: To provide various engineering services/activities to assist small drinking water systems with the implementation of regional solutions and to address deficiencies within their systems, particularly public health and safety issues such as recurring water shortages and violations related to various contaminants. The approach to solving a particular small water system's deficiencies will be determined jointly by representatives of the participating small water system, DEP and the consulting engineer.

Engineering assistance will include, but not be limited to, the following types of tasks:

- Preparation of site-specific work plans
- Data gathering and review
- Preparation of feasibility studies
- Preparation of funding applications
- Participation in PENN STEP
- Assistance with the selection of appropriate technologies to address specific water quality concerns
- Assistance with completion of required pilot plant studies
- Implementation of regional solutions
- Engineering analysis of special concerns, such as recurring water shortages
- Preparation of plans and specifications when required
- Preparation of required permit applications
- Construction management assistance, construction inspection, and start-up
- Operation & maintenance assistance
- On-site training

Deliverables and Outputs:

- (1) Fieldwork and engineering designs for the projects where a final work plan has been approved. (There are approximately 18 to 20 active projects per year)
- (2) Development of site-specific work plans for new small systems who have completed and returned the "Information Request Form" and who have been accepted into the program. (There are approximately 10 new projects started each year, depending on the number of active projects that are completed and closed out)
- (3) Project-scoping meetings scheduled.
- (4) Project summaries and success stories as part of semi-annual progress reports.
- (5) Updates to the database and web site.

Project: Small Systems Managerial and Financial Capability Enhancement Program (Ground Water)

Contract Recipient: To be determined using RFP

Project Begins: October 1, 2008

Estimated Expenditures in FY08-09: \$300,000

Goal: This project is not a new activity, but a combination of services provided in previous workplans by RCAP, Engineering Services and Consolidation Grants Program. Services to be provided include engineering expertise and assistance in the design and application of affordable treatment technologies, legal assistance to promote regionalization and consolidation concepts where appropriate, financial management assistance to develop appropriate rate structures, business plans and long-term budgets and technical assistance to implement asset management programs.

Deliverables and Outputs:

- (4) A Request For Proposals to solicit private consultants and engineering firms to provide the services listed to systems and further promote the basic principles of sustainable infrastructure through managerial and financial capability enhancement, and small system consolidation.
- (5) Project summaries for each completed project will be included as part of the semi-annual progress reports.
- (6) Success stories will be included in the Capability Enhancement Program Annual Report.

Program: WTP Tracer Studies

Contractor: Gwin, Dobson and Foreman

Three Year Project Started July 1, 2005

Estimated expenditure in State FY 06-07: \$105,000

Goal: Perform tracer studies at approximately 106 surface water treatment plants. The target facilities serve at least 10,000 persons but less than 50,000 persons (86 facilities). In addition, tracer studies will occur at smaller plants that have changed disinfection design and practice as a result of previous tracer studies (20 facilities). Proper disinfection contact time is more important than ever due to conflicting goals established under the Long Term 1 and 2 Surface Water Treatment Rules and Stages 1 and 2 of the Disinfectants/Disinfection Byproducts Rules. The studies will prepare water suppliers for the "balancing act" of maintaining adequate *Giardia* and virus inactivation at all times while avoiding over-disinfection that can lead to byproduct formation. Currently, surface water suppliers may be unaware of the actual short-circuiting that is occurring in chlorine contact basins. By default, DEP's field staff or the water suppliers have assigned a "rule-of-thumb baffling factor" (i.e., short-circuiting estimate) that may not realistically reflect conditions. Additionally, many of the suppliers do not have the technical expertise to conduct tracer studies.

Deliverables and Outputs:

- (1) Approximately 35 tracer studies per year at surface water treatment plants.
- (2) A final report on the results of each study to the water supplier and DEP staff so that the information will become a permanent part of the water system's file for use in future permitting and regulatory activities.
- (3) In the last contract year, (1) provide a refined set of detailed, operator-friendly instructions on tracer studies that DEP can share with all of the state's surface water suppliers, and (2) provide a summary that correlates the baffling factors with the actual tracer study results.

EQUIPMENT AND SUPPLIES

6 Vehicles – 1 per region to support the Drinking Water Protection Initiative. These vehicles will be purchased in the FY08/09, depending on usage rate of the new vehicles purchase in FY07/08.

Justification: The program implementation activities will require the proposed new regional staff to travel a great deal across their respective region. To improve the effectiveness of these individuals, vehicles are included in the resource request to ensure that these staff has a dedicated means to travel to the systems throughout the region and to store and transport the necessary field equipment and technical information needed to perform their tasks. Without additional assigned vehicles, these individuals would have to compete with other staff for a very limited number of state vehicles that may or may not be available when needed, load and unload a "pool" vehicle each time it is used, etc. All of those activities take time away from the goals and objectives of these individuals; and, with no guarantee that a pool vehicle will be available, their efforts to be in the field when needed may be seriously impacted.

1 Vehicle – Outreach Assistance Provider Program

Justification: The coordinator for this program travels all over the state providing hands-on assistance to drinking water systems or meeting with outreach program staff to insure

objectives of this program are met. The vehicle now used by the coordinator needs replaced. It has over 150,000 miles.

Personal Computers:

Laptops, docking stations and monitors were bought for all the new regional field staff for the Drinking Water Protection Initiative. These computers will be replaced every four to five years, depending on current IT replacement protocols.

Field Equipment:

The following table lists the field supplies purchased for the new regional field staff for the Drinking Water Protection Initiative.

Item	Quantity	Cost per item	Total
DR 820 Colorimeter	11	674.24	\$7,416.64
DR 890 Colorimeter	10	999.60	\$9,996.00
DR Carry Case	22	89.92	\$1,978.24
DPD Free Chlorine Reagent	13	18.33	\$238.29
DPD Total Chlorine Reagent	13	18.33	\$238.29
Hardness Reagent	13	50.17	\$652.21
Iron (Total) Reagent	13	17.29	\$224.77
Manganese Reagent	13	45.56	\$592.28
Phosphate	13	23.39	\$304.07
SensION2 portable pH/ISE Meter	10	590.60	\$5,906.00
Nitrate ISE Analysis Package	10	453.00	\$4,530.00
2100P Portable Turbidimeter	10	820.26	\$8,202.60
StablCal Turbidity Standards Calibartion Kit	10	92.46	\$924.60
SensION5 Conductivity Meter	10	506.92	\$5,069.20
Digital Titrator Kit	10	219.00	\$2,190.00
Delivery Tubes for digital titrator	10	7.25	\$72.50
Digital Titrator Titrant	10	13.95	\$139.50
Digital Titrator Titrant Cart	10	14.15	\$141.50
Fluoride Combination Probe	10	326.00	\$3,260.00
Subtotal			\$52,076.69
FE - 310 Olympus Digital Camera	10	131.24	\$1,312.40
Olympus B90SU 4AA Quick Charge Kit	10	28.49	\$284.90
AC Adapter Blister Pack	10	28.49	\$284.90
1 GB XD M Pic Card	10	19.29	\$192.90
Soft Leather Camera Case	10	11.28	\$112.80
Subtotal			\$2,187.90
High-end Laptop - Dell w/ docking station & carrying case	13	1,910.84	\$24,840.92
2nd battery - 9 cell lithium /ion	13	87.12	\$1,132.56
Monitor - Dell	13	249.00	\$3,237.00
Subtotal			\$29,210.48
Etrex Legend Garmin GPS Units	13	161.00	\$2,093.00
Subtotal			\$2,093.00
Total Equipment Charges to 15% set-aside			\$85,568.07

If additional equipment or supplies is needed, the procedure for pre-approval of these purchases by EPA will be followed.

APPENDICES

APPENDIX A - OVERALL SPENDING PLAN SUMMARY

APPENDIX B - SUMMARY OF EQUIPMENT PURCHASES

These appendices and figures for each set-aside are in a separate excel spreadsheet file.