Project Summary

Title:
PA's Innovative Approach for H2O Planning

Applicant:
Pennsylvania Department of Environmental Protection

Project Manager:
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Total Project Cost: Total Budget: $368,352
Requested from EPA: $350,000
Leveraged, Non-Federally Funded Staff Time: $18,352

Project Period: **October 1, 2009- September 30, 2011**

Project Abstract:
The Pennsylvania Department of Environmental Protection (Department) is becoming increasingly more aware that we, citizens and governmental agencies alike, need to be more efficient with our resources. As part of this recognition, the Department has begun to adopt and embrace a concept of integrated water resource planning (IWRP). IWRPs will be built upon four key principles: efficiency, equity, financial and environmental sustainability. Currently, throughout the state there are four uniquely different IWRPs under development with each building a framework that begin to link water planning programs together and highlight how various projects produce multiple benefits. Through the award of a SIG the Department would look to implement key projects that will have been highlighted and selected in cooperation with the local stakeholder groups currently involved in developing the IWRPs. Overall, the funding will: produce on the ground measurable benefits; highlight key components of resource planning; and, begin to look at interagency overlays and permitting activities/enhancements.

Statutory Authority and Flexibility:
Regulatory flexibility may be needed as it relates to stormwater permitting enhancements that may be identified as a key implementation component of the IWRPs.

State Agency Support:
Deputy Secretary of Water Management Cathleen Curran Myers of PADEP is aware of and endorses this proposal. If this proposal is selected in Spring 2009, a letter of endorsement from the Deputy Secretary will be provided with the final work plan.

Pre-proposal Budget Summary:
State: Pennsylvania
Agency: Department of Environmental Protection
Project Title: PA's Innovative Approach for H2O Planning

	Total Project Costs:	Proposed State Leverage Funds:	EPA Funding:
Personnel (incl. Fringe and overhead)	$18,352	$18,352	
Travel			
Capital Equipment			
Supplies			
Contractual			
Other	$ 350,000		$350,000
TOTAL:	$368,352	$18,352	$350,000

Pre-Proposal Project Narrative:

Problem statement

In almost every state, budgets are shrinking and we, citizens and government agencies must do more with less and when it comes to protecting the environment this becomes a critical hurdle to overcome. In Pennsylvania, we are beginning to embrace innovative concepts and ways of doing business in order to save valuable resources whether it is in the air, on the land, in the water or in the budget columns. These new concepts range from investigating green infrastructure measures as opposed to gray infrastructure measures, establishing environmental markets that allow for more cost-effective options to be chosen, to exploring new alternatives that integrate water resource planning methods. These new concepts will positively impact the future of water resources in Pennsylvania.

Background

The concept of integrated water resource planning has been highlighted in Act 220. Act 220, the state Water Resources Planning Act, was signed into law on December 16, 2002, and has since established a Statewide Water Resources Committee and six Regional Water Resources Committees that are collectively comprised of 169 members. The committees are charged with guiding the Department of Environmental Protection (Department) in the development of, and approving and recommending approval to the Secretary, a new State Water Plan (Plan). The Act stipulates that the Plan be completed and adopted within five years of the effective date of the legislation, and be updated every five years thereafter.

Overall, the Plan seeks answers to the following questions: How much water do we have? How much water do we use? How much water do we need? As a functional planning tool, the updated Plan provides Pennsylvanians with a vision, goals and recommendations for meeting the challenges of sustainable water use over a 15-year planning horizon. It consists of inventories of water availability, an assessment of current and future water use demands and trends, assessments of resource management alternatives, and proposed methods of implementing recommended actions. It also analyzes problems and needs associated with specific water resource usage such as navigation, stormwater management, and flood control. One of the key components of the Plan is the Principles Document which provides the three policy priorities to the Department. One of which is developing a framework for Integrated Water Resource Planning (IWRP).

While there is not yet a standard framework used for developing an IWRP, there are several common themes or principles that should be contained within each IWRP. Overall, it should be efficient by combining the Department's planning programs and requirements into one effort in turn being more cost-effective than completing individual planning efforts for each program. An IWRP should look at the equity of the plan when it is adopted by the community/county and the ability to implement the activities identified. The IWRP should be financially sustainable in how it addresses applicable planning and regulatory requirements and determines the bottom line cost figures for overall implementation. The IWRP should be environmentally sustainable in so that the plan

projects into the future what the water quality and quantity issues will be and highlights actions to maintain those resources.

The IWRP incorporates data (including an inventory of the water resources within a defined area), current and projected water management issues, and provides recommendations and actions for future improvements and protection of resources. In particular, an IWRP may include the following:

- Identify existing and planned water and wastewater treatment systems and service areas and significant water resources management facilities.
- Estimate current and future water demands.
- Identify local conservation areas (i.e. protected riparian corridors, conservation easements, wellhead and source water protection areas, preserved farmland etc) and identify environmentally sensitive features (i.e. habitat for rare and endangered plant and animal species, special protection waters etc).
- Identify and consider existing plans such as sewage facilities plans, storm water management plans, watershed protection and restoration plans.
- Identify and describe existing water quality and water resources management problems within the watershed, including those caused by domestic or industrial wastewater, nonpoint sources of pollution, water availability and storm water and floodplain management.
- Project future land-use changes over a ten-year period based on population estimates, anticipated development, planning and zoning requirements, economic considerations and public infrastructure.
- Evaluate and prioritize structural, nonstructural and institutional strategies to address existing water quality and water resources management problems anticipated by future land-use changes, as well as identify and evaluate alternatives for future water demands, including water supply and wastewater demands, potential water conservation and reuse measures and source water protection alternatives.
- Identify financing alternatives, including rate structures for fees and assessments to implement the plan, prioritize a schedule and process for plan implementation, and establish a program for public participation, information and education.

EPA's *Strategic Plan* identifies five major goals and the Department believes that implementation of projects identified in a developed an IWRP will achieve four of the five goals. For example, IWRPs specifically target water resources as part of a comprehensive environmental management strategy. Numerous environmental benefits can be achieved from one project (i.e. wetland establishment can produce stormwater runoff reductions, habitat establishment, carbon storage, nutrient credits etc). IWRPs are developed to enhance current water resource regulations. When an IWRP is developed and implemented, it can achieve a cleaner, more sustainable, water supply; restore and preserve land through the installation of best management practices and provide greater land protection through easements. An IWRP will highlight the importance of the overall ecosystem health and the importance to the community and will looks at innovations in permitting and compliance, including alternatives to structural management choices.

At the time of the pre-application submission, there are four key IWRPs being developed across the commonwealth. Each is developed with a unique objective, and each being completed using funds and development vehicles identified in the Stormwater Management Planning Program (Act 167). All four are a collaborative effort of a willing local government and a stakeholder committee. The four projects include:

- Walnut Creek, Erie County- watershed based effort to address multiple sector impacts with a strong GIS component;
- Washington/Alleghany County- multi-jurisdictional effort to address stormwater and provide for better flood management;
- Lycoming County- county based effort to address achievement of the Chesapeake Bay goals within the county by incorporating multiple planning efforts; and
- Little Chickies Creek/White Oak Dam, Lancaster County- local township and landowner effort designed around a stream restoration project that would enhance stormwater controls, establish greater floodplain and wetlands and become a showcase for the county's green infrastructure plan.

A SIG would provide the Department the opportunity to invest in projects identified by an IWRP. The provided grant funding will not allow the Department to fund full implementation of an IWRP, but it will allow the Department to be selective in the offering which in return will provide the community a springboard for additional implementation. Through this grant opportunity, the Department will use established criteria to identify projects and provide funding to implement the selected projects. End result, is that the funding will advance the plan from the development stage to implementation stage.

The proposed grant project and work underway with developing IWRPs would fall under the authority of the Clean Water Act as well as the Safe Drinking Water Act and ties in, and ultimately, becomes a key showcase for incorporating multiple goals identified in the *Strategic Plan*. This work would also further common Region 3 goals of advancing watershed restoration, developing holistic approaches and developing environmentally responsible and sustainable plans.

Project Objectives

Funding provided would allow the Department to bring the concept of IWRPs to the next stage. It is one thing to have a plan but in order to see the various benefits of interdisciplinary planning, implementation is crucial. This grant project builds and showcases to other communities, throughout the commonwealth and regionally, how interdisciplinary planning is completed and the benefits it has to the overall economic and environmental health of the community. IWRPs have the ability to begin empowering local communities to work together to address common goals and address multimillion dollar issues collectively rather than the current "silo" thinking of having to each independently address the same issue.

A good example of this new planning effort is highlighted by Lycoming County. In particular, Lycoming County is working on an initiative that would address Chesapeake Bay requirements by establishing a county based effort and much of the work leads well

into coordinating all county based plans into an overall IWRP. The third phase of the countywide effort includes evaluating and developing appropriate options such as municipal agreements to share sewage treatment services, establishing a county nutrient credit trading brokerage, developing potential comprehensive strategies for combining various treatment plant upgrade options for multiple plants with nutrient trading to reduce overall costs to end users, initiate initial BMP investments etc. Each entity (point source, non-point source, government and business) in Lycoming could be developing their own plan to meet Bay objectives, but have begun to look collectively to address the objectives locally for greater restoration, cost savings and overall county benefits (i.e. ecotourism, development etc).

IWRPs in Pennsylvania provide an innovative effort that synthesizes multiple planning requirements into one effective and easily implemented plan. This can be compared to the status quo of multiple planning requirements completed through multiple efforts. The IWRP hones in on the concept of strategic planning as well as being fiscally responsible for local residents. And, by funding this grant application, the implementation funding would additionally go beyond the Department's current status quo (i.e. be able to provide funding for plan development but not much for project implementation). IWRPs can begin to provide a targeted approach to watershed restoration and continued improvement.

Implementing activities from approved IWRPs also provides direct experience assisting in establishing an environmental results program (ERP). As discussed in the Request for Initial Proposals, an ERP "is an integrated system of compliance assistance that encourages pollution prevention, self-certification, and statistically-based measurement to gauge the performance of an entire business sector", and both the development of an IWRP and the implementation component start to establish an ERP. For example, the White Oak project has an overall IWRP component of completing a stream restoration project as a means of advancing stormwater controls, nutrient and sediment reductions, habitat restoration and land preservation. A portion of that restoration project includes a riparian buffer zone, which if selected could be installed through the implementation funding provided by the SIG. Through the installation of the riparian buffer zone, two of the many results includes: nutrient reductions credits to be generated and later sold to a local treatment facility; and, the stormwater control can be measured to show the controlled velocity saved by the zone. This one installed project begins to focus in on not only an integrated system approach for multiple pollutant prevention but it can be measured. The White Oak example is just one of many that can be accomplished through the SIG award that the Department is seeking.

Implementation of key projects and showcasing the outcomes of IWRPs will, in the Department's opinion, provide the local governments and stakeholders to be the real leaders in the overall success of IWRPs. Simply, the grant's installation projects become the showcase of stream lining regulatory requirement planning and implements "hot topics" such as green infrastructure and trading into one package that becomes the next wave of discussions.

Methodology or Technical Approach

Not only is the development of the IWRP done in a holistic comprehensive approach but the implementation of key projects would need to follow suit. Specific selection of projects will be dependent ultimately on the final grant award amount but the criteria can be highlighted as to how the Department would look to fund projects, as well as see the grant to completion.

It is anticipated that the selection criteria would include, but would not be limited to:

- The IWRP be at or near completion.
- Of the applicable IWRPs, the Department would compile a list of the projects suited for implementation (i.e. source water protection buffer, retention ponds, stream bank fencing etc). Note, that these projects would be selected from the stakeholder developed IWRP.
- Cost determinations, benefit/reduction amounts and ease of implementation would be determined for each project. This work would be done in coordination with the stakeholder group that developed the plan. Ease of implementation would refer to permitting requirements etc that may be needed for installation as well as project feasibility and coordination (i.e. for a buffer project does it involving one landowner or ten landowners).
- The projects would be ranked based on the overall cost/benefit.
    - If there is a tie in project ranking, it will be broken by reviewing if a project is located in a critical water planning area (as identified by the regional committees established by the State Water Plan), a developed Total Maximum Daily Load watershed or other Department or EPA identified priority area (i.e. Renaissance Watershed, Health Waters watershed etc).
- An appropriate number of projects will then be selected from the list depending on the resources available. Note, the selection of projects will be chosen from a number of the IWRPs and will not all be taken from the same plan, which will foster continued implementation for the selected IWRPs.

The method of selection will be completed in such a way that it starts to focus the attention on projects that can provide the biggest benefits for the least cost. This funding method is believed to be a shift in the norm in which large projects, with large price tags and possibly small or concentrated benefits are funded, rather than looking at targeting funding efforts for an overall impact and/or improvement. This concept of targeting funding is also being completed in other efforts underway by the Department, in particular in coordination with NRCS and three County Conservation Districts and the Conewago Watershed.

Once a project(s) is highlighted by the selection criteria, the Department will follow the appropriate procurement measures to provide the funding to the sub-participants. It is believed a grant to the participants would be most appropriate since the funding is going towards the benefit of the public and the environment. The Department may also consider having the participants provide a match, which would not only show local buy-in and

support for the project but also expand the potential results of the implementation funding.

The request for the grant is for a two year period. The first year would be primarily to determine the selected projects and coordinate with the local participants on providing the implementation funding. The second year of the grant would be focused on project implementation, outreach and summation of results.

Since IWRPs are already established based on a stakeholder process, selection and implementation would be an added complement to that forum. The groups would be a sounding board for the criteria, evaluation and ultimate selection of the projects. In addition, outreach and messaging would be a key component for the stakeholder groups, not only through the grant period but beyond as they begin to showcase their work and efforts for others. As it relates to the grant, the outreach, for the stakeholders, may be focused on the connection between the project completion and the quality/quantity of the resource(s) improvements. Beyond the grant period, outreach may be focused on leveraging continued implementation funding from the community as well as getting other government entities (i.e. local and county) interested in the concept of IWRP.

Outcomes and Measures

The provided grant funding will assist in implementing a IWRP projects that will serve as a template for other ongoing IWRPs. The grant funding will provide enhanced IWRP planning efforts as well as result in environmental benefits. All too often funding is provided for plan development and then the groups need to search out implementation funding. From the SIG, the Department would be able to provide seed implementation funding, that would allow for continued growth of the planning effort and highlight the many benefits.

Anticipated project results will be consider as part of the selection criteria in determining the cost/benefit of a project. To determine these anticipated results the Department and the stakeholders will use methods such as:

- Best Management Practice manuals and determined efficiencies (i.e. PA's Stormwater BMP Manual, Chesapeake Bay Model Efficiencies etc);
- Model Results (i.e. AGWLF and PreDICT etc); and
- Science based literature (i.e. research studies conducted by Universities etc)

The Department will consider producing quarterly reports, beyond the reporting requirement, to emphasis and highlight key activities and benefits that occurred during that period as well as what is to be expected as a next step. A final product for the grant will be a completed report that will summarize the selection process, funding sub-recipients, installed projects and outcomes. Another key component to the final report will be a section on lessons learned as well as identify changes for future project funding and IWRP development. A section will also be devoted to how the work completed on the selected projects and with IWRPs can be transferred not only throughout the state but also regionally. Additionally, to disseminate information related to the grant progress as well as IWRP development and grant outcomes, the Department will provide project

information on the website, participate in speaking engagements and use existing regulatory requirements (i.e. MS4 communities have six minimum control measures as part of a permit to complete with one of those being public education) for continued discussion and concept advancement.

Ultimately, the grant activities produced will coordinate well with the outreach that is currently underway for the discussion of the development of IWRPs, except the grant will allow the Department to highlight the success and solidify the importance of the coordinate and integrated planning approach both internally and externally. Additionally, the Department is not interested in recreating the wheel as it relates to resource planning but we are interested in learning how to inflate the wheel for it to be more efficient and innovative.

To reiterate, the Department is becoming increasingly more aware that we, citizens and governmental agencies alike, need to be more efficient with our resources. As part of this recognition, the Department has begun to adopt and embrace a concept of integrated water resource planning (IWRP). Through the award of a SIG the Department would look to implement key projects that will have been highlighted and selected in cooperation with the local stakeholder groups currently involved in developing the IWRPs. Overall, the funding will: produce on the ground measurable benefits; highlight key components of resource planning; and, begin to look at interagency overlays and permitting activities/enhancements.

Past Performance-Programmatic Capability and Reporting Environmental Results

The Department coordinates on a number of valuable assistance agreements and has a positive track record when it relates to implementation of that funding and reporting of the results achieved. To highlight this positive record, three funding activities have been chosen:

1. **Coastal Zone Management Program**
   Pennsylvania receives approximately $2 million per year annually in federal funding from the National Oceanic and Atmospheric Administration (NOAA) to administer the PA Coastal Zone Management Program as authorized by the Coastal Zone Management Act of 1972. The DEP's Water Planning Office coordinates and implements the Coastal Zone Management Program (CZMP) to execute sound coastal management program policies in Pennsylvania's two coastal areas. Since the program's federal approval in 1980, the PCZMP has provided over 50 million dollars in funding for coastal zone projects. CZMP results are reported to NOAA in various formats: biannual performance reports, performance measures, and final reports that provide details on the results of individual projects. Concerning the performance measurement reporting system, it consists of performance measures organized under the following six broad issue areas developed to capture the objectives of the CZMA: *Government coordination and decision making; Public access; Coastal water quality; Coastal habitat; Coastal-dependent uses and community development and Coastal hazards.*

2. **Chesapeake Bay Implementation Grant**
   These federal monies, and the required matching funds from the Commonwealth, support Chesapeake Bay Program restoration activities of DEP and Conservation District Staff, as well as, the Pennsylvania Chesapeake Bay Education Office, water quality monitoring to support Bay activities, DEP's Streambank Fencing Program and grants for the installation of Best Management Practices to abate nonpoint source pollution on agricultural lands. Annual reports are completed and submitted to provide details on the funding, BMP installation and results achieved.

3. **Section 106 – Water Pollution Control Grant**
   The Section 106 Water Pollution Control grant assists Pennsylvania in administering programs under the federal Clean Water Act for the prevention, reduction, and elimination of pollution, including enforcement. Activities carried out under this grant include: ongoing assessments of surface water quality; implementing the state NPDES permitting program for controlling discharges to meet public health, technology and water quality standards; monitoring compliance of permitted facilities and taking enforcement actions when necessary to maintain compliance with permit requirements; and management of inventory and compliance data. PA DEP submits semi-annual progress reports to EPA, including a list of outputs and activities as specified in the Section 106 work plan.

Logic Model

Resources/Inputs:

Programmatic investments available to support would include, but is not limited to:

- Department staff advancing the concept of IWRPs through the completion of the key IWRPs and will continue to discuss the concept with interested local government entities.
- The SIG award would allow the Department to further the implementation of funding that has been already been provided to develop key IWRPs.
- Department staff is also leveraging funds for the SIG grant.

Activities:

It is anticipated that the selection criteria would include, but would not be limited to:

- The IWRP be at or near completion.
- Of the applicable IWRPs, the Department would compile a list of the projects suited for implementation (i.e. source water protection buffer, retention ponds, stream bank fencing etc).
- Cost determinations, benefit/reduction amounts and ease of implementation would be determined for each project.
- The projects would be ranked based on the overall cost/benefit.
    - If there is a tie in project ranking, it will be broken by reviewing if a project is located in a critical water planning area, a developed Total Maximum Daily Load watershed or other Department or EPA identified priority area.
- An appropriate number of projects will then be selected from the list depending on the resources available.

Outputs:

Product or service delivery/implementation targets we aim to produce include, but would not be limited to:

- The request for the grant is for a two year period.
    - The first year would be primarily to determine the selected projects and coordinate with the local participants on providing the implementation funding.
    - The second year of the grant would be focused on project implementation, outreach and summation of results.
- Anticipated project results will be determined by methods such as:
    - Best Management Practice manuals and determined efficiencies (i.e. PA's Stormwater BMP Manual, Chesapeake Bay Model Efficiencies etc);
    - Model Results (i.e. AGWLF and PreDICT etc); and
    - Science based literature (i.e. research studies conducted by Universities etc)
- The Department will consider producing quarterly reports, beyond the reporting requirement, to emphasis and highlight key activities and benefits that occurred during that period as well as what is to be expected as a next step.
- A final product for the grant will be a completed report that will summarize:
    - the selection process;

- funding sub-recipients;
- installed projects and outcomes;
- lessons learned and changes for future project funding and IWRP development; and
- how the work completed along with the IWRPs can be transferred not only throughout the state but also regionally.

Customer:
The user of the products/services and the target audience that we are intending to reach includes but would not be limited to:

- local governments (county, municipal, township etc);
- watershed organizations;
- water resource management authorities;
- applicable committees (i.e. statewide water resource committee); and
- interagency coordination.

Critical factor that would be beyond the Department's control would include messaging of the benefits and successes of IWRPs. The involvement of stakeholders becomes key to addressing this factor throughout the project development and future of IWRPs.

Short Term:
Changes in learning, knowledge, attitude, skills and understanding that we seek to achieve include but is not limited to:

- Begin to embrace innovative concepts and ways of doing business in order to save valuable resources whether it is in the air, on the land, in the water or in the budget columns. These new concepts range from investigating green infrastructure measures as opposed to gray infrastructure measures, establishing environmental markets that allow for more cost-effective options to be chosen, to exploring new alternatives that integrate water resource planning methods.
- Highlight the success and solidify the importance of the coordinate and integrated planning approach both internally and externally.

Intermediate:
Changes in behavior, practice or decisions that we seek to achieve include but is not limited to:

- Additional IWRPs are developed that further solidifies the importance of coordinated water resource planning.

Long Term:
Changes in conditions that we seek to achieve include but is not limited to:

- IWRPs are developed as a common practice (concept is no longer new and innovative) and begin to look at future planning activities and impacts beyond water resources and becomes a fully integrated approach across multiple sectors and produces multiple benefits.