



REPLY TO  
ATTENTION OF

DEPARTMENT OF THE ARMY  
PHILADELPHIA DISTRICT, CORPS OF ENGINEERS  
WANAMAKER BUILDING, 100 PENN SQUARE EAST  
PHILADELPHIA, PENNSYLVANIA 19107-3391

CENAP-PL

27 January 2006

MEMORANDUM FOR Commander, North Atlantic Division ATTN: Mr. John Wright -  
CENAD-CM-PP

**SUBJECT: Proposal for Comprehensive Analysis of Multi-jurisdictional Use and Management of Water Resources on a Regional Scale – Delaware River Basin, NY, PA, NJ and DE**

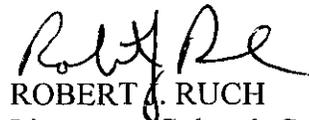
1. Reference. Assistant Secretary of the Army (Civil Works) and HQUSACE, 20 December 2005, request for proposals, subject as above.
2. Purpose. Enclosed is the Philadelphia District proposal for submittal to Assistant Secretary of the Army (ASA), as dictated in the referenced guidelines.
  - a. The proposed study area encompasses a large regional area, the Delaware River Basin (which includes area in four states, New York, Pennsylvania, New Jersey, and Delaware), and a large subset of watersheds within the basin.
  - b. The study effort will allow the Corps to augment a working relationship with the Delaware River Basin Commission (DRBC), state and local agencies, and non-federal private interests from the regional populace. Strong regional support is displayed by the attached letters from DRBC and the member states (New York, Pennsylvania, New Jersey and Delaware).
  - c. The expected outputs will be of importance to help meet goals specified by the DRBC in the regional agency's, "Water Resource Plan for the Delaware River Basin" in order to achieve integrated water resources management. Specific topics to be studied will include: long-term sufficiency of water supply and costs to users, long-term flow management, and flood vulnerability and mitigation needs.
  - d. The proposal is consistent with the Corps Civil Works Strategic Plan and the district's assigned mission authorities.
  - e. The proposed study fulfills the Corps guidelines as it does not entail a currently budgeted activity nor does it represent a project specific solution or serve as a substitute for a project cost-shared study.
  - f. The study funding request is for a total of \$1 million over a two-year time period.

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3. Action. Philadelphia District requests review and approval of the proposal by the North Atlantic Division and subsequent submitted to ASA for final consideration. The district points of contact are Mr. Stan Lulewicz, (215) 656-6541, and Mr. Robert Selsor, (215) 656-6569, of the Planning Division.

Encl



ROBERT J. RUCH  
Lieutenant Colonel, Corps of Engineers  
Commanding



**US Army Corps  
of Engineers**  
Philadelphia District

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**Proposal  
For  
Assistant Secretary of Army Civil Works  
FY 06 General Expenses**

**TOPIC**

**ENHANCING MULTI-JURISDICTIONAL  
WATER RESOURCE USE  
AND  
MANAGEMENT  
IN THE  
DELAWARE RIVER BASIN  
(NY, PA, NJ, DE)**

**January 2006**

## I. Location and Study Area

The Delaware River Basin encompasses water and land resources in New York, Pennsylvania, New Jersey and Delaware. The river and its tributaries drain 13,539 square miles of varied landscape with distinct topography, soils, hydrology, natural habitat, development patterns, and economic interests. Fifteen million people (5% of the U.S. population) rely on the ground and surface water resources of the Delaware River Basin.

New York City relies on the basin system for half of its water supply, and an additional amount is exported for use in areas of New Jersey located outside of the basin. Three-quarters of the non-tidal river, about 150 miles, is included in the National Wild and Scenic River system. In addition to the distribution shown at right, Maryland also has a very small 8 square miles of the basin within its boundary. (A basin map is included as Attachment 1, and another map identifying congressional districts is included as Attachment 2.)

### Area Distribution by State:

PA: 50% or 6,422 sq mi

NJ: 23% or 2,969 sq mi

NY: 19% or 2,362 sq mi

DE: 8% or 1,004 sq mi

## II. Proposal Attributes

This proposal:

- **Includes multiple states and watersheds.** The study area is a large, multi-jurisdictional river basin encompassing major areas of four states. A study effort of this magnitude will serve as an excellent example for other large, multi-state river basins throughout the nation.
- **Builds on established relationships.** The Corps has a long-established presence in the Basin both through a variety of planning and engineering projects and through being the Federal representative on the Delaware River Basin Commission. The Corps participated with the four states (NY, NJ, PA, and DE), other federal agencies, and a wide array of local and non-profit organizations in the development of a regional water resources plan for the Delaware Basin and has avowed, in partnership with those agencies, to help implement the Plan. The five attached support letters attest to the willingness of the states and DRBC to collaborate with the Corps in the proposed study.
- **Integrates and supports regulatory data and capabilities.** The proposed study will enhance the regulatory capacity of the Corps and the Delaware River Basin Commission by providing the necessary analyses and tools to address sustainable supply, flow management, and flood vulnerability and mitigation issues. It will also improve the management and accessibility of relevant information to support regional, state, and local decision making.
- **Clearly defines outputs.** Tasks and products are clearly defined in the framework of strategic goals common to both the Corps and regional partners.
- **Involves appropriate Planning Centers of Expertise and identifies a capable team.** The expertise and qualifications of the centers (to be incorporated into the study process as appropriate) and the study team are highlighted in Section VI.
- **Is consistent with and will serve to achieve goals of the HQUSACE Civil Works Strategic Plan.** The proposal is structured to highlight the alliance of tasks to specific goals and objectives of the Strategic Plan. Furthermore, the relationship to established regional water resource goals is illustrated in Attachment 3, with a detailed depiction of the cross matching of Corps goals and goals of the DRBC.
- **Represents new activity with long range implications for integrated water resource management at a large regional level.** The assessment, modeling and data systems

management activities included in this proposal are not currently budgeted and are not substitutions for local project cost-sharing requirements.

Furthermore, successful completion of this proposal will:

- Address a key Corps challenge to seek solutions that better balance economic, environmental, and quality-of-life issues.
- Exemplify Corps support of integrated state, regional and water resource management by supporting and implementing established goals for basin water resources.
- Enhance appreciation and understanding of the Corps' role in water resource management by expanding activity in the areas of sustainable supply, flow management, information provision, and flood vulnerability and mitigation assessment.
- Increase participation of Corps technical specialists in regional and local water resource initiatives by making use of their expertise in fields such as hydrogeology, flow modeling, and electronic data management.
- Identify and prioritize planning and investment opportunities in coordination with non-federal water resource managers, through the analysis of projected demand (both human and ecological) against known and planned water supply options.
- Intensify collaboration within a wide set of federal agencies to achieve integrated solutions for regional water resource management through data sharing and coordinated analytical efforts.

### **III. Background: Water Resources Management in the Delaware River Basin**

The Delaware River Basin Commission (DRBC), created in 1961 by means of a federal-interstate compact for river basin management, is responsible for managing the quality and availability of water in the basin. In September 2004, DRBC Commissioners, who include the governors of the four basin states and the commander of the Corps' North Atlantic Division, joined representatives of five federal agencies in an agreement to support and implement the goals of the new 100-page *Water Resources Plan for the Delaware River Basin* ("Basin Plan"). At subsequent meetings with Brig. Gen. Temple and his successor, Brig. Gen. Grisoli, the Corps and DRBC have found substantial common ground between the goals and objectives of the Corps Strategic Plan for FY 2004-09 and those of the Basin Plan. Indeed, since the Basin Plan has engaged other federal agencies, the states, and a broad spectrum of regional and local entities, it serves as an implementation vehicle for the goals of the Corps Strategic Plan. (A full listing of over 200 people serving on the Advisory Committees can be found at the end of the Basin Plan.)

### **IV. Common Ground: A proposal for achieving integrated water resource management.**

The numerous areas of shared interest between the Basin Plan's goals for regional water resource management and those of the Corps Strategic Plan are shown in Attachment 3. To work towards the achievement of several of these common goals, the Philadelphia District proposes using funds from the FY06 Energy and Water Development Appropriations Act (PL 109-103) for three *interdependent* initiatives:

- (1) **Outcome: Long term sufficiency of water in the Delaware River Basin.** Recently completed groundwater availability analyses (USGS-DRBC collaboration) and demand projections will be linked with ongoing efforts to develop water budgets, state water planning

initiatives, DRBC's basin-wide demand projections, decree parties' (i.e. four DRBC member states, City of New York) plans for storage upgrades, and long term flow management strategies for the Delaware River. This major initiative will incorporate an analysis of existing reservoir storage and proposed supply enhancement projects as well as identification of supply enhancement needs to protect water delivery obligations, ensure drought preparedness, and meet evolving conditions.

**Product(s):** Updates to the 1981 DRBC Level B Study and amendments to the DRBC Comprehensive Plan as appropriate.

**(2) Outcome: Effective, Long-term Flow Management.**

**Task 1: Estuary inflow evaluation.** The DRBC Subcommittee on Ecological Flows was established to determine ecological flow needs for aquatic habitat. Phases 2 and 3 of its Work Plan focus on selecting and linking a multi-dimensional hydrodynamic/salinity/temperature model in the estuary with the Operational Analysis and Simulation of Integrated Systems (OASIS) flow model and shellfish management endpoints.

**Task 2: Multi-jurisdictional Flood Mitigation Plan.** A preliminary basin-scale report would address flood vulnerability and management capabilities based on review of existing state and federal information about past disasters, National Flood Insurance Program (NFIP) Repetitive Loss Area, basin flood storage capacities, flow regime information, etc. Flood mitigation could have broad implications to be applied at the national level.

**Task 3: Re-evaluation of DRBC's approach to Water Supply User Costs.** The current rule allocates costs to users on a pro rata basis as a function of DRBC's Salinity Repulsion policy. Alternative approaches potentially would result in different cost allocations and revenues. This matter was originally analyzed at the onset of the Basin Water Charging Program over 30 years ago.

**Product(s):** A unique, integrated flow management strategy for the basin, supported by a multi-dimensional model capable of predicting impacts of alternative flow regimes on Delaware Bay shellfish colonies; a set of potential changes to DRBC Salinity Repulsion policy and user cost policies; and a basin-wide flood vulnerability and mitigation assessment.

**(3) Outcome: Provision of timely and easily accessible information to the public.** A key focus of this system would be to serve up decision support tools to augment Tasks 2 and 3 above, as well as to begin work in implementing Objective 5.3.2 and Goal 4.2 of the Basin Plan: "Increase sharing of data, information, and ideas among Basin stakeholders and reduce duplication of effort."

**Task 1: Data preparation and management.** This task includes enhancing DRBC in-house data management in preparation for data sharing and system linkages. Data layers will include, but not be limited to, the information gathered for this study.

**Task 2: Information management linkages.** Facilitate linkages among the four states, DRBC and Corps information management systems in preparation for Task 3 below.

**Task 3: Public access to information.** This involves defining resource assessment and management questions based on the goals of the Basin Plan, determining availability of relevant priority, and assembling a menu of analytical tools to assist resource managers and local decision makers. The public dimension could be modeled on existing innovative regional models, such as NOAA's Ocean Planning Information System or the new Pinelands Commission Information System. The initiative will be scoped in greater detail as the above tasks are undertaken.

**Product:** River Basin Information System "Linking People, Information & Technology."

**V. Corps Role: Providing technical expertise and enhancing collaboration.**

By implementing the three-pronged initiative outlined in this proposal, the Philadelphia District has an opportunity to bring its unique technical expertise to bear on pressing water supply, flow management, and flood vulnerability and mitigation assessment issues in the Delaware River Basin. In doing so, the District will, if appropriate:

- Collaborate with other districts such as New York District
- Technical support and review (ITR) by Corps Planning Centers of Expertise

**VI. Key Philadelphia District Staff (Position/Name/Years of Experience)**

- Project Manager/Basin Watershed Specialist: Jane Jablonski, Technical Regional Specialist - 20 years
- Environmental Assessment Specialist: Jerry Pasquale, Team Leader - 22 years
- Senior Plan Formulation Specialist: Hank Gruber, Team Leader Basin Studies - 15 years
- Senior Economist: Bob Selsor, Team Leader, Watershed/Regional Economics - 27years
- GIS Specialist: Steve Long, District/Regional Data Management Specialist - 15 years
- Senior Hydrology/Hydraulics/Flow/Salinity Modeling: Glen Stevens, Chief, Hydrology & Hydraulics Branch - 23 years
- Public Involvement Specialist: Ed Voigt, Chief, Public Affairs Office - 16 years
- Plan Formulation Quality Control (QC) : Stan Lulewicz, Assistant Chief, Planning Division - 32 years
- Policy Advisor/Quality Assurance (QA): Mike Arabatzis, Chief, Planning Division - 32 years
- Additional Corps staff will be identified if needed. The District will finalize the Project Delivery Team upon receiving funds and finalizing the scope of work. The team will include representatives from DRBC and the lead governmental agencies from the four member states (NY, PA, NJ, and DE). Other potential study participants include USGS, National Park Service, FEMA, USDA Forest Service, Natural Resource Conservation Service, EPA, U.S. Fish & Wildlife, National Weather Service, Delaware Valley Regional Planning Commission, The Nature Conservancy, Delaware Riverkeeper Network, New York City, and the City of Philadelphia.

**VII. Products:**

- **Year 1:** An interim report will be submitted at the end of the first year of funding.
- **Year 2:** A final report will extend the interim report to incorporate the Year 2 work effort.

**VIII. Support for Proposal.**

Local interests—most important, the Delaware River Basin Commission—and the four states have indicated strong support for working with the Corps. The five letters of support for this proposed study from DRBC and from the States of New York, Pennsylvania, New Jersey and Delaware are included as attachments.

**IX. Funding Needs/Schedule**

**Total: \$1,000,000**

Year 1: \$600,000 (Interim Report)

Year 2: \$400,000 (Final Report)

**Schedule:** 2 years (study initiated upon receipt of federal funds)