



SUSQUEHANNA RIVER BASIN COMMISSION

March 14, 2007

2007 Annual Water Resources Program

Section 14.2 of the Susquehanna River Basin Compact (Compact), P.L. 91-575 states that “the Commission will annually adopt a water resources program, based upon the comprehensive plan, consisting of the projects and facilities which the Commission proposes to be undertaken by the Commission and by other authorized governmental and private agencies, organizations, and persons during the ensuing six years or such other reasonably foreseeable period as the Commission may determine.” Beyond this Compact requirement, there is a need to set forth in one concise document a listing of the programs and projects that will help meet the current problems and challenges of water resources management in the Susquehanna River Basin. The following programs/projects of the Susquehanna River Basin Commission (SRBC) and other water resource management agencies will constitute the Water Resources Program (WRP) of the SRBC for 2007 to meet the water resources needs set forth in the Comprehensive Plan. The water resource needs are:

1. Coordination
2. Reduce Flood Damages & Provide Effective Disaster Recovery
3. Improve Water Quality
4. Mitigate Drought Impacts
5. Ensure Adequate Water Supply
6. Promote Economic Development
7. Protect and/or Restore Aquatic Ecosystems
8. Restore Migratory Fish
9. Manage Sediment
10. Preserve Cultural & Historical Heritage
11. Enhance Recreation
12. Facilitate Data Management & Use

Susquehanna River Basin Commission

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WATER RESOURCE NEED NO. 1 – COORDINATION

Coordinate the planning and management of the water resources of the basin in accordance with the requirements of the Compact and the Comprehensive Plan, communicate with and listen to the concerns of the water use stakeholders and their elected representatives, educate the public about the water resources of the basin, and garner adequate financial resources to support both SRBC and other agency programs and projects for management of the basin's water resources.

A. SRBC

1. **General Coordination:** Coordinate the water resource management efforts of state and federal agencies, local governments, and private interests, including through the following actions: (1) coordinating impaired waterbody listings, Total Maximum Daily Loads (TMDLs) and source water protection activities; (2) active participation in Pennsylvania's Water Resources Planning Act 220 implementation; (3) exploring development of cooperative memorandum of understanding agreements with Maryland and New York to promote efficient use of resources and provide consistency in regulatory procedures and programs; and (4) seeking guidance from SRBC advisory committees on a range of water management issues.
2. **Legislative Liaison:** Inform federal and state legislators of the activities, plans, and programs of SRBC and continue working with the Susquehanna River Basin Congressional Task Force, the Susquehanna Caucus in the Pennsylvania General Assembly, and interested legislators in Maryland and New York.
3. **Promote Interstate Comity and Resolution of Conflicts:** Continue SRBC's general Compact purpose of promoting interstate comity and resolution of conflicts, with particular focus on oversight of out-of-basin diversions from the Conowingo Pond, an interstate waterbody, and on efforts to resolve issues surrounding the diversion of water from Deer Creek by the City of Aberdeen.
4. **Planning (SRBC Documents):** Continue work on the following planning efforts: Comprehensive Plan (perform update), Water Resources Program (revise and update), internal strategic plans (implement divisional plans), SRBC Groundwater Management Plan for the basin (implement as appropriate), the Conowingo Pond Management Plan (implement as appropriate), and Abandoned Mine Drainage Remediation Strategy for the West Branch Susquehanna River Watershed (develop).
5. **Public Information and Education:** Continue to disseminate information through the *Guardian* newsletter, fact sheets and other publications, press releases, and web site.



B. Federal Programs and Projects

1. **Environmental Protection Agency (EPA):**
 - a. Continue to update monitoring strategy (work is largely completed by SRBC).
 - b. Actively participate in and contribute to a select set of Chesapeake Bay Program (CBP) committees: Water Quality Steering Committee, Monitoring and Analysis Subcommittee

(MASC), MASC's Nontidal Water Quality Monitoring Workgroup and Nutrient Subcommittee's Sediment Workgroup; clarify relative SRBC/EPA roles on these committees.

- c. Explore the possibility of developing a multi-jurisdictional partnership for the protection of source water, similar to the Potomac Drinking Water Protection Partnership and the Schuylkill Action Network.

2. Federal Emergency Management Agency (FEMA):

- a. Region II – Participate on focus groups and in meetings sponsored by SRBC and other state, local and regional groups that address flooding, flood damage and mitigation.
- b. Region III – Plan for and manage various water resources activities in the Susquehanna River Basin, in conjunction with numerous partners including SRBC, USACE, USGS, NRCS, USFWS, state and local emergency management agencies, etc.

3. National Park Service (NPS): Continue to coordinate – through Chesapeake NEMO – education, technical assistance and link financial assistance to: (1) help communities foster well-planned growth, preserve water quality and protect natural areas; and (2) build commitment and capacity for applying natural resource-based planning as a core underpinning of local land use decision-making.

4. National Weather Service (NWS): Provide program management for the Susquehanna Flood Forecasting and Warning System (SFFWS). Coordinate with SRBC, USGS, and other federal and state partners. Do field office coordination with local emergency management agencies and media outlets. Provide education and outreach to promote flood loss reduction.

5. Natural Resources Conservation Service (NRCS): Continue to support the objectives of SRBC and CBP by participating in meetings with and providing technical and program support in partnership with federal/state/local government, county conservation districts, watershed groups and private landowners through NRCS Farm Bill Programs, Watershed Program, Emergency Watershed Program, Resource Conservation and Development Program, Soil Survey, National Resource Inventory and Conservation Technical Assistance.

6. Office of Surface Mining (OSM): Continue to support the objectives of SRBC by participating in meetings and providing technical and program support in partnership with federal/state of Pennsylvania/local government and watershed groups in which mine drainage and abandoned mine land reclamation issues are of concern.

7. U.S. Army Corps of Engineers (USACE): Continue to partner with local governments, agencies, and stakeholders to initiate and execute investigations and projects within USACE authorities and jurisdiction. Continue membership and responsibilities on SRBC, CBP, and other such groups. Coordinate regularly with federal agencies to provide input and feedback as the federal representative to SRBC.

8. U.S. Fish and Wildlife Service (USFWS): Promote northeast regional water supply and demand analysis and alternatives to address needs and manage growth. Coordinate with state governments to work toward adoption of “smart-growth” land use planning techniques.

9. U.S. Geological Survey (USGS):

- a. Participate in technical advisory groups of other federal and state agencies involved in planning and managing water resources.

- b. Actively work on parts of the Pennsylvania State Water Plan update and provide technical assistance as needed.
- c. Manage and operate networks of stream gages and groundwater level recorders, serving data real time on the web and maintain historical records

C. State Programs and Projects

1. New York:

- a. Department of Environmental Conservation (NYSDEC) – Coordinate with local water resource professionals through participation in county water quality coordinating committees, the Upper Susquehanna Coalition, and the New York State Association of Regional Councils.
- b. Upper Susquehanna Coalition (USC) – Provide a mechanism for soil and water conservation districts and other partners in the Upper Susquehanna Region to cooperatively promote, and implement on a watershed basis, the conservation and improvement of natural resources. Complete and support an application for designation of the Upper Susquehanna and Chemung Rivers as American Heritage Rivers.
- c. Regional Planning Boards (RPBs) – Assist NYSDEC with local delivery of statewide water resource programs. Foster a regional approach to water resource management and coordination among neighboring communities. Work closely with private and public local, regional, and state parties involved in water resource protection.

2. Pennsylvania:

- a. Department of Environmental Protection:
 - (1) Bureau of Watershed Management (PADEP-BWM): Continue the implementation of the Water Resources Planning Act (Act 220 of 2002), with emphasis on drafting the Pennsylvania State Water Plan and coordination of that effort with SRBC's activities such as water budget analysis of watersheds, water conservation, and technical assistance to communities.
 - (2) Bureau of Water Standards and Facility Regulation (PADEP-BWSFR): Continue to encourage coordination with the State Water Plan and SRBC's activities involving registration of community water systems, planning, water conservation, and technical assistance to communities.
 - (3) Bureau of Waterways Engineering (PADEP-BWE): Continue to partner with local governments and agencies to execute investigations and projects, including flood protection and map modernization efforts.
- b. Department of Conservation and Natural Resources:
 - (1) Bureau of Recreation and Conservation (PADCNR-BRC) – Work to better target and coordinate river conservation plan-recommended projects across state and federal agencies, particularly coordinating funding programs and priorities (the river conservation plan stakeholder process already provides a vehicle for developing and educating stakeholders, particularly elected local officials and watershed groups).

- (2) Bureau of Forestry (PADCNR-BOF) – Promote private forest lands stewardship by working with State Forest Districts and other stakeholders to promote forests and their social, economic, and environmental benefits. Assist municipalities in incorporating forest, buffer and water quality language in their municipal and comprehensive plans.
- c. Fish and Boat Commission (PFBC) – Actively work on State Water Plan updates and implementation. Participate in technical advisory groups.

**WATER RESOURCE NEED NO. 2 – REDUCE FLOOD DAMAGES
AND PROVIDE EFFECTIVE DISASTER RECOVERY**

Prevent the loss of life and significantly reduce future damages from floods within the basin through an integrated system of structural and nonstructural flood damage reduction measures. Provide a comprehensive and effective program for disaster recovery efforts following major floods.

A. SRBC

1. **Flood Forecasting and Warning System:** Enhance the effectiveness of the SFFWS by coordinating the Interagency Committee’s efforts, seeking adequate federal appropriations, implementing a multi-year comprehensive flood outreach and education media campaign, assisting local governments with training and products to prevent loss of life and, in cooperation with the NWS, holding regional users’ conferences. Participate in local flood mitigation projects. Maintain and update the system website. Serve as a liaison between NWS and local flood managers to gather ideas and incorporate local input into the improvement of flood forecasts and warnings through partnerships related to Advanced Hydrologic Prediction Services (AHPS).



2. **Flood Mitigation:** Help reduce flood damages by coordinating information with local interests on successful flood-related programs and by providing technical assistance and outreach to include: (1) training on the use of flood inundation maps; (2) assistance in developing local flood alert systems; and (3) information on floodplain planning and management techniques. Support radar velocity technology as an additional cost-effective method of stream gaging.



B. Federal Programs and Projects

1. EPA:

- a. Continue limited involvement in drinking water programs through funding of state operator certification and emergency planning programs.
- b. Continue reducing runoff through the implementation of Stormwater Phase I and II programs, which control discharge of stormwater from urbanized areas (MS4’s) and all new development that impacts more than one acre. Continue addressing the outstanding need in stormwater management for modeling that would be used to assess the criteria used by states and local governments in the issuance of stormwater permits (there is a concern that the criteria in current use allow excessive runoff).

2. FEMA:

- a. Monitor communities, under the National Flood Insurance Program, for sound floodplain management and produce Flood Insurance Rate Maps to identify high-hazard flood areas.
- b. Coordinate efforts to reduce future damages from floods via a number of pre- and post-disaster mitigation grants; administration of these grants is conducted in coordination with various state emergency management agencies and local government sponsors.

- c. Coordinate efforts to reduce future damages from floods via the Map Modernization Program that will begin efforts to digitize all of the flood insurance rate maps by 2008.
 - d. Administer the President's Disaster Relief Act after Presidentially declared disasters; provide grant funds to the public and private sectors to repair eligible damage and mitigate future damage.
 - e. Serve as the lead federal agency for disaster recovery efforts. Coordinate these efforts with other stakeholders via the National Response Plan (NRP).
3. **NPS:** Recommend measures for floodplain protection and riparian buffer development in Deer Creek Watershed Restoration Action Strategy.
4. **NRCS:**
- a. Continue to ensure proper local operation and maintenance of NRCS-assisted flood control dams and other structures in the following watershed projects: Briar Creek, Marsh Creek, Middle Creek, Mill Creek (Tioga County), and North Fork Cowanesque River.
 - b. Continue assistance to Potter County to secure permits and local matching funds for rehabilitation of the flood control dam in the North Fork Cowanesque River Watershed.
 - c. Continue watershed planning assistance to local project sponsors in evaluating alternatives for flood damage reduction in the Bentley Creek Watershed.
 - d. Conduct a preliminary investigation to determine if NRCS Watershed Program assistance may be feasible for tributary flooding in Renovo and adjoining communities.
 - e. Provide Watershed Program planning assistance to address other flood damage concerns at the request of local project sponsors.
 - f. Implement stream restoration under the Emergency Watershed Program in priority areas where buildings, utilities and other critical infrastructure are imperiled by debris and unstable streams and stream banks as a result of the June 2006 floods.
5. **NWS:**
- a. Provide flood forecast and warning services (Middle Atlantic River Forecast Center, State College, Binghamton, and Mount Holly).
 - b. Collect and disseminate hydromet information (precipitation, river, temperature, snow).
 - c. In cooperation with SFFWS partners, provide enhanced flood forecast services (flood forecast mapping, short-term probability forecasts, snow information).

Future Actions: Develop, in cooperation with SFFWS partners, sustainable, high-resolution observational network (including stream and rain gages, soil moisture, and evaporation sensors). Develop gridded data network over Susquehanna watershed. Provide high-resolution flash flood forecasts. Develop, in cooperation with partners, new forecast points and flood forecast maps for priority damage locations in the basin.

6. USACE:

- a. Continue to work with non-federal sponsors on flood damage reduction projects.
- b. Promote the need for basinwide evaluations of existing flood damage reduction projects and evaluations of new structural and/or nonstructural projects.
- c. Continue management and maintenance of dams and reservoirs to serve flood control purpose. Continue support of FEMA in disaster recovery efforts.

7. USGS:

- a. Work with NWS to collect data needed to predict floods and to improve flood prediction capabilities, including development of instrumentation technology.
- b. Record flood high water marks and relate to velocities, and determine recurrence intervals.
- c. Work with FEMA and Pennsylvania Emergency Management Agency on flood inundation activities, including modeling and mapping (priority but not an active project).
- d. Develop regional regression equations to compute flood-flow statistics used in analysis of flood inundation and floodplains for constructions of structures.

C. State Programs and Projects

1. New York:

- a. NYDEC – Operate and maintain local flood control projects. Provide floodplain management training and assistance to local governments. Complete and release digital floodplain map for Cortland County. Initiate development of updated floodplain maps for additional counties in the Susquehanna Basin.
- b. State Emergency Management Office (SEMO) – Provide coordination and support for flood preparedness response, recovery, mitigation, and planning activities. Administer federal mitigation grant programs.
- c. Environmental Emergency Services (EMS) – Support emergency management offices in Chemung, Schuyler and Steuben Counties by operating a flood warning system, with a locally operated network of real-time gages (stream/river gages, precipitation gauges, and climate stations). Conduct public information and education.
- d. USC – Build flood attenuation wetlands. Reduce erosion damage from flooding through implementation of stream rehabilitation projects.

2. Pennsylvania:

a. PADEP:

- (1) BWSFR – Continue working to ensure that community water systems, where appropriate, address and plan for flooding incidents as part of their emergency response plans to prevent damage to infrastructure and contamination of their water supplies as a result of major flooding near sources, treatment facilities, distribution mains, etc. as well as provide alternate sources of power or potable water as may be appropriate.
- (2) BWE – Implement state funded nonstructural flood protection projects.

- b. PADCNr-BRC: Continue supporting PADCNr-funded efforts that promote the use of protected floodplain areas to augment recreational and conservation opportunities, including floodplain restoration, river access for the public, hiking and biking trails, water trails, and park improvements.

WATER RESOURCE NEED NO. 3 – IMPROVE WATER QUALITY

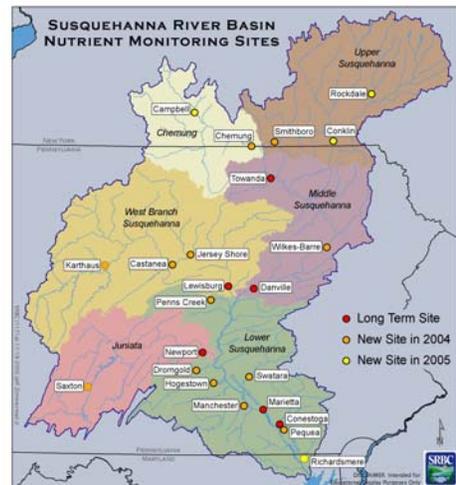
Control water pollution and excess nutrient runoff sufficiently to maintain and establish water quality capable of supporting multiple purpose uses for public water supply, recreation, fish, and wildlife, agriculture, industry, energy production and other uses. Protection also will be given to the receiving waters of the Chesapeake Bay.

A. SRBC

- 1. Water Quality Assessments:** (1) Conduct assessments of interstate stream water quality and issue annual reports; (2) conduct annual biological assessments for large rivers; (3) complete the first phase water quality and biological assessment of Chemung Subbasin and continue the second phase in a selected small watershed; (4) begin the first phase water quality and biological assessment for Upper Susquehanna Subbasin and begin the second phase in a selected small watershed. Enter water quality assessments into the EPA Assessment Database and assist member jurisdictions with developing water quality management strategies. Assist Pennsylvania with its Instream Comprehensive Evaluation Program. Assist Pennsylvania and Maryland with collection of water quality samples for TMDL development. Perform water quality monitoring associated with the EPA Chesapeake Bay Targeted Watershed Grant for Paxton Creek.



- 2. Chesapeake Bay Program:** Collect data and maintain a database for calculating annual loads, analyzing trends, and assisting Bay partners to develop strategies for water quality management in the Susquehanna basin. Implement expanded sediment and nutrient monitoring in support of tributary strategies and provide annual reports on trends. Assist in expanding the monitoring network, and participate in the CBP's subcommittees, work groups, and Pennsylvania Tributary Strategy Steering Committee. Perform other tributary strategy coordination activities.



B. Federal Programs and Projects

1. EPA:

- Increase bacteria monitoring (PADEP continues to work on a statewide plan for addressing bacterial pollution).
- Continue ensuring the timely sharing of assessment information on interstate waters for use in integrated reporting assessments 305b and 303d.
- Continue to coordinate impaired waterbody listings, develop TMDLs, and continue source water protection activities.

- d. Coordinate work by Pennsylvania, New York, USGS, and EPA to maintain existing monitoring stations and expand implementation of the Chesapeake Bay Nontidal Water Quality Monitoring Network within the Susquehanna River Basin.
 - e. Continue to reduce point source nutrient pollution through Bay permitting strategy, which will provide water clarity benefits in the Susquehanna as well as protect the Bay.
 - f. Continue application of the EPA stormwater programs, which serve to improve water quality through reduced sedimentation and nutrient loads.
- 2. NPS:** Identify and address impairments to water quality in conjunction with the Deer Creek Watershed Restoration Action Strategy. Continue supporting the Delaware–Lehigh National Heritage Corridor & Lackawanna Valley National Heritage Area, in partnership with the Susquehanna Greenway Partnership, to identify and improve riparian buffers along the Susquehanna River in Luzerne and Lackawanna Counties.
- 3. NRCS:**
- a. Continue to provide technical and financial assistance to agricultural producers through Farm Bill programs and conservation technical assistance to address critical water resource concerns.
 - b. Provide Watershed Program planning assistance to address nonpoint source and mine drainage pollution at the request of local project sponsors.
 - c. Continue to ensure proper local operation and maintenance of NRCS Watershed Program assisted mine drainage remediation measures in the Glenwhite Run Watershed, Blair County.
 - d. Encourage local project sponsors to work with landowners to properly operate and maintain Watershed-Program-assisted measures installed to address agricultural nonpoint source pollution in the following watersheds: Buffalo Creek, Cedar Run, Clover Creek, Rock Creek, and Yellow Creek.
- 4. NWS:** Issue daily flows forecasts (currently Susquehanna River at Harrisburg) and provide water information as necessary in conjunction with hazardous spills.
- 5. OSM:**
- a. Provide technical and financial assistance to PADEP and individual watershed groups for the remediation of the impacts of mine drainage and abandoned mine lands in the basin. Conduct periodic monitoring of the performance of mine drainage treatment systems constructed in West Branch tributaries under the Watershed Cooperative Agreement Program and provide this information to project sponsors.
 - b. Maintain a Geographic Information System (GIS) database of all mine drainage treatment projects in Pennsylvania (this database is available to all individuals, groups and agencies for planning and assessment purposes, and project monitoring).
 - c. Continue to partner with PADEP in its efforts to clean up the West Branch of the Susquehanna River.

6. USACE:

- a. Support development of abandoned mine drainage solutions, including continuing construction of the Dents Run (Section 206) project and investigations at Upper Tioga (Section 206) and the Southern Anthracite Region (General Investigations), Pennsylvania (these projects will also help restore aquatic ecosystems – see Water Resource Need No. 7).
- b. Evaluate modifications to the Curwensville Lake water control plan to account for the pass through of flows from a new basin water source from the proposed Barnes and Tucker treatment facility.

7. USFWS:

- a. Continue USFWS habitat enhancement efforts, e.g. riparian buffer restoration, using water quality assessment data developed by SRBC.
- b. Support fishery restoration programs using SRBC's subbasin water quality assessments.
- c. Restore and protect stream channels, riparian areas, and adjacent wetlands to reduce sediment and nutrient inputs.

8. USGS:

- a. Collect and provide water quality data to local, state, and federal agencies that manage water resources.
- b. Conduct studies to improve the understanding of fate and transport of contaminants under various hydrogeologic settings.
- c. Develop methodology and analyze trends in water quality data Chesapeake Bay basinwide.
- d. Conduct studies through monitoring and research to evaluate the effectiveness of land management treatments to mitigate agricultural and abandoned mine drainage impacts.
- e. Coordinate these efforts with local, state, and federal partners.

C. State Programs and Projects

1. New York:

- a. NYSDEC – Update the Chemung River Basin Waterbody Inventory and Priority Waterbodies List. Protect water quality through permit programs for point discharges, stormwater management, stream and wetland disturbance, and agricultural discharges.
- b. Soil and Water Conservation Committee (SWCC) – Promote water quality protection and improvements through the Agricultural Environmental Management Program and the Agricultural Non-Point Source Grant Program.
- c. USC – Facilitate the implementation of water quality and quantity projects.

2. Pennsylvania:

- a. PADEP-BWSFR – Continue to encourage local municipalities to develop and implement source water protection in the areas surrounding public water supply intakes. Encourage, when applicable, local municipalities and landowners to implement best management practices to protect riparian zones of streams and rivers.

b. PADCNr:

- (1) PADCNr-BRC – Work to better target and coordinate river conservation plan-recommended projects across state and federal agencies, particularly coordinating funding programs and priorities (as more funding is targeted to implementation grants, water quality improvements will result).
 - (2) PADCNr-BOF – Continue efforts to identify lands critical for water quality and to look for opportunities to conserve these lands wherever possible. Continue to supply technical support to community and watershed organizations to enhance and expand riparian forest buffers.
- c. PFBC – Continue to participate in technical advisory groups for various organizations and watershed groups for enhancement of aquatic resources. Evaluate aquatic biological conditions on select stream systems through a variety of programs.

3. Maryland:

Continue collecting water quality samples, in cooperation with SRBC, for TMDL development.

WATER RESOURCE NEED NO. 4 – MITIGATE DROUGHT IMPACTS

Mitigate the adverse impacts of drought conditions on water users and the environment.

A. SRBC

- 1. Drought Coordination:** Monitor emerging drought conditions and, as needed, activate the Interagency Drought Coordinating Committee, implement the basinwide Drought Coordination Plan, and, as needed, update the plan. Initiate several strategies to educate and inform the public on water conservation and promote awareness of water system losses.



B. Federal Programs and Projects

- 1. EPA:** Provide support through funding of drinking water emergency plans, at state and local level. Reduce the effect of droughts through EPA stormwater programs which result in more water being introduced to groundwater.
- 2. FEMA:** Continuing administering the mitigation grant programs for states that could be used to fund drought mitigation projects (the current top priority for use of these funds, however, is to remove substantially and repetitively damaged structures from the floodplain).
- 3. NRCS:** Continue to provide technical and financial assistance to agricultural producers through Farm Bill programs and conservation technical assistance to address critical water resource concerns, including improved irrigation water management, improved soil health and the use of moisture conserving crop production practices.
- 4. NWS:** Issue precipitation departures from normal for county-wide areas (monthly, seasonal, annual – MARFC) and drought statements as necessary (Weather Forecast Offices). Continue supporting U.S. Drought Monitor, an interagency drought monitoring tool issued weekly and coordinated by NOAA/NCDC. Issue drought/low flow forecasts based on enhanced gridded data (future).
- 5. OSM:** Continue to support PADEP’s efforts to promote the use of underground mine pools as alternative industrial water supplies, thereby reducing demand on ground and surface water.
- 6. USACE:** Continue to execute and manage release scenarios under drought conditions at USACE reservoirs. Evaluate modifications to the Curwensville Lake water control plan to account for the pass through of flows from a new basin water source from the proposed Barnes and Tucker treatment facility.
- 7. USFWS:** Continue involvement in Conowingo Pond Management Plan and advance migratory fish flow needs.
- 8. USGS:** Maintain drought monitoring website developed jointly with PADEP and maintain supporting data-collection activities. Develop methodology to evaluate ecological flows and impacts on aquatic communities. Develop regional regression equations to compute low flow statistics.

C. State Programs and Projects

1. New York:

- a. NYSDEC – Serve as the lead agency for management of water supply droughts.
- b. Department of Agriculture and Markets – Monitor and manage agricultural droughts.
- c. USC – Mitigate drought impacts through wetland creation.

2. Pennsylvania:

- a. PADEP-BWSFR – Work with water suppliers to optimize distribution systems and identify and correct unaccounted for water issues.
- b. PADCNR-BRC – Continue making the consideration of droughts a possible factor in Rivers Conservation Plans funded through Rivers Conservation Program grants.
- c. PFBC – Continue to support usage of alternate sources of water supplies such as underground mine pools, existing reservoirs, etc.

WATER RESOURCE NEED NO. 5 – ENSURE ADEQUATE WATER SUPPLY

Ensure an adequate supply of water for all users, including instream users and the Chesapeake Bay.

A. SRBC

- 1. Surface and Groundwater Management:** Continue to monitor and report on hydrologic conditions. Begin implementing some of the 30 plus recommendations in the 2005 Groundwater Management Plan for the Susquehanna River Basin. Continue leadership role in developing, operating, and managing recommendations for the Conowingo Pond water resources. Pursue funding opportunities to conduct a three-phase Critical Aquifer Recharge Areas project and to study groundwater and surface water interaction in Morrison Cove and other potentially stressed areas. Promote water conservation through the development of the Water Conservation Technical Assistance Center for the PADEP and through select agricultural water conservation demonstration projects. Substantially complete the comprehensive water availability study for the Deer Creek watershed.
- 2. Regulatory Program:** Continue reviewing hydropower re-licensing applications, proposed surface and groundwater withdrawals, consumptive water uses, and applications for emergency withdrawals/uses. Carry out compliance and enforcement activities. Complete an overhaul of application forms and guidance documents, in consultation with SRBC's Water Resources Management Advisory Committee.
- 3. Source Water Protection/Early Warning System (EWS):** Provide assistance to municipalities to protect source waters for potable water supply. Continue to fully implement the EWS for the Binghamton and Elmira, New York, water supply systems and seek funds and partners to expand the EWS project to other areas of the basin.
- 4. Low Flow Management:** Pursue prime recommendation of recently completed Agricultural Consumptive Use Study to provide the 15.7 million gallons per day (mgd) of water necessary to offset agricultural consumptive water use in the Pennsylvania portion of the basin. Focus search for sources on storage opportunities at abandoned or unused mines, and publicly or privately owned reservoirs and lakes. Seek federal appropriation for remaining funding for Whitney Point Lake Section 1135 Project Modification. Continue to explore possibility of more frequent water releases from USACE's Cowanesque and Curwensville projects where SRBC owns storage. Pursue funding to study biological and physical impacts of low flows. Monitor low flow conditions to ensure compliance with consumptive use regulations and, as appropriate, direct releases of water from storage.



B. Federal Programs and Projects

1. EPA:

- a. Develop a strategy to implement source water protection activities throughout the basin that would include: (1) using the source water assessments to identify protection priorities; (2) educating stakeholders about priorities and protection methods; and (3) consider forming regional source water protection workgroups that would coordinate activities with other agencies and programs, and provide technical assistance (related to item B1(c) in Water Resource Need No. 1, above).

- b. Consider (for the above work described) including a compilation of the source water assessments in a GIS overlay such as has been done in the Potomac basin.
- 2. **NPS:** Participate in the Deer Creek Watershed Study and facilitate integration of study results in ongoing management of the Deer Creek watershed.
- 3. **NRCS:**
 - a. Continue to provide technical and financial assistance to agricultural producers through Farm Bill programs and conservation technical assistance to improve efficient use of existing supplies and to protect sources from agricultural pollutants.
 - b. Continue to ensure proper local operation and maintenance of NRCS-assisted multiple purpose dams that include water supply located in the following watershed projects: Marsh Creek, Middle Creek, Mill Creek (Tioga County).
- 4. **NWS:** Issue AHPS long-term (30-day) probability forecasts for river locations within the basin. Issue long-term inflow forecasts for area reservoirs (future).
- 5. **OSM:** Continue to support PADEP's efforts to promote the use of underground mine pools as alternative public, commercial, and industrial water supplies, thereby reducing demand on ground and surface water. Continue to provide technical and financial assistance in the remediation of mine drainage impacts on local public water supplies.
- 6. **USACE:** Investigate low flow operational plan modifications at Curwensville and Cowanesque Lakes, if feasible. Use Section 22 program to investigate regional and local water supply needs, funds permitting. Evaluate modifications to the Curwensville Lake water control plan to account for the pass through of flows from a new basin water source from the proposed Barnes and Tucker treatment facility.
- 7. **USFWS:** Promote northeast regional water supply and demand analysis and alternatives to meet needs and manage growth. Continue involvement in Conowingo Pond Management Plan and advance migratory fish flow needs.
- 8. **USGS:** Provide tools to water managers to determine water availability based on USGS/cooperator stream gages and ground-water network data. Make data available for use with the Pennsylvania State Water Plan. Continue to conduct and refine recharge and water budget analysis methodology. Evaluate water availability within state holdings.

C. State Programs and Projects

1. Pennsylvania:

- a. PADCNR-BRC – Address water supply issues in Rivers Conservation Plans funded through grants provided under the Rivers Conservation Program.
- b. PFBC – Continue involvement in management of water resources and instream flow requirements for water users in the basin.

2. Maryland:

Continue monitoring and involvement in SRBC's Deer Creek Watershed Study that is to document the watershed's water use availability, and will be used in consideration of the City of Aberdeen's second application to SRBC.

WATER RESOURCE NEED NO. 6 – PROMOTE ECONOMIC DEVELOPMENT

Promote the economic development of the basin under sustainable water resource principles.

A. SRBC

Pursue economic development within the context of the programs and projects listed under other needs (i.e., SRBC will continue its commitment to the adequate funding and maintenance of the SFFWS as one very important means of reducing flood damage and minimizing economic displacement). Support programs of the member jurisdictions leading to restoration of runs of migratory fish to the basin that will improve the sport fishery. Operate a regulatory program for consumptive use of water and withdrawals of water that will seek to minimize conflicts among users who need dependable sources of water for their business and economic activities. Develop a consumptive water use mitigation plan that will look for ways to maintain adequate flows for all water users. Continue to seek water quality improvements to benefit businesses and industries, as well as recreation and tourism in the basin, through activities such as the West Branch remediation strategy.

B. Federal Programs and Projects

1. **NPS:** Encourage economic viability and resource sustainability of farming and timber harvest through the Deer Creek Watershed Restoration Action Strategy. Support the Delaware–Lehigh National Heritage Corridor, in partnership with USACE, to continue riverfront reinvestment activities in Wilkes-Barre, Pennsylvania.
2. **NRCS:**
 - a. Continue assistance to basin Resource Conservation and Development (RC&D) areas in Pennsylvania (Headwaters, Endless Mountains, Pocono Northeast, Southern Alleghenies, Community Partnerships, Capital) to: (1) improve the capability of state and local government and local nonprofit organizations to plan, develop and carry out programs for resource conservation and development; and (2) improve the quality of life achieved through natural resource conservation and community development, which leads to sustainable communities and prudent use of natural resources.
 - b. Improve agricultural sustainability and viability through proper natural resource conservation using agency financial and technical assistance programs.
 - c. Continue to use enhanced and targeted program opportunities to promote natural resource improvement for beginning farmers, limited resource farmers and disadvantaged communities.
3. **OSM:** Continue to support PADEP’s efforts to develop uses of underground mine pools and discharges for resource recovery, and to meet commercial and industrial water needs to promote economic development (the removal of abandoned mine drainage from streams also promotes economic development through improvement of the quality of life in adjacent communities).
4. **USACE:** Continue policy of using benefit-to-cost ratios and other national economic development considerations in project recommendations.
5. **USFWS:** Promote sustainable, “smart-growth” development techniques in order to protect fish and wildlife habitat and water quality. Work with SRBC on outreach and education for shad restoration and fish passage. Work to restore and manage healthy sustainable fisheries.

C. State Programs and Projects

1. Pennsylvania:

- a. PADCNR-BRC – Continue the Conservation Landscape Initiative approach, which combines sustainable economic development with conservation and restoration of natural resources. Continue implementing PA Wilds, which is the best example within the Susquehanna drainage, including many counties draining into the West Branch of the Susquehanna, where improving the water quality of the river goes hand in hand with developing enhanced recreation-based economies.
- b. PFBC – Continue involvement in a variety of advisory groups, watershed groups for protection and enhancement of water quality and aquatic systems for fishing, boating and other recreational activities. Continue to acquire and provide access for fishing and boating activities.

WATER RESOURCE NEED NO. 7 – PROTECT AND/OR RESTORE AQUATIC ECOSYSTEMS

Take actions to protect and/or restore fish and wildlife habitat including streams and wetlands.

A. SRBC

- 1. Watershed Management and Restoration:** Provide technical and organizational support to the member jurisdictions and local watershed groups to promote watershed planning, protection, and restoration. Conduct monitoring work to assist with the Audenreid Tunnel/Catawissa Creek Restoration Project. Continue development of TMDL studies, with emphasis on the West Branch Subbasin. Complete the work necessary to obtain funding appropriated by the New York State Legislature for the Whitney Point Lake Section 1135 Project Modification. Seek congressional funding for the federal portion of the Whitney Point project costs. Work with federal and state officials and nongovernmental organizations such as the Eastern and Western Pennsylvania Coalitions for Abandoned Mine Reclamation, to complete the development of an abandoned mine drainage remediation strategy for the West Branch Susquehanna River Watershed. Continue to pursue the acid mine drainage project in cooperation with PADEP, Bureau of Abandoned Mine Reclamation, at the Barnes and Tucker abandoned mine site on the West Branch Susquehanna River that could ultimately provide 7-10 mgd of treated, enhanced flows to the Susquehanna River Basin. Explore other opportunities with the Bureau of Abandoned Mine Reclamation to obtain enhanced flows from other abandoned mine drainage treatment sites.



B. Federal Programs and Projects

- 1. FEMA:** Contribute to the protection of and restoration of aquatic ecosystems via its administration of the National Flood Insurance Program (NFIP) and E.O. 11988 that minimizes development in the floodplain and via its mitigation grants that removes structures from floodplains.
- 2. NPS:** Address ecological health and sustainability through the Deer Creek Watershed Restoration Action Strategy.
- 3. NRCS:**
 - a. Continue to provide technical and financial assistance to agricultural producers through Farm Bill programs and conservation technical assistance to protect, improve or restore fish and wildlife habitat, including wetlands and streams.
 - b. Provide Watershed Program planning assistance to address nonpoint source and mine drainage pollution at the request of local project sponsors.
 - c. Continue to ensure proper local operation and maintenance of NRCS-assisted multiple purpose dams that include fish and wildlife measures in the following watershed projects: Briar Creek, Marsh Creek, Middle Creek, Mill Creek (Tioga County).
 - d. Continue to ensure proper local operation and maintenance of NRCS-assisted mine drainage remediation measures in the Glenwhite Run Watershed, Blair County.

- e. Encourage local project sponsors to work with landowners to properly operate and maintain NRCS Watershed Program assisted measures installed to address agricultural nonpoint source pollution and to improve aquatic habitat in the following watersheds: Buffalo Creek, Cedar Run, Clover Creek, Rock Creek, and Yellow Creek.
4. **NWS:** Partner with NOS in providing inflow data for Chesapeake Bay estuary model.
 5. **OSM:** Continue to provide financial and technical assistance to PADEP and local watershed groups in the remediation of mine drainage impacts on local streams, thereby improving and restoring aquatic habitat.
 6. **USACE:**
 - a. Execute Whitney Point Lake Section 1135 Project Modification construction when funding becomes available. Continue to pursue other improvements to aquatic ecosystems through a myriad of authorities available for this primary mission area. Continue the Cooperstown Area Ecosystem Restoration, New York, feasibility study to restore wetland habitats and improve soil and water conservation practices within the ecologically valuable headwaters of the Susquehanna River Basin and the Chesapeake Bay Watershed.
 - b. Proceed to design and implement the Section 206 Codorus Creek and Nanticoke Creek watershed projects, pending availability of funds.
 7. **USFWS:**
 - a. Provide technical support for stream restoration projects: identification, assessment, prioritization, and implementation.
 - b. Pursue regional adoption of smart-growth measures.
 - c. Provide technical assistance in development of watershed and stream management plans that restore native fish populations (e.g., fishways and dam removals) and support migratory birds and habitats.
 - d. Be proactive in protection of high priority habitats by developing partnerships with landowners for conservation easements, deed restrictions, and other protective instruments.
 - e. Collaborate with partners to restore early succession wetland habitats for the federally listed bog turtle.
 - f. Continue to serve on the Mid-Atlantic Regional Panel on ANS, and work to control the spread of aquatic nuisance species in the basin and the Chesapeake Bay.
 8. **USGS:** Conduct studies that quantitatively evaluate linkages between physical and chemical characteristics and biological communities to better understand inter-relationships. Conduct fish community, fish tissue, and bed-sediment analyses. Collect, analyze, and interpret benthic macroinvertebrate data from streams.

C. State Programs and Projects

1. New York:

- a. NYSDEC – Support the implementation of the *New York State Comprehensive Wildlife Conservation Strategy*.

- b. USC – Restore habitats through wetland construction, wetland restoration and stream rehabilitation.

2. Pennsylvania:

- a. PADEP-BWSFR – Continue involvement and support of PADEP’s abandoned mine reclamation projects and PADCNr’s Pennsylvania Rivers Conservation Program activities described in SRBC’s 2006 Annual Water Resources Program. (NOTE: The 2006 Program listed: (1) 49 projects in design or construction status in the basin and significant programmatic initiatives underway for abandoned mine reclamation; and (2) 18 watershed conservation plans from the basin that have been added to the Rivers Registry.)
- b. PADCNr:
 - (1) PADCNr-BRC – Continue implementing the C2P2 Program, which is already targeting important aquatic resources for conservation, guided in part by existing river conservation plans. Continue cooperative efforts with the PFBC to augment river access, increase biodiversity and better habitat for aquatic wildlife on state park lakes, and other joint projects are priorities for both agencies.
 - (2) PADCNr-BOF – Expand partnerships with non-governmental agencies to reclaim and remediate abandoned mine lands to minimize the impacts of AMD.
- c. PFBC – Continue to provide technical assistance for stream and wetland restoration projects, including but not limited to threatened and endangered species. Provide technical review for projects and permits in the watershed. Evaluate and manage fisheries in the watershed. Continue enforcement of existing laws and regulations.

WATER RESOURCE NEED NO. 8 – RESTORE MIGRATORY FISH

Restore native migratory fishes to the Susquehanna River system. Remove obstacles to the movement of migratory and indigenous fishes.

A. SRBC

- 1. Fisheries Program:** Continue to participate in the Susquehanna River Migratory Fish Restoration Program and help coordinate restoration efforts in upstream areas of the basin. Also, continue participation in Mid-Atlantic Panel on Aquatic Invasive Species and work to control and limit the spread of aquatic invasive species in the Susquehanna River Basin. Coordinate with



Pennsylvania and others on construction of the Sunbury fabric dam fish passage. Promote and seek opportunities to conduct additional instream flow studies.



B. Federal Programs and Projects

- 1. EPA:** Continue coordinated efforts with state and federal agencies to evaluate potential alternative construction methods to remove blockages to fish passage.
- 2. NPS:** Identify and eliminate fish blockages through the Deer Creek Watershed Restoration Action Strategy.
- 3. NRCS:** Continue to partner with the Pennsylvania Fish and Boat Commission on opportunities to support targeted dam removal utilizing NRCS programs such as the Wildlife Habitat Incentive Program (WHIP).
- 4. USACE:** Continue to seek opportunities to remove fish blockages, both physical and chemical, and provide migratory fish passage throughout various watersheds.
- 5. USFWS:**
 - a. Continue, as the lead federal agency for migratory fish restoration, efforts with partners to provide technical support for fish passage restoration to the tributaries of the Susquehanna River (i.e., identification, assessment, prioritization, and implementation).
 - b. Continue to chair various SRAFRC committees. Continue working with PADCNr and legislators to solve Sunbury funding issues and install adequate fishways.
 - c. Review federal activities and provide appropriate comments, recommendations and terms for federal permits and licenses in order to ensure installation of safe, timely and effective fish passage facilities and measures.
- 6. USGS:** Work with aquatic-resource management agencies to evaluate the geomorphic and chemical impacts of dam removals. Collect and evaluate stream habitat data in relation to the support of migratory fish populations.

C. State Programs and Projects

- 1. New York:**

NYSDEC – Stock American shad fry in the Susquehanna and Chemung Rivers.

2. Pennsylvania:

- a. PADEP-BWE – Continue partnering with resource agencies in removing obsolete dams.
- b. PADCNR-BRC – Provide project implementation funds (based on recommendations in completed river conservation plans), which should result in restored habitat for native migratory fish and improved fish access. Continue working with PFBC to remove an unwanted low-head dam at Ralph Stover State Park across Tohickon Creek this year.
- c. PFBC – Continue restoration activities in the watershed, which includes shad restoration, dam removal, etc.

WATER RESOURCE NEED NO. 9 – MANAGE SEDIMENT

Protect the water and related land resources of the basin through the implementation of both conservation practices that retard runoff, and prevent or reduce soil erosion and other management alternatives to control sediment deposition.

A. SRBC

Continue to work with federal, state, and local partners, including the Paxton Creek Watershed and Education Association, to implement the Paxton Creek Watershed Stormwater Project to control sediment and water quality in Paxton Creek and serve as a model for basinwide application.



B. Federal Programs and Projects

1. **EPA:** Work with the Chesapeake Bay Program to ensure project implementation reporting is included in overall sediment management and data accounting systems (EPA's stormwater management programs are designed to reduce sediment pollution).
2. **NPS:** Address sedimentation with best management practices and sound land use decisions through the Deer Creek Watershed Restoration Action Strategy.
3. **NRCS:**
 - a. Continue to provide technical and financial assistance to agricultural producers through Farm Bill programs and conservation technical assistance to address soil erosion and runoff.
 - b. Encourage local project sponsors to work with landowners to properly operate and maintain NRCS Watershed Program assisted measures installed to address erosion, runoff and sediment transport in the following watersheds: Briar Creek, Buffalo Creek, Cedar Run, Clover Creek, Marsh Creek, Middle Creek, Mill Creek (Tioga County), North Fork Cowanesque River, Rock Creek, Yellow Creek.
4. **OSM:** Continue to provide financial support to PADEP through the Abandoned Mine Lands Fund to reclaim abandoned surface mines in the basin, thereby reducing sediment loads in streams.
5. **USACE:** Identify and garner support for the Conestoga River Watershed Study to result in signing of a feasibility cost-sharing agreement. Investigate, contingent on funding and nonfederal partnership, the issue of sediment inflow and removal behind the lower Susquehanna River dams. Promote the need and champion the development of a Regional Sediment Management (RSM) Strategy for the Chesapeake Bay.
6. **USFWS:** Continue to provide technical support in sediment reduction in tributary stream channels through identification, assessment, prioritization, and implementation of projects. Provide technical assistance in developing watershed level sediment management plans. Develop strategy to restore sediment trapping capacity of Conowingo Dam and upstream dams.
7. **USGS:** Lead efforts in the Chesapeake Bay Program to determine sediment sources and transport. Encourage establishment of additional sediment stations. Collect, analyze, and evaluate data. Develop real-time capabilities of tracking sediment through surrogate continuous measurement of turbidity. Develop regional curves for utilization in stream restoration design.

C. State Programs and Projects

- 1. New York:** USC – Reduce erosion of streambanks and channels through implementation of stream rehabilitation projects. Promote prescribed grazing and other agricultural practices that reduce erosion by maintaining vegetative cover.
- 2. Pennsylvania:**
 - a. PADEP-BWE – Develop a legacy sediment removal/floodplain restoration best management practices for inclusion in Phase 5 of the Chesapeake Bay Program’s watershed model.
 - b. PADCNr:
 - (1) PADCNr-BRC – Continue calling for (within PADCNr-funded river conservation plans) the treatment of agricultural runoff and other sources of excess nutrients and sediments through establishment of riparian buffers and other conservation practices. Continue considering funding and technical assistance for these implementation efforts.
 - (2) PADCNr-BOF – Promote use of BMPS during harvesting operations.
 - c. PFBC – Continue reviewing and issuing permits to ensure practices that will limit sediment runoff. Participate in technical advisory groups that are addressing sediment issues. Continue enforcement of laws and regulations.

WATER RESOURCE NEED NO. 10 – PRESERVE CULTURAL AND HISTORICAL HERITAGE

Preserve and make more readily available to the public scenic, cultural, and historic amenities that are unique to the Susquehanna River Basin.

A. SRBC

Continue working with the Susquehanna Greenway Partnership to establish a 500-mile long greenway encompassing the water and a 1-mile corridor along both banks of the Susquehanna River in Pennsylvania and the West Branch Susquehanna River.

B. Federal Programs and Projects

1. **FEMA:** Review all mitigation project proposals and certain public assistance grant projects for compliance with environmental and historic preservation laws. Contribute to the preservation of cultural and historical heritage via its Environmental & Historic Preservation (EHP) Program to ensure compliance with Section 106 of the National Historic Preservation Act for all FEMA Programs.
2. **NPS:**
 - a. Solicit nominations and designate (as appropriate) additional Chesapeake Bay Gateway sites along the Susquehanna River and major tributaries.
 - b. Identify and preserve cultural and historical values through the Deer Creek Watershed Restoration Action Strategy.
 - c. Continue promoting and supporting the efforts of the Delaware–Lehigh National Heritage Corridor & Lackawanna Valley National Heritage Area, in partnership with the Susquehanna Greenway Partnership, to implement strategies to preserve cultural and historic heritage resources in Luzerne and Lackawanna Counties.
3. **NRCS:**
 - a. Continue to protect cultural resources by evaluating the impact of all conservation measures planned and implemented with agency assistance and avoiding impacts or enhancing cultural resource protection when practicable.
 - b. Continue to work with Pennsylvania to fund permanent conservation easements, including those that protect cultural resources, through the Farm and Ranch Land Protection Program (FRPP).
4. **USACE:** Coordinate, as part of the National Environmental Policy Act, all projects with appropriate stakeholders to assure cultural and historical preservation, and seek to add educational amenities about local history and culture.

C. State Programs and Projects

1. New York:

Department of State – Provide local communities with planning assistance and grant funding through the Local Waterfront Revitalization Program. Designated inland waterways include the Chemung River, Otsego Lake, Susquehanna River, and Tioughnioga River.

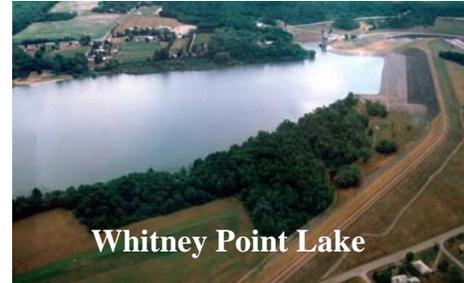
2. Pennsylvania:

- a. PADCNR-BRC – Provide Heritage Areas Program funds and administer the state’s Scenic Rivers Program.
- b. PADCNR-BOF – Continue to work with PHMC to identify and protect known archeological sites on state forest lands.

WATER RESOURCE NEED NO. 11 – ENHANCE RECREATION
Expand and improve water-based recreational opportunities in the basin.

A. SRBC

Pursue enhanced recreation in the context of the programs and projects listed under other needs (i.e., Whitney Point Lake Section 1135 Project Modification to include enhanced recreational facilities to be maintained by the County of Broome, New York). Continue supporting efforts to restore migratory fish to the basin to open up vast new recreational opportunities.



B. Federal Programs and Projects

1. NPS:

- a. Evaluate, in partnership with water trail management organizations and the Commonwealth of Pennsylvania, the needs and potential responses to help sustain developing water trails; provide grants and technical assistance to help ensure all current developing water trails in the Chesapeake Bay Gateways Network along the Susquehanna River and major tributaries meet baseline developmental criteria by 2008 (427 river miles designated and over \$435,000 granted to date).
- b. Solicit along major nominations and designate additional Chesapeake Bay Gateway water trails tributaries of the Susquehanna River.
- c. Continue partnering with water trail management organizations, Commonwealth of Pennsylvania and other partners to implement the Susquehanna River Trail Signage Project and complete other components of the Susquehanna River Trail System (Susquehanna River Water Trail – North Branch, Headwaters River Trail Partnership - NYS).
- d. Continue providing consultation level assistance to the Susquehanna River Greenway through the Rivers and Trails Program.
- e. Consider requests for technical assistance with community-based river, trail and greenway projects in the Susquehanna Basin through the Rivers, Trails and Conservation Assistance Program.
- f. Conserve “recreation habitat” and provide public access through the Deer Creek Watershed Restoration Action Strategy.
- g. Continue supporting the Delaware – Lehigh National Heritage Corridor & Lackawanna Valley National Heritage Area, in partnership with the Susquehanna Greenway Partnership, to implement strategies to link Lackawanna Valley trails with the Delaware and Lehigh trail system along the Susquehanna.
- h. Continue working (in partnership with the Active Living by Design Program) with the Wyoming Valley Wellness Partnership to implement health and wellness strategies using the Wyoming Valley trail system.

2. **NRCS:** Continue to ensure proper local operation and maintenance of NRCS-assisted dams that include water-based recreation in the following watershed projects: Briar Creek, Marsh Creek, Middle Creek, Mill Creek (Tioga County), North Fork Cowanesque River.
3. **OSM:** Continue to provide technical and financial support to PADEP and watershed groups to remediate the impacts of mine drainage in streams, thereby allowing the restoration of fisheries and enhancement of recreational opportunities, including fishing, boating, and scenic viewing by driving, hiking and biking.
4. **USACE:** Support the inclusion of recreational enhancements in new projects, such as the riverfront development initiatives at the Wyoming Valley Levee Raising Project and at existing projects.
5. **USGS:** Develop and maintain methods to make water quantity and quality data readily available to the public so it can be used for recreational purposes. Compile requests from public for more or different hydrologic data and seek funding to support sustainable requests.

C. State Programs and Projects

1. New York:

- a. Regional Efforts – Support water-based recreation to include: Chemung Basin River Trail Partnership, Headwaters Water Trail, and Tioughnioga River Waterfront Revitalization Program.
- b. USC – Provide support for boat landing construction projects on the Chemung River.

2. Pennsylvania:

- a. PADCNR:
 - (1) PADCNR-BRC – Provide Heritage Areas Program funds and administer the state’s Scenic Rivers Program.
 - (2) PADCNR-BOF – Continue efforts with other partners to develop and expand the Susquehanna River Trail program.
- b. PFBC – Continue to provide technical assistance for stream and wetland restoration projects, including but not limited to T&E species. Provide technical review for projects and permits in the watershed. Evaluate and manage fisheries in the watershed. Continue enforcement of existing laws and regulations.

WATER RESOURCE NEED NO. 12 – FACILITATE DATA MANAGEMENT AND USE

Inventory and store relevant water resource management data in a readily retrievable and usable form, as well as promote data sharing among agencies.

A. SRBC

- 1. Data Management Improvements:** Continue to analyze the SRBC's data management procedures, and implement a new and improved data management system in phases over the next several years. Continue developing SRBC's water quality database and enter data into STORET system. Develop an electronic atlas to provide the public with water resources information on the basin.
- 2. Geographic Information Systems (GIS) Enhancements:** Advance the development of the GIS program to support watershed and water resource activities. Make spatial data files, standard GIS maps, and mapping assistance available to the public. Increase efforts to provide digital and hard copy mapping assistance to local groups doing watershed planning and remediation.



B. Federal Programs and Projects

- 1. EPA:**
 - a. Closely coordinate with PADEP on data submission dates for 303(d), 305(b), and Chesapeake Bay Program state of the watershed assessment reporting and public communication schedules.
 - b. Continue implementing water quality data reporting through STORET and assist SRBC in application of new STORET procedures.
- 2. FEMA:** Continue storing engineering data used for flood insurance studies and mapping in a database and is readily available to internal resources and available to other agencies and general public upon request. Continue storing information on community participation in the Community Information System and make available to federal and state agencies and, to a limited extent, to the general public via the internet. Continue making flood insurance rate maps available through the internet and continue developing a new website that will also include all Letters of Map Change (amendments and revisions to flood maps).
- 3. NRCS:** Continue to maintain and share resource data including soils data, National Resource Inventory (NRI) and summary data from the NRCS Watershed Program database and Progress Reporting System. Continue to develop Rapid Watershed Assessments for 8-digit hydrologic units by assembling data from multiple sources into a uniform GIS based format.
- 4. NWS:** Provide AHPS standardized and uniform web pages. Provide flood forecast mapping at prototype locations on Juniata and mainstem Susquehanna. Provide easy access for customers to gridded analyses and forecasts of watershed conditions (future).
- 5. OSM:** Continue maintaining (in the Harrisburg Office) the GIS database of AMD treatment systems in Pennsylvania and distributing this database to agencies, consultants, individuals and nonprofit groups with interests in cleaning up streams impacted by mine drainage. Continue

efforts to make this database available on an OSM web site. Continue administering a national database of AML problems, and projects completed to mitigate the environmental and public health and safety impacts. Continue providing this database through OSM's web site at OSMRE.gov.

6. **USACE:** Support continued improvement of databases and data management systems, including sharing of data.
7. **USFWS:** Continue stream and habitat restoration efforts with products provided by SRBC's GIS mapping capabilities.
8. **USGS:** Promote use of NWIS web for availability of historic and real-time water resources data.

C. State Programs and Projects

1. **New York:** USC – Develop GIS-based data management system for New York's Agricultural Environmental Management program. Maintain a wetland database for the Upper Susquehanna Basin.
2. **Pennsylvania:**
 - a. **PADCNR:**
 - (1) PADCNR-BRC – Continue maintaining the Natural Heritage Program's database that includes data on a large number of aquatic and riparian plants and wildlife species, and continue sharing the data with other participating state agencies and federally and internationally through NatureServe.
 - (2) PADCNR-BOF – Continue to develop Spatial Analysis Program (SAP) to identify private stewardship forests. Use GIS to identify critical lands for water quality improvement projects.
 - b. **PFBC** – Assist other program areas by making current resource information available for permitting needs. Supply resource information to advisory and watershed groups.