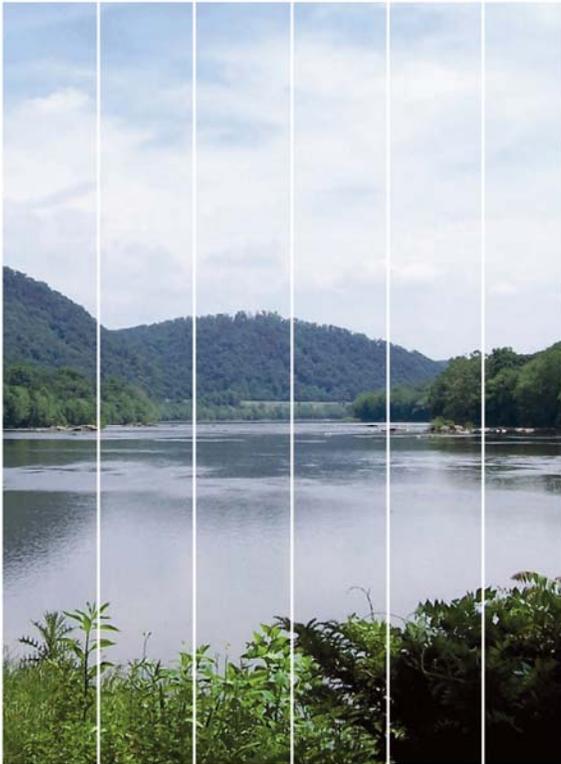


Protecting Your Watershed
for Today and Tomorrow

SRBC



Susquehanna River Basin Commission
2009 WATER RESOURCES PROGRAM
March 2009

SUSQUEHANNA RIVER BASIN COMMISSION

2009 Water Resources Program

March 12, 2009

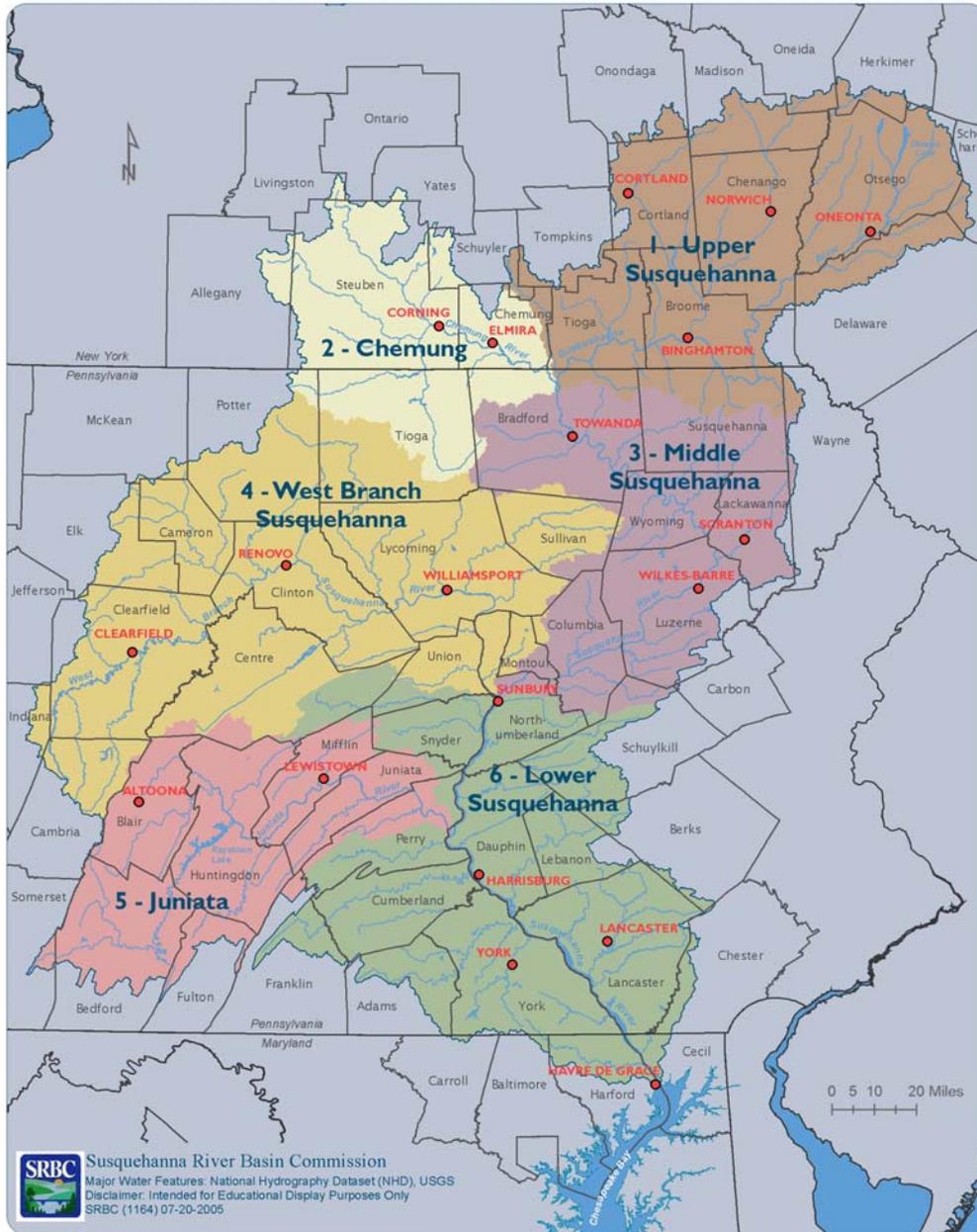


Section 14.2 of the Susquehanna River Basin Compact (Compact), P.L. 91-575 states that “the Commission will annually adopt a water resources program, based upon the comprehensive plan, consisting of the projects and facilities which the Commission proposes to be undertaken by the Commission and by other authorized governmental and private agencies, organizations, and persons during the ensuing six years or such other reasonably foreseeable period as the Commission may determine.” The Susquehanna River Basin Commission (SRBC), in general, looks to a 2- to 3-year period for the water resources program.

In accordance with SRBC’s Comprehensive Plan (www.srbc.net/planning/compplan_files.asp) – revisions adopted on December 4, 2008 – the annual water resources program is the mechanism for implementing the “Actions Needed” as listed in the Comprehensive Plan under the six Priority Management Areas. Those management areas are listed below and serve as the foundation by which SRBC, the federal, state and local agencies and the non-governmental organizations identified and cataloged their programs and projects within this 2009 Water Resources Program (www.srbc.net/planning/waterresources2009.htm) to help meet the water resource needs in the Susquehanna River Basin.

1. Water Supply (pp. 3-10)
2. Water Quality (pp. 11-36)
3. Flooding (pp. 37-44)
4. Ecosystems (pp. 45-56)
5. Chesapeake Bay (pp. 57-68)
6. Coordination, Cooperation and Public Information (pp. 69-80)

Susquehanna River Basin SUBBASINS



Priority Management Area A – Water Supply



Drought-impacted water supply reservoir (left) and stream in the Susquehanna basin.

Desired Result: *To meet immediate and future water needs of the people of the basin for domestic, municipal, commercial, agricultural, industrial water supply, and recreational activities, in order to maintain sustainable economic viability, protect instream uses, and ensure ecological diversity through regulation and planning.*

The following Actions Needed under Priority Management Area A – Water Supply are from SRBC's *Comprehensive Plan for the Water Resources of the Susquehanna River Basin*, pp. 44-47. The responses under each Action Needed are those programs and/or projects to be initiated, maintained or completed in 2009 through 2010 by governmental and non-governmental interests.

ACTION NEEDED:

Determine water availability through water budget assessments (analysis of demand increases and expected base flow levels) to establish local sustainable limits for water use development.

Federal Programs and Projects

U.S. Army Corps of Engineers

1. 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, if funding is available.)

U.S. Geological Survey (USGS)

1. Continue performing watershed assessments, which include water budgets that account for water usage, for the Pennsylvania Department of Environmental Protection (PADEP) as part of the State Water Planning process for identifying potentially stressed areas in the lower portion of the Susquehanna River Basin. (The assessments are done using a Water-Analysis Screening Tool developed through PADEP and USGS partnership. Verifying water use in the respective watersheds is a large part of the assessments.)

New York Programs and Projects

NYS Department of Environmental Conservation

1. Allocate public water supplies through the Public Water Supply Permit Program.

Pennsylvania Programs and Projects

Department of Environmental Protection – Bureau of Watershed Management

1. Support close cooperation and data sharing with SRBC.

Department of Environmental Protection – Water Planning Office

1. Begin implementing the recommendations in the updated State Water Plan, which includes water budget assessments of watersheds.

ACTION NEEDED:

Protect healthy ecosystems and instream flow needs, including recreation.

Federal Programs and Projects

U.S. Fish and Wildlife Service

1. Promote northeast regional water supply and demand analysis and alternatives to meet needs, manage growth and be protective of living resources.
2. Continue involvement in the Conowingo Pond Management Plan and advance migratory fish flow needs.

U.S. Geological Survey (USGS)

1. Initiate work activities for an instream flow project in partnership with The Nature Conservancy (TNC) and SRBC. (The project is to simulate baseline streamflow conditions that support instream flow protection. The project is being funded by a grant from Pennsylvania Department of Environmental Protection Growing Greener program, which TNC applied for as the project sponsor. USGS is providing matching funds.)

New York Programs and Projects

NYS Department of Environmental Conservation

1. Develop and finalize by summer 2009 a supplemental generic environmental impact statement to evaluate and appropriately regulate water use and other environmental impacts associated with developing natural gas resources from shale formations. (The impact statement being developed is called “Draft Supplemental Generic Environmental Impact Statement (dSGEIS) on the Oil, Gas and Solution Mining Regulatory Program; Well Permit Issuance for Horizontal Drilling and High-Volume Hydraulic Fracturing to Develop the Marcellus Shale and Other Low Permeability Gas Reservoirs.”)

Upper Susquehanna Coalition and Member Soil and Water Conservation Districts

1. Continue the active wetland restoration and construction program to provide multiple benefits, including maintenance of base flows and mitigation of drought impacts.

Pennsylvania Programs and Projects

York County Conservation District

1. Continue interest and involvement in the following waterbodies: Yellow Breeches Watershed; Conewago Creek (West) Watershed; Codorus Creek Watershed; Kreutz-Muddy Creek Watersheds; Deer Creek and Gunpowder Falls Watersheds; Lower Susquehanna River; Codorus Lake; Redman and Williams Reservoirs; Shepard-Myers Lake; and Long Arm Lake.

Maryland Programs and Projects

Department of Natural Resources – Resource Assessment Service / Tidewater Ecosystem Assessment / Power Plant Research Program

1. Continue involvement with the Susquehanna Flowby Workgroup that is helping to define potential impacts of low streamflow from the Susquehanna River on water quality and aquatic resources in the Chesapeake Bay and tributaries that need to be considered in terms of minimum flow requirements at Conowingo.

Department of Natural Resources (DNR) – Boating Services Unit

1. Continue ongoing efforts to promote best management practices at marinas and public access sites statewide, including the Susquehanna River. (DNR's Clean Marina Initiative provides marina and boatyard operators with technical assistance to plan for and implement strategies that promote water quality and environmental responsibility.)
2. Continue working in partnership with local governments and the non-profit Lower Susquehanna Heritage Greenway to develop, map, and promote a network of water trails and public access sites that will help promote recreational boating, encourage a stewardship ethic for the Chesapeake Bay, and provide local eco-tourism experiences and economic development. (DNR's Access Planning and Water Trails program provides technical and design assistance to communities.)

ACTION NEEDED:

Identify additional Potentially Stressed Areas, address unaccounted-for water in approved projects, and implement the recommendations contained in the 2005 Groundwater Management Plan.

Susquehanna River Basin Commission Programs and Projects

1. Throughout 2009 and 2010: Enforce unaccounted-for water standards in approved projects.
2. Throughout 2009 and 2010: Coordinate with Pennsylvania Department of Environmental Protection to identify Critical Water Planning Areas.

ACTION NEEDED:

Assess potential impacts of increased water use and the potential to temper increases through conservation and water reuse, particularly in Potentially Stressed Areas, and otherwise manage water resources for sustainability.

Susquehanna River Basin Commission Programs and Projects

1. By March 15, 2009: Revise consumptive use projections as needed in conjunction with Cowanesque/Curwensville Reassessment.
2. By June 30, 2009: Assist the Commonwealth of Pennsylvania to encourage water conservation by contracting with an entity to establish the Water Resources Technical Assistance Center.

Federal Programs and Projects

Natural Resources Conservation Service (NRCS)

1. Continue to provide technical and financial assistance to agricultural producers through Farm Bill programs, Conservation Technical Assistance and Resource Conservation and

Development program to improve efficient use of existing water supplies, improve irrigation water management, improve soil health, increase the use of moisture conserving crop production practices, and protect source water from agricultural pollutants.

2. Continue to ensure proper local operation and maintenance of NRCS-assisted multiple purpose dams that include water supply located in the following watershed projects in Pennsylvania: Marsh Creek, Middle Creek, and Mill Creek (Tioga County).

U.S. Army Corps of Engineers

1. Assess the impacts of flow alteration on aquatic resources and establish “ecological flow” criteria and the impacts of growing water demand basinwide through the Susquehanna River Basin Low Flow Management and Environmental Restoration Project.

U.S. Geological Survey

1. Continue assisting the Pennsylvania Department of Environmental Protection as part of the State Water Plan efforts by incorporating by-pass flows and conservation releases in the Water-Analysis Screening Tool to assess ongoing mitigation efforts. (The tool also allows for scenario testing where increased water demands could be entered into the tool and subsequent efforts evaluated.)

New York Programs and Projects

Corning Area Municipalities

1. Review the “Chemung River Valley Water Study” (April 2003) and consider implementing recommendations for sustainable management of the area’s water resources.

Pennsylvania Programs and Projects

Department of Environmental Protection – Water Planning Office

1. In 2009: Work with SRBC and its selected contractor to develop a Water Resources Technical Assistance Center.

York County Conservation District

1. Continue interest and involvement in related education and outreach initiatives.

Maryland Programs and Projects

Department of Natural Resources (DNR) – Boating Services Unit

1. Continue to administer the agency’s minimum water depth of 3-4 feet requirement to maintain recreational boating activities. (DNR’s Boating Service unit is concerned about the potential impacts of increased water use particularly as it may affect water levels and instream flow of the river.)

ACTION NEEDED:

Support efforts by member jurisdictions to safeguard groundwater recharge by preserving recharge contributing areas.

Susquehanna River Basin Commission Programs and Activities

1. Throughout 2009 and 2010: Assist the Pennsylvania Department of Environmental Protection to develop Critical Area Resource Plans for areas designated as Critical Water Planning Areas.

ACTION NEEDED:

Encourage and incentivize water conservation by water suppliers, industry and the public through education and application of regulatory requirements.

Susquehanna River Basin Commission Programs and Projects

1. Through 2009: Facilitate establishment of Water Resources Technical Assistance Center in accordance with contract executed with the Pennsylvania Department of Environmental Protection by June 30.

Federal Programs and Projects

Environmental Protection Agency (EPA), Region 3

1. Continue sponsoring WaterSense, a voluntary partnership program, to protect the future of the nation's water supply by promoting water efficiency and enhancing the market for water-efficient products, programs, and practices.

(WaterSense - www.epa.gov/watersense/index.htm - will help consumers identify water-efficient products and programs. The WaterSense label will indicate that these products and programs meet water efficiency and performance criteria. WaterSense labeled products will perform well, help save money, and encourage innovation in manufacturing. WaterSense is partnering with irrigation professionals and irrigation certification programs to promote water-efficient landscape irrigation practices, and partnering with manufacturers, retailers and distributors, and utilities to bring WaterSense products to the marketplace and make it easy to purchase high-performing, water-efficient products. For information contact: Ramon D. Albizu, Environmental Scientist, WaterSense Team, Phone: (215) 814-5779, E-mail: albizu.ramon@epa.gov.)

New York Programs and Projects

NYS Department of Agriculture and Markets

1. Monitor and manage agricultural droughts as conditions warrant.

NYS Department of Environmental Conservation

1. Continue to require water conservation programs and include conditions on all newly issued water supply permits.
2. Serve as a member of the New York State Drought Management Task Force and coordinate with the U.S. Geological Survey in evaluating regional drought conditions.

NYS Department of Health

1. Encourage water conservation for new water supplies.
2. Recommend installation of meters.
3. Work with communities on water conservation plans during droughts, main breaks or other emergency conditions.

ACTION NEEDED:

Revise the Commission's Drought Coordination Plan in consultation with the Drought Coordinating Committee.

Susquehanna River Basin Commission Programs and Projects

1. By April 30, 2009: Consult drought coordination committee members regarding modifications to the Drought Coordination Plan.

2. By July 1, 2009: Incorporate recommended modifications to the Drought Coordination Plan, as appropriate.

ACTION NEEDED:

Monitor the ecosystem effects of diversions of water to and from the basin and transfers of water from one waterbody to another within the basin, including water quality requirements.

Pennsylvania Programs and Projects

Eastern Pennsylvania Coalition for Abandoned Mine Reclamation

1. Continue communicating with SRBC, Pennsylvania Department of Environmental Protection, PPL Corporation and others following the February 2009 Mine Pool Forum.

ACTION NEEDED:

Implement recommendations of the Commission's Consumptive Use Mitigation Plan. Key recommendations include, among others: (a) the evaluation of existing U.S. Army Corps of Engineers and other reservoirs for the potential to enhance current release operations; (b) the evaluation of the ability of abandoned mines and quarries to supply water for releases during droughts; and (c) the assessment of specific needs for instream flows to meet riparian, water supply, water quality, habitat and recreational uses.

Susquehanna River Basin Commission Programs and Projects

1. Throughout 2009 and 2010: Continue the "Assessment of Optimizing Use of Water Storage at Cowanesque and Curwensville Lakes" begun in November 2008 in cooperation with the U.S. Army Corps of Engineers, including identifying (by March 31, 2009) and investigating (by August 1, 2009) future baseline conditions and hydrologic modeling of alternative reservoir release options.
2. By March 31, 2009: Establish cooperative committee under Section 729 Low Flow Study to assist in determination of ecological flow needs in watersheds of the basin.
3. By June 30, 2009: Develop hydrologic data for use in assessing existing alteration of natural stream flows in major streams of the basin and below large reservoirs.
4. By October 31, 2009: Collaborate with mining agencies and organizations to identify mines with potential for flow augmentation and assess storage, augmentation capabilities and cost estimates.

Pennsylvania Programs and Projects

**Department of Environmental Protection –
Bureau of Abandoned Mine Reclamation (BAMR)**

1. In 2009: Begin constructing a treatment plant at the headwaters of the West Branch Susquehanna River to transfer mine pool within the Lancashire #15 mine – mined by the Barnes and Tucker Coal Company – back into the Susquehanna basin. (Once operational, this project will provide 10 million gallons per day of new water to the basin.)
2. Continue project development activities, including beginning the design phase of a treatment plant, to provide an additional 5.7 million gallons of water per day of treated stored mine pool water during low-flow conditions. (In 2007, BAMR completed a mine pool assessment that identified the potential mine pools in the headwaters of Clearfield

Creek (from the Cresson, Gallitzin and Argyle/Stone Bridge mines near Cresson) to provide this additional flow to the Susquehanna basin.)

Eastern Pennsylvania Coalition for Abandoned Mine Reclamation

1. Work to determine the regional underground mine pool capacities for either potential storage or water re-use in the future for economic redevelopment and possibly consumptive use by industries that have direct relationships to water withdrawals from the Susquehanna River Basin. (Work has already begun in the Western and Southern Anthracite Coal Fields on this issue and SRBC is included in this partnership effort.)

OTHER KEY PROJECTS AND/OR PROGRAMS

(specific to this Priority Management Area but not captured in the select actions listed above)

Federal Programs and Projects

NOAA National Weather Service

1. Provide Advanced Hydrologic Prediction System long-term (30-day) probability forecasts for river locations within the basin. Provide long-term (30-60-90-day) inflow forecasts for area reservoirs.
2. Improve drought/low flow forecasts based on enhanced gridded data.
3. Provide precipitation departures from normal (monthly, seasonal, annual) for county-wide areas and drought statements as necessary.
4. Support the National Integrated Drought Information System through stakeholder engagement and provision of hydromet data.

U.S. Army Corps of Engineers

1. Evaluate water supply actions identified in Water Resources Development Act of 2007.

New York Programs and Projects

NYS Department of Environmental Conservation

1. Continue monitoring developments in climate science, energy technology and the economic impacts of climate change. (This issue is being addressed through a number of programs that work toward greenhouse gas reduction and adaptation to anticipate impacts.)

Pennsylvania Programs and Projects

Department of Environmental Protection – Bureau of Water Standards and Facility Regulation

1. Evaluate and provide recommendations for optimization of process control of Publicly Owned Treatment Works that are within five miles upstream of a public drinking water system plant intake.
2. Encourage the development of community-based source water protection programs to safeguard the public drinking water supplies based on threats identified in source water assessments.

Department of Conservation and Natural Resources – Bureau of State Parks

1. In 2009: Drill a new well at each of these state parks: Colton Point, Leonard Harrison, and Ole Bull.

**Department of Conservation and Natural Resources –
Bureau of Topographic and Geologic Survey**

1. Draft a publication, in cooperation with U.S. Geological Survey (USGS), entitled “Estimated Mean Annual (1971-2000) Groundwater Recharge Rates of Pennsylvania Watersheds.” (Map 71, scale to be determined. The map and text summarizing groundwater recharge in Pennsylvania based on USGS 2008 report, "Regression Method for Estimating Long-Term Mean Annual Ground-Water Recharge Rates from Base Flow in Pennsylvania" (USGS SIR 2008-5185), by Dennis W. Risser, Ronald E. Thompson, and Marla H. Stuckey, and additional study.)

York County Conservation District

1. Maintain the district’s following existing programs: Agricultural Conservation Planning and Technical Assistance; Chesapeake Bay Program; Dirt and Gravel Road; Environmental Education Program; Erosion and Sediment Control Program; Floodplain Management Program; and Watershed Management Program.
2. Continue to support the York County Agricultural Land Preservation Program.
3. Continue involvement with the following River Conservation Plans (RCP): Yellow Breeches Watershed RCP; Conewago Creek (West) Watershed RCP; Codorus Creek Watershed RCP; Kreutz Creek, Lower Susquehanna and Mason-Dixon Watersheds RCPs; and Muddy Creek Watershed RCP.

Black Hole Creek Watershed Association

1. Monitor and record base flow. (The watershed association purchased flow meters using funds from a Pennsylvania Department of Environmental Protection Growing Greener grant. The association notes that the White Deer Golf Course currently withdraws water.)

Priority Management Area B – Water Quality



Collecting macroinvertebrates (left). Abandoned mine lands in Clearfield County, Pennsylvania.

Desired Result: *To support the designated uses of all waterbodies by achieving water quality that meets or exceeds standards.*

The following Actions Needed under Priority Management Area B – Water Quality are from SRBC's *Comprehensive Plan for the Water Resources of the Susquehanna River Basin*, pp. 50-54. The responses under each Action Needed are those programs and/or projects to be initiated, maintained or completed in 2009 through 2010 by governmental and non-governmental interests.

ACTION NEEDED:

Monitor and assess waters for bacteria, pharmaceuticals and personal care products, and other emerging contaminants of concern.

Federal Programs and Projects

Environmental Protection Agency, Region 3

1. Encourage continued expansion of bacteria monitoring in Pennsylvania by providing 106 supplemental monitoring funds.

U.S. Fish and Wildlife Service

1. Conduct sampling by the Chesapeake Bay Field Office in two locations in fall 2009 along the Susquehanna River as part of the Investigation of Endocrine Disruption in Largemouth and Smallmouth Bass in the Northeast Region National Wildlife Refuges (NWR). (The goals of the project are to determine the extent and magnitude of endocrine disruption in bass on or near NWRs and to identify possible stressors. One sample, 10 male and 10 female bass, will be collected near the Susquehanna NWR (part of the Chesapeake Marshlands NWR complex) and a second sample from an upriver location in Pennsylvania. Fish will be analyzed for gonadal abnormalities, hormone concentrations and concentrations of vitellogenin (precursor protein for eggs).)

U.S. Geological Survey (USGS)

1. Continue, with the Pennsylvania Department of Environmental Protection, evaluating wastewater byproducts, hormones, personal care products and pharmaceuticals in water and sediment below wastewater treatment plants throughout Pennsylvania.
2. Continue to encourage the establishment of water-quality baseline data as an integral part of the science needed regarding gas extraction from the Marcellus shale. (This gas extraction has led to concerns over water contamination by conventional and emerging contaminants. In June 2008, the USGS prepared a 10-point list of scientific data needs relating to resource extraction from gas reservoirs in Pennsylvania. The list was provided to SRBC and other agencies on August 11, 2008. USGS has prepared three proposals for data collection and research to better understand the factors affecting water quality in areas where gas extraction from the Marcellus shale is ongoing and anticipated.

New York Programs and Projects

NYS Department of Environmental Conservation – Division of Water

1. Conduct monitoring of flowing and ponded surface waters and groundwater in the eastern Susquehanna River Basin, including water, sediment, and tissue chemistry, toxicity testing, and physical assessment of waterbodies.
2. Complete assessment and update of water quality information collected in 2008 from the Chemung River Basin.

NYS Department of Health

1. Update monitoring requirements and safe drinking water standards for public water supplies.
2. Provide existing and new water suppliers with information and monitoring assistance.

NYS Department of Health / County Health Departments

1. Assist with interpretation of water quality monitoring results for private water supplies.
2. Conduct monitoring of private water supplies for bacteria and other contaminants, including one-time surveys in selected high risk areas when resources allow.

Pennsylvania Programs and Projects

Department of Environmental Protection

1. Continue to be involved in a joint monitoring program with the U.S. Geological Survey regarding emerging contaminants of concern.

ACTION NEEDED:

Monitor for zebra mussels and other invasive species.

Susquehanna River Basin Commission Programs and Projects

1. By February 2009: Discuss monitoring procedures with Pennsylvania Sea Grant.
2. In spring 2009: Review monitoring procedures for adult zebra mussels and selected other invasive species during field orientation session.
3. Beginning spring 2009: Implement monitoring protocols for interstate, subbasin survey, and large river monitoring programs.

(SRBC performs water quality, aquatic habitat, and benthic macroinvertebrate monitoring for its subbasin survey, interstate streams, and large river assessment projects and has also performed some monitoring for volatile organics, bacteria, and fisheries. Fisheries monitoring

has been incorporated into SRBC's interstate streams monitoring program, and is being performed by SRBC for the Whitney Point environmental restoration project as well as the U.S. Environmental Protection Agency's National Rivers and Streams Assessment. SRBC is involved with invasive species management through the Mid-Atlantic Panel on Aquatic Invasive Species. Pennsylvania Sea Grant has taken a lead role in tracking the distribution of invasive species in the basin, and has provided training in zebra mussel monitoring. SRBC staff has performed zebra mussel monitoring and identified new areas where they occur. Field procedures for zebra mussel monitoring will be reviewed and other species will be considered for inclusion in SRBC's monitoring programs.)

Federal Programs and Projects

U.S. Army Corps of Engineers (USACE)

1. Carefully monitor development and spread of zebra mussels and other invasive species infestations at reservoirs. (USACE is monitoring at Cowanesque Lake in conjunction with Pennsylvania Sea Grant, as traces of zebra mussels were discovered at the project in 2007.)

New York Programs and Projects

SUNY – Oneonta Biological Field Station

1. Conduct monitoring and research on zebra mussels and other invasive species in Otsego Lake and the Upper Susquehanna Basin.

Pennsylvania Programs and Projects

Department of Environmental Protection – Water Planning Office

1. Continue to support and coordinate with Pennsylvania Sea Grant, which operates a zebra mussel monitoring network. (Sea Grant plans to develop a durable field guide to assist in early identification and rapid response to new invasive species.)

Black Hole Creek Watershed Association

1. Continue to offer information on invasive plant species through power point presentations and also through handouts at watershed meetings.

Exelon

1. Continue monitoring the Peach Bottom Atomic Power Station for zebra mussels as part of the Pennsylvania Sea Grant Invasive Species Monitoring Program.
2. Evaluate additional zebra mussel management options.

Maryland Programs and Projects

Department of Natural Resources – Invasive Species Matrix Team

1. Continue monitoring for invasive species.

Department of Natural Resources (DNR) – Resource Assessment Service / Monitoring and Non-Tidal Assessment

1. Prior to 2009 boating and angling season: Post "Stop Aquatic Hitch Hikers" signs at all boat ramps and marinas along the Lower Susquehanna in an effort to educate boaters and help contain the zebra mussels to the Lower Susquehanna. (DNR currently has no plans to conduct zebra mussel monitoring in the Maryland portion of the Susquehanna. DNR's Invasive Species Matrix Team reviews results from utility monitoring efforts in the Lower

Susquehanna River and has been involved in interagency discussions with other state agencies and utilities about recent findings of zebra mussels in the Conowingo area of the Susquehanna River Basin.)

ACTION NEEDED:

Expand the Commission's Early Warning System for public water suppliers in the basin.

Susquehanna River Basin Commission Programs and Projects

1. By September 2009: Establish monitoring stations upstream of Binghamton on the Susquehanna River and upstream of Elmira on the Chemung River.
2. Throughout 2009 and 2010: Conduct outreach meetings with Maryland water suppliers to explore possible expansion into Maryland.
3. Beginning in February 2009: Plan for additional sites in Pennsylvania as part of new Pennsylvania Department of Environmental Protection source water protection grant activities.

(In 2003, SRBC established its Early Warning System for public water suppliers withdrawing water from the Susquehanna River in Pennsylvania. In 2006, the system was expanded to include monitoring for intakes at Binghamton and Elmira, and in 2009, SRBC will establish monitoring locations upstream of Binghamton and Elmira to give those communities advance warning of water quality conditions upstream of their intakes. Currently, six stations have the capability to monitor water pH, temperature, and turbidity using online analyzers at intake locations, and transmitting the data in real-time to the associated treatment plant. The data can also be shared among water suppliers to give advance warning of upstream conditions. Four of the six stations currently provide enhanced monitoring for organic contaminant detection.)

ACTION NEEDED:

Develop, support, and implement remediation plans for areas of the basin that are impacted by AMD, agricultural, urban, and other sources.

(AMD stands for abandoned mine drainage. This acronym is referenced periodically from this point on.)

Susquehanna River Basin Commission Programs and Projects

1. By summer 2009: Continue work on Paxton Creek Stormwater project and include Pennsylvania Fish and Boat Commission as a restoration partner.
2. By March 2009: Submit updated proposal to maintain West Branch Susquehanna River database and assist Pennsylvania Department of Environmental Protection/Office of Surface Mining to identify potential areas for remediation.
3. Throughout 2009 and 2010 as funds are available: Complete additional phases of Bear Run Abandoned Mine Drainage Restoration Project through Pennsylvania Growing Greener Renaissance Grant Program.
4. By February 2009: Submit grant application for Sinnemahoning Creek atmospheric deposition restoration plan.
5. Throughout 2009 and 2010: Continue work on total maximum daily loads for impaired watersheds in the basin and participate in monthly conference calls and periodic meetings of the Chesapeake Bay Water Quality Steering committee.

(SRBC has worked with the Paxton Creek Watershed and Education Association on the 3-year Paxton Creek project to develop an innovative and cooperative stormwater management approach of Pennsylvania communities. In May 2008, SRBC published the West Branch Susquehanna Subbasin AMD Remediation Strategy, and proposed that the database for the

strategy be kept up to date. SRBC remains active in the restoration of the West Branch and its tributaries, and is working with the Indiana County Conservation District and others to completely restore the Bear Run Watershed, which is directly downstream of the restored Barnes and Watkins Coal Refuse Pile and the discharge for the proposed Barnes and Tucker Mine Drainage Treatment Plant. SRBC's assistance to its member states in performing total maximum daily loads helps to plan and focus restoration efforts for impaired streams in the basin.)

Federal Programs and Projects

Environmental Protection Agency (EPA), Region 3

1. Continue to administer the Healthy Water Priority program to emphasize four key pollutants in the following four regional sectors:

Agricultural Sector

- Accelerate and assess implementation and payback to pollution reduction goals via completion of nitrogen monitoring work that contributes to assessing wetland conditions. (This short term output will contribute to the long term outcome of improved water quality and wetlands; expected 4th quarter/2009.)
- Reduce Disinfection By-Product precursors in source waters for drinking water supplies via TOC reductions by 4th quarter/2009, but work will continue into 2010.
- Reach state agreements on updating programs to align with the new Concentrated Animal Feeding Operation rule. (This short term output will help reduce manure and litter pollutant transport to streams and groundwater, reducing nutrients, sediment, pathogens, toxins and other emerging contaminants to the Chesapeake Bay Basin from agricultural activities; expected 3rd quarter/2009.)
- Complete Chesapeake Bay model update that will help address the impact of dramatic increases in corn-acreage in EPA Region 3 on nutrient and pesticide loads to the Bay; expected 3rd quarter/2009.

Mining Sector

- Develop draft protocol, comprehensive data, resources and implement pilot project to simultaneously achieve goals of the Abandoned Mine Land (AML) Trust Fund program, the Clean Water Act 303(d)-listed streams, and the National Fish Habitat Action Plan; involved AML states will utilize the allowable maximum 30 percent of AML trust funds on rehabilitation of mined land impairments where fisheries can be restored as well; expected 3rd quarter/2009.

Land Sector

- Generate informational maps for state partners to use in MS-4 planning and resource application that preserve and protect waters, wetlands and overall hydrology; expected 2nd quarter/2009.
- Continue programs developed in each state for statewide in-stream ecological flow criteria; states are engaged in discussions to address the impact of future land use changes on high quality waters and statewide programs are developed; expected 1st quarter/2010.

Transportation Sector

- Merge environmental sustainability with transportation infrastructure maintenance and creation to support the Healthy Water Priority. (To achieve such measures, the team provides assistance in furthering the goals of the Green Highways Partnership.)
2. Continue administering EPA's Clean Water Act 319 (Non-point Source) Program <http://www.epa.gov/reg3wapd/nps>, which is delegated to the state(s) and aimed at restoring water quality in impaired streams. (In Pennsylvania, the non-point source program funds projects associated with 34 Watershed Implementation Plans. These watershed

implementation plans outline the needed actions to remediate streams impacted by abandoned mines, agricultural and urban stormwater runoff pollution.)

Federal Highway Administration

1. Administer, with acceptance by the U.S. Army Corps of Engineers, the off-site/out-of-kind compensatory wetland and stream mitigation efforts regarding AMD.

Natural Resources Conservation Service (NRCS)

1. Continue to provide technical and financial assistance to agricultural producers through Farm Bill programs, Conservation Technical Assistance and Resource Conservation and Development program to address critical agricultural surface and ground water resource concerns related to soil erosion, sediment, nutrients, organic materials, pathogens and agricultural chemicals.
2. Provide Watershed Program planning assistance to address nonpoint source and mine drainage pollution at the request of local project sponsors, if funding is available.
3. Continue to ensure proper local operation and maintenance of NRCS Watershed Program assisted mine drainage remediation measures in the Glenwhite Run Watershed, Blair County, Pennsylvania.

U.S. Army Corps of Engineers

1. Support development of abandoned mine drainage solutions, including investigations of the Southern Anthracite Region (General Investigations) and Nanticoke Creek Watershed (Section 206) in Pennsylvania.

U.S. Fish and Wildlife Service

1. Continue to provide technical support in sediment reduction in tributary stream channels through identification, assessment, prioritization, and implementation of projects.
2. Provide technical assistance in developing watershed level sediment management plans.
3. Develop strategy to restore sediment trapping capacity of Conowingo Dam and upstream dams.
4. Continue agency habitat enhancement efforts, e.g., riparian buffer restoration, using water quality assessment data developed by SRBC.
5. Assist partners with planning activities.

U.S. Geological Survey

1. Continue project with the Pennsylvania Department of Agriculture to assess pesticides in groundwater from vulnerable aquifers to document long-term changes in pesticide concentrations and evaluate hotspot areas where aquifers have pesticide contamination.
2. Initiate a project in partnership with the Columbia County Conservation District to assess the chemistry and flow of AMD sources and tributaries in the Catawissa watershed, if the proposed project is funded under the Pennsylvania Department of Environmental Protection Growing Greener program.
3. Initiate a project in partnership with the Lackawanna County Planning Commission to investigate the remediation of the South Wilkes-Barre borehole discharge to Solomon Creek, if the proposed project is funded under the Pennsylvania Department of Environmental Protection Growing Greener program.
4. Continue project with the Dauphin County Conservation District and Eastern Pennsylvania Coalition for Abandoned Mine Reclamation to evaluate water resources of flooded anthracite mines in the Mahanoy and Shamokin Creek Basins.

New York Programs and Projects

NYS Department of Environmental Conservation

1. Begin implementing water quality restoration and protection measures recommended in the Priority Waterbodies Lists for the Chemung and Susquehanna Basins and the “New York Tributary Strategy for Chesapeake Bay Restoration,” and fund Water Quality Improvement Projects.

NYS Soil and Water Conservation Committee

1. Promote water quality protection and improvements through the Agricultural Environmental Management program and the Agricultural Non-Point Source Grant Program.

County Soil and Water Conservation Districts

1. Work with both the agricultural sector and municipalities to deal with nonpoint source pollution from agricultural runoff and stormwater impacts. (Following the state-legislated Agricultural Environmental Management process and plan, identify and work with farms in the county that need conservation plans and ultimately implementation projects.)

Otsego County Soil and Water Conservation District

1. In accordance with State Agricultural Non-Point Source: (1) Implement a Grazing Project to assist seven local producers implement a rotating, precision feeding protocol that includes livestock exclusion from local creeks and streams; (2) assist a medium sized concentrated animal feeding operation (CAFO) in the Lower Unadilla watershed to accumulate manure for spreading in an environmentally friendly manner (in accordance with their Comprehensive Nutrient Management Plan) and reduce nutrients for wastewater and silage leachate; and (3) develop applications to assist two additional medium sized CAFOs with Silage Leachate Projects.

Upper Susquehanna Coalition

1. Develop regional projects and grant applications to support and enhance the water quality restoration and protection efforts of member Soil and Water Conservation Districts.

Pennsylvania Programs and Projects

Department of Environmental Protection – Bureau of Mining and Reclamation (BAMR)

1. Start constructing the Hollywood AMD Treatment Plant in 2009 pending funding. (BAMR has developed a Hydrologic Unit Plan to restore Bennett Branch Sinnemahoning Creek from the impacts of AMD. Several surface reclamation projects that included alkaline addition have been completed in the watershed. More projects are planned, including the Hollywood plant that will provide a centralized facility to treat a number of discharges that will be collected via a pipeline collection system and transported to the plant. Design of the Hollywood plant is complete.)
2. Complete a qualified hydrologic unit assessment of the headwaters of the West Branch Susquehanna River. (Upon completion, the upper West Branch will be eligible for funds from BAMR’s AMD Set Aside program. The transfer of the Lancashire #15 mine drainage treatment to the headwaters from outside the basin will facilitate restoration of the upper West Branch and is a very important aspect of this assessment.)
3. Determine if original restoration goals have been met or if additional projects are needed to meet the goals of several additional approved Hydrologic Unit Plans in the basin. (They are currently being reviewed. Once this evaluation is complete, there may be a decision to spend additional AMD Set Aside funds in the basin.)

**Department of Environmental Protection –
Bureau of Watershed Management**

1. Continue implementing the Nonpoint Source Watershed Implementation Plans in 13 impaired watersheds within the Susquehanna River Basin.

York County Conservation District

1. Continue interest and involvement in the development of total maximum daily loads for the following: Pinchot Lake; South Branch Codorus Creek; Oil Creek; and PA/York County Chesapeake Bay.

Eastern Pennsylvania Coalition for Abandoned Mine Reclamation

1. Continue developing partnerships within the Susquehanna River Basin to support this SRBC “Action Needed,” specifically for AMD remediation.

Maryland Programs and Projects

**Department of Natural Resources –
Resource Assessment Service / Tidewater Ecosystem Assessment**

1. Review various planning documents submitted for Environmental Review in terms of water quality and aquatic resource impacts.
2. Provide critical comments and suggestions to reduce water resource impacts.

**Department of Natural Resources –
Watershed Service / Community and Local Government Service**

1. Continue to work through the Upper Western Shore Tributary Team to develop local plans, programs and policies to reduce or remediate impacts from land uses. (Currently, the Team is working with the City of Havre de Grace to address water quality impacts for stormwater runoff in conjunction with addressing flooding issues. Local jurisdictions are in the process of developing their Water Resource Elements for their comprehensive plans. The Team is providing input and support for that process for both Cecil and Harford Counties, as well as the municipalities within those counties.)

ACTION NEEDED:

Encourage public and private support, maintenance, and upgrades of the infrastructure needed for drinking water withdrawal, treatment; stormwater management projects; combined sewer overflows; sanitary septic overflows; and other projects needed for the maintenance and improvement of water quality.

Susquehanna River Basin Commission Programs and Projects

1. In February 2009: Provide information and support through Paxton Creek Stormwater Project and new Pennsylvania Department of Environmental Protection source water protection grant.
2. Throughout 2009 and 2010: Participate in related activities of the Association of State and Interstate Water Pollution Control Administrators and U.S. Environmental Protection Agency Region 3 meetings and distribute pertinent information and/or links via the SRBC web site.
3. Throughout 2009 and 2010: Collect monitoring data on combined sewer overflows in the Lackawanna River Watershed and provide the data to Pennsylvania Department of Environmental Protection and other stakeholders.

(SRBC and its member states are engaged in infrastructure-related issues and participate as members of the Association of State and Interstate Water Pollution Control Administrators, which works directly with the U.S. Environmental Protection Agency to promote infrastructure improvements.)

Federal Programs and Projects

Environmental Protection Agency (EPA), Region 3

1. Continue to oversee state National Pollutant Discharge Elimination System permitting and enforcement programs in Pennsylvania and Maryland, with emphasis on review of nutrient limits in permits issued within the Chesapeake Bay drainage and to implement local total maximum daily loads (TMDLs) and also to assure consistency with the Combined Sewer Overflow policy.
2. Summer/fall 2009 in Pennsylvania: Offer 1.5-day Green Infrastructure training in growth hotspot areas in Region 3 to give local communities tools to implement these practices and better manage wet weather.
3. Administer the following funds received under the American Recovery and Reinvestment Act of 2009): EPA's Clean Water State Revolving Fund (CWSRF) will receive \$4 billion for assistance to help communities with water quality and wastewater infrastructure needs; EPA's Drinking Water State Revolving Fund (DWSRF) will receive \$2 billion for drinking water infrastructure needs. Twenty percent of the funding is targeted toward green infrastructure, water and energy efficiency, and environmentally innovative projects. The funds to the states, which will have until September 30, 2010 to obligate these funds, will be distributed in the Susquehanna River Basin as follows:

CWSRF

MD - \$95.7 million

NY - \$432.6 million

PA - \$156.8 million

DWSRF

MD - \$26.8 million

NY - \$86.8 million

PA - \$65.7 million

Federal Highway Administration

1. Continue Green Highways Partnership.

U.S. Army Corps of Engineers

1. Support the development of Section 219 water infrastructure projects in Pennsylvania, such as those in Towanda and Nicholson.
2. Develop the Section 510, Chesapeake Bay Environmental Restoration and Protection Program, for environmental infrastructure and restoration.
3. Continue water quality data collection and evaluation program at reservoirs. (Where possible, regulate dams and reservoirs to improve both in-lake and downstream water quality.)
4. Initiate a design, under the Cooperstown Area Ecosystem Restoration, New York, to link an existing wetland to the Village of Cooperstown Wastewater Treatment Plant, reducing nutrient loads in the effluent, pending availability of funds.

New York Programs and Projects

NYS Department of Environmental Conservation (NYSDEC)

1. Fund Water Quality Improvement Projects.
2. Continue to evaluate the scope of aging water supply and wastewater infrastructure problems and develop cost-effective and sustainable solutions.
3. Educate local officials, federal officials, and the public about the importance of investing in water and wastewater infrastructure.

(A 2008 report, “Wastewater Infrastructure Needs of New York State,” forms the basis for establishing a sustainable wastewater infrastructure funding program. Working with the public and the Legislature, NYSDEC will work to develop the components of this critical funding program.)

NYS Department of Health (NYSDOH) / County Health Departments

1. Provide technical assistance, training, and regulatory oversight for public water supplies, septic systems, and realty subdivisions. (NYSDOH provides only technical assistance for conventional septic systems and is establishing a local waiver system to facilitate permitting of alternative systems.)

Environmental Facilities Corporation / NYS Department of Health

1. Provide low interest financing and technical assistance for community water supply systems through the Drinking Water State Revolving Fund.
2. Provide low interest financing and technical assistance for municipal wastewater treatment and water quality improvement projects through the Clean Water State Revolving Fund.

Otsego County Conservation Association

1. Implement the Otsego Lake, Upper Susquehanna Septic System Management Plan, which involves inspection and replacement of septic systems around Otsego Lake.

Schuyler County Watershed Protection Agency

1. Monitor installation of septic systems and individual water supplies to insure proper designs are used to meet NYS Department of Health standards and local laws.
2. Provide analytical services for public, private, surface, and groundwater water quality testing.
3. Seek funding for cost sharing of septic system improvements.

Lamoka and Waneta Lakes Protection and Rehabilitation Districts / Schuyler County Watershed Protection Agency / Towns of Wayne, Orange, and Tyrone

1. Implement the Lamoka-Waneta Lakes Wastewater Management Program, which provides authority for inspection of lakeside property septic systems on a 5-year basis, requiring repairs and upgrades as necessary.

Regulated Municipal Separate Storm Sewer Systems (MS4s; municipalities and nontraditional MS4 operators in the Elmira and Binghamton urban areas)

1. Identify and eliminate sanitary septic overflows and other illicit discharges.
2. Regulate construction and post-construction stormwater runoff from new development.
3. Provide for long-term maintenance of stormwater management facilities.
4. Implement programs and practices that protect and restore stormwater quality (good housekeeping practices).

Broome Tioga Stormwater Coalition / Chemung County Stormwater Coalition

1. Support successful implementation of MS4 Stormwater Management Programs by maintaining stormwater web sites, providing training, conducting public education, facilitating public involvement activities, and providing direct assistance to MS4 municipalities.
2. Obtain grants to assist with stormwater management practices and MS4s stormwater management programs.

Chemung County Stormwater Coalition / Tioga County Soil and Water Conservation District

1. Review Stormwater Pollution Prevention Plans for construction projects in the urban area and conduct site inspections on behalf of regulated MS4 municipalities.

Rural Stormwater Coalition of Chemung, Schuylers, and Steuben Counties

1. Promote progressive stormwater management policies and practices in non-urban areas through training, public education, technical assistance, and other efforts.

Pennsylvania Programs and Projects

**Department of Environmental Protection –
Bureau of Watershed Standards and Facility Regulation**

1. Continue involvement with regulatory revisions, planning and permitting requirements, and guidance development to address many of the issues identified in this SRBC “Action Needed.”

Eastern Pennsylvania Coalition for Abandoned Mine Reclamation

1. Continue developing partnerships within the Susquehanna River Basin to support this SRBC “Action Needed,” specifically with local municipalities on stormwater management projects related to abandoned mine reclamation, combined sewer overflows, wildcat sewers, and other nonpoint source projects.

Black Hole Creek Watershed Association

1. Revisit the point-source discharge permits approved for an industry on Black Hole Creek.

Maryland Programs and Projects

**Department of Natural Resources –
Resource Assessment Service / Tidewater Ecosystem Assessment**

1. Review and provide comments on local comprehensive plans, including Water Resource Impacts in terms of potential water quality and aquatic resource impacts as part of the Environmental Review process.

**Department of Natural Resources –
Watershed Service / Community and Local Government Service**

1. Continue working on projects as they develop or as needed within the watershed, such as the recent project where the Upper Western Shore Tributary Team worked with North Harford High School and the Maryland Department of the Environment to restore the function of a wetland treatment system that had been bypassed during expansion projects at the high school.

ACTION NEEDED:

Promote the use of green infrastructure and stormwater management approaches that mimic natural hydrologic regimes and promote water use efficiency in combination with the prior Action Needed listed above.

Susquehanna River Basin Commission Programs and Projects

1. Throughout 2009 and 2010: Promote green infrastructure through the Paxton Creek Stormwater Project and new project proposals.
2. By September 2009: Update SRBC web site with additional information.

(In its 2008 Action Strategy for Managing Wet Weather with Green Infrastructure, the U.S. Environmental Protection Agency defined green infrastructure as management approaches and technologies that use, enhance, or mimic natural hydrologic cycle processes including infiltration, evapotranspiration, and water reuse. Examples include constructed wetlands and swales, rain gardens, green roofs, riparian buffers, reforestation/revegetation, and porous and permeable pavements. Green infrastructure can be incorporated into a wide variety of landscape conditions, and can help provide cleaner water, enhanced water supplies, cleaner air, reduced urban temperatures, moderated impacts from climate change, increased energy efficiency, cost savings, and protection of drinking water supplies.)

Federal Programs and Projects

Environmental Protection Agency, Region 3

1. In 2009: Provide technical and policy assistance to the Pennsylvania Department of Environmental Protection to support the agency's proposal to incorporate low impact development and stream buffer provisions in construction National Pollutant Discharge Elimination System permit program.

Federal Highway Administration

1. Promote, through the Pennsylvania Department of Transportation, the use of stormwater management approaches through the design of basins associated with roadway construction and per permit requirements of the Pennsylvania Department of Environmental Protection.

National Park Service

1. Through September 2009: Continue organizational development and capacity building to implement the recently completed Conservation Blueprint for the Upper Susquehanna River drainage.

Natural Resources Conservation Service (NRCS)

1. Continue to provide technical and financial assistance to agricultural producers through Farm Bill programs, Conservation Technical Assistance and Resource Conservation and Development program to address critical agricultural surface and groundwater resource concerns related to soil erosion, sediment, nutrients, organic materials, pathogens, and agri-chemicals.
2. Provide Watershed Program planning assistance, if funded, to address nonpoint source and mine drainage pollution at the request of local project sponsors.
3. Continue to ensure proper local operation and maintenance of NRCS Watershed Program assisted mine drainage remediation measures in the Glenwhite Run Watershed, Blair County, Pennsylvania.

U.S. Fish and Wildlife Service

1. Restore and protect stream channels, riparian areas and adjacent wetlands to reduce sediment and nutrient inputs.
2. Continue supporting strategic planning efforts to provide and manage green infrastructure in the Lower Susquehanna River Basin and the Chesapeake Bay.

New York Programs and Projects

NYS Department of Environmental Conservation

1. Explore ways to encourage and allow Low Impact Development (Green Infrastructure, Better Site Design) and Smart Growth through permit programs, training, guidance materials, and updated design standards.

Environmental Facilities Corporation / NYS Department of Health

1. Promote Smart Growth by implementing the recommendations of a recent report that identifies strategies for incorporating Smart Growth approaches into the administration of the Clean Water and Drinking Water State Revolving Funds. (This report could also serve as a blueprint for incorporating Smart Growth into funding programs of other state agencies.)

New York Ocean and Great Lakes Ecosystem Conservation Council

1. Develop a strategy for implementing ecosystem-based management across the state. (By considering the entire ecological community, including humans, this management approach is intended to restore both the ecological and economic values of ecosystems.)

Rural Stormwater Coalition of Chemung, Schuyler, and Steuben Counties

1. Provide homeowners with practical information and materials for rain gardens, rain barrels, and other small-scale practices.

Southern Tier Central Regional Planning and Development Board

1. Provide technical assistance, training, and public outreach on watershed planning, stormwater management, Low Impact Development, drainage system mapping/maintenance, and other topics.
2. Update the Low Impact Development Sampler with new projects and continue to use as an educational tool.

County Planning Departments / Regional Planning Boards

1. Help municipalities to incorporate open space, riparian corridor, floodplain, and green infrastructure considerations into municipal master plans.

County Soil and Water Conservation Districts / Southern Tier Central Regional Planning and Development Board / Upper Susquehanna Coalition

1. Continue to educate municipal officials, property owners, and others about stream processes, naturally beneficial floodplain functions, and watershed functions through training, distribution of the award-winning educational booklet entitled, "Stream Processes: A Guide to Living in Harmony with Streams," and other methods.
2. Investigate options for implementing policies and practices that protect and restore beneficial hydrologic functions.

Tioga County Soil and Water Conservation District

1. Install a bioretention facility on the district's building grounds to address stormwater runoff from the driveway and parking lot. (Project is funded through NYS Department of Environmental Conservation Water Quality Improvement Project grant program.)

NYS Floodplain and Stormwater Managers Association

1. Promote effective stormwater management, including use of Better Site Design and green infrastructure techniques, by providing training, public outreach, communication, and coordination.

Pennsylvania Programs and Projects

York County Conservation District

1. Continue interest and involvement in the following activities: education and outreach; financial assistance (grant writing); and technical assistance.

Eastern Pennsylvania Coalition for Abandoned Mine Reclamation (EPCAMR)

1. By fall 2009: Begin construction of a Natural Stream Channel Design Project for the Hicks Creek Watershed in the Upper Susquehanna River Basin, Luzerne County, to reduce unstable streambank erosion and downstream flooding issues in the Exeter Borough, partially caused by increased sedimentation in the stream channel and infrequent maintenance in stormwater flood debris basins. (EPCAMR is currently in the design phase of the project.)

ACTION NEEDED:

Encourage and support restoration planning as follow-up to the Commission's Year-2 subbasin surveys and TMDL development activities for water bodies impaired by AMD, urban, agricultural, and other nonpoint sources with the goal of removing impaired waterbodies from state lists established under Section 303(d) of the Clean Water Act.

Susquehanna River Basin Commission Programs and Projects

1. Throughout 2009 and 2010: Complete work on additional phases of Bear Run AMD Renaissance Grant.
2. Winter/spring 2009 and 2010: Coordinate with stakeholders to develop Year-2 subbasin survey monitoring programs that support restoration projects.
3. In 2009: Complete Paxton Creek Stormwater Project and prepare follow-up grant proposal to the National Fish and Wildlife Foundation for additional stormwater restoration work.
4. By February 2009: Complete Pennsylvania Fish and Boat Commission grant application to perform restoration work in the Sinnemahoning Creek Watershed.
5. By March 2009: Submit updated proposal to maintain West Branch Susquehanna River database and assist PADEP in identifying potential areas for remediation.

(SRBC conducts water quality and biological surveys of streams in each of the six major subbasins on a rotating basis. Local, state, and federal coordination are performed prior to performing each subbasin survey to ensure that the data collected are needed and not duplicative, and provide justification and support for future protection, enhancement, and restoration efforts. Data are provided to the member states and local groups to support watershed restoration and protection projects. SRBC's subbasin surveys include basinwide sampling during summer base flow conditions as a Year-1 effort, followed by a second year of more intensive sampling in a smaller watershed area. SRBC also coordinates with the public when developing total maximum daily loads for impaired waterbodies.)

Federal Programs and Projects

Environmental Protection Agency (EPA), Region 3

1. Conduct activities as described in the previous "Action Needed" – ("Develop, support, and implement remediation plans for areas of the basin that are impacted by AMD, agricultural, urban, and other sources."), and continue funding activities, through the 319 program, necessary to implement total maximum daily loads (TMDLs) with load allocations in impaired waters.)
2. By July 9, 2009: Complete the consent decree commitments listed below for Pennsylvania portion of the Susquehanna basin, and continue supporting the Pennsylvania Department of Environmental Protection when it develops other TMDLs in the basin in 2010.

<u>Creek</u>	<u>Approval date</u>
Beech Creek	July 9, 2009
Newport Creek	April 9, 2009

<u>Creek</u>	<u>Approval date (cont.)</u>
Rock Creek	April 9, 2009
Bennet Branch-Sinnemahoning Creek	April 9, 2009
Moshannon Creek	June 9, 2009
Susquehanna River	April 9, 2009
West Branch Susquehanna	July 9, 2009

3. Continue performing Chesapeake Bay TMDL activities to address all segments of the Chesapeake Bay and its tidal tributaries that are impaired from the discharge of nutrients and sediments and listed on the states' 2008 Section 303(d) list of impaired waters.

(Background: A maximum pollutant loading for nitrogen, phosphorus and sediment, necessary to restore the Chesapeake Bay, will be identified. This loading will be further divided among the Bay jurisdictions and major tributary basins. Also, maximum allowable point and non-point loadings will be identified. When completed, the Chesapeake Bay TMDL will be the largest, most complex TMDL in the country covering a 64,000-square-mile area of six states and the District of Columbia. EPA Region 3 Water Protection Division has primary responsibility for completing the Bay TMDL. An overview of the upcoming Chesapeake Bay TMDL deadlines includes:

- April 2009: Basin-jurisdiction caps to be developed and delivered to Chesapeake Bay Executive Committee in May 2009.
- May 2009 to May 2010: States to develop Tributary Strategy/Implementation Plans.
- June to August 2009: Bay TMDL 101 public meetings to be held.
- June 2010: Final Draft Bay TMDL and Draft State Tributary Strategy/Implementation Plans available for public comment period during June to August 2010.
- December 2010: Final TMDL established by EPA.
- May 1, 2011: Consent decree deadline.)

Natural Resources Conservation Service (NRCS)

1. Continue to provide technical and financial assistance to agricultural producers through Farm Bill programs, Conservation Technical Assistance and Resource Conservation and Development program to address critical agricultural surface and ground water resource concerns related to soil erosion, sediment, nutrients, organic materials, pathogens, and agri-chemicals.
2. Provide Watershed Program planning assistance, if funded, to address nonpoint source and mine drainage pollution at the request of local project sponsors.
3. Continue to ensure proper local operation and maintenance of NRCS Watershed Program assisted mine drainage remediation measures in the Glenwhite Run Watershed, Blair County, Pennsylvania.

U.S. Fish and Wildlife Service

1. Assist partners with planning activities.

New York Programs and Projects

NYS Department of Environmental Conservation

1. In 2009: Finalize the total maximum daily load (TMDL) for Lake Salubria and support implementation of the recommendations.
2. Continue data collection and analysis to support development of phosphorus TMDL for Whitney, White Birch, and Beaver Lakes.

Pennsylvania Programs and Projects

Department of Environmental Protection – Bureau of Watershed Management

1. Continue with the development of prioritized total maximum daily loads in Pennsylvania and throughout the Susquehanna River Basin.

York County Conservation District

1. Continue interest and involvement in the following Resource Conservation Planning initiatives: Yellow Breeches Watershed; Conewago Creek (West) Watershed; Codorus Creek Watershed; Kreutz Creek, Lower Susquehanna and Mason-Dixon Watersheds; and Muddy Creek Watershed.
2. Continue interest and involvement in the development of total maximum daily loads for the following: Pinchot Lake; South Branch Codorus Creek; Oil Creek; and PA/York County Chesapeake Bay Tributary Strategy.

Eastern Pennsylvania Coalition for Abandoned Mine Reclamation (EPCAMR)

1. Support SRBC's efforts to conduct the Year-2 subbasin survey on the Lackawanna River with the focus on the combined sewer overflows, and be integrally involved with the Lackawanna County partners and SRBC when AMD issues are addressed within the watershed. (EPCAMR is working on a very large AMD Remediation effort at the Old Forge Borehole, in partnership with the Lackawanna River Corridor Association, Solution Mining, LLC, Duryea Borough, Old Forge Borough, a private landowner, Luzerne and Lackawanna County commissioners, HDR, private funders, and several other state and federal agencies. SRBC's assistance is requested in this effort.)

Exelon

1. In 2009: Consider undertaking activities related to the Muddy Run Recreation Lake being listed on Pennsylvania's current 303(d) list.

ACTION NEEDED:

Seek water quality improvements to complement water quantity mitigation provided for water withdrawal and consumptive water use projects.

Susquehanna River Basin Commission Programs and Projects

1. Throughout 2009 and 2010: Encourage timely construction of the Barnes and Tucker AMD treatment project on the West Branch Susquehanna River.
2. Throughout 2009 and 2010: Investigate other abandoned mine drainage sites as possible sources of mitigation water for consumptive water use projects.
3. Annually in 2009 and 2010: Provide water quality data to New York State Department of Environmental Conservation from SRBC's Whitney Point monitoring activities.

(Through SRBC's regulatory authority over water withdrawal and consumptive water use projects, mitigation is often required to offset any impacts on local and basinwide water supply. In some cases, an opportunity may exist to benefit water quality as well as quantity. One such instance was the Barnes and Tucker AMD treatment project, where water currently diverted to the Ohio River Basin will be treated and returned to the Susquehanna River Basin to provide mitigation for agricultural consumptive use in Pennsylvania. SRBC also performed baseline water quality and biological monitoring in support of the Whitney Point Environmental Restoration Project in 2009, and will continue to monitor conditions for the next five years as part of the adaptive management plan for the project. Since Whitney Point Lake is listed by the New York State Department of Environmental Conservation as an impaired waterbody

with excess nutrients, the water quality data collected by SRBC and others should be of value to the state for developing total maximum daily loads and improving water quality in the lake.)

ACTION NEEDED:

Identify waterbodies with exceptionally high quality water, habitat, and biological resources, based on monitoring results.

Federal Programs and Projects

Environmental Protection Agency (EPA), Region 3

1. Conduct activities as described in the previous “Action Needed” – (“Develop, support, and implement remediation plans for areas of the basin that are impacted by AMD, agricultural, urban, and other sources.”).
2. Provide funding support to SRBC for monitoring of EPA’s National Aquatic Resource Survey of large rivers and wadeable streams for sites assigned to Pennsylvania within the Susquehanna River Basin.
3. Provide training in survey methods related to work cited above.
4. Continue providing resources, through EPA’s Chesapeake Bay Program Office, for interstate water quality monitoring on the Susquehanna River that would help identify these waterbodies.

U.S. Fish and Wildlife Service

1. Continue, through the Chesapeake Bay Field Office, to support the gathering and analysis of important GIS data to help in the identification of habitat and biological resources.

New York Programs and Projects

NYS Department of Environmental Conservation

1. Monitor water quality in streams, rivers, lakes, and groundwater on a 5-year cycle.

Upper Susquehanna Coalition / Cornell University

1. Identify hydrologically sensitive areas that can be targeted for implementation projects to maximize the water resource benefits from implementation of management practices.

Pennsylvania Programs and Projects

Department of Environmental Protection – Bureau of Watershed Standards and Facility Regulation

1. Continue ongoing antidegradation program to identify and protect Exceptional Value and High Quality waters based on monitoring results.

York County Conservation District

1. Continue interest and involvement in the following related to Exceptional Value: Rambo Run; Trout Run (Hellam Township); and UNT South Branch Codorus Creek Exceptional Value existing use designation.
2. Continue interest and involvement in the following related to High Quality-Cold Water Fishery (HQ-CWF): East Branch Codorus Creek; Deer Creek and Gunpowder Falls petition to the Environmental Quality Board for HQ-CWF status; Otter Creek; South Branch Muddy Creek; and Yellow Breeches.

Black Hole Creek Watershed Association

1. Consider submitting a request to reclassify the stream to High Quality or Exceptional Value. (There are native brook trout in the stream.)

Maryland Programs and Projects

Department of Natural Resources –

Resource Assessment Service / Monitoring and Non-Tidal Assessment

1. Conduct sampling under the Maryland Biological Stream Survey of 1st through 4th order streams in three 8-digit watersheds that drain into the Lower Susquehanna: Conowingo Dam Susquehanna River, Octoraro Creek, and Lower Susquehanna River in 2009.

ACTION NEEDED:

Provide increased protection for headwater areas and watersheds with existing good water quality.

Federal Programs and Projects

Environmental Protection Agency, Region 3

1. In 2009: Initiate a review of the states' implementation of their anti-degradation regulations and policies. (Examining the potential for increased protection of headwater areas and watersheds with existing good water quality could be part of that review.)
2. Continue cooperating on the Chesapeake Executive Council's 2007 signed commitment for Forest Conservation that commits to conserving forests in high priority places, including headwater areas and watersheds with existing good water quality. (Both the Commonwealth of Pennsylvania and New York State signed this commitment.)

U.S. Army Corps of Engineers

1. Continue to educate the public on the benefits of clean water. (Focus efforts to encourage the agricultural community to incorporate streambank fencing, riparian buffer plantings and designated cattle crossings in stream channels to reduce sediment loads and improve overall water quality in the Susquehanna River Watershed.)

U.S. Geological Survey (USGS)

1. Encourage the establishment of water-quality baseline data in headwaters areas, as these areas are susceptible to disturbance and water-quality changes relating to gas extraction from Marcellus shale. (The USGS has proposed an aquatic ecosystem assessment and monitoring program for sensitive headwater areas in the State Forests of Pennsylvania.)

New York Programs and Projects

NYS Department of Environmental Conservation / Upper Susquehanna Coalition

1. Continue protecting the Upper Susquehanna and Chemung River Watersheds of New York through numerous state, regional, and local programs. (The Upper Susquehanna and Chemung River Watersheds are headwaters for the Susquehanna Basin and Chesapeake Bay and include good water quality.)

County Soil and Water Conservation Districts

1. Continue protecting headwater areas through many programs and activities with agricultural operators and municipalities, including implementation of agricultural Best Management Practices, review of Storm Water Pollution Prevention Plans, stormwater site inspections, hydroseeding programs (to stabilize road ditches and road banks after maintenance activities), stream restoration projects, wetland projects, and development of watershed management plans.

Pennsylvania Programs and Projects

Department of Environmental Protection – Bureau of Watershed Standards and Facility Regulation

1. Continue providing a higher level of protection to headwaters areas and good quality watersheds through the antidegradation program.

York County Conservation District

1. Continue interest and involvement in the Headwaters Environmental Legacy Program (HELP-Streams) for small streams.

ACTION NEEDED:

Provide educational materials regarding the spread of aquatic invasive species in the basin and downstream to the Chesapeake Bay.

Federal Programs and Projects

U.S. Army Corps of Engineers (USACE)

1. Continue the public education program instituted by USACE at Tioga-Hammond/Cowanesque Lakes on what the boaters can do to help prevent the spread of zebra mussels. (USACE is utilizing posters and brochures at the boat launches explaining this initiative.)

U.S. Fish and Wildlife Service

1. Establish, through the Chesapeake Bay Field Office, an invasive species page on its web site.

New York Programs and Projects

NYS Department of Environmental Conservation

1. Post information about nuisance and invasive species on the agency's web site.
2. Support implementation of the NYS Invasive Species Task Force recommendations (2005 report) and regional activities of the Finger Lakes Partnership for Regional Invasive Species Management and the Catskill Regional Invasive Species Partnership.
3. Fund research projects through the State Wildlife Grant program.

Village of Cooperstown / Otsego County Conservation Association

1. Conduct invasive species boat inspections on Otsego Lake.
2. Design signage and informational fliers on invasive species identification, prevention, and control.

SUNY–Oneonta Biological Field Station

1. Conduct research on techniques for controlling Eurasian milfoil, purple loosestrife, and other invasive species.

Pennsylvania Programs and Projects

Department of Environmental Protection – Water Planning Office

1. Continue to support and coordinate with Pennsylvania Sea Grant, which has established a Susquehanna River Basin Office to conduct research and extension efforts.

York County Conservation District

1. Continue interest and involvement with the Mid-Atlantic Ecological Landscapes Partnership.

Exelon

1. In 2009: Develop public education materials concerning zebra mussels.

Maryland Programs and Projects

Department of Natural Resources – Invasive Species Matrix Team

1. Provide signs and conduct outreach regarding invasive species.

ACTION NEEDED:

Develop regional source water protection plans for drinking water supply systems.

Susquehanna River Basin Commission Programs and Projects

1. Early 2009: Begin work on a grant from the Pennsylvania Department of Environmental Protection to develop and implement regional source water protection plans for the majority of large public water supply systems within the Lower Susquehanna River Basin, as well as continue to operate, maintain, and expand the Early Warning System established by SRBC in 2003.
2. Throughout 2009 and 2010: Form steering committee and conduct public outreach for Community Based Source Water Protection Grant from the Pennsylvania Department of Environmental Protection.
3. Throughout 2009 and 2010: Delineate source water protection areas, inventory contaminant sources, list potential management options, review emergency response and contingency plans, and assist in identifying new sources of water supply, based on input from the steering committee and the Pennsylvania Department of Environmental Protection.

(SRBC will perform the above work in coordination with the Pennsylvania Department of Environmental Protection, water suppliers, emergency response personnel, Source Water Protection Assistance Program partners, and appropriate local interests in the Pennsylvania portion of the Lower Susquehanna River Basin. SRBC will develop plans for public water suppliers addressing all the “Minimum Elements” in the Pennsylvania Department of Environmental Protection’s Source Water Protection Program.)

Federal Programs and Projects

Environmental Protection Agency (EPA), Region 3

1. Continue supporting the following related efforts:
 - Source Water Protection activities on the Lower Susquehanna: \$125,000 was allocated from the 2009 Drinking Water State Revolving Fund (DWSRF) set-asides to SRBC for the Lower Susquehanna River Regional Basin Source Water Protection Plan. (The goal is to develop 12 source water protection plans over a 3-year period.)
 - Surface Water Assessments for Potable Water Supplies: The Pennsylvania Department of Environmental Protection completed assessments on 122 stream segments, including Lancaster County, which was funded under the DWSRF set-asides. (As of January 2009, three are impaired and will be listed on 303d list for 2010. Thirty-six (36) more assessments are to be completed in 2009. EPA is awaiting more information via the 2009 first semi-annual progress report.)

New York Programs and Projects

NYS Department of Environmental Conservation

1. Require individual permits for construction activities on steep slopes draining into Class AA and AA-s drinking water sources.

Municipalities

1. Enforce and update existing Aquifer Protection Plans and develop new plans and regulations as needed.

Pennsylvania Programs and Projects

York County Conservation District

1. Continue interest and involvement in the following source water protection planning efforts: Hanover Municipal Authority; Red Lion Municipal Authority; Wrightsville Municipal Authority; York Water Company; Stewartstown Municipal Authority; and Shrewsbury Municipal Authority.

ACTION NEEDED:

Establish a Susquehanna Source Water Partnership to work with public water suppliers and other stakeholders to protect drinking water supplies.

Susquehanna River Basin Commission Programs and Projects

1. Throughout 2009 and 2010: Encourage community partnerships as a cooperative effort among local interests and public water suppliers under the Pennsylvania Department of Environmental Protection Community Based Source Water Protection Grant described in the previous “Action Needed” above.

Federal Programs and Projects

Environmental Protection Agency, Region 3

1. Continue supporting the related efforts as described in the above “Action Needed” – (“Develop regional source water protection plans for drinking water systems.”).

Pennsylvania Programs and Projects

York County Conservation District

1. Continue interest and involvement in the following partnership efforts: Watershed Alliance of York and Red Lion Municipal Authority; York County Conservation District and Wrightsville Borough; and York County Conservation District and York Water Company.

ACTION NEEDED:

Encourage integration of state and federal data systems, develop consistent basinwide datasets and GIS layers, and enhance existing geospatial and other tabular datasets.

Federal Programs and Projects

Bureau of Land Management

1. Evaluate existing agency GIS themes.
2. Potentially contribute or build GIS resource themes for the existing oil and gas leases for federal minerals in the Susquehanna basin to support this SRBC “Action Needed.”

Environmental Protection Agency (EPA), Region 3

1. Continue coordination with states that, under the 319 program, must submit information to an EPA tracking system, which includes a GIS data layer, identifying the location of the water bodies associated with each implementation project.
2. Continuously update EPA Region 3's "unique" geospatial data sets in its Geospatial Data Library. (There are about 120 such unique data sets.)
3. Continue seeking additional geospatial data sets useful to regional programs and add them to the library. (In addition to GIS staff obtaining data sets, program staff members at times identify additional data sets of interest.)
4. Continue seeking data sets useful in creating indicators that describe human health and environmental condition, stressors, and outcomes of programmatic activities. (These data sets and indicators are used to help the region prioritize and target program implementation activities, and track progress toward environmental goals.)
5. By October 2009: Complete a statewide "Resource Lands Assessment," in cooperation with Pennsylvania's Department of Environmental Protection and Department of Conservation and Natural Resources, to identify areas that have a high value for ecosystem integrity, protecting watershed integrity, and that are threatened by potential future development activities. (This assessment will provide information the state agencies can use to prioritize and target land protection and restoration activities.)
6. Develop a regional template approach, in cooperation with the EPA Region 3's Trends and Conditions work group, other regional water quality agencies and SRBC, to assess incremental progress towards water restoration goals.

U.S. Army Corps of Engineers

1. Support continued improvement of databases and data management systems, including sharing of data.

U.S. Fish and Wildlife Service

1. Provide assistance, as appropriate, through the Chesapeake Bay Field Office, to help achieve this "Action Needed."

New York Programs and Projects

NY State Emergency Management Office (SEMO)

1. Continue maintaining datasets documenting damages resulting from specific Federal Emergency Management Agency Emergency and Disaster Declarations. (This information is available by contacting Dan O'Brien, SEMO's Program Manager for Earthquakes and GIS, 518-292-2468.)
2. Continue to make available the New York State Standard Multi-Hazard Mitigation Plan on SEMO's web site at <http://www.semo.state.ny.us/programs/planning/hazmitplan.cfm>. (The Plan contains enhanced mapping created by GIS staff using data in SEMO's files and that of other federal, state, and local agencies. The GIS information behind the images is also available by contacting Dan O'Brien.)

NYS Department of Environmental Conservation

1. Maintain environmental mapping information on the public web site.

Upper Susquehanna Coalition

1. Maintain and expand a GIS-based data management system for New York's Agricultural Environmental Management program and the Chesapeake Bay Program.
2. Maintain and update databases for wetlands, agricultural practices, streams, and drainage infrastructure.

3. Conduct road bank and road ditch erosion assessments.

Southern Tier Central Regional Planning and Development Board

1. Promote and explore funding methods to establish a web-based GIS network that provides centralized storage and access for locally generated data.
2. Create user-friendly web-based applications for data collection, maintenance, and dissemination to local governments and the public.
3. Enhance the agency's Water Quality/Stormwater web page to enable public access to additional map-based data and other information.
4. Conduct mapping of stormwater facilities, bridges, and culverts.

Pennsylvania Programs and Projects

Department of Conservation and Natural Resources – Bureau of Topographic and Geologic Survey

1. Continue to coordinate with the Pennsylvania Map (PAMAP) Program, which continues to explore funding methods and partners for processing the 2008 LiDAR data. (Statewide coverage with LiDAR will significantly improve topographic information. LiDAR will allow for more accurate hydrologic data layers and better flood risk analyses, water and flow management, and provide numerous other environmental benefits.)
2. Continue with geologic mapping projects of bedrock and surficial geology in Pennsylvania.

Department of Environmental Protection – Bureau of Watershed Standards and Facility Regulation

1. Continue enhancing integration of data systems through the use of federal datasets and layers in the ICE GIS system and the SLIMS database.

York County Conservation District

1. Continue interest and involvement in the York County Planning Commission GIS enterprise network.

Eastern Pennsylvania Coalition for Abandoned Mine Reclamation

1. Continue to share, integrate, and transfer data sets among our regional partners and GIS layers that are complete with metadata, and to support this SRBC "Action Needed."

Maryland Programs and Projects

Department of Natural Resources – Resource Assessment Service / Tidewater Ecosystem Assessment

1. Continue participating in the state's effort to integrate water quality and living resource databases with the U.S. Environmental Protection Agency Water Quality Exchange system.
2. Continue to provide relevant water quality data that the state submits for its portion of the Chesapeake Bay to the U.S. Environmental Protection Agency Chesapeake Bay Program Chesapeake Information Management System database. (Maryland's data includes those collected in the Maryland portion of the Susquehanna River Basin.)

ACTION NEEDED:

Enhance and improve the sharing of information contained in water quality databases maintained by the Commission and its member jurisdictions.

Federal Programs and Projects

Environmental Protection Agency (EPA), Region 3

1. Work with EPA headquarters to establish reporting protocols for SRBC and other river basin commissions within EPA Region 3 jurisdiction for the new STORET WQX program to allow for continued sharing of water quality data via STORET.

Pennsylvania Programs and Projects

Department of Conservation and Natural Resources – Bureau of Topographic and Geologic Survey

1. Continue enhancing the bureau's Webdriller reporting system, and start requiring all submittals of driller information for water wells drilled in Pennsylvania to be done electronically as of June 2009. (This update also will allow better data management and quality of driller information that ultimately is transferred to the Pennsylvania Groundwater Information System, which is a publicly available groundwater database.)

Maryland Programs and Projects

Department of Natural Resources – Resource Assessment Service / Tidewater Ecosystem Assessment

1. Review information from SRBC and other states on the U.S. Environmental Protection Agency Chesapeake Bay Program Chesapeake Information Management System database to help define background conditions in Maryland, including the state's portion of the Susquehanna River Basin.

OTHER KEY PROJECTS AND/OR PROGRAMS

(specific to this Priority Management Area but not captured in the select actions listed above)

Federal Programs and Projects

Environmental Protection Agency, Region 2

1. Monitor specific locations in New York for National Rivers and Stream Assessment.

NOAA National Weather Service

1. Provide daily flows forecast (Conklin, Vestal, Waverly, Towanda, Meshoppen, Wilkes-Barre, Sunbury, and Harrisburg).
2. Provide water information in conjunction with hazardous spills as necessary.
3. Provide land cover and change data, including New York, northern Pennsylvania and Maryland (for 1996, 2001, 2005, and the changes during those 5-year intervals) according to NOAA Coastal Change Analysis Program standards.

Office of Surface Mining

1. Provide grant funding to the Pennsylvania Department of Environmental Protection Bureau of Abandoned Mine Reclamation for the construction, operation, and maintenance of AMD treatment facilities on the West Branch Susquehanna River.
2. Continue working closely with the Pennsylvania Department of Environmental Protection Bureau of Abandoned Mine Reclamation, including providing technical assistance and

program input into evaluations of mine drainage treatment proposals and guidance regarding the distribution of funds and project selection.

U.S. Army Corps of Engineers (USACE)

1. Review, through the USACE's Regulatory Program, permit applications for Section 10 and 404 Permits to ensure no more than minimal impacts to waters of the United States, including jurisdictional wetlands. (Require avoidance, minimization, and compensatory mitigation for all unavoidable impacts in an effort to improve overall water quality.)

New York Programs and Projects

NYS Department of Environmental Conservation

1. Protect and improve water quality through permit programs and compliance monitoring for point discharges, stormwater management, stream and wetland disturbance, and agricultural discharges.
2. Administer chemical and pollution control programs, including spill response, waste site remediation, chemical and petroleum storage, pesticide program, and waste management.

County Soil and Water Conservation Districts

1. Protect and restore stream and riparian functions through implementation of stream channel and stream corridor rehabilitation projects.
2. Promote prescribed grazing, riparian buffers, and other agricultural practices that reduce erosion by maintaining vegetative cover.

County Water Quality Coordinating Committees

1. Periodically update county water quality strategies and support implementation of strategy recommendations. (Some committees (Steuben and Schuyler Counties) have identified high priority water resources for protection, in addition to priority areas for restoration.)

Otsego County Water Quality Coordinating Committee

1. Establish a no-wake buoy program on Otsego Lake.
2. Continue to sponsor water quality monitoring in all of the county's subbasins.

Public and private waste management facilities and recycling programs

1. Implement and enhance waste management and recycling efforts, including residential and business recycling programs, household hazardous waste collection, agricultural hazardous waste collection, latex paint exchanges, tire collection, electronic waste collection, and other efforts. (Chemung, Schuyler, and Steuben Counties are researching options for bailing and recycling of agricultural plastics.)

SUNY–Oneonta Biological Field Station

1. Monitor water quality and conduct other research in Otsego Lake and the Upper Susquehanna Watershed.

Pennsylvania Programs and Projects

Department of Conservation and Natural Resources – Bureau of State Parks

1. In 2009: Conduct arsenic treatment at the Cherry Springs State Park.
2. In 2009 and 2010: Coordinate possible volunteer water quality testing of Pinchot Lake.
3. In 2009: Work on filtration system at Leonard Harrison State Park.
4. In 2010: Install two vault toilets at Trough Creek State Park.

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Priority Management Area C – Flooding



According to the Centers for Disease Control, more than 50 percent of lives lost during flooding are the result of people attempting to drive on flooded roads. Cost-benefit ratio (right) of the Susquehanna Flood Forecast and Warning System.

Desired Result: *To prevent 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.*

The following Actions Needed under Priority Management Area C – Flooding are from SRBC's *Comprehensive Plan for the Water Resources of the Susquehanna River Basin*, pp. 55-57. The responses under each Action Needed are those programs and/or projects to be initiated, maintained or completed in 2009 through 2010 by governmental and non-governmental interests.

ACTION NEEDED:

Conduct an annual evaluation and update of the Susquehanna Flood Forecast and Warning System (SFFWS) Strategic Plan.

Susquehanna River Basin Commission Programs and Projects

1. By March 31, 2009: Revise strategic plan to reflect interests of NOAA National Weather Service.
2. By March 31, 2009: Incorporate improvements and outstanding recommendations from 2006 Flood Report.

ACTION NEEDED:

Develop, in cooperation with SFFWS partners, new forecast points and flood forecast maps for priority damage locations.

Susquehanna River Basin Commission Programs and Projects

1. By August 31, 2009: Review local forecasting needs with communities and NOAA National Weather Service.
2. By October 15, 2009: Develop a prioritized list of needed forecast points.

ACTION NEEDED:

Assist in the evaluation of need and implementation of flood damage reduction alternatives for high-risk communities.

Federal Programs and Projects

Natural Resources Conservation Service (NRCS)

1. Continue assistance under the NRCS Watershed Rehabilitation Program for rehabilitation of flood control dams in the following watershed projects:
New York: Hoffman Creek, Jackson Creek, and Little Choconut Creek
Pennsylvania: North Fork Cowanesque River (secure final permits and begin rehabilitation construction for North Fork Dam in 2009)
2. Complete flood damage reduction plan, if funded, for Bentley Creek Watershed (an interstate creek in Pennsylvania and New York), in cooperation with local project sponsors. (The project needs to be submitted for implementation authorization under the NRCS Watershed Protection and Flood Prevention Program.)
3. Evaluate, if funded, the potential for flood plain easements under the NRCS Emergency Watershed Program.
4. Implement stream restoration, if eligible flood damages occur, under the NRCS Emergency Watershed Program in areas where building, utilities and other critical infrastructure are imperiled by debris and unstable streams and stream banks.
5. Provide NRCS Watershed Program planning assistance, if funded, to address other flood damage concerns at the request of local project sponsors.
6. Continue to ensure proper local operation and maintenance of NRCS-assisted flood control dams and structure in the following watershed projects:
Maryland: Little Deer Creek
New York: Brandywine Creek, Brixus Creek, Bulkeley Creek, Clark's Creek, Dean Creek, Finch Hollow Creek, Genegantslet Creek, Hoffman Creek, Jackson Creek, Little Choconut Creek, Millbrook Creek, Nanticoke Creek, Newtown Creek, Patterson Creek, and Trout Brook
Pennsylvania: Briar Creek, Marsh Creek, Middle Creek, Mill Creek (Tioga County), and North Fork Cowanesque River

NOAA National Weather Service

1. Provide Coastal Vulnerability Assessment Tool, which is a NOAA-developed tool to help communities understand and reduce their hazard vulnerability, including from flooding.

U.S. Army Corps of Engineers

1. As warranted, support completion of the Lackawanna River, Bloomsburg, and Wyoming Valley flood risk management projects.
2. Promote the need for basinwide evaluations of existing flood damage reduction projects and evaluations of new structural and/or nonstructural projects, specifically in the Upper Susquehanna River Watershed.

New York Programs and Projects

NYS Department of Environmental Conservation

1. Operate and maintain local flood control projects.
2. Protect against dam failure through increased emphasis on the Dam Safety Program.
3. Protect against increased stormwater discharges through outreach, training, stormwater construction permits, and MS4 stormwater permits (Binghamton and Elmira urban areas).

NY State Emergency Management Office

1. Continue to maintain and update the New York State All Hazard Mitigation Plan and provide planning assistance for local and county Hazard Mitigation Plans.

Environmental Emergency Services

1. Support emergency management offices in Chemung, Schuyler, and Steuben Counties by operating and enhancing a flood warning system, with a locally operated network of real-time gages (stream/river gages, precipitation gages, and climate stations).
2. Conduct public information and education.

County Hazard Mitigation Coordinators / County Emergency Management Offices

1. Provide coordination and assistance to identify, obtain funding, and implement flood mitigation projects.
2. Develop or assist with development of local and/or county hazard mitigation plans.

Chemung County Emergency Management Office / Southern Tier Central Regional Planning and Development Board

1. Develop local expertise, working with code enforcement officials, in flood-proofing techniques that can be used to retrofit existing flood-prone structures.
2. Develop a half-day training module that can be used statewide, conduct local training workshops for building professionals, prepare public outreach materials, conduct a media campaign, and conduct public information sessions in flood-prone neighborhoods.

Upper Susquehanna Coalition and Member Soil and Water Conservation Districts

1. Continue to maintain an active wetland restoration and construction program to provide multiple benefits, including flood mitigation.
2. Reduce erosion damage from flooding through implementation of stream rehabilitation projects.
3. Engage local governments throughout the Upper Susquehanna and Chemung Basins to identify, assess, and promote measures that will mitigate the impact of floods.

Otsego County Soil and Water Conservation District – Municipal Flood Program

1. Stabilize about 150 feet of streambank in Herkimer Creek as part of a larger effort to reduce sedimentation and flooding to Canadarago Lake.
2. Assist with stabilizing a steep road ditch along Burlington Road that chronically floods and erodes, causing sedimentation to Wharton Creek.

Otsego County Soil and Water Conservation District – Canadarago Lake Flooding Initiative

1. Oversee funding for an engineering report detailing the hydrology and hydraulics of Oaks Creek and Canadarago Lake to determine if a proposed dredging and dam rehabilitation project would have a demonstrable benefit.
2. Oversee funding for a limnological and biological assessment (State of the Lake Report) for the purpose of determining the most critical natural resource needs to serve as the foundation of a Canadarago Lake Watershed Management Plan.

Pennsylvania Programs and Projects

York County Conservation District

1. Continue interest and involvement in the York County Hazard Mitigation Plan and the Floodplain Management Program.

ACTION NEEDED:

Assist local and county flood managers in planning efforts and assessments of floodplain reclamation projects.

Federal Programs and Projects

Federal Emergency Management Agency

1. Complete and release preliminary Digital Flood Insurance Rate Maps (DRIRMS) for Chemung County.
2. Complete a restudy of selected reaches of the Susquehanna, Unadilla, and Chenango Rivers for incorporation into countywide DFIRMS for Broome, Tioga, Chenango, and Otsego Counties.

Natural Resources Conservation Service (NRCS)

1. Continue assistance under the NRCS Watershed Rehabilitation Program for rehabilitation of flood control dams in the following watershed projects:
New York: Hoffman Creek, Jackson Creek, and Little Choconut Creek
Pennsylvania: North Fork Cowanesque River (secure final permits and begin rehabilitation construction for North Fork Dam in 2009)
2. Complete flood damage reduction plan, if funded, for Bentley Creek Watershed (an interstate creek in Pennsylvania and New York), in cooperation with local project sponsors. (The project needs to be submitted for implementation authorization under the NRCS Watershed Protection and Flood Prevention Program.)
3. Evaluate, if funded, the potential for flood plain easements under the NRCS Emergency Watershed Program.
4. Implement stream restoration, if eligible flood damages occur, under the NRCS Emergency Watershed Program in areas where building, utilities, and other critical infrastructure are imperiled by debris and unstable streams and streambanks.
5. Provide NRCS Watershed Program planning assistance, if funded, to address other flood damage concerns at the request of local project sponsors.
6. Continue to ensure proper local operation and maintenance of NRCS-assisted flood control dams and structure in the following watershed projects:
Maryland: Little Deer Creek
New York: Brandywine Creek, Brixus Creek, Bulkeley Creek, Clark's Creek, Dean Creek, Finch Hollow Creek, Genegantslet Creek, Hoffman Creek, Jackson Creek, Little Choconut Creek, Millbrook Creek, Nanticoke Creek, Newtown Creek, Patterson Creek, and Trout Brook
Pennsylvania: Briar Creek, Marsh Creek, Middle Creek, Mill Creek (Tioga County), and North Fork Cowanesque River

U.S. Army Corps of Engineers

1. Continue to work with non-federal sponsors on flood damage reduction projects through cost shared or technical assistance programs.
2. Assist in emergency and post-emergency assessments, as needed.

New York Programs and Projects

NYS Department of Environmental Conservation

1. Provide floodplain management training and assistance to local governments.
2. Release finalized Digital Flood Insurance Rate Maps for Cortland County.

NYS Floodplain and Stormwater Managers Association

1. Promote effective floodplain and stormwater management by providing training, public outreach, communication, and coordination.
2. Advocate for improved public policies related to floodplain management, flood mitigation, and stormwater management.

Southern Tier Central Regional Planning and Development Board

1. Provide technical assistance and training for floodplain management, stormwater management, flood mitigation, hazard mitigation planning, beneficial floodplain functions, and other water resource issues.

Pennsylvania Programs and Projects

York County Conservation District

1. Continue interest and involvement in Floodplain Management Program and Codorus Creek Restoration East, South, and West Branches.

ACTION NEEDED:

Conduct post-flood assessments to identify information needs, educational opportunities, lapses in forecast coverage, and other measures that can assist communities in reducing flood damages.

Susquehanna River Basin Commission Programs and Projects

1. By April 30, 2009: Evaluate outstanding recommendations from the June 2006 Flood Report and assess feasibility of implementation.
2. By March 15, 2009: Work with National Weather Service to conduct Flood Awareness outreach in targeted areas.
3. By May 30, 2009: Revise and update the Susquehanna Flood Forecast and Warning System web site www.susquehannafloodforecasting.org.

Federal Programs and Projects

NOAA National Weather Service

1. Provide recommendations and guidance, in cooperation with other federal and state partners, to communities devastated by the catastrophic June 2006 flood.
2. Develop, in cooperation with partners, new forecast points and flood inundation maps for priority damage locations in the Susquehanna River Basin.

New York Programs and Projects

NY State Emergency Management Office (SEMO)

1. Coordinate the emergency response of all state agencies to manmade and natural disasters.
2. Maintain the State Emergency Operations Center.
3. Act as the state's focal point for all emergency management programs.
4. Administer federal disaster relief funds.

(In carrying out those roles, SEMO often interacts with other agencies, like NYS Department of Environmental Conservation, to assess damages, provide information about federal programs, and discusses recovery and mitigation measures with local governments. Because these activities are largely responsive or reactive, there are no definite schedules for their implementation.)

County Emergency Management Offices

1. Provide coordination for emergency response, flood recovery, post-flood assessments, and identification of mitigation opportunities.

NYS Hydrologic and Habitat Modifications Workgroup

1. Promote improved practices for stream restoration following floods, perhaps through development of a “stream team” that is deployed for emergency flood response.

Pennsylvania Programs and Projects

York County Conservation District

1. Continue interest and involvement in the Federal Emergency Management Agency’s Flood Recovery Assistance program and the Pennsylvania Emergency Management Agency’s Repetitive Loss Assistance program.

ACTION NEEDED:

Develop a flood inundation mapping program, including a training component for communities in the basin. These maps delineate areas of flooding corresponding to various river stages, designate evaluation routes, locate major buildings for potential mass evacuation shelters, and list general flood response procedures.

Susquehanna River Basin Commission Programs and Projects

1. By June 30, 2009: Establish mapping priorities.
2. By July 1, 2009: Secure funding and contracting agreements as needed to begin flood inundation maps in Pennsylvania.

Federal Programs and Projects

Federal Energy Regulatory Commission

1. In 2009: Work with Exelon as it updates and formats the dam break inundation mapping for Conowingo Dam (FERC no. 405-MD).

NOAA National Weather Service

1. Develop, through partnered enhanced Advanced Hydrologic Prediction System services, cost-effective emergency management tool to be used prior to and during flood events for reduction of property damage and loss of life.
2. Provide, through the North Atlantic Regional Collaboration Team Hazard Resilient Coastal Communities, a prototype inundation forecasting system (Chesapeake Bay Inundation Prediction System) to facilitate emergency management decision-making in the challenging case of complex, intricate coastlines semi-enclosed, coastal bays and estuaries.

U.S. Geological Survey

1. Develop, in partnership with SRBC, flood inundation maps that will show areas of flooding corresponding to various river stages of the Jersey Shore area along the West Branch Susquehanna River in Lycoming County, Pennsylvania.

ACTION NEEDED:

During dam relicensing, advocate for the continued removal of material from behind power dams on the lower Susquehanna River.

Maryland Programs and Projects

**Department of Natural Resources –
Resource Assessment Service / Power Plant Research Program**

1. Incorporate a study of sediment accumulation as part of the relicensing process.

OTHER KEY PROJECTS AND/OR PROGRAMS

(specific to this Priority Management Area but not captured in the select actions listed above)

Federal Programs and Projects

Environmental Protection Agency, Region 2

1. Fund a non-competitive grant through the Region 2 Wetlands Program to the Upper Susquehanna Coalition.

(The funds will go through the Tioga County Soil and Water Conservation District. The Upper Susquehanna Coalition proposes to identify and implement wetlands restoration and creation opportunities in the Bailey Creek Watershed, located in Corning, N.Y. Bailey Creek is a small tributary to the Chemung River. The stream experiences frequent flooding events and erosion problems where the stream passes near roads and residential areas. The Coalition believes these stormflows can be attenuated by establishing upstream flood storage wetlands. They view this as a “full build-out” demonstration project that will comprehensively identify all wetlands restoration opportunities in the 3.5 square mile watershed, where few wetlands currently exist. The Town of Corning supports the project. A state college and an environmental education center own significant portions of the watershed. The Coalition, which has been successful in the past in working cooperatively on similar projects with local landowners, believes these property owners will be interested in participating in the project.)

National Park Service

1. Through September 2009: Prepare a comprehensive watershed plan for Carr’s Creek to integrate geospatial resource data, stream characterization/assessment information, pollutant load reduction, hydrologic and hydraulic studies, flood hazard assessment, and local knowledge of watershed issues/conditions. (The plan will recommend specific actions for restoration of environmental damage from past flooding, attenuation of future floods and conservation/enhancement of lands and waters within the watershed.)

NOAA National Weather Service

1. Provide flood forecast and warning services.
2. Collect and disseminate hydromet information (precipitation, river, temperature, snow, ice).
3. Coordinate and manage the Susquehanna Ice Monitoring Network, which is a network of eighty ice observers, serving data collection and display on the web.
4. Maintain the River Model Calibration Project, which calls for calibration of SNOW-17 and Sacramento Soil Moisture Accounting models for 8 sub-basins in the basin and perform comparison analysis to determine best soil moisture model for the watershed. (River forecasts are currently generated using a Continuous-Antecedent Precipitation Index model.)
5. Test the kinematic runoff and erosion model for Weir Creek near Sidney, N.Y. (The model is a spatially distributed watershed model driven by high resolution rainfall input.

Plans are to add Tuscarora Creek in Steuben County, N.Y., and Towanda Creek in Bradford County, Pa.)

6. Maintain the national Flash Flood Potential Index. (A national Flash Flood Potential Index coverage was created and an extra slope component added for the Chemung and Upper Susquehanna River Basin.)
7. Develop, in cooperation with Susquehanna Flood Forecast and Warning System partners, sustainable, high-resolution observational network, including stream and rain gages, soil moisture and evaporation sensors.

New York Programs and Projects

NYS Department of Environmental Conservation

1. Monitor the Federal Emergency Management Agency's ongoing efforts on levee protection. (FEMA requires a full levee certification that a structure still meets sufficient standards in order for the area behind it to be mapped as protected. Certification is extremely expensive and thus far, the funds have not been found.)

Municipalities

1. Manage floodplain development in a manner consistent with National Flood Insurance Program standards.
2. Consider adoption of higher standards for floodplain management.
3. Implement mitigation projects that protect life and property from flood damages.

Tioga County Flood Mitigation Group

1. Conduct a series of seminars directed toward municipal officials, highway personnel, and residents to make them aware of flooding issues and natural stream processes.

Pennsylvania Programs and Projects

Black Hole Creek Watershed Association

1. Provide input to Lycoming County's Department of Planning and Community Development on its "Update of the County All Hazard Mitigation Plan." (One of the flooding concerns on the Black Hole Creek is the number of large debris jams on the stream.)

Priority Management Area D – Ecosystems



Hellbender (left), productive wetland and cardinal flower.

Desired Result: *To achieve healthy ecosystems that provide groundwater and surface water of sufficient quality and in adequate supply to support abundant and diverse populations of aquatic, riparian, and terrestrial organisms, as well as human use.*

The following Actions Needed under Priority Management Area D – Ecosystems are from SRBC's *Comprehensive Plan for the Water Resources of the Susquehanna River Basin*, pp. 59-62. The responses under each Action Needed are those programs and/or projects to be initiated, maintained or completed in 2009 through 2010 by governmental and non-governmental interests.

ACTION NEEDED:

Encourage the maintenance of critical stream gaging stations in the basin.

Susquehanna River Basin Commission Programs and Projects

1. Maintain a list of gages used in various SRBC programs, accompanied by a scoring system, rating, or other indication of the relative importance of the gage to programs.
2. Provide input to U.S. Geological Survey (USGS) and cooperative partners regarding optimal gage network characteristics.
3. By September 30, 2009: Coordinate with the USGS and cooperative partners to identify and secure funding sources for continued operation of critical gages.

Federal Programs and Projects

U.S. Army Corps of Engineers (USACE)

1. Continue to support and maintain the USACE stream gaging network within the basin, funding permitting.
2. Communicate the need for a robust and diverse network of gaging stations and funding scenarios.
3. Continue to coordinate with both federal and non-federal partners to assure the stream gaging network will continue to provide necessary information in flood risk management and other areas.

New York Programs and Projects

NYS Floodplain and Stormwater Managers Association

1. Provide information to members, elected officials, and others concerning the benefits of stream gaging stations for flood warning, flood response, floodplain management, flood mitigation, infrastructure design, and other purposes.

Environmental Emergency Services

1. Advocate for consistent funding for critical stream gages in the Chemung Basin and nationwide development of a mechanism for reliable funding of the stream gage network.

Pennsylvania Programs and Projects

Pennsylvania Department of Environmental Protection – Bureau of Water Standards and Facility Regulation

1. Continue to provide funding to maintain stream gaging stations in the basin.

York County Conservation District

1. Continue interest and involvement in efforts to restore gaging stations in Codorus and Muddy Creeks.

Maryland Programs and Projects

Department of Natural Resources – Resource Assessment Service / Maryland Geological Survey

1. Continue to raise awareness of the agency's report produced in 2000, with support from the Maryland Water Monitoring Council, that identifies suitable locations for expanding stream gaging in the basin ("Report of Investigation 71-A *Strategy for a Stream-Gaging Network in Maryland*" (<http://www.mgs.md.gov/geo/pub/index.html>)).

Department of Natural Resources – Boating Services Unit

1. Continue to support this SRBC "Action Needed" as stream gages are essential to providing safe recreational boating experiences.

ACTION NEEDED:

Plan, implement, and maintain a program to monitor and assess impacts occurring during individual low flow events.

Susquehanna River Basin Commission Programs and Projects

1. By June 15, 2009: Complete draft SRBC low flow monitoring plan.
2. By September 2009: Coordinate the draft SRBC low flow monitoring plan with SRBC's Water Quality Advisory Committee and Water Resource Management Advisory Committee.

(Water quantity and quality monitoring provide the data to assess the health of aquatic systems and support planning activities for the protection and restoration of aquatic resources. Few datasets exist that document the impacts of reduced flow on water quality and biological resources during actual events in the Susquehanna River Basin. Because of the paucity of data, increased monitoring during low flow events is a high priority that will assist SRBC in assessing the effects of flow and in managing water withdrawals and consumptive water uses. SRBC's low flow monitoring program will be designed to complement the monitoring

programs of SRBC's member jurisdictions including monitoring currently underway by Pennsylvania Fish and Boat Commission related to juvenile smallmouth bass mortality experienced in the Susquehanna River during low flows in 2005, 2007, and 2008. It will also consider potential impacts related to increases in total dissolved solids during low flow periods as experienced recently in the Monongahela River in the Ohio River Basin.)

Federal Programs and Projects

U.S. Army Corps of Engineers

1. Monitor low flow conditions throughout the Susquehanna Basin when they develop, and implement drought contingency plans at reservoirs as necessary.
2. Participate on SRBC's Drought Coordination Committee.
3. Consider use of drought assistance emergency authorities, if requested and if applicable.

Maryland Programs and Projects

Department of Natural Resources (DNR) –

Resource Assessment Service / Tidewater Ecosystem Assessment

1. Consider comparing low-flow results to area results or to the same sites during "normal" flows after a recovery period. (Because of the infrequent nature of low stream flow events, there is no DNR strategy to assess individual events. Data collected regularly through the statewide macroinvertebrate and fish community surveys have shown local impacts.)

ACTION NEEDED:

Perform additional instream flow studies to provide scientifically-based estimates of the amount of water needed for fish, wildlife, and recreational use.

Susquehanna River Basin Commission Programs and Projects

1. By March 2009: Meet with The Nature Conservancy, U.S. Army Corps of Engineers and other resource agencies to plan future work activities for the Susquehanna River Basin Ecosystem Flow Study.
2. In August 2009: Hold interdisciplinary flow-ecology workshop.
3. In April 2010: Complete final report with ecosystem flow recommendations.

(SRBC has performed a number of instream flow studies in partnership with other organizations and prepared a Consumptive Use Mitigation Plan in March 2008 recommending that additional instream flow assessments be performed. Biological data collected by SRBC were used by The Nature Conservancy to prepare a report on the development of instream flow criteria in Pennsylvania to support ecologically sustainable water resource planning and management. SRBC is currently working with The Nature Conservancy and a number of water resource agencies to evaluate instream flow needs throughout the Susquehanna River Basin.)

Federal Programs and Projects

U.S. Army Corps of Engineers

1. Lead and support the low flow needs assessment for the Susquehanna River Basin and the Susquehanna River Basin Low Flow Management Study.

U.S. Fish and Wildlife Service

1. Provide technical support for stream restoration projects: identification, assessment, prioritization, and implementation.

Pennsylvania Programs and Projects

Pennsylvania Department of Environmental Protection – Bureau of Watershed Management

1. Continue to support this “Action Needed” and request SRBC’s ongoing close coordination.

Eastern Pennsylvania Coalition for Abandoned Mine Reclamation

1. Purchase two pressure transducers, if funding through the Office of Surface Mining is provided, to assist with the continuous monitoring of AMD discharges and/or mine pool fluctuations during seasonal flows throughout the year.
2. From June 2009 through 2011: Begin monitoring as described above, if funding is provided.

Maryland Programs and Projects

Department of Natural Resources – Resource Assessment Service / Monitoring and Non-Tidal Assessment

1. Continue collaborating with the U.S. Geological Survey and the Maryland Department of the Environment on a proposal to conduct a hydroecological integrity assessment for Maryland that will be submitted to the U.S. Environmental Protection Agency for funding. (One of the objectives of the proposed project is to provide the information needed to help with the water appropriation permitting process and provide better information on the minimum flow conditions needed to protect biological integrity.)

Department of Natural Resources – Resource Assessment Service / Tidewater Ecosystem Assessment / Power Plant Research Program

1. Continue involvement with the Susquehanna Flowby Workgroup helping to define potential impacts of low streamflow from the Susquehanna River on water quality and aquatic resources in the Chesapeake Bay and tributaries that need to be considered in terms of minimum flow requirements at Conowingo.

ACTION NEEDED:

Consider the potential spread of invasive species when evaluating project review applications for diversions and transfers of untreated water from one waterbody to another.

Susquehanna River Basin Commission Programs and Projects

1. Monitor the spread of zebra mussels and other invasive species in the basin, and their distribution for use in evaluating project review applications.
2. Condition SRBC approvals, as appropriate, to require the disinfection of withdrawal equipment and prohibit the transfer of untreated water from one water body to another.

(Diversions and transfers of untreated water from one waterbody to another can result in unintentional introductions of invasive species into new areas. To prevent this from occurring, SRBC performs environmental screenings and considers invasive species distribution prior to making decisions on individual project proposals.)

Federal Programs and Projects

U.S. Fish and Wildlife Service

1. Continue to serve on the Mid-Atlantic Regional Panel on Aquatic Nuisance Species, and work to control the spread of aquatic nuisance species in the Susquehanna basin and the Chesapeake Bay.

Pennsylvania Programs and Projects

Pennsylvania Department of Environmental Protection – Water Planning Office

1. Continue to support inter-agency cooperation and consideration of invasive species impacts of projects in the Commonwealth. (The Commonwealth is supporting a coordinator position for the Governor’s Invasive Species Council.)

Maryland Programs and Projects

Department of Natural Resources – Boating Services Unit

1. Continue to serve on the interdisciplinary Invasive Species Matrix Team (ISMT) and have direct involvement in efforts to prevent the spread of aquatic hitchhikers such as zebra mussels. (Utilizing the unit’s contacts and communications with recreational boaters and marine related industry, the Maryland Boating Services actively promotes education, outreach, and signage programs to support ISMT initiatives.)

ACTION NEEDED:

Disseminate information regarding the effects of PPCPs on the biological resources of the basin.

Maryland Programs and Projects

Department of Natural Resources (DNR) – Resource Assessment Service / Tidewater Ecosystem Assessment

1. Consider the use of DNR’s statewide water quality reports required by the federal Clean Water Act (S. 305(b)). (These reports can include general discussions, but without specific criteria, it is difficult to assess the significance of widely scattered results that may be available.)

ACTION NEEDED:

Provide information on the biological resources of the basin and promote fishing, boating, hunting, outdoor photography, eco-tourism, bird watching, and other water-based outdoor recreation through the Commission’s web site and appropriate links to other web sites.

Susquehanna River Basin Commission Programs and Projects

1. By September 2009: Update website to include additional information on biological resources and recreation.

(Biological resources such as aquatic macroinvertebrates (insects, worms, snails, and other animals without backbones) and fish serve as indicators of water quality and reflect the ecological health of aquatic systems. Fish and wildlife support a wide range of outdoor

recreation activities, which in turn help to support the quality of life and economic viability of local areas and the region. Conservation, fishing, and hunting organizations such as Sierra Club, Trout Unlimited, Ducks Unlimited, and others have a stake in water-based outdoor recreation and can help provide public support for fish and wildlife conservation efforts.)

ACTION NEEDED:

Work with SRAFRC, dam owners and operators, sportsmen groups, conservation organizations, and others to produce, by 2025, self-sustaining annual populations of two million American shad and five million river herring, reproducing in the free-flowing Susquehanna River above York Haven Dam and in suitable tributaries, provide 500,000 angler days annually throughout the basin for these species, and provide effective upstream and downstream passage for American eels arriving at dams in the basin.

Federal Programs and Projects

Federal Highway Administration

1. Work with organizations to complement their efforts for self-sustaining shad and river herring populations through methods such as advance mitigation and off-site/out-of-kind compensatory mitigation per the Pennsylvania Department of Environmental Protection and the U.S. Army Corps of Engineers permit conditions.

U.S. Fish and Wildlife Service

1. Continue to collect American shad brood stock from the Potomac River for use in culture activities at the Pennsylvania Fish and Boat Commission Van Dyke hatchery.
2. Continue to serve on the Atlantic States Marine Fisheries Commission Shad and River Herring Plan Development Team and Technical Committee.
3. 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).

New York Programs and Projects

NYS Department of Environmental Conservation

1. Address potential solutions to fish health concerns (particularly viral hemorrhagic septicemia) in the American shad stocking program.

Pennsylvania Programs and Projects

Exelon

1. Continue to work with members of the Susquehanna River Anadromous Fish Restoration Cooperative committee and other identified parties for the restoration of American shad and river herring on the Susquehanna River.

Maryland Programs and Projects

Department of Natural Resources –

Resource Assessment Service / Power Plant Research Program

1. Incorporate a study of shad and herring passage as part of the relicensing process.

ACTION NEEDED:

With assistance of SRAFRFC and others, support studies of eel migration and implement restoration plans to re-establish a fishable population of American eel in the Susquehanna River system and restore adult recruitment from the river to help rebuild spawning stocks for the east coast eel fishery.

Federal Programs and Projects

U.S. Fish and Wildlife Service

1. 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).
2. Continue to chair various Susquehanna River Anadromous Fish Restoration Cooperative committees.
3. Continue working with the Pennsylvania Department of Conservation and Natural Resources and legislators to solve Sunbury funding issues and install adequate fishways.
4. Continue eel migration assessment work at Conowingo Dam.

Maryland Programs and Projects

Department of Natural Resources –

Resource Assessment Service / Power Plant Research Program

1. Incorporate a study of shad and herring passage as part of the relicensing process.

ACTION NEEDED:

Support preservation and restoration of tributary streams that provide habitat for migratory fish, including the removal of obstacles to upstream movement and remediation of AMD-impaired streams.

Federal Programs and Projects

Federal Highway Administration

1. Continue to coordinate with state agencies to develop cooperative agreements regarding the removal of low-head dams as mitigation for stream impacts.

Natural Resources Conservation Service (NRCS)

1. Continue to provide technical and financial assistance to agricultural producers through Farm Bill programs, Conservation Technical Assistance and Resource Conservation and Development program to protect, improve or restore fish and wildlife habitat, including wetlands and streams.
2. Continue to partner with the Pennsylvania Fish and Boat Commission and Maryland Department of Natural Resources on opportunities to support targeted dam removal and stream habitat improvement using NRCS programs such as the Wildlife Habitat Incentive Program.
3. Provide Watershed Program planning assistance, if funded, to address nonpoint source and mine drainage pollution at the request of local project sponsors.
4. Continue to ensure proper local operation and maintenance of NRCS-assisted mine drainage remediation measures in the Glenwhite Run Watershed, Blair County, Pennsylvania.

U.S. Army Corps of Engineers

1. Support development of AMD solutions, including investigations Southern Anthracite Region (General Investigations) and Nanticoke Creek Watershed (Section 206), Pennsylvania.
2. Proceed to design and implement the Section 206 Codorus Creek, Sweet Arrow Lake and Nanticoke Creek Watershed projects, pending availability of funds.
3. Continue to seek opportunities to remove fish blockages, both physical and chemical, and provide migratory fish passage throughout various watersheds.

U.S. Fish and Wildlife Service

1. 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.
2. Identify restoration needs, through the Chesapeake Bay Field Office, in the Lower Susquehanna Basin.
3. Assist partners with planning activities.

New York Programs and Projects

NYS Hydrologic and Habitat Modifications Workgroup

1. Complete a working document about barrier mitigation and removal of small dams for use with applicants and dam owners.
2. Promote use of the May 2008 report, “A Strategy for Removing or Mitigating Dams in New York State and Lessons Learned in the Upper Susquehanna Watershed” (prepared by the U.S. Fish and Wildlife Service).

Broome County / City of Binghamton

1. Continue with efforts to procure funding for engineering specifications to reconfigure Rockbottom Dam for fish passage and a whitewater recreation site.

Upper Susquehanna Coalition

1. Investigate options for re-connecting streams by removing dams and other barriers.
2. Work with property owners to minimize environmental impacts resulting from breaching dams.
3. Conduct additional “Stream and Culvert” workshops to provide highway departments with practical, cost-effective suggestions for maintaining and restoring fish passage at culverts.

Friends of the Chemung River Watershed

1. Pursue funding for construction of fish passage and a canoe/kayak route at the Hibbard Dam in Elmira.

Interagency Aquatic Connections Team

1. Provide guidance for stream crossings by completing the Engineering Design and Specifications (under development) to meet the Ecological Performance Standards already developed.

Pennsylvania Programs and Projects

Pennsylvania Department of Environmental Protection – Bureau of Abandoned Mine Reclamation (BAMR)

1. Starting in 2010: Work with local watershed groups, through BAMR’s AMD Set Aside program, to evaluate watersheds and determine whether they qualify as hydrologic units eligible for funding under Federal Surface Mining Control and Reclamation Act funding.

York County Conservation District

1. Continue interest and involvement in protection and restoration activities in the following watersheds: Yellow Breeches; Conewago Creek (West); Codorus Creek; Kreutz-Muddy Creek; Deer Creek and Gunpowder Falls; and Lower Susquehanna River.

Eastern Pennsylvania Coalition for Abandoned Mine Reclamation (EPCAMR)

1. Continue to fully support this SRBC “Action Needed” and partner with SRBC on projects within the EPCAMR Region that support this goal.

ACTION NEEDED:

Require viable upstream and downstream migratory fish passage as part of relicensing activities for power dams on the lower Susquehanna River.

Susquehanna River Basin Commission Programs and Projects

1. By fall 2009: Work with other members of Susquehanna River Anadromous Fish Restoration Cooperative (SRAFRFC) to revise the Migratory Fish Management and Restoration Plan for the Susquehanna River Basin.
2. Implement applicable portions of the plan through relicensing activities.

(SRBC is a member of SRAFRFC, which includes the U.S. Fish and Wildlife Service and the fishery agencies of all three of SRBC’s member states. SRAFRFC works together with the operators of dams on the Susquehanna River to provide fish passage, stock hatchery-reared American shad, and monitor and manage stocks of migratory fish in the basin. SRAFRFC is currently revising the Migratory Fish Management and Restoration Plan for the Susquehanna River Basin, which will be used by SRBC and others during pending relicensing for the four hydropower dams on the Lower Susquehanna River.)

Federal Programs and Projects

U.S. Army Corps of Engineers (USACE)

1. Continue, through the USACE Regulatory Branch, to review and authorize (when determined appropriate) dam removal/stream restoration projects to support the migratory fish restoration efforts within the Susquehanna River Watershed.

U.S. Fish and Wildlife Service

1. Review federal activities and provide appropriate comments, recommendations and terms for federal permits and licenses to ensure installation of safe, timely and effective fish passage facilities and measures.

Pennsylvania Programs and Projects

Exelon

1. Continue to comply with its federal license and related settlement agreement regarding fish passage on the Lower Susquehanna River.

OTHER KEY PROJECTS AND/OR PROGRAMS

(specific to this Priority Management Area but not captured in the select actions listed above)

Federal Programs and Projects

National Park Service

1. Through September 2009: Continue supporting the Delaware-Lehigh National Heritage Corridor and 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.
2. Through September 2009: Assist with the preparation of a community-based watershed management plan for Carr's Creek and Willow Brook that will guide the restoration of extensive flood damage caused by two major flood events in 2006. (Restoration of streamside vegetation will be particularly beneficial in addressing water pollution and sedimentation.)

NOAA National Weather Service

1. Continue participation with the North Atlantic Regional Collaboration Team Integrated Ecosystem Assessment, which is coordinating ecosystem assessment and modeling efforts in the Chesapeake Bay among various federal and state institutions that either possess long term data sets and/or have the capacity to inventory, analyze, synthesize, and integrate these data for use in the assessments and development of forecasting tools to support adaptive Ecosystem Management Assessment.

U.S. Army Corps of Engineers

1. Complete Whitney Point Lake Section 1135 Project Modification construction, and continue to pursue other improvements to aquatic ecosystems through a myriad of authorities available for this primary mission area.

New York Programs and Projects

NYS Department of Environmental Conservation

1. Support the implementation of the *New York State Comprehensive Wildlife Conservation Strategy*.
2. Monitor aquatic habitat in lakes and streams on a 5-year monitoring and assessment cycle.
3. Support the NY Citizens Statewide Lake Assessment Program, in which trained citizens conduct water quality monitoring.

NYS Department of Transportation / U.S. Department of Transportation / Upper Susquehanna Coalition

1. Implement the Eco-Logical Project, "An Ecosystem Approach to Developing Infrastructure Projects," as a way to institutionalize procedures for sound ecological planning and mitigation to establish connections and procedures for restoring, creating, enhancing, and preserving habitat and other ecosystem features in conjunction with transportation projects.

Upper Susquehanna Coalition

1. Restore habitats through wetland construction, wetland restoration, stream rehabilitation, and prescribed grazing projects.
2. Design and install creative outreach signs for the Chemung/Upper Susquehanna Basin, possibly showing a hellbender to promote knowledge about the presence of this rare salamander and provide an image that characterizes the watershed.

Pennsylvania Programs and Projects

Department of Conservation and Natural Resources – Bureau of State Parks

1. In 2009: Oversee possible mitigation project by Pennsylvania Department of Transportation to reduce invasive Reed Canary Grass and plant trees in riparian area of New Creek in Canoe Creek State Park.
2. In 2009: Place Osprey nesting platforms along Pinchot Lake.
3. In 2010: Oversee a turtle platform construction project by Pennsylvania Fish and Boat Commission at Pinchot Lake.
4. In 2010: Undertake a streambank stabilization project to provide fishing for Americans with disability at Trough Creek State Park.

York County Conservation District

1. Continue interest and involvement in the Gunpowder Watershed Eastern Brook Trout Initiative.

Black Hole Creek Watershed Association

1. Oversee the removal, if funding is approved, of a small dam at the Allenwood Federal Correctional Prison. (The association applied for funds to the Pennsylvania Department of Environmental Protection Growing Greener Program. The removal of this impoundment would provide habitat for native fish, improve water quality, and lower stream temperature.)

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Priority Management Area E – Chesapeake Bay



Desired Result: *To manage the water resources of the Susquehanna River Basin to assist in restoring and maintaining the Chesapeake Bay so it meets or exceeds applicable water quality standards and supports healthy populations of living resources, including oysters, crabs, fish, waterfowl, shore birds, and underwater grasses.*

The following Actions Needed under Priority Management Area E – Chesapeake Bay are from SRBC's *Comprehensive Plan for the Water Resources of the Susquehanna River Basin*, pp. 64-66. The responses under each Action Needed are those programs and/or projects to be initiated, maintained or completed in 2009 through 2010 by governmental and non-governmental interests.

ACTION NEEDED:

Work with USEPA's Chesapeake Bay Program, the USACE, the State of Maryland, and others to support the process to determine flow regimes under which the ecological health of the Bay can be restored and sustained.

Susquehanna River Basin Commission Programs and Projects

1. In February 2009: Attend coordination meeting with the State of Maryland.
2. Provide data and analyses to support Maryland's lead role in determining flow regimes needed for a healthy Bay.
3. Provide input and data as needed to fulfill the goals of Maryland's Susquehanna Flowby Workgroup.

(Low flow maintenance planning has been a priority activity throughout the history of SRBC, including work on: (1) a series of planning reports in the mid-1980s related to the storage and release of water from Cowanesque Lake in Tioga County, Pennsylvania; (2) series of low flow management framework plans for each of the six major subbasins; (3) plans for potential pooled water storage from large federal and state reservoirs in the 1990s and acquisition of storage at the Cowanesque Lake and Curwensville Lake; (4) agreements for low flow releases from Whitney Point Lake in Broome County, New York; (5) arrangements with Pennsylvania to provide water storage from the Barnes and Tucker abandoned mine pool in Clearfield County; and (6) consumptive use mitigation planning. Currently, the State of Maryland has taken the lead, with support from SRBC, in determining flow regimes needed by the Chesapeake Bay.)

Federal Programs and Projects

Environmental Protection Agency, Region 3

1. Offer modeling and data analysis support under the Chesapeake Bay Program using the soon-to-be released version of the Chesapeake Bay Watershed model.

Pennsylvania Programs and Projects

Pennsylvania Department of Environmental Protection – Bureau of Water Standards and Facility Regulation

1. Continue to implement the agency's Chesapeake Bay Compliance plan.

York County Conservation District

1. Continue interest and involvement in activities in the following watersheds: Yellow Breeches; Conewago Creek (West); Codorus Creek; Kreutz-Muddy Creek; Deer Creek and Gunpowder Falls; and Lower Susquehanna River.

Maryland Programs and Projects

Department of Natural Resources – Resource Assessment Service / Tidal Ecosystem Assessment

1. Continue involvement with the Susquehanna Flowby Workgroup helping to define potential impacts of low streamflow from the Susquehanna River on water quality and aquatic resources in the Chesapeake Bay and tributaries that need to be considered in terms of minimum flow requirements at Conowingo.

ACTION NEEDED:

Plan any additional studies and modeling efforts that are needed and seek appropriate funding and implementation.

Federal Programs and Projects

U.S. Army Corps of Engineers

1. Identify and garner support for the Conestoga River Watershed Study and Sediment Behind the Conowingo Dam to result in signing of a feasibility cost-sharing agreement.

U.S. Fish and Wildlife Service

1. Develop a Strategic Habitat Conservation Plan for all jurisdictions within the Chesapeake Bay Field Office, including the Lower Susquehanna River Basin.

Maryland Programs and Projects

Department of Natural Resources – Resource Assessment Service / Tidal Ecosystem Assessment

1. Continue involvement with the Susquehanna Flowby Workgroup helping to define potential impacts of low streamflow from the Susquehanna River on water quality and aquatic resources in the Chesapeake Bay and tributaries that need to be considered in terms of minimum flow requirements at Conowingo.

ACTION NEEDED:

Assess the feasibility of providing recommended flow regimes to the Bay.

Federal Programs and Projects

Environmental Protection Agency, Region 3

1. Help set up an independent peer review, if requested, through the Chesapeake Bay Program's Scientific and Technical Advisory Committee.

Maryland Programs and Projects

Department of Natural Resources –

Resource Assessment Service / Tidal Ecosystem Assessment / Power Plant

Research Program

1. Continue involvement with the Susquehanna Flowby Workgroup helping to define potential impacts of low streamflow from the Susquehanna River on water quality and aquatic resources in the Chesapeake Bay and tributaries that need to be considered in terms of minimum flow requirements at Conowingo.

ACTION NEEDED:

Coordinate, encourage and support efforts to manage sediment within the basin, including legacy sediments from mill dams and sediment that has accumulated behind dams on the lower Susquehanna River.

Federal Programs and Projects

Environmental Protection Agency (EPA), Region 3

1. Continue supporting the related efforts as described in the previous "Action Needed" – ("Work with USEPA's Chesapeake Bay Program, the USACE, the State of Maryland, and others to support the process to determine flow regimes under which the ecological health of the Bay can be restored and sustained.")
2. Continue current collaboration and potential grant involvement on the Big Spring Run Project, a \$600,000+ Pennsylvania Growing Greener project in Lancaster County with the following stated objectives: (1) Assess ecosystem benefits of restoring a stream adversely impacted by legacy sediments deposited as a function of historic mill dam construction; (2) Identify stream restoration methods, including legacy sediment removal and implementation of wetland restoration best management practices that enhance nitrogen control; (3) Develop predictive models of stream hydrology and sediment movement; and (4) Develop ecologically based guidelines for stream restoration with the goal of advancing the legacy sediment concept for watershed restoration applications.
3. Continue supporting the related efforts as described in the previous "Action Needed" under the Water Quality Priority Management Area B – ("Encourage and support restoration planning as follow-up to the Commission's Year-2 subbasin surveys and TMDL development activities for water bodies impaired by AMD, urban, agricultural, and other nonpoint sources with the goal of removing impaired waterbodies from state lists established under Section 303(d) of the Clean Water Act.")

Federal Highway Administration

1. Continue participation on the Legacy Sediment Workgroup.
2. Facilitate low-head dam removal as mitigation.

Natural Resources and Conservation Service

1. Continue to provide technical and financial assistance to agricultural producers through Farm Bill programs (including the Chesapeake Bay Watershed Initiative), Conservation Technical Assistance and Resource Conservation and Development program to: (1) address critical agricultural surface and groundwater resource concerns related to soil erosion, sediment, nutrients, organic materials, pathogens, and agri-chemicals; and (2) protect, restore and enhance wetlands.
2. Provide Watershed Program planning assistance, if funded, to address nonpoint source and mine drainage pollution at the request of local project sponsors.

U.S. Army Corps of Engineers

1. Promote the need for and champion the development of a Regional Sediment Management Strategy for the Chesapeake Bay.

U.S. Geological Survey

1. Continue work on a project with the Capital Area Resource Conservation and Development Council and Franklin and Marshall College to evaluate the Big Spring Watershed for legacy sediment removal and the transport of nutrients and sediment.

New York Programs and Projects

Upper Susquehanna Coalition and Member Soil and Water Conservation Districts

1. Reduce erosion of streambanks and channels through implementation of stream channel and stream corridor rehabilitation projects.
2. Promote prescribed grazing, riparian buffers, and other agricultural practices that reduce erosion by maintaining vegetative cover.
3. Conduct training on highway maintenance practices to reduce erosion of road banks, ditches, and road surfaces.
4. Conduct hydroseeding programs to stabilize road ditches and road banks after maintenance activities.
5. Review the “New York Tributary Strategy for Chesapeake Bay Restoration” and revise the sediment management recommendations to meet the projected sediment loads for the Chesapeake Bay.

Pennsylvania Programs and Projects

Pennsylvania Department of Environmental Protection – Bureau of Abandoned Mine Reclamation

1. Continue to identify and complete surface mine reclamation projects in the watershed that will restore abandoned mine lands and reduce sediment loads to receiving streams.

York County Conservation District

1. Continue interest and involvement in activities in the following watersheds: Yellow Breeches; Conewago Creek (West); Codorus Creek; Kreutz-Muddy Creek; Deer Creek and Gunpowder Falls; and Lower Susquehanna River.

ACTION NEEDED:

Support studies to determine the remaining sediment trapping efficiency of dams on the lower Susquehanna River and determine if and how trapping capability may be retained.

Federal Programs and Projects

Environmental Protection Agency (EPA), Region 3

1. Continue supporting the related efforts as described in the previous “Action Needed” – (“Work with USEPA’s Chesapeake Bay Program, the USACE, the State of Maryland, and others to support the process to determine flow regimes under which the ecological health of the Bay can be restored and sustained.”)

U.S. Army Corps of Engineers

1. Investigate the issue of sediment inflow and removal behind the Lower Susquehanna River dams, contingent on funding and non-federal partnership.

U.S. Geological Survey

1. Make known an assessment recently completed by the agency on the amount of sediment behind the hydroelectric dams on the Lower Susquehanna River and remaining sediment storage capacity.

Maryland Programs and Projects

Department of Natural Resources –

Resource Assessment Service / Maryland Geological Survey

1. Continue being engaged in activities with the Chesapeake Bay Program and the U.S. Geological Survey regarding sedimentation that has been investigated in the Lower Susquehanna River dams.

ACTION NEEDED:

Promote the installation of best management practices for point and nonpoint sources including stormwater and water quality infrastructure improvement for point sources in the Susquehanna River Basin to benefit local water quality improvement and the Bay restoration effort.

Susquehanna River Basin Commission Programs and Projects

1. By September 2009: Complete work on bioretention and rooftop capture demonstrations for the Paxton Creek Stormwater project.
2. By December 2009: Complete final report for Paxton Creek Stormwater Project.
3. By December 2009: Update SRBC website for Paxton Creek, infrastructure, and best management practices.
4. Participate in Chesapeake Bay Water Quality Steering Committee monthly conference calls and April 2009 meeting to assist in planning future restoration efforts.
5. Prepare total maximum daily load studies according to the Pennsylvania Department of Environmental Protection grant schedule to assist in planning and promoting watershed restoration activities.

(This “Action Needed” complements several other actions under the Water Quality Priority Management Area B. SRBC is actively promoting stormwater management and green infrastructure through its Paxton Creek Stormwater project, which was funded by the U.S. Environmental Protection Agency (USEPA) to test innovative approaches to stormwater

management in the Paxton Creek Watershed for application to other areas in Pennsylvania and the Chesapeake Bay Watershed. This 3-year grant from USEPA will be completed in December 2009.)

Federal Programs and Projects

Environmental Protection Agency, Regions 2 and 3

1. Region 2: Continue to partner with Region 3, the Chesapeake Bay Program, New York State and the Upper Susquehanna Coalition to work toward improving water quality in the Upper Susquehanna region and in the Chesapeake Bay.
2. Region 3: Continue to provide funds, through the Chesapeake Bay Program Office, to the Upper Susquehanna Coalition, Commonwealth of Pennsylvania, and State of Maryland, among others, to implement the *Chesapeake 2000* commitments. (Much of that funding goes toward best management practices for nonpoint sources on agricultural lands.)
3. Region 3: Continue supporting the related efforts as described in the previous “Action Needed” – (“Assess the feasibility of providing recommended flow regimes to the Bay.”)
4. Region 3: Continue supporting the related efforts as described in the previous two “Actions Needed” – (“Coordinate, encourage and support efforts to manage sediment within the basin, including legacy sediments from mill dams and sediment that has accumulated behind dams on the lower Susquehanna River.” and “Support studies to determine the remaining sediment trapping efficiency of dams on the lower Susquehanna River and determine if and how trapping capability may be retained.”)

Federal Highway Administration

1. In 2009: Develop a plan of action for the completed Erosion and Sedimentation Control Independent oversight Program Review.
2. Continue the Chesapeake Bay Tracking Initiative.

Natural Resources and Conservation Service

1. Continue to provide technical and financial assistance to agricultural producers through Farm Bill programs (including the Chesapeake Bay Watershed Initiative), Conservation Technical Assistance and Resource Conservation and Development program to: (1) address critical agricultural surface and groundwater resource concerns related to soil erosion, sediment, nutrients, organic materials, pathogens, and agri-chemicals; and (2) protect, restore, and enhance wetlands.
2. Provide Watershed Program planning assistance, if funded, to address nonpoint source and mine drainage pollution at the request of local project sponsors.

New York Programs and Projects

NYS Department of Environmental Conservation

1. Protect and improve water quality in New York and downstream areas through permit programs and compliance monitoring for point discharges, stormwater management, stream and wetland disturbance, and agricultural discharges.
2. Administer chemical and pollution control programs, including spill response, waste site remediation, chemical and petroleum storage, pesticide program, and waste management.
3. Fund Water Quality Improvement projects.

NYS Department of Environmental Conservation / Upper Susquehanna Coalition / Other Partners

1. Promote the installation of best management practices for point and nonpoint sources, including stormwater and water quality infrastructure improvement in the Chemung and

Susquehanna River Basins to benefit local water quality improvement and the Chesapeake Bay restoration effort.

2. Proceed with implementation of water quality restoration and protection measures identified in the “New York Tributary Strategy for Chesapeake Bay Restoration,” <http://www.dec.ny.gov/lands/33279.html>. (The strategy is an interim plan (based on the Chesapeake Bay Program Watershed Model Version 4.3, released September 2007) that will be refined as new information becomes available.)

Environmental Facilities Corporation / NYS Department of Environmental Conservation

1. Provide low interest financing for municipal wastewater treatment and water quality improvement projects through the Clean Water State Revolving Fund.

NYS Soil and Water Conservation Committee

1. Promote water quality protection and improvements (including sediment, nitrogen, and phosphorus reductions) through the Agricultural Environmental Management program and the Agricultural Non-Point Source Grant Program.

County Soil and Water Conservation Districts

1. Implement best management practices on farms, including by working with municipalities and contractors to meet stormwater requirements and promoting additional reductions in nonpoint sources including sediment, nitrogen, and phosphorus.
2. Identify and work with farms in the county, following the state-legislated Agricultural Environmental Management process and plan, that need conservation plans and ultimately implementation projects.

Otsego County Soil and Water Conservation District

1. Support the Oneonta Stormwater Program by providing the City and Town of Oneonta with a digitized map of their stormwater drop inlets and outfalls.
2. Make presentations and participate in working group meetings to explain the impact of a total maximum daily load designation on the Upper Susquehanna, with particular attention to possible MS4 designation of the Oneonta area.

Village of Cooperstown / Otsego County Soil and Water Conservation District

1. Seek funding to connect the Village of Cooperstown Wastewater Treatment Plant to a nearby restored wetland for nitrogen and phosphorus removal (in partnership with the NYS Department of Environmental Conservation, U.S. Army Corps of Engineers and Congressman Arcuri’s office).

Upper Susquehanna Coalition

1. Develop regional projects and grant applications to support and enhance the water quality protection and restoration efforts of member Soil and Water Conservation Districts.

Regulated MS4s (in the Elmira and Binghamton urban areas)

1. Educate the public regarding stormwater management.
2. Identify and eliminate sanitary septic overflows and other illicit discharges.
3. Regulate construction and post-construction stormwater runoff from new development.
4. Provide for long-term maintenance of stormwater management facilities.
5. Implement programs and practices that protect and restore stormwater quality (good housekeeping practices).

Rural Stormwater Coalition of Chemung, Schuyler, and Steuben Counties

1. Promote progressive stormwater management policies and practices in non-urban areas through training, public education, technical assistance, and other efforts.

NYS Floodplain and Stormwater Managers Association

1. Promote effective stormwater management by providing training, public outreach, communication, and coordination.

Pennsylvania Programs and Projects

Pennsylvania Department of Environmental Protection – Water Planning Office

1. Continue administering Pennsylvania's Nutrient Trading Program, which is working to establish a functioning bank of nutrient trading credits.

York County Conservation District

1. Continue interest and involvement in activities in the following watersheds: Yellow Breeches; Conewago Creek (West); Codorus Creek; Kreutz-Muddy Creek; Deer Creek and Gunpowder Falls; and Lower Susquehanna River.

Maryland Programs and Projects

Department of Natural Resources – Watershed Services / Community and Local Government Services

1. Continue to work with local governments and all stakeholders through the Tributary teams and the Chesapeake Bay National Estuarine Research Reserve, Otter Point Creek component site to provide information and training regarding implementation of best management practices and Bay restoration. (Planned events include a forum on the new Maryland Stormwater regulations when they are released, training for Homeowners on Green Building in Harford County, and the development of an information packet for homeowners in the Critical Area in Harford County.)

ACTION NEEDED:

Work with municipalities, developers, conservation and sportsmen groups, and others to support wetland establishment and enhancement in the basin to provide downstream benefits to water quality and migratory birds using the Bay.

Federal Programs and Projects

Environmental Protection Agency, Region 3

1. Continue to provide funds, through the Chesapeake Bay Program Office, to the Upper Susquehanna Coalition (USC) to implement water quality commitments. (The USC is providing a leadership role in the Bay program office to work with groups to support wetland establishment and enhancement.)

Federal Highway Administration

1. In 2009: Implement the Pennsylvania Wetland Banking Agreement (watershed-based).

Natural Resources and Conservation Service

1. Continue to provide technical and financial assistance to agricultural producers through Farm Bill programs (including the Chesapeake Bay Watershed Initiative), Conservation Technical Assistance and Resource Conservation and Development program to:
(1) address critical agricultural surface and groundwater resource concerns related to soil

- erosion, sediment, nutrients, organic materials, pathogens, and agri-chemicals; and (2) protect, restore, and enhance wetlands.
2. Provide Watershed Program planning assistance, if funded, to address nonpoint source and mine drainage pollution at the request of local project sponsors.

U.S. Army Corps of Engineers

1. Continue the Cooperstown Area Ecosystem Restoration, New York, feasibility study and Upper Susquehanna River strategy to restore wetland habitats and improve soil and water conservation practices within the ecologically valuable headwaters of the Susquehanna River Basin and Chesapeake Bay Watershed.

U.S. Fish and Wildlife Service (USFWS)

1. Proactively protect high priority habitats by developing partnerships with landowners for conservation easements, deed restrictions and other protective instruments.
2. Develop a Strategic Habitat Conservation Plan for all jurisdictions within the Chesapeake Bay Field Office, including the Lower Susquehanna River Basin. (This plan will help USFWS identify wetland restoration needs and implement projects that benefit the fish and wildlife resources of the basin.)

New York Programs and Projects

Upper Susquehanna Coalition and Member Soil and Water Conservation Districts

1. Continue active wetland restoration and construction program that provides multiple benefits to local and downstream areas.

The Wetland Trust

(The mission of this newly formed nonprofit organization is to restore and protect wetlands.)

1. Develop an endowment to provide a sustainable source of funding for projects in the Susquehanna River Basin.
2. Partner with the Upper Susquehanna Coalition on wetland mitigation projects.

Pennsylvania Programs and Projects

Pennsylvania Department of Environmental Protection – Bureau of Watershed Management

1. Requests a change to the language of this “Action Needed” to read: “Work with municipalities, developers, conservation and sportsmen groups, and others to support wetland establishment and restoration and stream mitigation and restoration in the basin to provide downstream benefits to water quality and migratory birds using the Bay.”

York County Conservation District

1. Continue interest and involvement in activities in the following watersheds: Yellow Breeches; Conewago Creek (West); Codorus Creek; Kreutz-Muddy Creek; Deer Creek and Gunpowder Falls; and Lower Susquehanna River.

OTHER KEY PROJECTS AND/OR PROGRAMS

(specific to this Priority Management Area but not captured in the select actions listed above)

Federal Programs and Projects

U.S. Army Corps of Engineers

1. Proceed to design and implement the Lidy Creek (Section 14) Emergency Streambank Protection project, Dupont Borough, Luzerne County, Pennsylvania, which will reduce sediment inputs to the Chesapeake Bay, pending availability of funds.

U.S. Forest Service (USFS)

1. Continue to provide financial and technical assistance, through the U.S. Forest Service / State and Private Forest / Northeastern Area, to partner organizations for forest conservation in the Chesapeake Bay Watershed, including the six Bay-states and Washington, D.C.

(The program is referred to as Chesapeake Watershed Forestry (CWF) and consists of the following three primary project area agreed to by the partners: (1) restoration and conservation of riparian forest buffers; (2) conservation of priority forests; and (3) enhancing urban tree canopy throughout the watershed – urban and community forestry. These are the most important forestry measures for restoration of watershed health. Formal support for forest conservation in the Chesapeake Bay Watershed comes through the Chesapeake Bay Executive Council’s Directive 06-1 – “Protecting the Forests of the Chesapeake Watershed” – signed by the governments of the six Bay-states and the District of Columbia in September 2006.)

2. In Fiscal Year 2009: Conduct the following activities through the Northeastern Area (Morgantown Field Office):
 - Continue to fund all costs for a dedicated USFS “Chesapeake Bay Liaison” position located at the Chesapeake Bay Program in Annapolis, Maryland. (This position also serves as Coordinator for the “Forestry Working Group” and on a federal advisory group to the Chesapeake Bay Program.)
 - Fund a riparian buffer specialist position, in collaboration with the U.S. Environmental Protection Agency, to coordinate riparian buffer tree planting and conservation.
 - Provide small watershed project grants and/or forest conservation grants to the Bay-states that contain portions of the Susquehanna River Basin (New York, Pennsylvania, and Maryland). (These grants support a variety of forest conservation measures, including assisting communities with urban tree canopy goal setting and tree planting to better manage storm water flow and quality.)
 - Support gypsy moth suppression programs, depending on federal funding availability, in Maryland and Pennsylvania, including some portions of the Susquehanna River Basin. (This suppression program is designed to retain tree canopy and promote forest protection (primarily oak forests) on private, state, and federal lands and in communities. This program works to conserve forests that provide benefits to the Susquehanna River Basin and the Chesapeake Bay.)
 - Work with the Natural Resources and Conservation Service (NRCS) to implement the Forestry and Chesapeake Bay provisions of the 2008 Farm Bill to expand cost share assistance programs for private landowners interested in implementing forest conservation projects on their land. (These are new Farm Bill emphasis areas, and Maryland, Pennsylvania, and New York State Forestry organizations, NRCS state organizations, and the USFS Northeastern Area are actively working to establish programs in fiscal year 2009.)

New York Programs and Projects

NYS Department of Environmental Conservation

1. Assist SRBC with stream sampling associated with the Chesapeake Bay Program non-tidal monitoring network.

Upper Susquehanna Coalition

1. Update the New York nonpoint source database used for the Chesapeake Bay Model to accurately describe land uses, farm operations, and management practices.
2. Conduct “what if” runs of the Chesapeake Bay Model, in cooperation with Penn State Institute of Energy and the Environment, to help determine the best suite of practices to implement.

Pennsylvania Programs and Projects

Pennsylvania Department of Environmental Protection – Water Planning Office

1. Continue to support the Susquehanna Nutrient Assessment Program, including monitoring and analysis of nutrient and sediment in the Susquehanna River.

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Priority Management Area F – Coordination, Cooperation and Public Information



SRBC commissioners and Deputy Director signing cooperative low-flow study agreement (left), and SRBC and federal agency representatives reviewing and discussing Commission's draft Comprehensive Plan.

Desired Result: *To maximize available human resources and achieve common and complementary management objectives by the Commission, its member jurisdictions and others; to promote the planning and management of the basin's water resources in the most efficient manner possible; to inform the public on the Commission's water management responsibilities; and to enhance the public's access to the Commission information and decision making procedures.*

The following Actions Needed under Priority Management Area F – Coordination, Cooperation and Public Information are from SRBC's *Comprehensive Plan for the Water Resources of the Susquehanna River Basin*, pp. 68-72. The responses under each Action Needed are those programs and/or projects to be initiated, maintained or completed in 2009 through 2010 by governmental and non-governmental interests.

ACTION NEEDED:

Consult the Commission's established advisory committees such as the Water Resources Management Advisory Committee and Water Quality Advisory Committee and, as needed, activate ad hoc committees to address special issues or projects.

Susquehanna River Basin Commission Programs and Projects

1. By March 2009: Schedule and develop general format for 2009 meetings of the Water Quality Advisory Committee.
2. By July 2009: Add a section on SRBC's web site for the Water Quality Advisory Committee.
3. By September 2009: Coordinate SRBC's draft low flow monitoring plan with the Water Quality Advisory Committee and the Water Resource Management Advisory Committee.

New York Programs and Projects

Southern Tier Central Regional Planning and Development Board / Chemung County Stormwater Coalition

1. Finalize proposed revisions to the New York State model ordinance for floodplain management and incorporate optional language for adoption of higher standards that provide increased flood protection.

ACTION NEEDED:

Keep the Commission-PADEP MOU current to ensure more effective implementation of Commission regulatory standards, and explore possibilities of executing similar MOUs with Maryland, New York and the federal government or establishing an alternative procedure for coordination and exchange of information on project approvals and other work programs.

Susquehanna River Basin Commission Programs and Projects

1. In 2009: Discuss and pursue with NYS Department of Environmental Conservation (NYSDEC) the development of an SRBC-NYSDEC memorandum of understanding.
2. Review the existing memorandum of understanding between SRBC and the Pennsylvania Department of Environmental Protection.

ACTION NEEDED:

Determine the need for uniform standards in such areas as instream flows, aquifer testing, water conservation and flood plain management.

Susquehanna River Basin Commission Programs and Projects

1. Beginning March 2009: Invite agencies from member jurisdictions to participate in several ecological flow workshops with The Nature Conservancy as part of the Susquehanna Environmental Flow Study.

New York Programs and Projects

Southern Tier Central Regional Planning and Development Board / Chemung County Stormwater Coalition

1. Finalize proposed revisions to the New York State Model ordinance for floodplain management and incorporate optional language for adoption of higher standards that provide increased flood protection.

ACTION NEEDED:

As appropriate, assemble special interagency and interstate task force committees to address special water management topics and the development of uniform water management policies or standards.

Susquehanna River Basin Commission Programs and Projects

1. Continue to participate in Maryland's ad hoc Susquehanna Flowby Workgroup to determine minimum flows needed for the Chesapeake Bay.

ACTION NEEDED:

Organize a consortium of resource agencies with jurisdiction over water at the federal and state level to facilitate the coordination of input into federal licensing and relicensing of hydroelectric and nuclear power facilities in the basin, including new facilities and updates at existing facilities.

Susquehanna River Basin Commission Programs and Projects

1. Continue to participate and coordinate with federal and state resource agencies on issues related to the Holtwood amendment and relicensing at York Haven, Holtwood, Conowingo, and Muddy Run hydroelectric facilities. (SRBC staff will take the lead on issues related to hydrologic investigations and minimum flow requirements, and will provide modeling services as needed.)

Federal Programs and Projects

Nuclear Regulatory Commission

1. Continue regulatory activities related to Susquehanna River plants.
2. Continue to inform SRBC of any nuclear plant licensing activities that may impact surface or groundwater use in the river basin.
3. Continue to consult with SRBC when conducting environmental reviews of proposed licensing actions.

(Three operating nuclear power plants are located on the Susquehanna River: Peach Bottom, Three Mile Island Unit 1, and Susquehanna Steam Electric Station. These plants draw cooling water from the river, and some may also utilize onsite groundwater wells for potable and service water. Susquehanna Steam Electric and Three Mile Island are both in the process of applying for license renewals to extend their operating licenses an additional twenty years from their current expirations. Peach Bottom was granted a renewed license in 2002, extending its licenses to 2033 and 2034. Susquehanna Steam Electric was granted an extended power uprate license amendment in 2008, which will allow the plant to operate at a higher power level after certain modifications. Additionally, PPL has filed an application to construct a new nuclear unit adjacent to the Susquehanna Steam Electric site; that application is currently under review and an environmental impact statement will be prepared for that proposed licensing action.)

ACTION NEEDED:

Develop basinwide water conservation standards in cooperation with member states.

Susquehanna River Basin Commission Programs and Projects

1. By June 1, 2009: Select a coordinator through a Request for Proposal process, in coordination with the Pennsylvania Department of Environmental Protection, to establish a Water Resource Technical Assistance Center to make information available on water conservation and to encourage reduction in water use.

Federal Programs and Projects

U.S. Fish and Wildlife Service

1. Promote northeast regional water supply and demand analysis and alternatives to address needs and manage growth.
2. Coordinate with state governments to work toward the adoption of “smart-growth” land use planning techniques.

Pennsylvania Programs and Projects

Pennsylvania Department of Environmental Protection – Water Planning Office

1. Coordinate with SRBC regarding a Request for Proposal to establish a Water Resource Technical Assistance Center, called for in Act 220. (The initial focus of the center will be on water conservation and efficient use.)

ACTION NEEDED:

Facilitate interagency coordination of post-flood actions for the purpose of improving emergency response, technical information and flood damage reduction.

New York Programs and Projects

Tioga County (NY) Flood Mitigation Group

1. Conduct a series of seminars directed toward municipal officials, highway personnel, and residents to make them aware of flooding issues and natural stream processes.

Environmental Emergency Services / NYS Department of Homeland Security

1. Conduct a regional tabletop exercise, if grant application is approved, for a major hurricane in Chemung, Schuyler, and Steuben Counties.

Pennsylvania Programs and Projects

York County Conservation District

1. Continue interest and involvement in the Federal Emergency Management Agency Flood Recovery Assistance program.

ACTION NEEDED:

Expand leadership role and advocacy for the collection of water quality and quantity data for science, including the maintenance of an effective and sustainable stream and rain gage network.

Susquehanna River Basin Commission Programs and Projects

1. By March 10, 2009: Begin discussions for FY-10 for building support for threatened stream and rain gages in the Susquehanna River Basin. (SRBC will participate in and assume a coordination role in these discussions.)
2. Expand SRBC's Early Warning System for Public Water Suppliers to cover additional sites and parameters, and make data available to resource agencies and others addressing specific water quality programs. (An example is the Pennsylvania Fish and Boat Commission's investigations of smallmouth bass die-offs in the Susquehanna River Basin.)
3. Promote the collection of water quality data through participation in Chesapeake Bay Program activities, meetings of the Association of State and Interstate Water Pollution Control Administrators, and SRBC's Water Quality Advisory Committee.
4. In spring 2009: Expand leadership and advocacy for water quality monitoring through revision of the Strategic Plan for SRBC's Watershed Assessment and Protection Division.

Federal Programs and Projects

U.S. Army Corps of Engineers (USACE)

1. Continue to partner with local governments, agencies, and stakeholders to initiate and execute investigations and projects within USACE authorities and jurisdiction.

New York Programs and Projects

NYS Floodplain and Stormwater Managers Association

1. Provide information to members, elected officials, and others concerning the benefits of stream gaging stations for flood warning, flood response, floodplain management, flood mitigation, infrastructure design, and other purposes.

Environmental Emergency Services

1. Advocate for consistent funding for critical stream gages in the Chemung Basin and nationwide development of a mechanism for reliable funding of the stream gage network.

Pennsylvania Programs and Projects

York County Conservation District

1. Continue interest and involvement in the Citizen Volunteer Monitoring Program.

Eastern Pennsylvania Coalition for Abandoned Mine Reclamation (EPCAMR)

1. Work with the Pennsylvania Department of Environmental Protection Keystone Volunteer Monitoring Network to determine if there can be a certification monitoring program established for citizen volunteers to assist with the monitoring of stream and rain gages, as well as water quality and quantity monitoring to assist SRBC.
2. Review www.datashed.org for an idea of how to create a clearinghouse for the data collected.

Maryland Programs and Projects

Department of Natural Resources (DNR) – Resource Assessment Service / Tidewater Ecosystem Assessment

1. Support experienced staff from various DNR units who serve on state, regional, and national workgroups/advisory committees.
2. Continue to be the primary sponsor of the Maryland Monitoring Council that serves as a state-wide collaborative body to help achieve effective collection, interpretation and dissemination of environmental data related to issues, policies, and resource management involving the Maryland water monitoring community. (Maryland State agency staff, local and federal agency staff, citizens, educators, students, and consultants participate in workshops, meetings, and symposia sponsored by the Council.)

ACTION NEEDED:

Evaluate the establishment of a Susquehanna River Basin Monitoring Council.

Susquehanna River Basin Commission Programs and Projects

1. Throughout 2009 and 2010: Continue coordinating with the U.S. Geological Survey, member jurisdictions and others on the merits of establishing a monitoring council for the entire Susquehanna basin, or alternatively, to participate in statewide monitoring councils in each of the member states.

Federal Programs and Projects

Environmental Protection Agency, Region 3

1. Discuss, as requested, the formation of a Susquehanna River Basin Monitoring Council with National Water Quality Monitoring Council members and provide feedback and suggestions for SRBC evaluation.

U.S. Geological Survey

1. Continue dialogue with SRBC, Delaware River Basin Commission, and Pennsylvania Department of Environmental Protection to evaluate the merits of establishing this monitoring council.

Pennsylvania Programs and Projects

Eastern Pennsylvania Coalition for Abandoned Mine Reclamation (EPCAMR)

1. Offer to serve on this monitoring council, if established. (The council could report to SRBC's Water Quality Advisory Committee quarterly.)

Maryland Programs and Projects

Department of Natural Resources (DNR) –

Resource Assessment Service / Monitoring and Non-Tidewater Assessment

1. Continue to be the prime sponsoring agency of the Maryland Monitoring Council that was formed 14 years ago and has been very successful in coordinating monitoring programs in the state (<http://mddnr.chesapeakeby.net/MWMC/>). (Several DNR staff members have played and continue to play key roles in this organization. DNR would be happy to share the Council's experiences with SRBC.)

ACTION NEEDED:

Periodically evaluate existing and emerging communication technologies and methods to determine their potential application and benefits to the Commission's public information program and strategies.

Susquehanna River Basin Commission Programs and Projects

1. Throughout 2009 and 2010: Conduct periodic evaluations with a particular focus on how to most effectively utilize the Internet.
2. Throughout 2009 and 2010: Consider and, as appropriate, implement improvements to SRBC's web site to take advantage of emerging technologies for enhanced communications.

ACTION NEEDED:

Utilize currently available technologies to make information readily available through electronic means, including non-restricted files and records requested by interested parties to eliminate the need to physically visit the Commission's headquarters building.

Susquehanna River Basin Commission Programs and Projects

1. Throughout 2009 and 2010: Continue enhancing SRBC's Internet-based databases, and continue making increasing amounts of data available electronically.
2. Throughout 2009 and 2010: Continue enhancing SRBC's web site and continue making more and more regulatory program forms and programmatic information available on the web site.
3. Throughout 2009 and 2010: Continue expanding and using SRBC's information technology capabilities to their fullest to maximize available human resources.

ACTION NEEDED:

Identify, assess and consider a range of options for enhancing access to the Commission by the public and stakeholder groups to facilitate input to ongoing and emerging issues and programmatic matters; options for consideration could include holding periodic topical meetings or public forums, forming a general advisory committee, and using the Commission's web site more effectively for direct public input.

Susquehanna River Basin Commission Programs and Projects

1. Throughout 2009 and 2010: Identify and select viable options for consideration to meet the objectives of this "Action Needed."

ACTION NEEDED:

Expand on existing ties to non-governmental organizations to maximize the beneficial use of their resources and expertise in the management of the basin's water resources.

Susquehanna River Basin Commission Programs and Projects

1. Throughout 2009 and 2010: Continue to seek input from the non-governmental members of SRBC's Water Quality Advisory Committee.
2. Throughout 2009 and 2010: Continue the partnerships with The Nature Conservancy on the low flow study, the Paxton Creek Watershed association on the Paxton Creek Stormwater Project, and with the Eastern Pennsylvania Coalition for Abandoned Mine Reclamation on an AMD project in northeast Pennsylvania, and continuously seek other such partnership efforts.

Federal Programs and Projects

National Park Service

1. Support the Delaware-Lehigh National Heritage Corridor, in partnership with the U.S. Army Corps of Engineers, to continue riverfront reinvestment activities in Wilkes-Barre, Pennsylvania.
2. In March 2009: Support the Susquehanna Greenway Partnership's symposium to identify strategies for maintaining and increasing visitors and tourism related interpretive media.

Pennsylvania Programs and Projects

York County Conservation District

1. Continue interest and involvement in the Watershed Alliance of York (www.watershedsyork.org).

Eastern Pennsylvania Coalition for Abandoned Mine Reclamation (EPCAMR)

1. Recommend that SRBC staff play an expanded role in the Upper Susquehanna River Basin in partnership with EPCAMR on AMD remediation efforts and future mine pool mapping efforts given their expertise in GIS, AMD remediation support staff expertise, past participation in local community efforts and groundwater monitoring.

Maryland Programs and Projects

Department of Natural Resources –

Watershed Services / Community and Local Government Services

1. Continue to have the Tributary Team serve as the source for all stakeholders for collaboration, identification of innovation, and dissemination of information regarding

those issues. (The Team will continue to function as a resource for stakeholders and a venue for collaboration and development of proposals and policies to support this objective.)

ACTION NEEDED:

Identify opportunities to collaborate with academic institutions to maximize resources and scientific knowledge.

Susquehanna River Basin Commission Programs and Projects

1. Work with Bucknell University and the Susquehanna Heartland Coalition to develop a scope of work for the State of the Susquehanna report by May 2009, initiate work in June 2009, and complete the final report by September 2010.
2. By spring 2009: Continue coordinating with Susquehanna University on its Science in Motion project to help teachers promote water quality monitoring activities in the Susquehanna basin, and to complement SRBC's sediment and nutrient monitoring program. (After spring, SRBC's involvement in the project will be minimal.)

New York Programs and Projects

Upper Susquehanna Coalition

1. Collaborate with and provide funding for academic research at Cornell University (identify hydrologically sensitive areas; impacts of Marcellus Shale development), Binghamton University (support graduate student research), and SUNY College of Environmental Science and Forestry (wetlands research).

Binghamton University Center for Integrated Watershed Studies

1. Conduct a Watershed Symposium to bring together social and natural science perspectives on current watershed study and watershed management topics, including the water resource issues related to the development of Marcellus Shale gas resources.

Pennsylvania Programs and Projects

York County Conservation District

1. Continue interest and involvement with Dickinson College, Franklin and Marshall College and Penn State York.

Eastern Pennsylvania Coalition for Abandoned Mine Reclamation (EPCAMR)

1. Continue to strengthen and expand its regional partnerships with academic institutions within the Susquehanna River Basin. (EPCAMR recently expanded its regional partnerships with academic institutions within the Susquehanna River Basin to assist the organization with its mine pool mapping project, pending funding by the Office of Surface Mining, through its Applied Sciences grant funding; Mansfield University, Lock Haven University, and Bloomsburg University will all be working with EPCAMR and its partners, including SRBC to georeference and digitize mining maps throughout northeast and northcentral Pennsylvania, utilizing their students, who will be taught how to work with and interpret the maps for digitizing.)

Exelon

1. Consider conducting additional tests later in 2009 at Exelon's Muddy Run facility to determine the feasibility of using an Algal Turf Scrubber technology to filter harmful nutrients from the Susquehanna River. (Exelon partnered with the Smithsonian Institute and the University of Maryland to conduct the initial test.)

ACTION NEEDED:

Provide opportunities for the involvement of non-governmental organizations in Commission activities and, through coordination efforts, encourage communication on activities/issues of mutual interest.

Federal Programs and Projects

National Park Service

1. Continue to coordinate – through Chesapeake Network for Education of Municipal Officials – education and 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.
2. Continue to solicit nominations and designation (as appropriate) additional Chesapeake Bay Gateway sites, trails, and water trail segments along the Susquehanna River and major tributaries, and provide technical assistance and financial assistance (as appropriate) to designated Gateways to aid the enhancement of public access, interpretation, and resource stewardship.
3. Continue promoting and supporting the efforts of the Delaware-Lehigh National Heritage Corridor and Lackawanna Valley National Heritage Area, in partnership with the Susquehanna Greenway Partnership, to implement strategies to develop recreational resources and preserve and interpret cultural and historic heritage resources along the North Branch Susquehanna River in Luzerne and Lackawanna Counties.
4. Continue to support efforts of the Susquehanna Greenway Partnership and local partners to preserve, interpret, and communicate the cultural and historic resources and stories of the Susquehanna corridor.
5. 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 technical and financial assistance (as appropriate) to help ensure all current developing water trails in the Chesapeake Bay Gateways Network along the Susquehanna River and major tributaries meet baseline development criteria.
6. Continue providing consultation by request from the Headwaters River Trail Partnership with completion of the Susquehanna River Water Trail System in New York State.
7. Through September 2009: Continue providing assistance through the Rivers, Trails and Conservation Assistance Program to the Susquehanna River Greenway and Susquehanna River Water Trail project, including partnering with water trail management organizations, Commonwealth of Pennsylvania, and other partners to implement phase 2 of the Susquehanna River Trail Signage Project, assisting with a stewardship and conservation workshop, and assisting with recognition of segments of the water trail as a National Recreation Trail.
8. 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.
9. Continue supporting the Delaware-Lehigh National Heritage Corridor and 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.
10. Through September 2009: Provide assistance through the Rivers, Trails and Conservation Assistance Program to the Pennsylvania Highlands Trail project to provide trail linkages between the Delaware, Schuylkill, and Susquehanna watersheds in Pennsylvania.

U.S. Army Corps of Engineers

1. Continue to work with The Nature Conservancy, such as in the Susquehanna River Basin Low Flow Management and Environment Restoration Project.

Pennsylvania Programs and Projects

York County Conservation District

1. Continue interest and involvement in the following watershed activities: Deer Creek Watershed Resources Study; Yellow Breeches Watershed Resource Conservation Plan (RCP); Conewago Creek (West) Watershed RCP; Codorus Creek Watershed RCP; Kreutz-Muddy Creek Watersheds RCPs; Deer Creek and Gunpowder Falls Watersheds RCPs and Watershed Restoration Action Strategies; and Lower Susquehanna River.

Eastern Pennsylvania Coalition for Abandoned Mine Reclamation (EPCAMR)

1. Continue to actively participate in SRBC's Water Quality Advisory Committee. (EPCAMR has provided several updates and presentations on its regional activities throughout the Susquehanna River Basin on AMD efforts, projects, and major initiatives. EPCAMR believes it would be a positive step to continue to allow other regional non-governmental organizations to make similar presentations at meetings throughout the year.)

ACTION NEEDED:

Coordinate with trade associations related to the various types of water use in the basin to promote sustainable water use in conjunction with economic development.

Federal Programs and Projects

Natural Resources Conservation Service (NRCS)

1. Participate with flood emergency response, technical assistance and flood damage mitigation through the NRCS Emergency Watershed Program, if funded.

OTHER KEY PROJECTS AND/OR PROGRAMS

(specific to this Priority Management Area but not captured in the select actions listed above)

Federal Programs and Projects

Natural Resources Conservation Service (NRCS)

1. Continue to support the objectives of SRBC and the Chesapeake Bay Program 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.

NOAA National Weather Service

1. Provide program management for the Susquehanna Flood Forecast and Warning System, and coordinate with SRBC, U.S. Geological Survey and other federal and state partners.
2. Do field office coordination with local emergency management agencies and media outlets, provide education and outreach to promote flood loss reduction, and conduct partnered Flood Inundation Mapping coordination meetings.
3. Design and pilot opportunities to engage Susquehanna River Basin stakeholders on the North Atlantic Regional Collaboration Team Integrated Water Resources.

4. Conduct flood preparedness briefings with the Federal Emergency Management Agency, state, county, and local emergency managers, and cover pre-, during, and post-flood operations.
5. Support serving National Weather Service hydrologic information through the Advanced Hydrologic Prediction System web pages, and manage web user requirement implementation activities.
6. Leverage new technologies to distribute hydrologic information to basin customers such as the electronic messaging system (also known as RSS feed).
7. Coordinate Flood Safety Awareness activities during Flood Safety Awareness Week.
8. Develop a strategy to deploy inundation maps in the basin, leveraging the partnerships established through the Water Resources Program.
9. Work with SRBC to update the 5-year Strategic Plan for the Susquehanna Flood Forecast and Warning System.

U.S. Army Corps of Engineers

1. Continue to lead a group of 16 federal agencies regarding their role and input to SRBC's Comprehensive Plan and Water Resources Program, facilitate quarterly conference calls, distribute information, and lead the development of "lead" and "support" roles per federal agency for each Priority Management Area.

New York Programs and Projects

NYS Department of Environmental Conservation

1. 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.

NYS Department of Environmental Conservation / Upper Susquehanna Coalition / Other Partners

1. Initiate development of a New York Susquehanna/Chemung Comprehensive Action Plan that identifies key water quality, flooding, and ecosystem issues; recommends approaches for addressing problems; and supports implementation programs.

Upper Susquehanna Coalition

1. 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.

Regional Planning Boards

1. Assist NYS Department of Environmental Conservation with local delivery of statewide water resource programs (stormwater management, floodplain management, water quality monitoring program, watershed management planning, etc.).
2. Foster a regional approach to water resource management and coordination among neighboring communities.
3. Prepare regional Comprehensive Economic Development Strategies, which incorporate water resource issues, such as flooding, sewer and water infrastructure, and water quality.

County Water Quality Coordinating Committees

1. Provide a forum for local coordination of water resource programs among local agencies, watershed associations, and other interested parties.

Otsego County Soil and Water Conservation District

1. Assist with the formation of local watershed groups in the Canadarago Lake, Goodyear Lake, and Butternut Creek Watersheds for the purpose of protecting natural resources.

Friends of the Chemung River Watershed

1. Facilitate implementation of “The Chemung River Comprehensive Master Plan” to promote river-based economic development, river-based recreation, and riverside trails throughout the Chemung River Basin.

Southeast Steuben River Council

1. Develop a vision for river-related economic development along the Chemung River in Steuben County and join with efforts of the Friends of Chemung River Watershed.

Broome County River Communities

1. Develop, with Local Waterfront Revitalization Program funding, a regional river corridor plan that expands the Greater Binghamton Greenway, promotes river-related economic development, improves recreational access, and highlights cultural heritage sites.

Chemung Basin River Trail Partnership

1. Encourage, as a network of individuals, organizations and governmental agencies, sustainable use of the Chemung watershed through increased access to the river and educational outreach.

Headwaters River Trail Partnership

1. Encourage, as a network of individuals, organizations and governmental agencies, sustainable use of the Upper Susquehanna Watershed through increased access to the river and educational outreach.

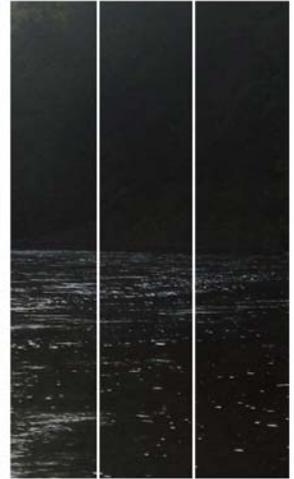
Pennsylvania Programs and Projects

Department of Conservation and Natural Resources – Bureau of State Parks

1. In 2009 and 2010: Conduct stream studies of Canoe Creek at Canoe Creek State Park and Project WET with Blue Knob State Park.
2. In 2009 and 2010: Conduct educational pontoon boat tours of Pinchot Lake.
3. In July 2009 and again in 2010: Offer watershed education workshop to educators at Kings Gap State Park.
4. In 2009 and 2010: Conduct environmental education programs at Trough Creek park in cooperation with the U.S. Army Corps of Engineers and Friends of Raystown Lake-Raystown Conservation Education Program.

York County Conservation District

1. Maintain the district’s following existing programs: Agricultural Conservation Planning and Technical Assistance; Chesapeake Bay Program; Dirt and Gravel Road; Environmental Education Program; Erosion and Sediment Control Program; Floodplain Management Program; and Watershed Management Program.
2. Continue to support the York County Agricultural Land Preservation Program.



Protecting Your Watershed for Today and Tomorrow

United States

Brig. General Todd T. Semonite, *Commissioner*
Colonel Peter W. Mueller, *Alternate Commissioner*
Colonel Christopher J. Larsen, *Alternate Commissioner*
Amy M. Guise, *Advisor*

New York

James M. Tierney, *Commissioner*
Kenneth P. Lynch, *Alternate Commissioner*
Peter Freehafer, *Alternate Commissioner*

Pennsylvania

(Currently Vacant), *Commissioner*
Cathleen Curran Myers, *Alternate Commissioner*
John T. Hines, *Alternate Commissioner*
Susan K. Weaver, *Alternate Commissioner*

Maryland

Dr. Robert M. Summers, *Commissioner*
Herbert M. Sachs, *Alternate Commissioner*

Commission Officers

Paul O. Swartz, *Executive Director*
Thomas W. Beauduy, *Deputy Director*
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