

Building Strong Collaborative Relationships for a Sustainable Water Resources Future:

SUSQUEHANNA RIVER BASIN COMMISSION

SUMMARY OF REGIONAL WATER PLANNING

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The findings contained in this report are based on the information collected from the literature search and interviews for this initiative and should not be construed as an official Department of the Army position, policy or decision unless so designated by other official documentation.

SUSQUEHANNA RIVER BASIN COMMISSION

1. STATE/REGIONAL WATER PLANNING STATUS

The legislative basis for development of the Susquehanna River Basin Commission's (SRBC or Commission) comprehensive plan is the Susquehanna River Basin Compact (Public Law 91-575) which was signed into law by the President of the United States on December 24, 1970. The Compact established the SRBC; joining the federal government and Maryland, Pennsylvania, and New York as equal partners to manage the Susquehanna's water resources for a period of 100 years. Through the institutional framework of the SRB Compact, member jurisdictions delegate sovereign authority to the Commission to exercise regulatory authority. Governors of the three member states as well as the President of the United States each appoint a representative to sit on the Commission Board. Consequently, the SRBC serves as a common forum for discussion among jurisdictions and the facilitator of a unified approach to addressing water resources issues in the basin.

In December 2008, the SRBC adopted the "Comprehensive Plan for the Water Resources of the Susquehanna River Basin (Comprehensive Plan)," which, "provides an overarching framework for the Commission to manage and develop the basin's water resources and serves as a guide for all Commission programs and activities." This updated Comprehensive Plan replaces the previous comprehensive plan adopted in 1987. The 2008 Comprehensive Plan is SRBC's third plan. The first plan was adopted in 1973.

In addition to the Comprehensive Plan, Article 3 of the Compact directs the Commission to develop an annual "Water Resources Program." This program is based on the Comprehensive Plan and serves as the implementation vehicle for the Plan by describing public and private projects being undertaken in the basin within the next two to three years. The Comprehensive Plan incorporates the annual Water Resources Program and other planning documents such as the "Consumptive Use Mitigation Plan (2008)", the "Groundwater Management Plan (2005)", and the "Susquehanna River Basin Drought Coordination Plan (2000)". Together, these documents constitute SRBC's comprehensive goals and implementation plans.

Originally, there were no specific requirements for Comprehensive Plan revisions or assessments. According to the Compact, the Commission was "from time to time [to] review and revise" the Comprehensive Plan. The 2008 Comprehensive Plan, however, sets a timeline for future plan updates and revisions:

The Plan is envisioned to be a dynamic, Internet document that includes effective use of GIS products. Annually, the Plan will incorporate new approved projects, plans and other actions (Appendix 2) and include the current version of the Water Resources Program (Appendix 3). Updates to the full Comprehensive Plan will be made every five years to help ensure the Plan is current and of long term value and usefulness. A complete revision of the Plan will be made every 15 years.

2. RESPONSIBLE STATE AGENCIES/REGIONAL ENTITIES

SRBC is headed by four commissioners: one representing each of the three states and a fourth representing the federal government. The Executive Director reports directly to the commissioners and is responsible for administration of all Commission programs and management of senior staff.

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3. WATER MANAGEMENT MISSION, VISION AND GOALS

The Commission's mission, which is defined in the Compact, is to enhance public welfare through comprehensive planning, water supply allocation, and management of the water resources of the Susquehanna River Basin. To accomplish this mission, the Commission works to: reduce damages caused by floods; provide for the reasonable and sustained development and use of surface and ground water for municipal, agricultural, recreational, commercial and industrial purposes; protect and restore fisheries, wetlands and aquatic habitat; protect water quality and instream uses; and ensure future availability of flows to the Chesapeake Bay. The Commission strives to fulfill its commitments in the manner reflected in its mission statement, its motto 'Protecting Your Watershed for Today and Tomorrow', and its values of teamwork, professionalism, and quality (Comprehensive Plan, 2008).

The Commission's vision for the Susquehanna River Basin is 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 uses and enjoyment. Through enlightened planning for and management of the basin's water resources, the health, safety and welfare of its citizens are safeguarded during times of flooding and drought, a vibrant economy is sustained, the Chesapeake Bay's water quality and living resources are improved, and an informed public is involved in resolving water resource issues. The Commission provides the necessary leadership and coordination of efforts among its member jurisdictions and with the private sector to make this vision a reality (Comprehensive Plan, 2008).

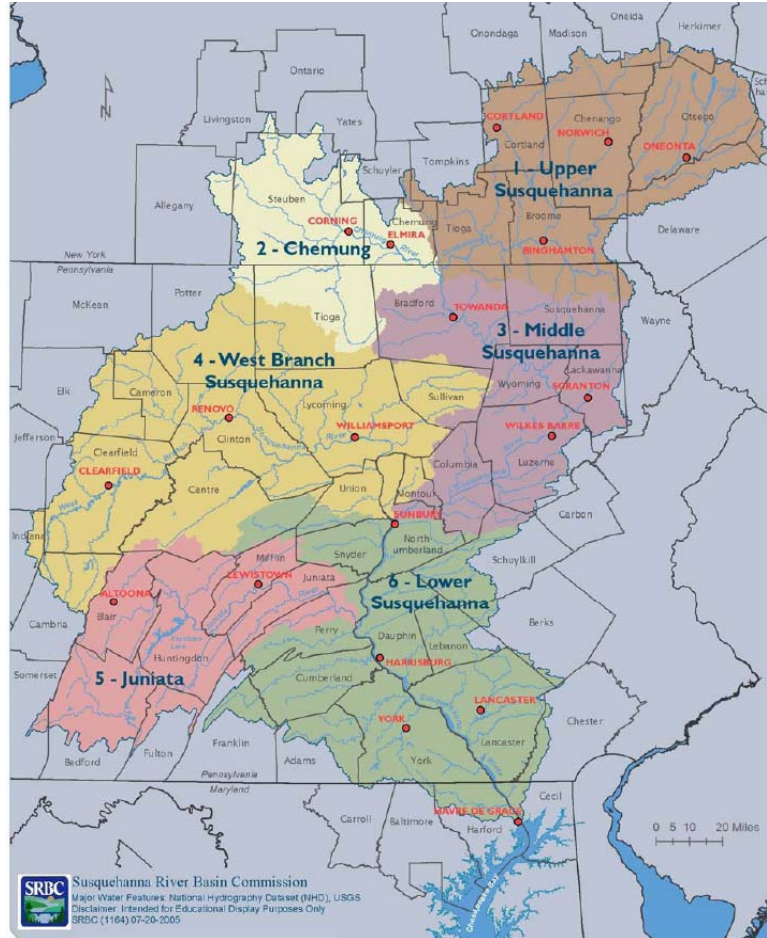


Figure 1. Susquehanna River Basin Map (Comprehensive Plan).

The goals of the SRBC are (SRBC, 2008):

1. *To be responsive to water resources management needs of the Commission’s signatory members.*
2. *To provide excellent service to the public.*
3. *To coordinate management of interstate water resources and serve as an effective forum for resolution of water resource issues and controversies within the basin.*
4. *To be a leader in issues concerning the conservation, utilization, allocation, development, and management of water resources within the Susquehanna River Basin.*
5. *To encourage excellence in SRBC staff by affording opportunities for professional growth and development and by providing a stimulating work environment for all Commission employees.*
6. *To provide public information and education about the water resources of the basin.*

In the 2008 Comprehensive Plan, SRBC groups its management responsibilities into six key water resources needs or “priority management areas”. For each of the key areas, the Comprehensive Plan discusses water resources issues, states its desired result, and lists goals, ongoing SRBC activities, and actions needed. The six priority management areas and associated desired results and goals are:

1. Water supply

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

Goals:

- a. *Support and encourage the sustainable use of water for domestic, industrial, municipal, commercial, agricultural, and recreational activities in the basin.*
- b. *Maintain an equitable system for allocating water for various uses, including the protection of instream flows and receiving waters of the Chesapeake Bay.*
- c. *Ensure sustainability of water sources by improving systems and managing water resources more efficiently.*
- d. *Mitigate drought impacts through coordination and use of drought emergency powers.*
- e. *Manage diversions to avoid impacts to the basin's water resources.*
- f. *Manage consumptive water use to mitigate impacts to the basin's water resources.*

2. Water quality

Desired result: *To support the existing and designated uses of all water bodies by achieving water quality that meets or exceeds standards.*

Goals:

- a. *Support and coordinate the efforts of the Commission's member jurisdictions in managing the basin's water quality*
- b. *Monitor and assess the biological, chemical, and physical quality of the basin's waters to support restoration and protection efforts*
- c. *Develop, support, and implement plans and projects to remediate and enhance the basin's water quality*
- d. *Protect the quality of the basin's biological resources and sources of public drinking water supply*
- e. *Organize, maintain, and distribute water quality data to facilitate basinwide water quality improvement and protection activities*

3. Flooding

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.*

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Goals:

- a. *Implement the goals of the strategic plan for the Susquehanna Flood Forecast and Warning System (SFFWS).*
- b. *Promote protective floodplain management practices.*
- c. *Improve community flood preparedness to ensure adequate and appropriate response by emergency managers before, during and after a flood event.*
- d. *Assist the Commission's member jurisdictions, as appropriate, in reducing the introduction of man-made debris into the waters of the Susquehanna River Basin and, ultimately, Chesapeake Bay.*

4. Ecosystems

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.

Goals:

- a. *Perform ecosystem monitoring and assessment to provide data needed for effective watershed management.*
- b. *Protect and restore biological resources throughout the basin and in each of the major subbasins.*
- c. *Restore populations of migratory fish throughout the Susquehanna River system.*

5. 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.

Goals:

- a. *Identify the minimum freshwater inflows needed from the Susquehanna River to assist in restoring and maintaining the ecological health of the Chesapeake Bay, while also identifying opportunities for enhancement.*
- b. *Develop and implement plans to address the flow requirements in Goal a. above.*
- c. *Support the Chesapeake Bay restoration effort, including sediment and nutrient reduction strategies developed by each of the Commission's member states.*
- d. *Provide habitat for migratory waterfowl and shorebirds found in the Chesapeake Bay.*

6. Coordination, cooperation and public information

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 Commission information and decision making procedures.

Goals:

- a. Continue use of interagency committees and ad hoc committee mechanisms to gather input from member jurisdictions and to encourage consistent interstate water management policies and actions.*
- b. Execute, review, and update memoranda of understanding (MOUs) with member jurisdictions to coordinate regulatory or other programs that overlap.*
- c. Support uniform water management policies and standards in areas such as water quality, stream classification, flood plain management, instream flow protection, stream passby requirements and aquifer protection.*
- d. Coordinate major interagency efforts such as flood forecasting and warning, drought emergency management, water conservation, and hydro power license renewal.*
- e. Inform legislators and executive branch policy makers on important issues related to the basin's water resources.*
- f. Inform the public on matters affecting the basin's water resources and utilize current tools, methods and strategies to effectively reach the public.*
- g. Enhance public access to Commission information and decision making procedures.*
- h. Involve and seek the advice of non-governmental organizations on the management of the basin water resources.*

4. SCOPE OF WATER RESOURCES PLANNING AND MANAGEMENT

The Susquehanna River Basin stretches across most of eastern and central Pennsylvania into the southeastern half of New York and down to the northeastern portion of Maryland where the Susquehanna drains into the Chesapeake Bay (Figure 1). There are six major subbasins in the Susquehanna: Upper, Middle, Lower and West Branch Susquehanna, Chemung, and Juniata.

The Comprehensive Plan is organized into 5 main sections to assist the Commission in “the optimum planning, development, conservation, utilization, management and control of the water resources of the basin to meet present and future needs”:

1. An assessment of water resources needs
2. General principles, and project guidance and standards
3. Desired results, goals, ongoing SRBC activities and needed actions for the six priority management areas
4. Water resource areas of special interest

5. An inventory of past and present projects, plans, and actions that have been incorporated into the Comprehensive Plan

Water resources needs are categorized into the six priority management areas. The following are major needs identified in each of those management areas:

1. Water supply

Issues:

- Uneven distribution of water resources across time and space
- Infrastructure problems such as leakage and water delivery issues
- Increasing water demand from growing population and industrial water users (such as power generation companies)
- Droughts/extreme weather patterns due to climate change
- Increase in the water consumption of large power plants due to regulations prohibiting once-through cooling
- High growth in exploration for natural gas has led to tens of thousands of new small wells

Needs:

- *Sustainability of water supply for various uses in the basin*
- *Equitable allocations of water for various uses, including protecting instream flows and the receiving waters of the Chesapeake Bay*
- *Mitigation of drought impacts*
- *Management of water diversions to avoid resource impacts*
- *Management of consumptive water use to avoid resource impacts*
- *Modify regulations to enhance data management systems to adapt to the new natural gas industry*

2. Water quality

Issues:

- Leading causes of surface water impairment are abandoned mine drainage, agriculture and urbanization.
- Localized surface water impairment comes from transportation activities, malfunctioning septic systems, and other sources.
- In portions of the basin, groundwater quality degradation is caused by elevated nutrient loads including iron, manganese, nitrates, and organics.

Needs:

- *Support for and coordination of the member jurisdiction's water quality efforts.*
- *Monitoring and assessment of the quality of the basin's waters to support restoration and protection efforts.*
- *Development, support, and implementation of measures to remediate and enhance the basin's water quality.*

- *Protection of the basin's biological resources and sources of public drinking water supply.*
- *Enhancement of the water quality data program.*

3. Flooding

Issues:

- Basin is one of the most flood prone watersheds in the country and is susceptible to tropical weather systems, thunderstorms, snowmelt and ice jams, and rapid runoff.
- High costs and environmental impacts will limit construction of new major structural projects (e.g., dams and levees).

Needs:

- *Continued effectiveness of the Susquehanna Flood Forecast and Warning System through implementing its strategic plan.*
- *Protective flood plain management activities by member jurisdictions.*
- *Improvements in community flood preparedness.*
- *Reduction of man-made debris in the basin's waterways and into the Chesapeake Bay.*

4. Ecosystems

Issues:

- Healthy ecosystems are needed to support a wide array of water resources needs: sustainable water supply, good water quality, biological productivity, species diversity, recreation, and ecological health of the Chesapeake Bay.
- Competition for resources during times of low flow.

Needs:

- *Monitoring and assessment of ecosystems to provide data needed for effective watershed management*
- *Protection and restoration of biological resources in the basin*
- *Restoration of populations of migratory fish throughout the Susquehanna River system*
- *Develop target flows for ecosystem protection and other uses*

5. Chesapeake Bay

Issues:

- Susquehanna River contributes ~50 percent of the total freshwater inflow to the Chesapeake Bay, the largest estuary in the U.S.

Needs:

- *Identification of the minimum freshwater inflows needed from the Susquehanna River.*

- *Development and implementation of measures to address the minimum flow requirements.*
- *Support for the sediment and nutrient reduction strategies developed for the Susquehanna River Basin.*
- *Provision of habitat for migratory waterfowl and shorebirds found in the Bay.*

6. Coordination, cooperation, and public information

Issues:

- There are many different governmental agencies who administer water resources programs in the basin, leading to potential problems including discrepancies in authority and responsibility, inefficient use of governmental resources, and inconsistent treatment of water users.

Needs:

- *Use of interagency committees and ad hoc committee mechanisms.*
- *Use of memoranda of understandings with member jurisdictions.*
- *Support for uniform water management policies and standards.*
- *Coordination of major interagency efforts such as flood forecasting and warning, drought emergency management, and hydropower license renewal.*
- *Providing information on basin water resource matters for legislators and policy makers.*
- *Effective means to inform the public.*
- *Enhanced public access to Commission information and procedures.*
- *Increased involvement of non-governmental organizations in water resources management.*

Goals and actions for the six priority management areas are considered the primary vehicle for achieving the Susquehanna's water resources needs. Complementary to the goals and actions, are the areas of special interest:

1. Abandoned mine drainage
2. Climate change
3. Consumptive use mitigation
4. Drought coordination
5. Economic development, recreation and other public values
6. Emerging contaminants
7. Energy production
8. Flood forecast and warning
9. Invasive species
10. Migratory fish restoration
11. Potentially stressed areas and water challenged areas
12. Water and wastewater infrastructure

The above mentioned areas of interest do not have specific SRBC goals and actions but are discussed in terms of their impacts on water resources and initiatives needed or underway to

address them. They represent longstanding and emerging programs as well as problems of interest. The Commission believes these areas of special interest need to be addressed by the combined efforts of all levels of government, the private sector and the Commission.

The water and wastewater infrastructure special area of interest represents an example of a combined effort albeit of mixed success. Throughout the basin, aging water and wastewater infrastructure and inadequate funding for rehabilitation and new construction are growing concerns. Effectively managing infrastructure is part of the goals and/or desired result some of SRBC's priority management areas such as water supply, water quality, and flooding. Federal funding for water and wastewater infrastructure has decreased by half a billion dollars in 2006 to 2008, with additional cuts proposed for 2009. SRBC continues to participate in an infrastructure workgroup chair by the USEPA Region III and works with its member jurisdictions to address infrastructure issues. SRBC is also working with the Association of State and Interstate Water Pollution Control Administrators to coordinate infrastructure issues and promote infrastructure funding. In Pennsylvania, Governor Rendell issued an Executive Order in 2008 to find solutions to the state's drinking water and wastewater infrastructure needs, including non-structural alternatives to capital upgrades (e.g., nutrient credit trading, water reuse, and conservation) and new funding options.

Beyond infrastructure issues, the constraints on financial resources have the potential to negatively impact the Commission's ability to effectively address other key issues. During an interview session conducted for this summary, representatives from the Commission pointed out additional impacts of an overall lack of adequate funding. Resource needs mentioned included high quality personnel and the development and maintenance of computer systems. Other concerns identified include the limited willingness of member jurisdiction to provide financial support and the complete lack of federal funding over the last decade.

The Comprehensive Plan focuses on issues, goals, and actions that will affect the entire basin versus regionally (i.e., subbasin-scale issues). Despite this, SRBC emphasizes the importance of taking a watershed-scale approach to water resources planning and management, stating in the Comprehensive Plan that, "Through planning and regulatory actions, the Commission should strive to manage water resources beginning at the watershed level, based on a 15-year planning horizon, to assure short-term resource availability and long-term balance between healthy ecosystems and economic viability."

Part III of the Comprehensive Plan provides a series of guiding principles, several of which are related to integrated, watershed-scale management:

- *Watersheds should be utilized and promoted as the best units for water resources planning and management.*
- *The optimum use or combination of uses of the basin's water and related natural resources should be promoted to address foreseeable immediate and long-range demands in a balanced, efficient and timely manner under sustainable development principles.*
- *The multiple planning objectives of economic development, environmental quality, and social welfare should be considered so as to facilitate reasoned, balanced choices being made when conflicts arise.*

- *Surface and groundwater resources should be managed as an integrated unit, recognizing that the chemical, biological and physical aspects of ground and surface water systems are interrelated; that natural processes and human activities affect these interactions; and that ground and surface waters are inextricably linked parts of the same resource and cannot be managed separately.*
- *The water resources of the basin should be managed on an integrated basis and with a recognition of the interrelationship between land and water resources, that those resources are finite, and that their development and utilization on a sustainable basis is vital to the basin's ecological, economic and social well-being.*
- *Decision-making should be based on sound scientific principles and policies, consistent with requirements in law and regulations, with due regard to both water quantity and water quality considerations.*
- *Public input and involvement in the water resources planning and management process should be actively sought and encouraged.*
- *Water resources planning and management efforts should be coordinated with local, state, and federal agencies and with the private sector.*

5. PARTNERSHIPS, STAKEHOLDER, AND PUBLIC INVOLVEMENT

SRBC's has many partnerships, including those with the USACE and the three states' departments: New York's Department of Environmental Conservation; Pennsylvania's Department of Conservation and Natural Resources, Department of Environmental Protection, and Fish and Boat Commission; and Maryland's Department of the Environment and Department of Natural Resources. Other federal partners include the USEPA, the National Park Service, the National Weather Service, USDA's Natural Resources Conservation Service, the Office of Surface Mining, USGS, the U.S. Fish and Wildlife Service, and the Federal Emergency Management Agency. Among regional partners are the Susquehanna River Anadromous Fish Restoration Cooperative, The Nature Conservancy, Upper Susquehanna Coalition, the New York State Floodplain and Stormwater Managers Association, the numerous New York Regional Planning Boards, the Chemung River Council, and the Southeast Steuben River Council. The Commission also has partnerships in the power industry with Exelon and Pennsylvania Power & Light (PPL).

Public input and participation is solicited by SRBC throughout the planning process, generally through informal coordination, stakeholder meetings, public review and comment of draft documents, and public hearings. In accordance with the Compact:

- All Commission meetings are open to the public
- Projects cannot be approved by the Commission until public hearings, with due notice, are held
- Plans cannot be adopted by the Commission until public hearings, with due notice, are held

6. PLAN IMPLEMENTATION STRATEGY

SRBC's implementation strategy is included in the Comprehensive Plan as Part VII-Implementing Actions in the Comprehensive Plan. SRBC's strategy consists of the continuation

or initiation of work activities, programs, projects, and plans. Examples of continuing projects, programs, and plans include:

Projects

1. The system of 13 USACE multipurpose reservoirs
2. Twenty local flood protection projects constructed by USACE
3. Twenty major electric power plants
4. Four fish passage facilities on the Susquehanna River
5. Over 900 facilities having water use approvals provided by SRBC since 1971

Programs

1. The Susquehanna Flood Forecast and Warning System, including its 2007 Strategic Plan for Flood Forecast and Warning-Susquehanna Improvements Program

Plans

1. 2005 Groundwater Management Plan for the Susquehanna River Basin
2. 2008 Consumptive Use Mitigation Plan for the Susquehanna River Basin
3. 2000 Susquehanna River Basin Drought Coordination Plan

In addition, to meet the water resources needs identified in the Comprehensive Plan and to fulfill the requirements of the Compact, SRBC annually adopts a Water Resources Program (WRP). The 2009 WRP is expected to be adopted in March 2009 and it will serve as the implementing mechanism for the actions needed under the six priority management areas presented in the 2008 Comprehensive Plan.

The 2008 WRP was adopted on March 13, 2008. For each water resource need identified in the 1987 Comprehensive Plan, the Program identified and described SRBC projects, Federal program and projects, and State programs and projects. The water resource needs were:

1. Coordination—*Coordinate the planning and management of the water resources of the basin in accordance with the requirements of the Compact and the Comprehensive Plan, communicate with and listen to the concerns of the water use stakeholders and their elected representatives, educate the public about the water resources of the basin, and garner adequate financial resources to support both SRBC and other agency programs and projects for management of the basin's water resources.*
2. Reduce Flood Damages & Provide Effective Disaster Recovery—*Prevent the loss of life and significantly reduce future damages from floods within the basin through an integrated system of structural and nonstructural flood damage reduction measures. Provide a comprehensive and effective program for disaster recovery efforts following major floods.*
3. Improve Water Quality—*Control water pollution and excess nutrient runoff sufficiently to maintain and establish water quality capable of supporting multiple purpose uses for public water supply, recreation, fish and wildlife, agriculture, industry, energy production and other uses. Protection also will be given to the receiving waters of the Chesapeake Bay.*

4. Mitigate Drought Impacts—*Mitigate the adverse impacts of drought conditions on water users and the environment.*
5. Ensure Adequate Water Supply—*Ensure an adequate supply of water for all users, including instream users and the Chesapeake Bay.*
6. Promote Economic Development—*Promote the economic development of the basin under sustainable water resource principles.*
7. Protect and/or Restore Aquatic Ecosystems—*Take actions to protect and/or restore fish and wildlife habitat including streams and wetlands*
8. Restore Migratory Fish—*Restore native migratory fishes to the Susquehanna River system. Remove obstacles to the movement of migratory and indigenous fishes.*
9. Manage Sediment—*Protect the water and related land resources of the basin through the implementation of both conservation practices that retard runoff, and prevent or reduce soil erosion and other management alternatives to control sediment deposition.*
10. Preserve Cultural & Historical Heritage—*Preserve and make more readily available to the public scenic, cultural and historic amenities that are unique to the Susquehanna River Basin.*
11. Enhance Recreation—*Expand and improve water-based recreational opportunities in the basin.*
12. Facilitate Data Management & Use—*Inventory and store relevant water resource management data in a readily retrievable and usable form, as well as promote data sharing among agencies.*

7. OUTCOMES ASSESSMENT PROCESS

The Comprehensive Plan concludes its section on “Implementing Actions in the Comprehensive Plan” with a description of the plan’s progress assessment process:

The true value of this Comprehensive Plan will be measured by the degree to which its goals are met through taking the identified actions and continuing the ongoing Commission activities. An annual assessment of progress on meeting goals will be made by the Commission using a procedure to be determined. It is anticipated that performance measures to include a listing of accomplishments in the preceding year will be part of the assessment process. A review of the current Water Resources Program will be useful in identifying actions planned or being taken toward meeting the goals. The results of the annual assessment will be reported to the commissioners.

SRBC currently does not have established performance measures or a comprehensive assessment process. The Compact directs the commission to report annually on its programs, operations, and finances. The SRBC 2007 Annual Report lists select accomplishments based on the water resources needs identified in the 2007 Annual Water Resources Program (below) but does not report on any ongoing or anticipated problems or challenges. Accomplishments included:

Coordination

- *Coordinated extensively with state and federal legislative assemblies and agencies.*

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- *Convened meetings with SRBC's core advisory committees: Water Resources Management Advisory Committee, Water Quality Advisory Committee, and Susquehanna Flood Forecast and Warning System Interagency Committee.*
- *Coordinated with other interstate river basin commissions, participated in advisory committees of our member jurisdictions, and coordinated with our member jurisdictions in the exercise of our regulatory functions.*
- *Coordinated with the U.S. Army Corps of Engineers, state and local officials from Broome County and others to break ground on the Whitney Point Lake Section 1135 Project Modification.*

Reduce Flood Damages and Provide Effective Disaster Recovery

- *Coordinated with Interagency Committee members to continue needed enhancements to the Susquehanna Flood Forecast and Warning System, including stream and rain gage updates.*
- *Continued progress on the flood mapping project for New York State.*
- *Continued media campaign to raise awareness on the dangers of driving on flooded roadways.*

Improve Water Quality

- *Conducted subbasin survey activities in the Upper Susquehanna, Middle Susquehanna and Chemung Subbasins.*
- *Completed initial phase and started next phase of the \$750,000 grant project from the USEPA Chesapeake Bay Targeted Watershed Program for the Paxton Creek Watershed Stormwater Project.*
- *Completed the annual assessment of interstate streams and issued the report and interactive web product.*

Ensure Adequate Water Supply

- *Prepared the Commission's regulatory revisions for final rulemaking, adopted final rulemaking, published revised regulations and posted them on the Commission's web site.*
- *Continued reviewing hydropower re-licensing applications.*
- *Continued progress on the Deer Creek Watershed water availability study.*
- *Continued enhancing the Early Warning System program in Pennsylvania and received funding from the New York State Assembly to expand the program into New York.*

Promote Economic Development

- *Continued regulating consumptive water uses and withdrawals to minimize conflicts among users who need dependable sources of water for their businesses and economic activities.*
- *Continued all activities related to the Susquehanna Flood Forecast and Warning System so that businesses and others receive early flood warnings.*

Protect and/or Restore Aquatic Ecosystems

- *Completed data assessment, modeling and began initial draft of the West Branch Remediation Strategy.*
- *Continued TMDL work in Pennsylvania with an emphasis on the West Branch Subbasin and in Maryland.*
- *Continue activities in support of the Adaptive Management Plan for the Whitney Point Lake Section 1135 Project Modification.*

Manage Sediment

- *Conducted data collection and analysis for all long-term and expanded sediment and nutrient monitoring sites in the basin.*

8. NEEDS, CHALLENGES AND CRITICAL PRIORITIES – INTERVIEW INSIGHTS

The key water resources issues/needs in the Susquehanna River Basin are:

- Meeting the increasing demand for water in multiple sectors of use due to a fast-growing regional population. This includes an increase in water lost to the basin through consumption by large power plants meeting regulations prohibiting once-through cooling. Increase in consumption by large power plants was identified as the most challenging issue over the next 5 to 10 years.
- Modify regulations to enhance data management systems to adapt to the rapid growth of natural gas exploration in the Marcellus Shale region of the basin.
- Promoting a coordinated effort to enhance water quality monitoring and assessment to facilitate in the development and implementation of water quality remediation measures. Specific water quality impairment concerns include the effects of acid mine drainage, agriculture, and increased urbanization.
- Develop an integrated system of floodplain management to mitigate social and environmental impacts.
- Improve the overall health of the Basin's riparian ecosystems through improved monitoring, assessment, protection, and restoration initiatives.
- Development and implement measures to address the minimum flow requirements needed from the Susquehanna River to support the health of the Chesapeake Bay.
- Enhance overall stakeholder integration and involvement into basin-wide planning and management. This includes state and federal government agencies, NGOs and the public.

Effectively addressing the needs and challenges mentioned above will require the maintenance and addition of various supportive resources. Financial funding is needed to acquire high quality personnel to develop and carry out the initiatives of the SRBC, as well as for supplying the Commission with the necessary technological assets and assisting in its overall operating costs. The Commission will also require the continued commitment, support, and coordination from its member jurisdictions and federal, public, and private partners. The SRBC is fully committed to working closely with federal partners in addressing the water resource needs of the basin and views its current coordination among federal agencies as a positive asset.

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