

COOPERATIVE WATER MANAGEMENT IN THE SUSQUEHANNA RIVER BASIN

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INTRODUCTION

As part of a series of long term studies conducted by the Susquehanna River Basin Commission and the Baltimore District, Corps of Engineers the long term water needs of the Susquehanna River basin were investigated. The objectives of the studies were to project future water demands in the basin and develop a long term water management strategy that would serve the present and future needs of the basin. From these studies and the interest of concerned citizens developed the need for a Federal-Interstate Compact for the comprehensive management of the water resources of the basin. A Compact was subsequently developed and signed in 1970 creating the single administrative agency that presently coordinates and manages the basin's water program.

OVERVIEW OF THE SUSQUEHANNA RIVER BASIN

The Susquehanna River has a drainage area of 27,510 square miles and is the largest river on the east coast of the United States. The Susquehanna drains nearly 43 percent of the Chesapeake Bay watershed and contributes an average of 51 percent of the total freshwater inflow to Chesapeake Bay. The Susquehanna River basin extends from the Adirondacks in New York to the coastal plain in Maryland. Land use in the basin ranges from intensive, urban activities such as railroad, highways, residential, commercial, industrial and public lands, to open, extensive types such as agriculture, woodlands, open lands, wetlands, and parklands. Land use in the basin is 61.8 percent forestland, 18.3 percent cropland, 17.5 percent pasture and 2.4 percent urban or other uses.

Historically, the basin's urban growth was established on land adjacent to the Susquehanna River. Recent economic and population growth has occurred in the suburban areas around the older communities. Population growth in the Susquehanna River basin during the last decade was below the national average, with certain Standard Metropolitan Statistical Areas (SMSA's) experiencing faster rates of growth than others. According to the U.S. Department of Commerce, the population of the SMSA's in the Susquehanna basin area is expected to grow modestly from 2.55 million in 1983 to 2.68 million in 2005. The bulk of the population increases are expected to occur within the Lancaster, York, and Harrisburg SMSA's.

The basin area, with its natural resource characteristics and diversity of life forms, provides many recreational pursuits. The climate of the area is characterized by abundant precipitation, moderate snowfall, plentiful sunshine, and a long frost-free season. Such a climate is extremely conducive to most outdoor recreation activities. The basin area also contains a rich heritage of historical, cultural and environmental resources that also provide recreational enjoyment. These resources are operated and maintained by both public and private organizations whose intent is to preserve the resources for future enjoyment.

DROUGHT MANAGEMENT

With an average annual precipitation of 38 inches, the water resources of the basin would appear to be abundant. While the average rainfall seems substantial, droughts have been a recurring problem and remain one of the highest priority management issues in the basin. The prolonged drought during the 1963-1966 period illustrated the inadequacy of many individual and municipal sources of supply and the limitations of storage and distribution systems. During a relatively minor drought in 1980 and 1981, more than 110 municipal water supply utilities were forced to declare some degree of water emergency. A similar experience was noted in the low flow period in the late 1980's. This experience is considered to be a harbinger of things to come and evidence of the need to take appropriate actions to manage such emergencies.

As a result of the above mentioned droughts, various Federal and state agencies have conducted studies to identify water supply related problems. These studies were in sufficient detail to define the specific needs of both individual subbasins and water service areas throughout the overall basin. Based on these studies, the following general conclusions may be drawn.

Water use, particularly consumptive water use, is expected to increase between 1990 and 2020.

Many public water supply utilities need to increase the capability or number of their sources.

Increasing consumptive use will reduce streamflows and adversely affect instream uses and riparian rights.

There is a strong need for careful planning for the use of land and water resources in the Susquehanna basin in order to insure adequate water supplies for public and private uses and to protect the environmental integrity, including the aesthetic, recreation, and fishery values of the streams.

Major emphasis should be placed upon conservation programs to help meet future water needs.

Increased storage is needed in order to meet consumptive loss makeup requirements.

The above mentioned studies were able to define the scope of the water problems and the variety of solutions available to solve those problems. Most importantly, the technical findings of these studies were generally agreed to by all the federal and state interests having water resources responsibilities in the basin. What remained was the development of the institutional mechanism that could resolve conflicts and coordinate the development of the basinwide management plan.

RESOURCES MANAGEMENT

In the early 1960's, citizens concern regarding water resource problems in the Susquehanna River Basin stimulated the formation of the Susquehanna River Basin Association, a citizens' organization. The Association and other groups expressed the need for comprehensive basin studies to develop solutions to resource problems. The Congress of the United States recognized a national interest in the Susquehanna River Basin. In 1962 it authorized and funded a comprehensive study of the water resources of the basin. The Baltimore District, Corps of Engineers was assigned to chair this study which was completed in 1970. Concurrently, citizen and State activities led to the creation of an Interstate Advisory Committee for the Susquehanna River Basin. This Committee concluded that a regional approach to development issues of the basin was urgently needed. The Committee thus drafted a Federal-Interstate Compact for the comprehensive planning, management, development, use and conservation of the water resources of the basin.

The President of the United States signed the Susquehanna River Basin Compact into law on December 24, 1970. The Compact provided for the creation of a single administrative agency to coordinate water resources efforts and programs in the basin. Within a few months of the signing of the Compact, the Susquehanna River Basin Commission was established as the administrative agency. The members of the Commission are the governors of the signatory States or their designees and an appointee of the President of the United States. The District Engineer of the Baltimore District serves as the technical advisor to the Federal member.

The Commission's mandated mission is to bring about coordinated planning and management of the water resources of the basin. The Commission is required to formulate, adopt and implement a comprehensive plan for the basin. Inherent in this process is the coordination of the planning and management efforts of others affecting water resources, stimulation of public awareness, and implementation of related action programs. The Commission also seeks to provide the opportunity for groups to express their views and to reconcile differences between groups when possible. The Corps has been heavily involved in water resources planning in the basin for decades and is currently responsible for thirteen reservoir projects within the basin. The Baltimore District and the Commission have successfully reallocated storage at one Corps project to meet consumptive use regulations established by the Commission, and additional studies are underway to determine the

merit of reallocating storage at two additional projects. The success of these joint studies in identifying and implementing the specific measures needed to address basin problems demonstrates the effectiveness of the institutional measures used for resource management in the Susquehanna River basin.

SUMMARY

Over the last three decades a series of technical studies have defined the present and emerging water needs of the Susquehanna River basin. Concurrent with these technical studies, the Susquehanna River Basin Compact was signed and the Susquehanna River Basin Commission was established. The Commission's mission is to bring about coordinated planning and management of the water resources of the basin. The Commission, together with the Corps of Engineers and other Federal and state agencies and the private sector, have been working effectively to manage the water resources of the basin.

ACKNOWLEDGEMENTS

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