



Chapter 1: Introduction

Significance of Issue

The Genesee River Basin is a resource of intense historical, ecological and cultural value. The lands and waters of the Basin have always been a source of great wealth to its inhabitants, both in terms of production and beauty. The Basin has at times been a source of great turmoil, however, as exemplified by destructive flooding, rapid industrial expansion and decline and continuous fluctuations in human settlement patterns. Throughout its 10,000 year geologic history, the Genesee River—the primary drainage channel of the Basin—has continued its steady journey north to Lake Ontario, carving deep trenches through the highlands of the Allegheny Plateau and routinely depositing fertile soils throughout the Genesee Valley below. The Basin itself is divided into two primary drainage basins, together containing a total of twenty-four separate watersheds, each with its own unique physical, environmental and social characteristics. As the River meanders northward, an enormous volume of water is gathered from these catchments, creating a flow of significant volume and strength by the time it reaches the City of Rochester and exits into the immense holding tank that is Lake Ontario, one of the five lakes that comprises the Great Lakes Basin.

The Genesee River Basin has yielded enormous benefits to its residents, embodied by a variety of land and water uses such as navigation, recreation, energy production, wildlife habitat, and fresh water for drinking, irrigation, industrial uses and sanitation. Unfortunately, a general atmosphere of neglect coupled with the steady increase in the intensity of human activities on the land and water in the Basin has steadily led to the degradation of these and other uses to varying degrees. Agricultural and industrial activities, stormwater runoff, inadequate waste treatment, hydrologic and habitat modification, and invasive species are a sample of the types of issues that inhabitants and their local, state, and federal governments and associated agencies have been grappling with in recent time.

Disjointed, reactionary measures have proven to be inadequate means of addressing variant forms of pollution and their cumulative impacts on local human and wildlife communities. If the uses that are enjoyed in the Genesee River Basin are to be sustained over a prolonged period of time, an active and focused planning and management effort will be required across all relevant organizational and administrative levels. The Genesee River Basin Action Strategy (GRBAS) is intended to help implement and guide this effort.

The Genesee River Basin Action Strategy (GRBAS)

The GRBAS is based on the general format developed for Watershed Restoration and Protection Action Strategies (WRAPS), first implemented for the Susquehanna and Chemung River Basins in 2001.¹ Like the WRAPS, the GRBAS is intended to be a concise, action-oriented document

¹ See “Watershed Restoration and Protection Action Strategies,” online at the NYS DEC website, <http://www.dec.state.ny.us/website/dow/wrap/>.



that compiles currently available information about the state of the watershed and ongoing assessment, outreach and implementation activities in a “State of the Basin” report. Such a report proposes environmental and natural resource priorities or goals in the Basin, along with measurable objectives as a strategy for achieving those goals. The process seeks to bring together all appropriate agencies and stakeholders to focus support in the form of grant dollars, technical assistance, and other resources to address the priority water quality and natural resource needs in that watershed.

The strategy creates an opportunity to strike an appropriate balance between controls over discharges and polluted runoff, and to consider other water-related problems in the watershed such as wetland loss, sediment contamination, aquatic species habitat degradation, drinking water protection and overall riparian health.

Mandate for Conducting a Strategy

In 1998 the federal government introduced the Clean Water Action Plan, designed to accelerate the pace for achieving the original national goal of a fishable, swimmable and safe waters that was established under the Clean Water Act of 1972. New York State completed the Unified Watershed Assessment (UWA) required by the Clean Water Action Plan and submitted it to the United States Environmental Protection Agency on October 1, 1998. As part of the UWA, states were required to set priorities and a schedule for restoring their watersheds, coordinating with existing restoration priorities beginning in 1999-2000.²

A related component of the Clean Water Action Plan was to update the state's Nonpoint Source (NPS) Management Program and to provide statements of vision, goals and specific objectives ("Nine Key Elements") for achieving the program. New York State's updated NPS Management Program was approved in August of 2000. The next step required the development of Watershed Restoration Action Strategies to address those watersheds identified in the UWA as most in need of attention, that is, those not meeting clean water and other natural resource goals (i.e., Category I watersheds). New York State originally had taken the opportunity presented by this process to include those watersheds of good quality that are most in need of protection to maintain natural resource and water quality.

In January of 2002, the Genesee/Finger Lakes Regional Planning Council (G/FLRPC) began the process of producing a WRAPS for the Genesee River Basin in association with the New York State Department of Environmental Conservation (DEC) and various county agencies in the Basin. Due to shifting priorities and resources, the WRAPS process was temporarily discontinued in the middle of 2002. In 2003, the US Army Corps of Engineers (USACE) began the process of developing the Sediment Transport Model for the Genesee River Basin. In order to capitalize on work and research that had already been completed for the WRAPS, the USACE

² The entire UWA and schedule of restoration efforts is available on the NYS DEC web site at <http://www.dec.state.ny.us>. A comprehensive review of NYS water quality management efforts can be found in the NYSDEC Div. of Water report *New York State Water Quality Monitoring Strategy 2000*, <http://www.dec.state.ny.us/website/dow/305b98.pdf>.



chose to continue the Action Strategy process with G/FLRPC. The GRBAS, incorporating the output data from the Genesee River Sediment Transport Model, will be a direct extension of these efforts.

Genesee River Basin Sediment Transport Model

Under the authority of Section 516(e) of the Water Resources Development Act (WRDA) of 1996, as amended, the United States Army Corps of Engineers agreed to assist the G/FLRPC, along with State and local watershed managers, with their evaluation, prioritization and implementation of alternatives for soil conservation and non-point source pollution prevention in the Genesee River Basin. As stated above, the Genesee River Basin Sediment Transport Model is a major component of this collaborative process. A sediment transport model is a computerized environmental analysis tool that can be used to predict the erosive behavior of a range of soil types under a variety of climactic and/or hydrological conditions. When implemented, it is anticipated that the model will yield important data relative to the prevention of soil erosion, thus facilitating the implementation of Best Management Practices (BMPs) throughout the Basin.

Report Overview and Organization

Chapter 2: Basin Overview

Chapter 2 of the GRBAS, entitled *Basin Overview*, presents a general overview of the present conditions in the Genesee River Basin. Subjects such as Basin geography, demographic and environmental characteristics, land use and political jurisdictions are summarized therein. Current data regarding water quality within the Basin is then presented in detail. Information is given both in narrative and chart form in order to provide clarity and accuracy regarding current technical data.

Chapter 3: Basinwide Recommendations and Commitments

Chapter 3 of the GRBAS presents the primary issues of concern that are experienced throughout large portions of the Genesee River Basin. These include issues such as agricultural runoff and hydromodification, for example. For each issue of concern, programmatic and/or institutional arrangements that are either currently in place or applicable to the issue of concern are listed and explained. Specific commitments and/or recommendations for addressing these issues are then provided.

Chapter 4: Watershed Prioritization

Chapter 4 of the GRBAS is a series of matrices that summarize, by watershed, the status, pollutants, source and recommended actions or commitments for implementation in the watersheds of the Genesee River Basin. Individual watersheds have been assigned priority



levels for action based upon the severity of impacts that have been found to exist therein. Many items detailed in Chapter 3 are cross-referenced here under their corresponding watershed.

Chapter 5: Natural Resource and Heritage Data

A variety of maps, inventories and other current data sets regarding public lands, access, and natural heritage data in the Genesee River Basin are included in Chapter 5. This data will be extremely useful in the development of individual watershed restoration programs.

Appendices

The Appendices of the GRBAS serve as a repository for important reference and ancillary information relevant to the report. Items such as an implementation budget and schedule for watershed restoration projects, supplementary maps, an inventory of Basin programs and agencies, as well as a list of common acronyms can be found here.