

# Executive Summary

## Mohawk River Watershed Management Plan



March 2015



This plan was prepared with funds provided by the New York State Department of State under Title 11 of the Environmental Protection Fund.



# Executive Summary

---

## Development of the Plan

### Partners

The Mohawk River Watershed Management Plan assesses the present state of the Mohawk River Watershed, the changes it is undergoing, and the challenges it is facing. In light of this assessment, the Mohawk River Watershed Management Plan recommends actions needed to restore and protect the watershed. Preparation of the Plan was led by the Mohawk River Watershed Coalition of Conservation Districts (the Coalition) in collaboration with members of the Mohawk River Watershed Advisory Committee. The Coalition, formed in 2009, includes the 14 Soil and Water Conservation Districts (SWCDs) within the Mohawk River Watershed. The Mohawk River Watershed Advisory Committee includes representatives from the New York State Department of State (NYS DOS), the NYS Department of Environmental Conservation (NYS DEC), the U.S. Geological Survey (USGS), the State University of New York, Union College, the U.S. National Park Service, The Nature Conservancy, the NYS Canal Corporation, Cornell Cooperative Extension, Cornell Water Resources Institute, the NYS Department of Agriculture and Markets, the Tug Hill Commission, the Capital District Regional Planning Commission, Herkimer-Oneida Counties Comprehensive Planning Program, USDA's Natural Resources Conservation Service (NRCS), the U.S. Army Corps of Engineers (USACE), the NYS Department of Transportation (NYSDOT), Empire State Development, the U.S. Fish and Wildlife Service (USFWS), all 14 SWCDs in the Mohawk River Watershed, and watershed municipalities.

Preparation of the Mohawk River Watershed Management Plan was funded in part through a New York State Department of State Title 11 Environmental Protection Fund (EPF) Local Waterfront Revitalization Program (LWRP) grant to Montgomery County, and represents a collaborative effort among local governments, county and state agencies and others, including representatives of government agencies, nonprofit organizations, and academic institutions.

### Vision and Goals

The Mohawk River Watershed Advisory Committee worked collaboratively to develop a vision for the future of the watershed in which:

*The Mohawk River Watershed's natural hydrologic conditions are respected. Diverse fish and wildlife habitats and agriculture are flourishing, and superior water quality is celebrated. Vibrant watershed communities find prosperity in the strong economy where water-based recreation and tourism thrive along the waterfront.*

Guided by this vision, the WAC established seven goals:

1. Protect and restore the quality and ecological function of water resources.
2. Protect and enhance natural hydrologic processes.
3. Promote flood hazard risk reduction and enhanced flood resilience.
4. Protect, restore, and enhance fish and wildlife habitat.
5. Revitalize communities and waterfronts and adopt Smart Growth land use practices.
6. Promote agriculture and other working landscapes.
7. Increase watershed awareness.

## Approach

The Coalition used the watershed planning approach jointly developed by the NYSDOS and NYSDEC and described in the guidebook *Watershed Plans: Protecting and Restoring Water Quality* to identify practices, actions, and projects that will help meet the seven goals listed above. Addressing these goals will contribute to the restoration and protection of the entire Mohawk River Watershed, which is an important resource for New York State.

To characterize the current state of the Mohawk River Watershed and to identify threats to water quality and opportunities, each of the SWCDs in the Coalition assessed watershed characteristics within its land area, providing information that covered all 116 subwatersheds in the Mohawk River basin. These findings were then summarized into larger subwatershed and basin-wide characterizations of water quality. Furthermore, a review and summary of local land use and development controls and practices affecting water quality led to recommendations to assist municipalities in strengthening their ability to address water quality issues.



*The Mohawk River Watershed covers 3,460 square miles, including 170 municipalities and a population of more than 600,000 people.*

## Public Input

A Community Outreach/Public Participation Plan directed at interested individuals, organizations and agencies was drafted, made available online, and presented at public meetings to solicit broad public input to the development of the Mohawk River Watershed Management Plan.

This Plan is likely to change as new challenges appear and new opportunities arise. Progress in the implementation of recommended projects and other actions to protect and improve water quality and related watershed resources can be assessed through tracking implementation and correlating this information with ongoing monitoring of water quality.

## The Nature of the Mohawk River Watershed

### Setting

The Mohawk River Watershed is one of the largest and most important physical features of New York State, encompassing 3,460 square miles within 14 counties between the Adirondack Mountains to the north and the Catskills to the south (see Map 1-1). Over 600,000 New Yorkers live within the watershed's 170 municipalities. For the purpose of analysis, the Mohawk River Watershed was divided into three main regions: Upper Mohawk, Main River, and the Schoharie Watershed. Many streams in the Upper Mohawk and the Schoharie Watershed originate in pristine, wooded areas in the Adirondack or Catskill Parks, while downstream sections flow through agricultural land. The cities of Rome, Utica and Little Falls, and the Village of



Herkimer, and other developed areas lie along the Upper Mohawk. The Main River region includes fertile agricultural land as well as developed areas, including the cities of Amsterdam and Schenectady and the suburbs of Albany.

## History

With the advent of the Erie Canal in the early 19<sup>th</sup> century, the Mohawk Valley developed as an important transportation link, a center of manufacturing and other industry, and a productive agricultural region. The growth of industry and agriculture in the 19<sup>th</sup> and 20<sup>th</sup> centuries had a significant negative impact on water quality in the Mohawk River and its tributaries. With the passage of the Clean Water Act in the 1970s, water quality began to improve and continues to improve to this day, but many problems remain. Among these are pollution with harmful chemicals, including PCBs, nutrient enrichment from inadequate sewage treatment, and erosion and sedimentation from agricultural practices and development. Even the relatively pristine upper reaches of the watershed in the Adirondack and Catskill Parks continue to be subject to acid precipitation and other forms of atmospheric pollution. Flooding has a long history in the Mohawk River Watershed, and climate change with more frequent episodes of heavy precipitation can be expected to make the problem worse. The watershed experienced severe flooding most recently during Hurricane Irene and Tropical Storm Lee in 2011.



*Significant flooding occurred in the Schoharie Valley after Hurricane Irene in 2011. Climate change may lead to more frequent episodes of heavy precipitation, making the problem worse.*

## Land Use and Land Cover

The largest cities wholly in the watershed are Utica, Rome, Amsterdam, and Schenectady. The western edge of Albany is also included. Most of the population in the Mohawk River Watershed is located in the lowlands and mid-uplands along the main stem of the river, as are most of the roadways and railways, and the New York State Barge Canal.

Forests are the dominant land cover in the Mohawk River Watershed, and agriculture is the second most common land-cover type. The principal types of land use within the watershed are residential, wild lands, forested conservation lands, agriculture, and vacant land. Land cover and land use follow largely similar patterns, with the forested lands in the Adirondack highlands to the north and the Catskills to the south. Agriculture and human settlement dominate the lowlands near the Mohawk River and the mid-uplands along major tributaries to the north and south.

## Pollution Sources

Discharges from municipal sewage treatment plants and stormwater outfalls are regulated under the State Pollution Discharge Elimination System (SPDES). These pollution sources are classified as “point sources” because the discharge enters the water at a defined point (usually a pipe). Combined Sewer Overflows (CSOs), which are present in some older cities and villages in the watershed, are also considered point sources of pollution. Combined sewers use a single piping system to convey wastewater and stormwater to a treatment facility. During times of high rainfall or snowmelt, the capacity of these pipes is exceeded, resulting in overflows of untreated



*Riparian buffer zones, which help to protect waterbodies from pollutants transported in runoff, can play an important role in management strategies.*

sanitary waste and stormwater to regional waterways. These overflow points are designated as CSOs and regulated by NYSDEC.

Other pollution sources reach the waterways through diffuse sources; they are not conveyed by pipes and are referred to as nonpoint sources. Developed lands and agricultural lands cover significant regions of the Mohawk River Watershed and affect water quality conditions. Densely populated areas have many surfaces where rain and snowmelt cannot seep into the ground (impervious surfaces). Runoff from rooftops, driveways, parking lots and roadways carries various pollutants, and eventually this runoff finds its way into waterways. Suburban sprawl, characteristic of rapidly growing communities in the Mohawk River Watershed, contributes to this problem with a greater proportion of impervious surfaces compared to older, more compact cities and villages. Runoff from agricultural areas containing animal waste, fertilizers, other chemicals, and eroded topsoil constitutes another important nonpoint source of pollution in the Mohawk River Watershed.

The most frequently cited sources of pollution in the watershed are atmospheric deposition, agricultural activities, habitat/hydrologic modification, and streambank erosion. There are areas in the watershed

where water quality and/or habitat conditions do not support the designated best use of the waterways—for drinking water, recreation, and aquatic life support. These areas require active measures to reduce pollutant sources and restore the lands and waters. In addition, there are pristine areas in the watershed that require protection to ensure that they remain intact. Some of these pristine areas play an essential role in protecting and maintaining the watershed. For example, wetlands provide a buffer against flooding, woodlands help protect waterbodies from runoff, vegetation stabilizes steep slopes prone to erosion, etc. The role these natural areas play in mitigating the potential for adverse impacts on lands and waters of the Mohawk River Watershed would be costly or impossible to replace.

## Regulations

Local laws related to impervious surfaces, site plan reviews, setbacks from waterways, development in floodplains, and erosion and sedimentation controls can have a significant effect on water quality. Local laws governing land use can differ significantly among municipalities, largely because New York municipalities are responsible for formulating their own land use regulations (the “home rule” provision of General Municipal Law).

Opportunities were identified to strengthen municipal controls in the Mohawk River Watershed to enhance overall protection and preservation of water quality. Noteworthy gaps in the regulations include provisions dealing with impervious surfaces, development on steep slopes, floodplains, and protection of lakes and streams.

## Recommendations

### Defining Priorities

To define priority areas, each of the 116 subwatersheds in the Mohawk River Watershed was assigned a score based on quantitative indicators of current water quality, land use, and habitat conditions (see Chapter 3). The

evaluation, conducted with input from SWCDs throughout the basin, was completed at this relatively detailed scale because it is at this level that efforts for restoration or protection will be implemented. Based on this quantitative assessment, subwatersheds in the forested upland areas of the Adirondacks and Catskills received relatively high scores, indicating healthy conditions and a need for protection, while subwatersheds in highly developed and agricultural areas earned low scores, indicating unhealthy conditions and a need for restoration.

## Developing Strategies for the Watershed: Actions, Practices, and Projects

Based on the assessment results, recommendations were developed to restore or protect watershed health throughout the basin, thereby promoting the seven goals of the Mohawk River Watershed Management Plan (see Chapter 4). Actions taken to achieve these goals will not only restore or protect the natural processes of a healthy watershed, but will also bring economic benefits to communities within the watershed. Three strategies are recommended, each of which includes components that will support goals for the watershed:

**Strategy 1: Implement best management practices** to protect and restore natural hydrology, reduce erosion and sedimentation, minimize pollution, and protect and restore habitats.

**Strategy 2: Advance municipal actions** to promote sustainability, reduce risk of flood damage, and revitalize communities and waterfronts through the adoption of appropriate zoning and land use policies to encourage cluster development, protect steep slopes, protect and enhance floodplains, reduce impervious surfaces, protect, restore or enhance unique and natural areas, riparian areas, and wetlands.

**Strategy 3: Advance collaboration and partnerships** to promote sustainable communities, smart growth, economic development, and environmental quality through advancing collaboration and partnerships with the NYSDOS Local Waterfront Revitalization Program (LWRP), Mighty Waters Working Group, NYSDEC Mohawk River Basin Action Agenda, New York Rising Community Reconstruction (NYRCR) Program, and the Cleaner, Greener Communities Program.

Each of the strategies is developed into a set of detailed recommendations for actions and practices that address current conditions of the natural and built environment within the watershed. Since each community and subwatershed faces unique conditions influencing factors such as water quality, hydrology and flooding, waterfront revitalization, and community development, many recommendations are proposed with consideration for their relevance to the three main watershed regions and subwatershed areas within those regions.

## Implementation and Monitoring

### Launching Projects to Carry Out Recommendations

Members of the Coalition have proposed specific projects based on recommended actions and practices that resulted from the detailed planning effort (see Chapter 5). Each project addresses a specific area or waterbody in one of the three main regions of the Mohawk River Watershed, with a focus on subwatersheds whose low assessment scores indicate the need for restoration. Some of the recommended actions and practices are designed to be protective, and are therefore directed at mid- and high-scoring subwatersheds. Some projects have already been funded but not yet installed, some have been submitted for grant funding, and other projects have been recommended for future funding.

At present, implementation of the recommended actions and practices tends to focus on Strategy 1, BMPs, and their relevance for restoration and protection of watershed health, both basin-wide and with respect to specific

subwatersheds in the three regions. Recommendations for Strategy 2, advancing municipal actions, apply to all three regions of the Mohawk River watershed, and the priority for implementing these actions will focus on HUC-10 subwatersheds with low assessment scores. For Strategy 3, which relates to collaboration and partnerships, ongoing implementation of the Plan will include working with the organizations and initiatives identified.

In addition to the specific projects recommended by members of the Coalition and other watershed stakeholders, other projects will certainly be added in the future as the Plan is implemented. Future actions will be prioritized and initiated to the extent that they address the seven goals for the watershed and the three overarching strategies designed to support these goals. Thus, the Mohawk River Watershed Management Plan remains a work in progress, evolving as conditions in the watershed change.

## Tracking Implementation

The Mohawk River Watershed Coalition will track the ongoing implementation of watershed projects and other actions to restore and protect the watershed. Changes over time will be reflected in the [Interactive Mapping Tool for the Mohawk River Watershed](#), where multilayered maps will show how the watershed strategies are being carried out through specific projects and activities at the subwatershed scale. Details will include information regarding goals, timing, estimated cost, funding sources, responsible party, and project status/progress.

## Monitoring Water Quality and Watershed Health

The Coalition will also oversee long-term monitoring of water quality and watershed health by periodically repeating the assessment procedure used to determine the current status of water quality in each subwatershed. A comparison of the resulting assessment scores over time will enable the Coalition and others to follow progress toward achieving the goals set out in the Plan. The status of each waterbody is reported on the NYSDEC Waterbody Index/Priority Waterbodies List (WI/PWL) which is updated every five years; this compendium provides important information for calculating the assessment scores. Updating the assessment scores will provide insights into the effectiveness of the actions taken to date, and the need for additional measures to restore and protect the lands and waters of the Mohawk River Watershed.

## Looking Ahead

This watershed management plan is a living document, and will be updated as new projects are undertaken, as the effectiveness of actions is documented, and as new challenges arise. Updates to the Plan will be published on the [Mohawk River Watershed Coalition website](#).

Continuing in their role as natural resource managers at the local level, the Mohawk River Watershed Coalition of Conservation Districts will coordinate implementation of projects with the many state, federal, academic, and nonprofit organizations that joined forces to focus on the Mohawk River Watershed. Ultimately, realizing the vision for a healthy and economically vibrant Mohawk River Watershed will depend on this collaborative approach.



*Water-based recreation and tourism are important to the vision for vibrant watershed communities.*



