Chapter 5: Implementation, Tracking, and Monitoring

5.1 Introduction

This chapter connects recommendations in Chapter 4 to strategy components to be advanced and watershed goals to be achieved, while also providing context and greater geographic detail on site-specific projects, and includes an approach to tracking the implementation of projects and monitoring effectiveness over time. The discussion is organized by the three main regions of the Mohawk River watershed—Upper Mohawk, Main River, and Schoharie Watershed—and is grouped by the HUC-10 subwatersheds, but encompasses recommendations for projects at the finer, 12-digit HUC level. Project level recommendations tend to focus on addressing impairments in the low-scoring subwatersheds, which exhibit degraded conditions of water quality, aquatic habitat, and/or land use patterns. Broader scale recommendations for high scoring and mid-scoring subwatersheds include actions designed to be protective of waters and related resources.

The majority of recommended actions are related to advancing *Strategy 1: Implement best management practices* to protect and restore natural hydrology, reduce erosion and sedimentation, minimize pollution, and protect and restore habitats.

The recommendations related to **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 (summarized in Table 4-8) apply to all three regions of the Mohawk River watershed, and the priority for implementing these practices is focused on HUC-10 subwatersheds with low assessment scores, similar to implementation of Strategy 1. For **Strategy 3: Advance collaboration and partnerships**, ongoing implementation of the Plan includes working with the organizations and on initiatives discussed in Chapter 4, section 4.4 (promoting sustainable communities, smart growth, economic development, and environmental quality through advancing collaboration and partnerships with the NYSDOS Local Waterfront Revitalization Program, Mighty Waters Working Group, NYSDEC Mohawk River Basin Action Agenda, New York Rising Community Reconstruction Program, and the Cleaner, Greener Communities Program).

For each of the three main regions, this chapter presents specific information designed to foster implementation of the watershed strategies: (1) a table recommending *actions and practices* for HUC-10 subwatershed locations, including estimated cost range and timetable for implementation; and (2) a table listing specific *projects* at the HUC-12 subwatershed level, including lead organization(s), potential funding sources, estimated cost, and timing. As indicated above, this information tends to focus on the recommendations for Strategy 1. However, since the Watershed Management Plan will be a "living document," specific projects for Strategies 2 and 3 will, when identified, be added to the regional sections of this chapter. Updates to the Plan will be published on the <u>Mohawk</u> <u>River Watershed Coalition website</u> and reflected in the <u>Interactive Mapping Tool for the Mohawk River Watershed</u>.

This Mohawk River Watershed Management Plan exemplifies a philosophy of "ongoing implementation and reassessment"; with strong encouragement from the NYSDOS and other funding partners, projects that can improve water quality and habitat conditions within the watershed were included in grant requests prior to completion of the Plan. Projects that have already been funded but not yet installed, projects submitted for grant funding, and projects recommended for future funding are included in the second table presented for each region.

Finally, recommendations for a commitment and approach to ongoing implementation and monitoring are presented. Monitoring the effectiveness of the individual projects is an essential component of continuous improvement; managers can learn which techniques are best suited to certain areas and improve estimates of cost and longevity. Monitoring can also provide information and knowledge regarding watershed health and provide a means for early detection of and rapid response to emerging threats.

5.2 Strategies for the Watershed: Actions, Practices, and Projects

The strategies for watershed health, as discussed in Chapter 4, are referenced in this chapter as follows:

Strategy 1: Implement Best Management Practices to protect and restore the watershed as follows:

- 1A: Protect and restore natural hydrology
- 1B: Reduce erosion and sedimentation
- 1C: Minimize pollution
- 1D: Protect and restore habitats

Strategy 2: Advance municipal actions to promote sustainability, reduce the impact of flooding and enhance flood resilience and revitalize communities and waterfronts through the adoption of the appropriate zoning and land use policies in the following areas:

- 2A: Increase density of cluster development
- 2B: Control development on steep slopes
- 2C: Provide floodplain protection
- 2D: Minimize impervious surfaces
- 2E: Protect unique and natural areas
- 2F: Protect riparian areas
- 2G: Protect wetlands

Strategy 3: Advance collaboration and partnerships to promote sustainable communities, smart growth, economic development, and environmental quality through the following initiatives:

- 3A: NYSDOS Local Waterfront Revitalization Program (LWRP)
- 3B: Mighty Waters Working Group
- 3C: NYSDEC Mohawk River Basin Action Agenda
- 3D: New York Rising Community Reconstruction (NYRCR) Program (includes countywide resiliency plans)
- 3E: Cleaner, Greener Communities Program

Cost ranges for recommend actions and practices are represented as follows in tables throughout this chapter:

\$	Up to \$25,000
\$\$	\$25,000 to \$50,000
\$\$\$	\$50,000 to \$100,000
\$\$\$\$	\$100,000 to \$500,000
\$\$\$\$	\$500,000+

There are many potential funding sources for implementation of recommendations in the Mohawk River Watershed, with the main sources being federal, state, and local (within these main sources, funding is generally program-specific). An overview of some potential funding sources, programs funded, and eligible activities is presented in Table 5-1. In the sections that follow, tables presenting recommended projects for each region in the Mohawk River Watershed include funding sources only at the main levels of federal, state, and local.

TABLE 5-1	
Potential Funding Sources for Mohawk River Watershed Recommended Projec	ts

Funding Source	Program	Eligible Activities
STATE		
NYS Dept. of Agriculture and Markets	Agricultural Nonpoint Source Abatement and Control Program	Program funds are available for nonpoint source abatement and control projects that plan (AEM Tier III) or implement (AEM Tier IV) Agricultural BMP Systems on New York farms. All projects must consist of activities that will reduce, abate, control, or prevent nonpoint source pollution originating from agricultural sources.
NYS Dept. of Environmental Conservation (NYSDEC)	Water Quality Improvement Project Program (WQIP)	A competitive, reimbursement grant program that directs funds from the NYS Environmental Protection Fund (NYSEPF) to projects that reduce polluted runoff, improve water quality and restore habitat in New York's waterbodies. Eligible project types include nonagricultural nonpoint source abatement and control, municipal wastewater treatment, aquatic habitat restoration, and municipal separate storm sewer systems.
	Mohawk River Basin Action Agenda Grants	Provides funding through the Mohawk River Basin Program to implement priorities outlined in the program's Action Agenda aimed at fish, wildlife and habitats; water quality; flood hazard risk reduction; community planning and revitalization; and working landscapes, land use and open space.
NYS DEC / NYS Environmental Facilities Corporation (NYSEFC)	Clean Water State Revolving Fund	Provides low-interest rate financing to municipalities to construct water quality protection projects such as sewers and wastewater treatment facilities. Eligible projects include point source projects such as wastewater treatment facilities and nonpoint source projects such as stormwater management projects and landfill closures, as well as certain habitat restoration and protection projects in national estuary program areas.
NYS Dept. of State (NYSDOS)	Local Waterfront Revitalization Program (LWRP)	Provides matching grants from the NYSEPF to revitalize communities and waterfronts. Eligible activities include preparing or implementing a LWRP; redeveloping hamlets, downtowns, and urban waterfronts; planning or constructing land and water-based trails; preparing or implementing a lakewide or watershed revitalization plan; preparing or implementing a community resilience strategy.
NYS Dept. of Transportation (NYSDOT)	Transportation Alternatives Program	Provides funding for roadway improvements and culvert and bridge replacements, as well as pedestrian and bicycle paths.
NYS Environmental Facilities Corporation (NYS EFC)	Green Innovation Grant Program	Provides grants on a competitive basis to projects that improve water quality and demonstrate green stormwater infrastructure in New York. Eligible green infrastructure practices include: permeable pavement, bioretention, green roofs and green walls, stormwater street trees/urban forestry program designed to manage stormwater, construction or renovation of wetlands, floodplains or riparian buffers, stream daylighting, downspout disconnection, and stormwater harvesting and reuse.
NYS Office of Parks, Recreation and Historic Preservation (NYS OPHRP)	Environmental Protection Fund Municipal Grants Program	Funding is available for the acquisition, planning, development, and improvement of parks, historic properties, and heritage areas located within the physical boundaries of the state. Funding is available for the following grant categories: Park Acquisition, Development and Planning Program; Historic Property Acquisition, Preservation and Planning Program; Heritage Areas System Acquisition, Development and Planning Program.
FEDERAL		
Federal Emergency Management Agency (admin. by NYS Div. of Homeland Security and Emergency Services)	Pre-Disaster Mitigation Grant Program	Offers pre-disaster project grants to eligible government subapplicants to avoid or reduce the loss of life and property in future events.
U.S. Dept. of Agriculture, Natural Resources	Conservation Reserve Program (CRP)	Provides technical assistance and funding for the installation of agricultural BMPs, including ringrian buffers, wetland restoration, wildlife babitat protection, and other
Conservation Service (USDA-NRCS)	Wetland Reserve Program (WRP)	environmental improvements for agriculture.
	Wildlife Habitat Incen- tives Program (WHIP)	
	Environmental Quality Incentives Program (EQIP)	
LOCAL		
Municipalities	Municipal budgets— no particular program	Provide funding in the form of labor and equipment from Departments of Public Works to do tasks such as clean debris from streams, culverts, storm drains, etc.

5.2.1 Upper Mohawk Region

As displayed in Map 5-1, the low-scoring subwatersheds (Oriskany Creek, Ninemile Creek, and Nowadaga Creek) are located along the main stem of the Mohawk River and include the developed areas of Greater Rome and Greater Utica. Outside of the developed areas, there is a substantial amount of agricultural land use along the valley lowlands. There are numerous point sources of pollution including municipal wastewater treatment plants and a USEPA Superfund site at the former Griffiss Air Force Base. This combination of land uses and sources of pollution have led to a significant impairment of waterbodies, resulting in the recommendations discussed in Chapter 4. For the remainder of the Upper Mohawk Region, the HUC-10 assessment scores were in the mid- to high range (Lower West Canada Creek, Delta Reservoir, Middle West Canada Creek, and Upper West Canada Creek).

Recommended actions and practices for the Upper Mohawk region for Strategy 1 are summarized in Table 5-2. The priority for implementing recommended actions and practices is based primarily on assessment scores; low-scoring subwatersheds in need of restoration were assigned a higher priority compared with mid- and high-scoring subwatersheds. Cost, potential funding sources, and timing were considered as well. As a consequence, the implementation strategy is weighted toward restoration-focused actions and practices within the low scoring HUC-10 subwatersheds. However, protection-focused actions and practices that are relatively simple and low-cost may be implemented in advance of more costly and complex restoration efforts. The Oriskany Creek, Ninemile Creek, and Nowadaga Creek HUC-10 subwatersheds are italicized in Table 5-2 to emphasize priority.

Ultimately, implementation requires on-the-ground projects and changes to municipal codes. Members of Coalition and other watershed stakeholders have proposed specific projects for implementation designed to restore and protect subwatersheds in their counties. The projects and other actions that have been proposed to date for the upper Mohawk River region are summarized in **Table 5-3** (this is a snapshot of recommended projects as of the end of 2014; other projects will continue to be added). Some of the listed projects have already been funded, some have been submitted for funding, and others await future funding. Projects will be implemented at the HUC-12 subwatershed level. The lead municipality, strategy category, goals addressed, target subwatershed(s), lead organization, potential funding sources, potential cost, and timing are included in Table 5-2.

Recommendation	Locations (HUC-10)	Cost	Timing(Years)						
Strategy Component 1A: Protect and restore natural hydrology									
Restore/protect wetlands	All	\$\$\$	3-5						
Restore/protect riparian buffers	All	\$\$\$	3-5						
Implement stormwater management practices	Lower W. Canada Creek Oriskany Creek Ninemile Creek Nowadaga Creek	\$\$\$\$\$	5+						
Stabilize water levels (w/ Canal Corp)	Delta Reservoir	\$\$	3-5						
Preserve green space	Ninemile Creek	\$\$	3-5						
Implement green infrastructure practices	Ninemile Creek	\$\$\$	3-5						
Redevelop vacant impervious surfaces	Ninemile Creek	\$\$\$	5+						
Employ control measures in MS4 communities	Ninemile Creek	\$\$\$	3-5						

TABLE 5-2 Upper Mohawk Region: Recommended Actions and Practices

Table 5-2, continued

Recommendation	Locations (HUC-10)	Cost	Timing(Years)
Strategy Component 1B: Reduce erosion and sedim	entation		
Encourage forest management planning	Middle W. Canada Creek Delta Reservoir Ninemile Creek	\$	1-2
Stabilize streambanks w/ natural stream design	Middle W. Canada Creek Lower W. Canada Creek Delta Reservoir Oriskany Creek Ninemile Creek Nowadaga Creek	\$\$\$\$\$	3-5
Stabilize steep slopes	Delta Reservoir	\$\$\$	3-5
Install soils conservation practices	Oriskany Creek Ninemile Creek	\$\$	1-2
Incorporate smart growth land use practices	Ninemile Creek	\$	1-2
Strategy Component 1C: Minimize pollution			
Upgrade WWTPs to tertiary treatment to remove phosphorus	Middle W. Canada Creek Lower W. Canada Creek Nowadaga Creek	\$\$\$\$\$	5+
Address failing septic systems	Upper W. Canada Creek Middle W. Canada Creek Lower W. Canada Creek	\$\$\$\$	3-5
Apply agricultural BMPs related to water pollution Restrict animal access to streams Expand nutrient management programs Improve animal feeding and waste operations	Lower W. Canada Creek Delta Reservoir Oriskany Creek Nowadaga Creek	\$\$\$\$	3-5
Address legacy contaminants (e.g., Superfund sites)	Ninemile Creek (Griffiss AFB)	\$\$\$\$	3-5
Address Combined Sewer Overflow (CSO) issues	Ninemile Creek	\$\$\$\$	5+
Strategy Component 1D: Protect and restore habita	its		
Enhance in-stream habitats	Lower W. Canada Creek	\$\$	3-5
Protect trout spawning water	Lower W. Canada Creek	\$	3-5
Protect wildlife management areas	Ninemile Creek	\$	1-2

TABLE 5-3 Upper Mohawk Region: Recommended Projects

County Municipality (-ies)	Project (1)	Strategy	Goal	Target Subwatersheds	Lead Organization	Funding Sources	Potential Cost	Timing 1-2 Yrs	Timing 3-5 Yrs	Timing 5+ Yrs
Oneida County				·						
Towns: Sangerfield, Marshall, Kirkland, Westmoreland, Whitestown	Oriskany Creek Stormwater Management	1A	1,2,3	Headwaters Oriskany Creek, Upper Oriskany Creek, Middle Oriskany Creek, Lower Oriskany Creek	Oneida SWCD	State (4)	\$368,250	Х		
Towns: New Hartford, Kirkland	Mud Creek Stormwater Management (2)	3D	1,2,3	Mud Creek	Towns: New Hartford, Kirkland	State	\$5 million+			х
Towns: New Hartford, Whitestown, Paris	Sauquoit Creek and Palmers Creek Bank Stabilization (2)	3D	1,2,3	Sauquoit Creek	Towns: New Hartford, Whitestown, Paris	State	\$1.5 million		х	
All Towns	Floodplain and Stormwater Regulation Updates for Municipalities	2C	1,2,3	All HUC-12s in Oneida County	Oneida County Department of Planning	State	No Cost	х		
Hamilton County									-	-
Towns: Arieta and Morehouse	Aquatic Habitat and Fish Passage Assessment and Improvement Project	1D	1,3,4	Headwaters E Canada Creek, Headwaters So. Branch W Canada Creek, Vly Brook-So. Branch W Canada Creek, Fourmile Brook	Hamilton SWCD	Local	\$20,000- 35,000	х		
Towns: Arieta and Morehouse	Stream Debris Removal and Bank Stabilization	1A	1,2,3	Headwaters E Canada Creek, Headwaters So. Branch W Canada Creek, Vly Brook-So. Branch W Canada Creek, Fourmile Brook	Hamilton SWCD	Local	\$10- 25,000	х		
Towns: Arieta, Lake Pleasant, and Morehouse	Invasive Species Assessment and Control	1D	4	All HUC-12s in HUC-10 Upper W Canada Creek, HUC-12s in north portion of HUC-10 E Canada Creek	Hamilton SWCD	State (4)	\$20,000	х		
Towns: Arieta, Lake Pleasant, and Morehouse	Re-vegetation of roadside ditches	18	1,4	All HUC-12s in HUC-10 Upper W Canada Creek, HUC-12s in north portion of HUC-10 E Canada Creek	Hamilton SWCD	State (4)	\$16,000		х	

Table 5-3, continued

County Municipality (-ies)	Project (1)	Strategy	Goal	Target Subwatersheds	Lead Organization	Funding Sources	Potential Cost	Timing 1-2 Yrs	Timing 3-5 Yrs	Timing 5+ Yrs
Madison County										
	Agricultural Waste Management	1C	1,6	Oriskany Creek Headwaters	Madison SWCD	Federal	\$20,000		х	
Towns: Madison and	Soil Stabilization through Cover Crops	1B	1,4,6	Oriskany Creek Headwaters	Madison SWCD	Federal	\$50,000- \$70,000		х	
Eaton	South Street Flood Reduction Project	1A	3	Oriskany Creek Headwaters	Madison SWCD	State (4)	\$50,000	Х		
	Stream Buffers	1A	1,4,6	Oriskany Creek Headwaters	Madison SWCD	State (4)	\$25,000		х	
	Stream Restoration	1A	1,2,3	Oriskany Creek Headwaters	Madison SWCD	State (4)	\$65,000		х	
Herkimer County										
Town of Manheim	Crum Creek Slip Bank Stabilization	3D	1,2,3,4, 5,6	Crum Creek	Herkimer SWCD	State	\$100,000		х	
Town of German Flatts	Fulmer Creek Bank Stabilization and Stormwater Management (2)	3D	1,2,3,	Fulmer Creek	Town of German Flatts	State	\$1.5 million			х
Village of Herkimer	Herkimer County Community College Stormwater Mgt.	3D	1,2,3,4	Bridenbecker Creek	Herkimer SWCD	State	\$25,000- \$50,000	х		
Towns of Danube,	Nowadaga Creek Bank Stabilization and Stormwater Management (2)	3D	1,2,3	Nowadaga Creek	Town of Danube	State	\$500,000		х	
Village of Frankfort	Moyer Creek Embankment Repair (2)	3D	1,2,3	Moyer Creek	Village of Frankfort	State	\$860,000		х	
Town of Fairfield Village of Middleville	West Canada Creek and Maltanner Creek Sediment Control and Stream Maintenance (2)	3D	1,2,3	City Brook	Town of Fairfield, Village of Middleville	State	\$500,000		х	
Village of Herkimer	Bellinger Creek Stream Maintenance (2)	3D	1,2,3	Bridenbecker Creek	Village of Herkimer	State	\$2.2 million		х	
Town of Manheim	East Canada Creek Sediment Removal (2)	3D	1,2,3	Lower E Canada Creek	Town of Manheim	State	\$500,000			х
Town of Norway	White Creek Streambank Protection (2)	3D	1,2,3	White Creek	Town of Norway	State	\$50,000		х	

Table 5-3, continued

County Municipality (-ies)	Project (1)	Strategy	Goal	Target Subwatersheds	Lead Organization	Funding Sources	Potential Cost	Timing 1-2 Yrs	Timing 3-5 Yrs	Timing 5+ Yrs
All Towns (Herkimer County)	Develop Uniform Floodplain and Land Use Regulations	2C	1,2,3	All HUC-12s in Herkimer County	Herkimer- Oneida Counties Planning Department	State	<\$500,000	x		
Multiple Counties										
Oneida County Herkimer County	Watershed Modeling (3)	1B,1C	1,2,4	All HUC-12s in HUC-10s: Upper, Mid & Lower W Canada Creek., Nowadaga Creek, Delta Reservoir, Ninemile Creek, Oriskany Creek	Herkimer SWCD	State	\$45,000		х	

NOTES: (1) Unless otherwise noted, projects are based on recommendations from the Mohawk River Watershed Coalition SWCD's HUC-12 Assessment Reports.

(2) This project includes one or more specific actions along this particular stream that include the implementation of stormwater management and natural stream design practices. Refer to the <u>Oneida</u> <u>County and Herkimer County NY Rising Countywide Resiliency Plans</u>.

(3) The Watershed Modeling project will address the need to estimate pollutant loading reductions to be achieved by implementing specific recommended actions for threatened or impaired waterways.
 (4) This project has been partially funded by a NYS Department of State Title 11 EPF Local Waterfront Revitalization Program grant.

KEY: Strategy 1: Implement Best Management Practices

1A: Protect and restore natural hydrology1B: Reduce erosion and sedimentation1C: Minimize pollution1D: Protect and restore habitats

Strategy 2: Advance Municipal Actions

2A: Cluster development
2B: Steep slopes
2C: Floodplain protection
2D: Impervious surfaces
2E: Unique and natural areas
2F: Riparian areas
2G: Wetlands

Strategy 3: Advance Collaboration and Partnerships

3A: Local Waterfront Revitalization Program
3B: Mighty Waters Working Group
3C: Mohawk River Basin Action Agenda
3D: NY Rising Community Reconstruction Program
3E: Cleaner, Greener Communities Program

5.2.2 Main River Region

As displayed in Map 5-2, the low scoring HUC-10 subwatersheds in the Main River region (Cayadutta Creek and Canajoharie Creek), encompass the main stem of the Mohawk River and include the fertile valley lowlands with relatively high agricultural land use. To the east, the Alplaus Kill, also along the main stem, was mid-scoring, but on the low side. In addition to agriculture, there are many villages and cities stretching from Herkimer to Schenectady. The remaining subwatersheds in the region include mid-scoring Fly Creek along the Schoharie Creek, and high-scoring East Canada Creek in the southern Adirondacks. The recommended actions and practices for the Main River region are summarized in Table 5-4, and grouped by their strategy components in meeting the overall goal of restoring watershed health. Cayadutta Creek and Canajoharie Creek HUC-10 subwatersheds are italicized to show priority. Projects to help advance these strategies within the Main River region are listed in Table 5-5.

Recommendation	Locations (HUC-10s)	Cost	Timing (Years)
Strategy Component 1A: Protect and restore natural hydrolo	gy		
Restore/install/protect forested riparian buffers	Cayadutta Creek Canajoharie Creek Alplaus Kill Fly Creek East Canada Creek	\$\$\$	3-5
Restore/protect wetlands	<i>Canajoharie Creek</i> Alplaus Kill Fly Creek	\$\$\$	3-5
Implement stormwater management practices in MS4 areas	Alplaus Kill Cayadutta Creek Canajoharie Creek	\$\$\$\$	3-5
Educate homeowners re stormwater runoff	Alplaus Kill	\$	1-2
Implement green infrastructure practices	Alplaus Kill	\$\$\$	3-5
Decrease impervious surfaces	Alplaus Kill	\$\$\$	3-5
Strategy Component 1B: Reduce erosion and sediment trans	port		
Employ soil conservation BMPs	Cayadutta Creek Fly Creek (steep slopes)	\$\$\$	3-5
Restrict animal access to streams	Cayadutta Creek Alplaus Kill	\$\$\$	3-5
Prevent streambank erosion	Canajoharie Creek	\$\$\$\$	5+
Prevent soil erosion on steep slopes	Fly Creek	\$\$\$	3-5
Employ agricultural BMPs	Alplaus Kill	\$\$\$	3-5
Employ forest management BMPs	Alplaus Kill	\$\$	5+
Strategy Component 1C: Minimize pollution			
Upgrade WWTPs to tertiary treatment for phosphorus removal	Cayadutta Creek Alplaus Kill	\$\$\$\$	5+
Employ nutrient and waste management BMPs on farms	Cayadutta Creek Fly Creek	\$\$	1-2
Protect drinking water supplies	Cayadutta Creek	\$\$	1-2
Protect the Great Flats aquifer	Alplaus Kill	\$\$\$	3-5
Address failing septic systems near waterbodies	Alplaus Kill Fly Creek	\$\$\$	3-5
Address brownfield and Superfund sites	Cayadutta Creek	\$\$\$\$\$	5+
Strategy Component 1D: Protect and restore habitats			
Conduct biodiversity assessments	Canajoharie Creek	\$	1-2
Maintain or improve in-stream habitats	East Canada Creek	\$\$\$	3-5
Protect wildlife management areas	Fly Creek	\$\$	1-2

TABLE 5-4 Main River Region: Recommended Actions and Practices

TABLE 5-5 Main River Region: Recommended Projects

County Municipality (-ies)	Project (1)	Strategy	Goal	Target Subwatersheds	Lead Organization	Funding Sources	Potential Cost	Timing 1-2 Yrs	Timing 3-5 Yrs	Timing 5+ Yrs
Fulton County										
Towns: Johnstown, Broadalbin, Mayfield, Bleecker, Caroga, Stratford, Ephratah, Oppenheim	Invasive Species Assessment and Control	1D	1,4	HUC-12s in portions of HUC-10s: East Canada Creek, Canajoharie Creek, Cayadutta Creek	Fulton SWCD	State (4)	\$40,0000	x		
Town: Johnstown Cities: Johnstown and Gloversville	Stormwater Management	1A	1,2,3	HUC-12s: Headwaters Cayadutta Creek, Hall Creek, (Cities: Johnstown, Gloversville)	Fulton SWCD	State (4)	\$40,000	х		
Towns: Caroga Lake and Bleecker	Boat Wash Stations for Invasive Species Control	1D	1,4	HUC-12s: Peck Lake, Sprite Creek	Fulton SWCD	State (4)	\$310,000		х	
Schenectady County										
Town: Rotterdam	Water Quality Monitoring Gauges	1C	1,2,3,4	Great Flats Aquifer	Schenectady SWCD	State	\$100,000- \$500,000		х	
Towns: East Glenville, Alplaus, Niskayuna, Scotia, Rotterdam, Duanesburg	Re-vegetation of Roadside Ditches	18	1	HUC-12s: Sandsea Kill, Poentic Kill, Stony Creek	Schenectady SWCD	State (4)	\$12,000		х	
Montgomery County										
Town of Minden Village of Fort Plain	Otsquago Creek Restoration (2)	3D	1,2,3	Otsquago Creek	Montgomery SWCD	State	\$1 million		х	
Village of St. Johnsville	Zimmerman Creek Restoration (2)	3D	1,2,3	Zimmerman Creek	Montgomery SWCD	State	\$1 million		х	
Village of Canajoharie	Canajoharie Creek Wall Restoration (2)	3D	1,2,3	Lower Canajoharie Creek	Village of Canajoharie	State	\$1 million		х	
Saratoga County										
Towns: Ballston, Clifton Park, Charlton, Galway	Invasive Species Assessment and Control	1D	1.4	North Chuctanunda Cr, Evas Kill, Headwaters Alplaus Kill, Indian Kill, Stony Cr., Shakers Cr.	Saratoga SWCD	State (4)	\$25,000	х		
Multiple Counties										
Portions of Hamilton, Fulton, Montgomery, Saratoga, and Schenectady Counties	Watershed Modeling (3)	1B,1C	1,2,4	HUC-12s in the following HUC-10s: Alplaus Kill, Fly Creek, Cayadutta Creek, Canajoharie Creek, East Canada Creek	Schenectady SWCD	State	\$45,000		Х	

NOTES: (1) Unless otherwise noted, projects are based on recommendations from the Mohawk River Watershed Coalition SWCD's HUC-12 Assessment Reports.

(2) This project includes one or more specific actions along this particular stream that include the implementation of stormwater management and natural stream design practices. Refer to the Montgomery County NY Rising Countywide Resiliency Plan.

(3) The Watershed Modeling project will address the need to estimate pollutant loading reductions to be achieved by implementing specific recommended actions for threatened or impaired waterways.

(4) This project has been partially funded by a NYS Department of State Title 11 EPF Local Waterfront Revitalization Program grant.

KEY: See strategy key on p. 5-8.

5.2.3 Schoharie Watershed Region

As displayed in Map 5-3, the Schoharie Watershed region has only one low-scoring subwatershed (Cobleskill Creek) based on the assessment scoring process. Of the remaining five subwatersheds, two are mid-scoring (Batavia Kill and Fox Creek) and three are high-scoring (West Kill, East Kill, and Panther Creek). Cobleskill Creek's low score is due primarily to relatively high agricultural land use, while the mid- and high-scoring subwatersheds have lower agricultural land use and higher forest cover. Sediment loss during storms is an issue in the uplands of the Catskills, due to steep slopes and high soil erodibility, and contributes to the need to stabilize streambanks in these subwatersheds. The recommended actions and practices for this region are summarized in Table 5-6, and grouped by their strategy component in meeting the overall goal of restoring watershed health. The Cobleskill Creek subwatershed is italicized to emphasize its priority for restoration. Specific projects to advance these strategies within the Schoharie Watershed region are listed in Table 5-7.

Recommendation	Locations (HUC-10s)	Cost	Timing (Years)				
Strategy Component 1A: Protect and restore natura	l hydrology		•				
Restore wetlands	Cobleskill Creek, Fox Creek	\$\$\$	3-5				
Restore/increase riparian buffers	<i>Cobleskill Creek,</i> Panther Creek Batavia Creek, East Kill, Fox Creek	\$\$\$	3-5				
Implement stormwater management practices	<i>Cobleskill Creek,</i> Panther Creek Batavia Kill, East Kill West Kill, Fox Creek	\$\$\$\$\$	3-5				
Address streamflow below reservoir	West Kill	\$\$\$\$	5+				
Install adequate culverts	East Kill	\$\$\$	5+				
Preserve green space	Cobleskill Creek	\$\$\$	3-5				
Strategy Component 1B: Reduce erosion and sediment transport							
Stabilize streambanks/address streambank erosion	<i>Cobleskill Creek,</i> Panther Creek Batavia Kill, East Kill, Fox Creek	\$\$\$\$	3-5				
Restrict animal access to streams	Cobleskill Creek	\$\$	3-5				
Regulate streamside development	Fox Creek, East Kill	\$	1-2				
Re-vegetate roadside ditches	West Kill	\$\$	3-5				
Implement soil erosion BMPs	Cobleskill Creek	\$\$\$	3-5				
Strategy Component 1C: Minimize pollution							
Address failing septic systems	<i>Cobleskill Creek</i> Fox Creek (Warner's Lake)	\$\$\$\$	3-5				
Employ nutrient and waste management BMPs on farms	Cobleskill Creek	\$\$	1-2				
Monitor road salt at bridge crossings	Cobleskill Creek	\$	1-2				
Strategy Component 1D: Protect and restore habitat	ts						
Control invasive species	Panther Creek, East Kill	\$\$	3-5				
Conduct biodiversity study of streams	West Kill, Fox Creek	\$	3-5				
Manage culverts for fish passage	West Kill	\$\$	3-5				

 TABLE 5-6

 Schoharie Watershed Region: Recommended Actions and Practices

TABLE 5-7 Schoharie Watershed Region: Recommended Projects

County Municipality(-ies)	Project (1)	Strategy	Goal	Target Subwatersheds	Lead Organization	Funding Sources	Potential Cost	Timing 1-2 Yrs	Timing 3-5 Yrs	Timing 5+Yrs
Schoharie County										
County-wide (plus portions of Montgomery, Albany, & Schenectady Cos.)	Flood Mitigation Studies	1A	1,3	All HUC-12s in HUC-8 Schoharie Watershed	Schoharie SWCD	State (3)	\$444,000	х		
County-wide	Re-vegetation of Roadside Ditches	1B	1	All HUC 12s in HUC 10s: Cobleskill Creek, Fly Creek, Panther Creek, West Kill	Schoharie SWCD	State (3)	\$40,000		х	
Town of Cobleskill Village of Cobleskill	Flood Attenuation Study & Implementation— Mill Creek	1D	1,2,3, 4,5	Punch Kill/Cobleskill Creek	Schoharie SWCD	State, Federal	Study \$100,000 Implementation \$150,000-200,000		х	
Town of Esperance	Fly Creek Revitalization Project	1A	1,2,3,4, 5,6,7	Fly Creek	Schoharie SWCD	State, Federal	\$100,000-500,000		х	
Towns: Conesville, Cobleskill, Schoharie, Middleburgh	Assessment of Preva- lence & Removal of Japanese Knotweed (<i>P.</i> <i>cuspidatum</i>)	1D	1,2,3, 4,5	Little Schoharie Creek, Manor Kill, Cobleskill Creek, Schenevus Creek, Ox Kill (Fox Creek)	Schoharie SWCD	State	\$25,000-30,000		х	
Towns: Middleburgh, Fulton, Gilboa	Riparian Buffer Enhance- ment Post Emergency Watershed Protection Implementation	1A	1,2,3,4	Little Schoharie Creek, Line Creek, Platter Kill (Schoharie Creek)	Schoharie SWCD	State	\$54,000		х	
Albany County										
Towns: Berne, Altamont	Invasive Species Assessment and Control	1D	1,4	HUC 12s: Headwaters Fox Creek, Beaverdam Creek, Switz Kill	Albany SWCD	State (3)	\$20,000	х		
Towns: Berne, Altamont	Re-vegetation of Roadside Ditches	1B	1	HUC 12s: Headwaters Fox Creek, Beaverdam Creek, Switz Kill	Albany SWCD	State (3)	\$12,000		х	
Towns: Knox, Berne	Conservation Cover Cropping	1B	1,2,3, 4,5	Fox Creek, Switz Kill, Beaverdam Creek	Albany SWCD	State, Federal	\$25,000-50,000		х	
Towns: Knox, Berne, Westerlo, & Rensselaerville	Streambank Restoration	1B	1,2,3,4	Switz Kill Headwaters of Fox Creek, Beaverdam Creek, Shaker Creek	Albany SWCD	State	\$50,000-100,000		Х	
Multiple Counties			-							
Albany County, Greene County, Schoharie County	Watershed Modeling (2)	1B,1C	1,2,4	HUC 12s in the following HUC 10s: Cobleskill Creek, Batavia Kill, Fox Kill, West Kill, East Kill, Panther Creek	Schoharie SWCD	State	\$45,000		х	

NOTES: (1) Unless otherwise noted, projects are based on recommendations from the Mohawk River Watershed Coalition SWCD's HUC-12 Assessment Reports.

(2) The Watershed Modeling project will address the need to estimate pollutant loading reductions to be achieved by implementing specific recommended actions for threatened or impaired waterways.

(3) This project has been partially funded by a NYS Department of State Title 11 EPF Local Waterfront Revitalization Program grant.

KEY: See strategy key on p. 5-8.

5.3 Ongoing Implementation, Tracking and Monitoring Progress

The implementation of the Mohawk River Watershed Management Plan will be monitored at two levels. The first level is the ongoing implementation of watershed projects and municipal actions for both restoration and protection of the watershed. The second level is the long-term monitoring of watershed health over a period of years.

5.3.1 Ongoing Implementation

The projects and other actions summarized in Tables 5-2 through 5-7 represent the first round for implementing the recommendations for restoration and protection of the Mohawk River Watershed. As future actions are recommended, they will be prioritized and initiated to the extent that they address the strategies discussed in Chapter 4 and the seven goals of the Mohawk River Watershed Management Plan. Thus, the Plan remains a work in progress, growing and adapting as conditions in the watershed change.

Likewise, implementation of the Plan will be an ongoing process and will continue for many years into the future. Projects will be completed, and new projects will be added. Periodic watershed assessments will be conducted and the Plan will be updated to reflect new information.

To manage this ongoing implementation, a Steering Team will be established comprised of representatives of the Mohawk River Watershed Coalition of Conservation Districts, NYSDOS, NYSDEC, and state and local stakeholders as appropriate. The Steering Team will meet on a regular basis to review progress and determine future watershed projects and funding opportunities. Status reports will be available on the <u>Mohawk River Watershed Coalition</u> <u>website</u>.

5.3.2 Tracking Implementation and Monitoring Progress

It is important to track progress and to document a successful pattern of water-quality improvement resulting from implementation of the Mohawk River Watershed Management Plan. To this end, the description of each of the recommended projects/actions includes measures to track implementation and determine success over the short and the long term.

Implementation strategy activities will be monitored and tracked through the <u>Interactive Mapping Tool for the</u> <u>Mohawk River Watershed</u>. This online interface will store implementation strategy details that can be viewed at the subwatershed scale, including information about the goals addressed, estimated timeline, estimated cost, potential funding sources, responsible party, and project status/progress, where available.

Coalition members will be able to make additions or updates about progress toward completion of different tasks or projects through a separate, secure, online map-based tracking system. Implementation projects may be added or edited by the Coalition through this secure tracking system. These additions or updates will be made directly to the GIS-based subwatershed features and will be viewable in both the secure web tracking system and the existing Interactive Mapping Tool for the Mohawk River Watershed.

The system allows stakeholders to visualize progress of subwatershed management activities and to evaluate progress over the Mohawk River Watershed as a whole. With the interactive mapping tool, implementation strategies can be viewed in conjunction with other Mohawk River Watershed data layers, such as watershed assessment scores, environmental data, and demographic information. Links to the implementation plan

documents are also available through the implementation strategy tracking dataset, such as subwatershed management recommendation reports and grant information, where available.

5.3.3 Monitoring Long-Term Watershed Health

The current status of water quality in each subwatershed was measured by the methods described in Chapter 3: Subwatershed Assessment and assigned three component scores—water quality, land use, and habitat—and a composite score. By periodically repeating the assessment procedure, perhaps every five years, one can follow progress toward achieving the goals set out in the Plan. For example, included in the water-quality metric used in the assessment technique is the status of the waterbody on the 2010 NYSDEC Waterbody Index/Priority Waterbodies List. This list is updated every five years, and, as water quality in a subwatershed improves, its assessment score should show improvement as well.





