

Chapter 9: Management Plan Phase 3 Strategy

In the very beginning of the watershed management planning process it became apparent that the sheer size and scale of the Watershed, in addition to the vast complexity of issues impacting water quality, required a multi-phased approach. Phases 1 and 2 of the Regional Niagara River/Lake Erie Watershed Management Plan development aimed to characterize the entire Niagara River/Lake Erie Watershed, capturing how it currently functions, what the primary issues are, and better understand the trends and major impairment contributors. This planning process also helped to identify what we do not know, where data is lacking and where we need to research further in order to outline specific management actions for each sub-watershed.

The Regional Niagara River/Lake Erie Watershed Management Plan is intended to be a living planning document, one that evolves over time, tracks progress, and is updated regularly based on new conditions and progress. In addition, it will serve as a foundation for developing a Nine-Element Watershed Management Plan for the region. In order to reach this level, the Lake Erie Watershed Protection Alliance and NYSDEC, along with other stakeholder organizations aim to develop a NYSDEC-approved Nine-Element Watershed Management Plan for the Niagara River/ Lake Erie Watershed in Phase 3 over the next several years. Upon completion, a Nine-Element Watershed Plan will outline strategies for restoration that are based on quantifiable metrics to enable on-going tracking of watershed health and the effectiveness of restoration initiatives. The nine elements¹ required in the plans are:

- A. Identify and quantify sources of pollution in watershed.
- B. Identify water quality target or goal and pollutant reductions needed to achieve goal.
- C. Identify the best management practices (BMPs) that will help to achieve reductions needed to meet water quality target/goal.
- D. Describe the financial and technical assistance needed to implement BMPs identified in Element C.
- E. Describe the outreach to stakeholders and how their input was incorporated and the role of stakeholders to implement the plan.
- F. Estimate a schedule to implement BMPs identified in plan.
- G. Describe the milestones and estimated time frames for the implementation of BMPs.
- H. Identify the criteria that will be used to assess water quality improvement as the plan is implemented.
- I. Describe the monitoring plan that will collect water quality data needed to measure water quality improvement (criteria identified in Element H).

¹ <https://www.dec.ny.gov/chemical/103264.html>

Water Quality Monitoring and Modeling

As the Phase 2 Watershed Characterization was being worked on, NYSDEC initiated a partnership with U.S. Geological Survey to conduct water quality sampling at 19 sites throughout the watershed. This will serve as the monitoring required by a Nine-Element Plan to develop baseline conditions. Additional gage stations were set up at several of the locations to measure flow. Because nutrient monitoring is so important in Lake Erie and its watershed at this time, phosphorus and nitrogen are being measured in addition to traditional water quality parameters, such as temperature, dissolved oxygen, etc. This sampling process is scheduled to take place from fall 2017 through fall 2019 and will result in a report on the findings from the U.S. Geological Survey in 2020. The Lake Erie Watershed Protection Alliance (LEWPA) has also undertaken a water quality sampling project for bacteria. From spring 2019 through spring 2020, LEWPA will be sampling at the same 19 sites for *E. coli*, fecal coliform, and total coliform. A report will follow from LEWPA, also in 2020.

NYSDEC and U.S. Geological Survey have also partnered to create nine sub-watershed models throughout the Niagara River/Lake Erie Watershed to determine the potential impacts of certain BMPs and model the impacts that corrective actions could have on water quality. These are expected to be developed in 2019 and 2020 and be available around 2021.

These reports will be used toward sections A, B, and C of the Nine-Element Watershed Plan. Potential pollution sources have been identified in the Watershed Characterization laid out in Phases 1 and 2 and the water quality sampling and modeling results will be used to quantify those sources in the major waterways and identify the areas most impacted in the Watershed and most receptive to BMP implementation. Phase 3 will involve LEWPA and NYSDEC working together with regional and local stakeholders to develop target pollutant reductions, BMPs for implementation, and finalizing the rest of the nine-elements based upon the results from the monitoring and modeling.

Sub-watershed Planning

In Phase 2, five of the 18 sub-watersheds that were prioritized in Phase 1 received Stream Visual Assessment Protocol (SVAP) review, also funded by NYS Department of State. Three of these were prioritized for protection and two were prioritized for improvement. Teams from Buffalo Niagara Riverkeeper walked lengths of streams to determine the state of health of the waterways and came up with specific actions for implementation. Their findings are described in a separate report² for the following five sub-watersheds:

- Lower Tonawanda Creek (needs improvement)
- Smoke(s) Creek (needs improvement)

² *Healthy Niagara: Regional Niagara River/Lake Erie Watershed Management Plan – Phase 2*, found at <https://bnwaterkeeper.org/projects/healthyniagara/>

- Buffalo River (needs protection)
- Eighteenmile Creek (needs protection)
- Upper Tonawanda Creek (needs protection)

Phase 3 will focus on developing Sub-watershed Implementation Plans for the rest of the 18 sub-watersheds utilizing the information collected and reported in Plan, as well as ongoing data collection and modeling from U.S. Geological Survey. In addition, in order to ground-truth the results of the model outputs and determine locations for projects, SVAP will again be used to assess the health of the waterways and identify areas for action. LEWPA, NYSDEC, and stakeholders will identify critical pollution source areas and specific potential actions for improvement based upon the data. In the case of healthy areas, riparian buffers and forested areas will be identified for protection.

The result will be eighteen Sub-watershed Implementation Plans covering the Niagara River/Lake Erie Watershed that outline how to move ahead with detailed management actions, through prioritizing and ranking the most effective and influential actions (cost-benefit), as well as outlining benchmarks, timelines, partners, and funding for implementation. Stakeholders have indicated their further participation in this process and are eager to advance the plan forward.

Next Steps

Chapter 8 describes a comprehensive set of recommended actions that would advance the goals of this Watershed Management Plan. Some can be initiated shortly or are already underway, while others will require more upfront work, coordination and funding. The following chart outlines recommended actions from Chapter 8 that should be focused on in the short-term and/or can be part of the Phase 3 watershed planning, broken down into larger categories.

CONSERVATION, PROTECTION & MANAGEMENT

Conserve, protect and effectively manage the natural living infrastructure network that preserves watershed function, provides habitat and sustains biodiversity.

- ▶ Outline the living infrastructure network for the watershed and identify gaps or threatened components by encouraging municipalities to complete natural resource inventories.
- ▶ Establish a protection plan for living infrastructure components by Sub-watershed.
- ▶ Promote the role of living infrastructure to area land trusts, conservation groups, and local municipalities.
- ▶ Promote and implement the Niagara River Habitat Conservation Strategy and the New York Natural Heritage Program Statewide Riparian Opportunity Assessment.
- ▶ Design restoration plans for severely altered watercourses to replace missing living infrastructure and habitat.

INFRASTRUCTURE

Correct, upgrade, install, and maintain watershed related infrastructure that will protect and improve water resources, plus sustain and expand watershed function.

- ▶ Develop design guidelines and training modules on infrastructure designed to support water quality.
- ▶ Create tools to assist municipalities in tracking and maintaining infrastructure.
- ▶ Promote the benefits of green stormwater infrastructure.
- ▶ Install, evaluate, and endorse green infrastructure demonstration projects and promote them as educational resources.
- ▶ Implement Long-Term Control Plans to address known infrastructure deficiencies.
- ▶ Inventory and identify problem stormwater infrastructure.
- ▶ Call attention to and communicate private property violations to local regulatory authorities.
- ▶ Educate the public on infrastructure issues and proper maintenance to increase awareness of system workings, reduce non-point source pollution, increase the adoption of green infrastructure, and increase the longevity of existing systems.

DEVELOPMENT

Create only high-quality development, in-fill, and retrofits that work in conjunction with natural systems, minimize impacts on watershed health, and improve the public's relationship to water resources.

- ▶ Develop ordinance models and example zoning provisions for protecting water quality.
- ▶ Develop design guidelines and training modules on development designed to support water quality.
- ▶ Conduct outreach to municipal officials and boards on sustainable development.
- ▶ Highlight development projects that utilize low-impact and sustainable designs.

DATA

Fill data gaps to provide better understanding and analysis of watershed conditions for effective and resilient planning of water resources.

- ▶ Collect and analyze data from current water quality sampling efforts to establish comprehensive baseline conditions for the Watershed.
- ▶ Advocate for filling needed data gaps including natural resource and tree inventories, erosion assessments, septic system assessments, and new data collection and analysis as necessary.
- ▶ Highlight what certain data sets can do for planning efforts.

EDUCATION

Expand local knowledge of water resources, watershed conditions, non-point source pollution prevention, and natural living systems to foster public investment and practices to advance watershed health.

- ▶ Communicate and publicize the findings of the Watershed Management Plan.
- ▶ Educate local officials on the data and tools available to assist with local planning efforts.
- ▶ Disseminate information on Best Management Practices.
- ▶ Incorporate water stewardship education into recreational tours and activities.
- ▶ Expand outreach opportunities to include newspaper campaigns, social media and other peer-to-peer sharing, innovative water quality tools, and additional educational and interpretive signage.

FUNDING

Establish long-term funding mechanisms to effectively manage the watershed and water resources, including research, mitigation, restoration, and outreach.

- ▶ Secure additional grant and foundational funding to continue Phase 3 planning.
- ▶ Research various long-term and short-term funding mechanisms.
- ▶ Build the connection between clean water and economic vibrancy.

REGIONAL POLICY

Institute local, county, and state policies that enhance protections on water quality and watershed health, and improve watershed planning collaboration between local, county, and state organizations.

- ▶ Conduct outreach to local, county, and state organizations.
- ▶ Communicate and publicize the findings of the Watershed Management Plan.
- ▶ Establish watershed-wide roundtable discussions.
- ▶ Outline the Regional Watershed Plan Manager role.
- ▶ Build relationships with elected officials and representatives to promote new policies.
- ▶ Create regional sub-watershed roundtables to solicit local stakeholder input and support decision making.

Structure for Implementation

Regional Watershed Plan Manager

One of the most important factors to developing and implementing a successful watershed management plan is the collaboration and organization of key stakeholders and watershed-related organizations. Partnerships between governmental entities, environmental organizations, citizens groups, local and regional experts, and even businesses and utilities (water and sewer) are all instrumental to move this plan toward action. Many of these organizations have been involved in the development of the plan as Advisory Committee members; while others were consulted throughout the process. Still there are other entities need to be engaged further, such as schools, municipal boards, and local and county environmental commissions as planning enters Phase 3.

In a watershed with so many important partners, stakeholders, and different governmental jurisdictions, identifying who or what type of organization will lead the plan into action is essential.

Discussions at the Advisory Committee level in Phase 1 came to the consensus that:

- no new organization or body be created;
- nor should any one county, water quality committee, environmental organization, or soil and water conservation district take on the lead role;
- nor should an individual entity take on the lead role without continuous adequate funding to do so.

The Lake Erie Watershed Protection Alliance, formed in 2012, is an inter-municipal organization made up of three counties committed to working together on water quality and water quantity issues; Cattaraugus, Chautauqua, and Erie counties. It fits the criteria established in Phase 1 and is funded through the NYS Environmental Protection Fund. This organization has taken on the role of Regional Watershed Plan Manager in Phase 2 and is applying for funding for Phase 3 of the Regional Niagara River/Lake Erie Watershed Management Plan in an effort to coordinate stakeholders and implement water quality improvement projects.

Key Stakeholders & Implementation Partners³

The following entities are essential players, partners and stakeholders for the implementation of the Phase 1 and Phase 2 plans and for engagement in Phase 3 planning efforts:

³ Please note this is not meant to be an exclusive list and it can be expanded moving forward.

U.S. Environmental Protection Agency	County Soil & Water Conservation Districts
U.S. Fish and Wildlife Service	University at Buffalo
U.S. Army Corps of Engineers	Buffalo State College
National Oceanic and Atmospheric Administration (NOAA)	Buffalo State Great Lakes Center
NYS Dept. of Environmental Conservation	County Water Quality Committees
NYS Dept. of State	Lake Erie Management Commission
NYS Empire State Development	Tonawanda Creek Watershed Committee
NYS Environmental Facilities Corporation	Municipalities
NYS Sea Grant	Chautauqua Watershed Conservancy
Cattaraugus County	WNY Land Conservancy
Chautauqua County	Land Trusts
Erie County	Buffalo Niagara Riverkeeper
Genesee County	WNY Partnership for Regional Invasive Species Management
Niagara County	WNY Environmental Alliance
Wyoming County	Sewer Districts & Water and Sewer Utilities
Tuscarora & Seneca Nations	Fishing, Sportsman/Outdoorsmen's Groups

Funding⁴

Continued plan development and coordination funding for Phase 3 of the Regional Niagara River/Lake Erie Watershed Management Plan, in addition to project specific funding for implementing the five Sub-watershed Implementation plans, is necessary. This will require a mixture of resources including public grant monies, foundation grants, volunteer in-kind donations, capital campaigns, incentive-based funding, and public and private investments. The list below outlines some of these potential funding resources:

- U.S. EPA Great Lakes Restoration Initiative
- U.S. EPA Nonpoint Source Pollution (Section 319) Funding
- U.S. EPA 5 Star Restoration Funding
- U.S. EPA State/Local/ Tribal Wetlands Grant Programs
- U.S. EPA Great Lakes Shoreline Cities Green Infrastructure Grants
- U.S. EPA Urban Waters Small Grants Program
- U.S. Fish and Wildlife Service (Various Grants & Cooperative Agreements)
- U.S. Army Corps of Engineers (various Sections relative to habitat, flood infrastructure, navigation and shoreline protection)

⁴ This is not meant to be a comprehensive list and only outlines the variety of resources available to the Niagara River/Lake Erie Watershed.

USDA NRCS Conservation Innovation Grants
USDA NRCS Agricultural Conservation Easement Program
USDA NRCS Agricultural Management Assistance Program
USDA NRCS Conservation Reserve Program
USDA NRCS Conservation Stewardship Program
USDA NRCS Debt for Nature Program
USDA NRCS Environmental Quality Incentives Program
USDA NRCS Healthy Forests Reserve Program
USDA NRCS Regional Conservation Partnership Program
USDA NRCS Watershed and Flood Prevention Operations Program
NYS Soil & Water Conservation Committee Agricultural Environmental Management Program
NYS Soil & Water Conservation Committee Agricultural Nonpoint Source Abatement and Control Program
NYS Water Quality Management - 604(b) Funding
NYS Water Quality Improvement Program
NYS Non-Agriculture and Non-Point Source Grant Program
NYS Great Lakes Basin Small Grants Program
NYS Landowner Incentive Program
NYS Conservation Partnership Program
NYS Urban & Community Forestry Grants
NYS Environmental Justice Grants
NYS Green Innovation Grant Program
NYS Environmental Protection Fund
NYS Sea Grant (various programs)
NYS Community Development Block Grants
NYS Canal Corporation
NYS Local Waterfront Revitalization Program
Chautauqua County 2% Occupancy Tax funding
County Soil and Water Conservation District funding
Municipal budgets
Margaret L. Wendt Foundation
John R. Oishei Foundation
Community Foundation for Great Buffalo
NYPA Greenway Commission (Standing Committees)

Future planning efforts should also look to establish consistent long-term funding mechanisms and incentive programs that will foster watershed health and stability, such as development impact fees, transfer of development rights, tax assessment programs, in-fill and brownfield tax credits, utility

districts and utility incentive programs, adopt-a-stream programs, and green infrastructure incentives and tax credits. There are many areas of the country where such programs are successfully financing the protection and management of living infrastructure, including Portland, Oregon and Milwaukee, Wisconsin.

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