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Development of a Comprehensive Watershed Management Plan for the Eighteenmile Creek Watershed

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This project will involve development of a comprehensive watershed management plan (CWMP) for the Eighteenmile Creek watershed. This CWMP will serve as a coordinated and integrated approach to address the priority issues in this watershed and improve overall watershed health and function. The CWMP will be developed through extensive stakeholder involvement. This project addresses two specific Great Lakes Restoration Initiative (GLRI) Focus Areas and contributes to the delisting of all five beneficial use impairments (BUIs) in the Eighteenmile Creek Area of Concern (AOC).

Comprehensive Watershed Management Plan for the Eighteenmile Creek Watershed

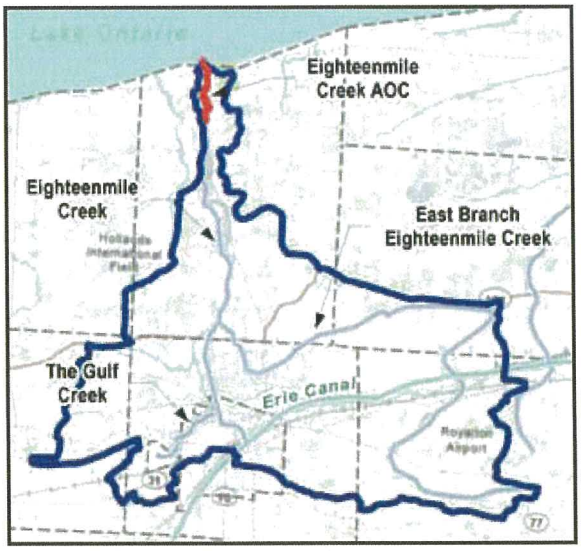
- Addresses GLRI Focus Areas
- Addresses all five BUIs for the Eighteenmile Creek AOC

Project Overview and Background

Eighteenmile Creek Watershed and AOC

The Eighteenmile Creek watershed has a drainage area of approximately 90 square miles and includes Eighteenmile Creek; two main tributaries, the East Branch and the Gulf; and minor tributaries. Eighteenmile Creek flows from the south and discharges through Olcott Harbor into Lake Ontario. Approximately 2 miles south of Olcott Harbor, the watershed is a unique canyon habitat that attracts recreational boaters, birders, and waterfowl hunters. Because of this, Eighteenmile Creek is the second most visited fishing destination in the Lake Ontario basin, attracting up to 15,000 anglers annually (E & E 2007a).

A portion of the Eighteenmile Creek watershed was identified as an AOC; the AOC includes Olcott Harbor and extends upstream to the farthest point at which backwater conditions exist during Lake Ontario's highest monthly average lake level. In addition to its AOC designation, Eighteenmile Creek is on the New York State Section 303(d) List of Impaired Waters. The upper, middle, and lower sections of Eighteenmile Creek along with their tributaries contain contaminated sediments; additionally, the upper section and its tributaries also have aquatic toxicity from an unknown source (NYSDEC 2010b). Poor water quality and sediment contamination in Eighteenmile Creek have resulted from industrial and municipal discharge practices, pesticides, and waste disposal. Contaminated substances have contributed to restrictions on fish and wildlife consumption, degradation of benthic organisms, and restrictions on dredging activities in the Eighteenmile Creek AOC. Additionally, it is suspected that the contaminated sediments may adversely affect fish and wildlife populations, increase the frequency of fish tumors, and increase the prevalence of deformities and reproductive problems in birds and animals (E & E 2009).



The vision for the Eighteenmile Creek watershed involves active stewardship among stakeholders and a commitment to initiating and completing recovery of impaired aquatic resources, with each success directly contributing to the value of restoring environmental and ecological integrity within the watershed.

The completion of a CWMP is critical in providing a long-term vision for the watershed that will include clear communication of the watershed priorities and the steps needed to achieve overall watershed health. A basin-wide approach to resource restoration in the watershed will enhance opportunities for public access, outdoor recreation, wildlife observation, and ecotourism.

Support of Great Lakes Restoration Initiative

This project will address two significant GLRI focus areas: Toxic Substances and AOCs and Habitat and Wildlife Protection and Restoration. This project will result in the development of a CWMP with specific management actions organized into functional management units. Contaminant remediation and aquatic habitat protection and restoration will be two priority management units. The specific management actions within each of these management units will protect the health and integrity of wildlife and their habitats throughout the Eighteenmile Creek watershed.

GLRI Focus Areas

Long-term Goals of the Toxic Substances and AOCs Focus Area

- Reduce exposure to toxic substances from historically contaminated sources through source reduction or other methods
- Reduce levels of toxic chemicals to the point that all restrictions on the consumption of Great Lakes fish can be lifted
- Protect the health and integrity of wildlife habitat from adverse chemical and biological effects associated with the presence of toxic substances in the Great Lakes Basin

Long-term Goals of the Habitat and Wildlife Protection and Restoration Focus Area

- Maintain or improve the conditions of native fish and wildlife through the protection and restoration of Great Lakes aquatic and terrestrial habitats
- Facilitate sound decision-making by using accessible, site-specific and landscape-scale baseline status and trend information about fish and wildlife resources and their habitats

Progress toward Delisting Five BUIs in the Eighteenmile Creek AOC

There are five BUIs that are impaired in the AOC: Restrictions on Fish and Wildlife Consumption, Degradation of Benthos, Restrictions on Dredging Activities, Bird or Animal Deformities or Reproductive Problems, and Degradation of Fish and Wildlife Populations. These impairments can all be linked to PCB contamination in sediments of the Eighteenmile Creek AOC and watershed. This project, through the development of specific watershed management actions for watershed-wide priorities, such as remediation of PCB source areas and in-channel contaminated sediments, will achieve progress toward delisting each of these BUIs.

Project Specifics

Establishing a Watershed Planning Stakeholder Advisory Group

The watershed planning stakeholder advisory group will serve as the lead for the watershed management planning process. The preliminary list of stakeholders for this group may include: New York State Department of Environmental Conservation, Niagara County Soil and Water Conservation District, U.S. Army Corps of Engineers (USACE), Niagara County, representatives of each of the six towns located within the watershed, and business organizations for Lockport and Newfane. The advisory group will play an active role throughout the development of the CWMP, setting goals for the CWMP, reviewing watershed issues, and selecting the highest priority management actions for implementation.

Developing a CWMP—Compilation of Existing Data to Characterize the Watershed and Identify Issues/Opportunities

Pre-planning activities have largely been completed and the development of the CWMP will draw heavily upon the numerous studies that have been completed or are in progress in the Eighteenmile Creek AOC and the larger watershed. These studies will provide the baseline for CWMP development and will help to focus the plan on the highest priority issues.

The Comprehensive Watershed Management Plan Concept Document (E & E 2005) was completed in 2005 and is intended for use as a tool to develop a CWMP for the Eighteenmile Creek watershed. The existing watershed information presented in the Concept Document can be used in conjunction with the *State of the Basin Report* to complete the watershed characterization section of the CWMP. The Concept Document provides an initial framework for a CWMP that will be followed once the planning process begins.

Several completed studies, including the BUI Investigation for Eighteenmile Creek (E & E 2009), the PCB Trackdown Study (E & E 2007b), the Soil and Water Assessment Tool (SWAT) modeling (Buffalo State College 2005), and the Record of Decision for the Eighteenmile Creek Corridor Site (NYSDEC 2010a) can be used to form the basis of the watershed issues and opportunities section of the CWMP. In addition to these completed studies/projects, two are underway that can also be used to identify watershed issues and opportunities. The ongoing Great Lakes Legacy Act (GLLA) Remedial Investigation (RI) is further evaluating contamination in Eighteenmile Creek sediments to provide comprehensive data relevant to the migration of contaminants from upstream source areas. A subsequent feasibility study would include the development and completion of a remedial alternatives analysis for the remediation of contaminated sediments. Additionally, the USACE is completing a TrophicTrace Model to evaluate how contaminants may be bioaccumulating and moving through the food chain and determine resultant environmental risks. Both of these ongoing studies will be associated with outcomes that can be translated into opportunities for the watershed, and ultimately into watershed management actions for implementation.

Key Components of the CWMP

- Rationale for plan
- Delineation of watershed
- History of watershed
- Watershed characterization
- Identification of watershed issues and opportunities
- Goals and policies
- Watershed management actions and guidelines
- Phasing and Implementation
- Monitoring and Assessment

Developing a CWMP—Prioritization of Issues and Development of Specific Watershed Management Goals and Supporting Actions

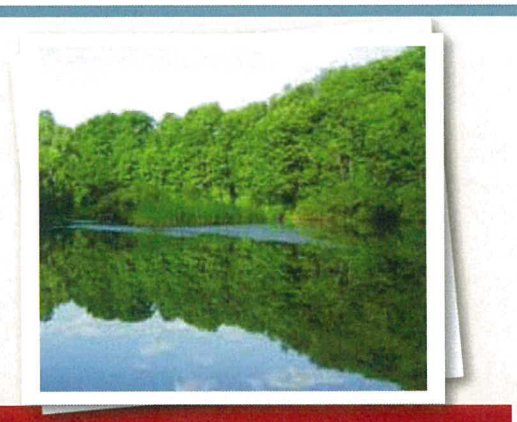
Based upon data obtained from the pre-planning efforts, the CWMP will take the priority issues for the watershed and develop specific watershed goals based on the identified issues/problems. These goals will form the basis for policies and management actions specifically designed to achieve the desired changes in the watershed. These management actions will include the following priorities:

- Nonpoint source storm water monitoring and assessment
- An integrated approach for prioritization of known sediment hot spots for remediation
- Additional modeling for sediment loads and pollutant fate and transport that focus on the Erie Canal and small tributaries
- Implementation of recommendations coming out of the TrophicTrace Model
- Modeling to determine the potential recovery of the creek following remediation efforts

These priority management actions will be developed and organized into a clear plan for implementation. The implementation of these actions will be the critical element in achieving improved water quality, improved habitat value, and overall ecosystem health within the Eighteenmile Creek watershed. In doing so, the CWMP will provide the roadmap of specific steps needed to achieve the restoration goals for the Eighteenmile Creek watershed.

Project Goals

- Develop a CWMP for the Eighteenmile Creek watershed to facilitate ecosystem restoration within this watershed
- Meet the long-term goals of the GLRI Focus Areas of Toxic Substances and AOCs and Habitat and Wildlife Protection and Restoration
- Facilitate progress toward the delisting of five BUIs for the Eighteenmile Creek AOC



The CWMP for the Eighteenmile Creek watershed will establish a coordinated, long-term vision for the restoration of the watershed, identifying specific steps to achieve that vision.

Project Objectives

- Establishment of a watershed stakeholder advisory group
- Integration and compilation of previously completed and ongoing watershed studies into the CWMP
- Development of specific recommendations for management and restoration in the watershed and compilation of an implementation plan

Project Outcomes

- Long-term stakeholder support and ownership of the CWMP for the Eighteenmile Creek watershed
- CWMP that focuses on documented key problems and opportunities for the Eighteenmile Creek watershed
- Coordinated and comprehensive approach to improving water quality and habitat, and addressing BUIs

Preliminary Cost Estimate

Cost estimates will be developed in coordination with the project sponsor.

Project Sponsor

Eighteenmile Creek Remedial Action Plan (RAP) Coordinator

Sources

Buffalo State College. 2005. Sediment Modeling for the Eighteenmile Creek Watershed, Niagara County, New York. Final Project Report for the USACE, Buffalo District. December 2005.

Ecology and Environment, Inc. (E & E). 2005. Eighteenmile Creek Comprehensive Watershed Management Plan Concept Document, Eighteenmile Creek Restoration Project, Town of Newfane, Niagara County, New York. Prepared for the Niagara County Department of Economic Development, Niagara County, New York, by E & E, Lancaster, New York.

Ecology and Environment, Inc. (E & E). 2007a. Eighteenmile Creek State of the Basin Report: December 2007. Prepared for the United States Army Corps of Engineers (USACE) Buffalo District, Buffalo, New York, by E & E, Lancaster, New York.

Ecology and Environment, Inc. (E & E). 2007b. Final Report for Eighteenmile Creek PCB Source Trackdown Project, Niagara County, New York. Prepared for Niagara County Soil and Water Conservation District, Lockport, New York, by E & E, Lancaster, New York. January 2007.

Ecology and Environment, Inc. (E & E). 2009. Beneficial Use Impairment Investigation for Eighteenmile Creek, Niagara County, New York. Prepared for Niagara County Soil and Water Conservation District. April 2009.

New York State Department of Environmental Conservation (NYSDEC). 2010a. Record of Decision, Eighteenmile Creek Corridor Site Operable Unit Numbers 1,3,4,5 and 6, State Superfund Project, Lockport, Niagara County, New York, Site Number. 932121. March 2010.

New York State Department of Environmental Conservation (NYSDEC). 2010b. Section 303(d) List of Impaired Waters Requiring a TMDL/OtherStrategy.Available at: http://www.dec.ny.gov/docs/water_pdf/303dlistfinal10.pdf. June 2010. (accessed January 26, 2011).