

Chapter I: Introduction

Section 1. The State of the Lake and Watershed Report

Watershed management is a process whereby local municipalities, homeowners, citizens groups, and county, state and federal agencies work together to develop a plan for the long-term protection and improvement of surface and groundwater resources. During the early stages of watershed management planning an inventory of the natural environmental setting and the human influences that affect water quality is compiled. In later stages, goals are defined and prioritized, and alternative restoration and protection methods are evaluated and eventually selected to reach those goals.

This State of the Lake and Watershed Report (SOLWR) has been compiled as a necessary component of the planning process for the Oneida Lake watershed. The intent of the CNY Regional Planning and Development Board (CNY RPDB) was to compile a collection of information about Oneida Lake and its watershed that can be used as a reference by key stakeholders when goals are identified and prioritized and action plans are developed.

The Task Force Land Use Committee initially took a leading role in defining the topics to be included in the SOLWR and in defining the GIS maps to be developed. Many authors eventually contributed to the publication, either by granting permission to reprint published articles and research papers, or by writing original text specifically for this document. CNY RPDB collected the text from these authors, merged it with GIS maps supplied by the Herkimer-Oneida Counties Comprehensive Planning Program (HOCCPP), and then filled in the gaps with in-house research findings.

As each section was completed, the draft text was sent to groups that had a specific interest in the subject matter. Once their editorial comments were incorporated, the text was added to a SOLWR website and broader editorial review was invited from primary watershed stakeholders. Task Force Executive Committee members volunteered to review situations when editorial comments contradict authors' opinions. Homeowners and lake users had an opportunity to review the publication during a public comment period in the fall of 2002. During that time, three public meetings were held throughout the watershed to solicit additional input from the Oneida Lake community.

Our sincere thanks and gratitude go to the all the people that contributed to this publication. Their immeasurable hard work, enthusiasm, and dedication serves as the backbone of this report and reflects on the remarkable level of interagency collaboration and multi-county cooperation.

Section 2. Project History: The Oneida Lake and Watershed Protection Program

The CNY Regional Planning and Development Board initiated the **Oneida Lake and Watershed Protection Program** during the summer of 1997 with a \$200,000 Federal Clean Water Act 604(b) grant through the NYS Department of Environmental Conservation (NYS

DEC). Due to the large size and diversity of the watershed, the primary focus of this project began with a thorough review of environmental, regulatory, and land use issues in the southern region, including portions of Onondaga, Madison and Oneida Counties. The southern region extended from the southern lake border down to Route 5 in the vicinity of Chittenango, Canastota and Wampsville. This area was selected as a priority due to population growth rates, development pressures, tributary water quality problems, and concerns for water quality impacts.

This first watershed initiative, also referred to as the **Southern Region Strategy**, involved working with local organizations to collect, summarize, and map environmental and cultural influences. The grant provided the resources to strengthen watershed partnerships through the development of the Oneida Lake and Watershed Task Force. Educational workshops and conferences were held and brochures and project newsletters were distributed to keep watershed partners well informed. Water quality monitoring programs were also initiated during this time (through the cooperation of regional agencies and organizations) in order to collect information about the streams flowing into Oneida Lake (refer to Chapter II Section 4.3.1 for additional information). Survey information was collected to document lake and watershed user perceptions, computer resources, and long-term water quality monitoring goals. “The Oneida Lake Book,” a publication containing information about the lake and its watershed, was written as a homeowners guide to lake protection and free copies were distributed throughout the region. The Southern Region Strategy project continued to the end of 2000, laying the foundation for a full watershed planning project that would begin in 2001.

Section 3. Current Programs

3.1 Watershed Management Plan

With momentum established during the Southern Region Strategy, a proposal was developed for a comprehensive, six-county **Watershed Management Plan** in 2000. Sixty-nine municipalities in the Oneida Lake watershed were asked to participate (**Map 1.3.1** – Oneida Lake Watershed). The project, approved by the U.S. Environmental Protection Agency (EPA) and the New York State Department of Environmental Conservation, involves expanded data collection and analysis, strengthened partnerships among local stakeholders, consensus on priority lake and watershed issues, pooled funding and staff resources among Task Force partners, and the review and eventual selection of appropriate restoration projects for improved water quality. The Management Plan is designed to encourage community-based partners to look beyond county and agency boundaries as they work together to monitor, conserve, and restore Oneida Lake and its watershed.

A Management Plan will be presented in 2004 for the long-term protection and restoration of water resources throughout the entire watershed. As part of this process, recommendations will be developed with the assistance of the Watershed Advisory Council, with consideration for impacts to near-shore areas as well as upland regions. The publication will involve prioritization of lake and watershed issues and the development of recommendations and guidelines to address the high priority concerns.

3.2 Watershed Improvement Projects

With grant funding from the NYS DEC, the CNY RPDB and the Task Force Executive Committee distributed a “Request for Proposals” to solicit projects to restore and protect waterbodies in the Oneida Lake watershed. Grant funding was available for the design and implementation of projects to reduce non-point source pollution, and/or to implement restoration projects at problem areas where sedimentation has impacted fisheries habitat and recreational opportunities.

County Water Quality Coordinating Committees (WQCCs) participated by prioritizing proposals that were submitted from within their Counties and submitting recommendations to the Task Force Executive Committee. Executive Committee members reviewed the proposals and recommended projects to the CNY RPDB for grant funding. Priority was given to projects that had a broad impact on downstream areas of the watershed, could be applied in several areas of the watershed, involved cooperation among several groups, and had the potential to leverage future funding under other grant programs.

The Oneida Lake Native Shoreline Restoration Project, an Analysis of the Oneida Creek Delta in South Bay, and the Oneida Watershed Agriculture Program were selected as recipients of this grant funding and are described below. An additional proposal submitted for grant funding is currently being considered.

Oneida Lake Native Shoreline Restoration Project

CNY RPDB is providing grant funding to the Madison County Planning Department to improve water quality in the Oneida Lake watershed. The Native Shoreline Restoration Project provides financial incentives and technical assistance to landowners interested in restoring some or all of their shoreline to a native plant community, thereby improving offshore and in-lake habitat, increasing nutrient buffering capacity, slowing or preventing shoreline erosion, and improving the aesthetic quality of the property. Additional information about this project is available in Chapter II, Section 4.1.

Analysis of the Oneida Creek Delta in South Bay

CNY RPDB recently approved grant funding to the Madison County Planning Department and Hamilton College for a project on Oneida Creek. One of the main issues of concern for the Oneida Lake watershed is sedimentation from tributary streams. Initial tributary monitoring data identifies Oneida Creek as one of the greatest contributors of Total Suspended Solids. This research will document the source of sediment, the rate of sedimentation, the structure of the sediment layers, the current depth of the lake and sediment, and the potential toxicity of the sediment. Additional information about this project is available at the Madison County Planning Department or at the CNY RPDB.

Oneida Watershed Agriculture Program

The Watershed Agricultural Project, created in 2002, involves the cooperation of the five primary County Soil and Water Conservation Districts (SWCDs). The major goal is the reduction of agricultural non-point sources of pollution throughout the watershed. In support of this goal, an Agricultural Watershed Resource Specialist position was created

to work on agriculture programs in the region for a two-year term with funding provided through the NYS DEC by the CNY RPDB. During this time, agricultural data is being collected using the Agricultural Environmental Management (AEM) Program. With assistance from the SWCD Managers, the work of the Agricultural Specialist involves establishing an education and outreach plan, prioritizing water quality impacts from farms, and gathering data for the State of the Lake and Watershed Report. In addition, an Agricultural Advisory Committee was created, comprised of farmers representing each of the five primary counties in the watershed. The Committee was formed to encourage farmer participation in the Watershed Management Plan and in shaping regional activities for agricultural projects. Additional information about agricultural programs in the Oneida Lake watershed is available in Chapter IV, Section 2.

The following sections provide a brief summary of additional programs that support the Watershed Management Plan.

3.3 Tributary Monitoring

Eleven sites on Oneida Lake tributaries are being monitored to scientifically document sediment and nutrient loading to the lake, to record stream flow rates, and to prioritize the streams according to problem severity. This program was designed by the Task Force Technical Committee to help identify watershed areas for potential restoration work. The 2002 monitoring program is a continuation of the monitoring that took place in the southern region tributaries from 1999 to 2000. Additional sampling sites in the northern region tributaries were added to the 2002 program to provide comprehensive coverage of the entire lake basin. Stressed stream analysis, scheduled for 2003 – 2004, will involve further analyses on the high priority streams to identify pollution sources. Additional information about this project is available in Chapter II, Section 4.3.

3.3.1 Project Watershed Central New York

Project Watershed is a non-profit organization dedicated to facilitating water resource education in Central New York schools by providing student access to programs, equipment, training, and computer data storage. During 2001 and 2002, Project Watershed worked with eighteen high school classes and groups that monitored Oneida Lake tributaries in Onondaga, Cortland, Madison and Oneida Counties. Additional information about Project Watershed in the Oneida Lake watershed and other tributaries throughout Central New York is available in Chapter II, Section 4.3.

3.4 Education and Outreach

Education is critical to the success of the watershed management planning process. Education goals for the Oneida Lake program are designed to provide opportunities for decision-makers to learn more about the environmental setting and the land use influences that affect water quality. Outreach and education programs are also developed to cultivate a sense of local ownership and responsibility for water resource issues.

The CNY RPDB has worked closely with Cornell Cooperative Extension (CCE) of Onondaga County to define and reach our education goals. These two organizations, along with additional groups that participate on the Task Force Education Committee, have implemented the following projects over the past several years:

- Two websites have been designed. One provides information about programs and opportunities in the Oneida Lake watershed. The other site provides an opportunity for stakeholders to review and comment on the State of the Lake and Watershed Report.
- A Municipal Survey was designed and distributed to all of the watershed mayors and supervisors as a group effort between CNY RPDB, CCE, and HOCCPP.
- Project newsletters are distributed each year to watershed groups and individuals.
- A tabletop display with photographs and descriptive text was designed for use at regional conferences.
- PowerPoint slide shows have been presented to many watershed groups.
- Program summaries and information packets have been distributed in response to phone and mail requests.
- Newspaper press releases, television interviews, and targeted mailings have continued throughout the project.
- Educational fact sheets and/or project brochures have been compiled.
- Oneida Lake watershed partners came together for the first time in March 1998 for an Oneida Lake and Watershed Task Force conference. People with a management interest in the lake and its watershed were invited to hear presentations on program accomplishments, network with other watershed decision-makers, and set goals for the future. Seventy-five stakeholders (including federal, state and local agencies and organizations, non-profit groups, and elected officials) participated in the successful, daylong event. Based on positive results from that initial gathering, Task Force Conferences have been scheduled as an annual event each fall.

Section 4. Program Funding

The CNY RPDB received State and Federal funding in 2001 to initiate a three-year, six-county Watershed Management Plan for Oneida Lake. The funding includes \$325,000 from the NYS DEC via the Environmental Protection Fund, and \$300,000 from the U.S. Environmental Protection Agency via the FY 2001 VA-HUD Appropriations Bill secured by Congressmen Walsh and Boehlert. The grants allow for the continuation of activities that began under the original CNY RPDB-managed Oneida Lake and Watershed Protection Project (from 1997-2000). The current federal and state funds support activities for a three-year period (April 2001 to April 2004).

Section 5. Key Partners

During 2001 and 2002, the CNY RPDB contracted with the following organizations to accomplish the Watershed Management Planning goals and objectives: Cornell Biological Field Station, Madison County Planning Department, Cornell Cooperative Extension of Onondaga County, Herkimer-Oneida Counties Comprehensive Planning Program, Joe Makarewicz (SUNY

Brockport), Oneida County Soil & Water Conservation District, Project Watershed, and Life Science Laboratories.

Section 6. Project Purpose

From the early stages of the project history, the Watershed Management Plan has been promoted as an opportunity to protect water resources while strengthening the region's economic footing. Communication with other lake communities throughout New York State has continued throughout this project for their guidance and advice and to learn from their experience. Many of these groups indicated that comprehensive, long-term planning will maintain a healthy lake environment while attracting business, tourism, and recreation dollars to strengthen the local economy.

Additional benefits of a Watershed Management Plan, summarized below, have formed the basis of our overall project purpose and have served as our primary "selling points" for watershed decision-makers:

- The Oneida Lake Watershed Task Force and the Watershed Advisory Council are based on working partnerships between state and federal agencies, research institutions, non-government organizations, county and municipal representatives, and additional stakeholders. Improved communication among these groups will reduce duplication of efforts with lake and watershed projects.
- Cooperation among municipalities and agencies, combined with pooled staff services and financial resources, will result in improved regional efficiency.
- Regional partnerships on project development and implementation will result in a reduction of non-point source pollution in Oneida Lake and its tributaries.
- Water quality information through tributary and lake monitoring will add science to the decision-making process.
- Long-term planning will result in the protection of critical lake and watershed areas such as wetlands, fisheries and wildlife habitats.
- Education programs about the responsible care and protection of local water resources will lead to an involved and informed public. Well-informed community leaders and watershed homeowners will be in a better position to make wise management decisions regarding environmental protection.
- A well-designed, comprehensive Watershed Management Plan will strengthen our chances of receiving additional state and federal grant funding for the region.
- Uniformity, consistency and fairness will be utilized during the process of problem prioritization and program implementation. Ecologically based, cost effective solutions will be developed as a watershed-wide effort.

Section 7. Committee Structure

7.1 Oneida Lake Watershed Task Force

Water resource management frequently extends beyond county and agency boundaries, often making regional collaborations an absolute necessity. These partnerships serve as a fundamental building block for successful environmental strategies. The Oneida Lake Watershed Task Force has been a guiding influence in building and maintaining momentum with the Oneida Lake Watershed Management Plan.

Several years ago, an initial project goal was to identify the primary water resource stakeholders throughout the Oneida Lake watershed. As a result, the Oneida Lake and Watershed Task Force was formed in 1998 with staff support provided by the Central New York Regional Planning and Development Board. The new organization represented a partnership of agencies, organizations, non-profit groups, and homeowners with an interest in the protection of water resources. These partnerships have formed the foundation of regional projects and have contributed to the success of the Oneida Lake watershed program to-date.

Task Force members receive program newsletters and many participate on committees that design, implement, oversee, and evaluate projects such as water quality monitoring, data collection, GIS mapping, and educational programming. Many groups have looked beyond agency and county borders to identify common goals and to share resources and talents. The Task Force Committee responsibilities are summarized below.

- The Technical Committee provides scientific advice on the development and implementation of tributary monitoring programs. Committee members oversee the collection of reliable data on the chemical, physical and biological conditions in the tributaries and ensure that the data is collected and analyzed with a high level of accuracy and precision. (*Chair - Edward Mills, Cornell Biological Field Station*)
- The Education & Outreach Committee provides advice and program planning for workshops, conferences, publications, and other educational projects designed to keep the public well informed of lake and watershed issues. (*Chair – Sheila Myers, Cornell Cooperative Extension of Onondaga County*)
- The Land Use Committee is responsible for reviewing information about the natural setting and human influences (such as agricultural and urban impacts) and determining their impacts on water resources. Committee members have taken a leading role in prioritizing information categories and GIS maps for the State of the Lake and Watershed Report.
- The Executive Committee provides leadership and direction to members of the Technical, Education & Outreach, and Land Use Committees. The following groups have been represented on the Committee: The Central New York Regional Planning and Development Board, the Herkimer-Oneida Counties Comprehensive Planning Program, the NYS Department of Environmental Conservation (two representatives), the NYS Soil & Water

Conservation Committee, the Oneida Lake Association, the Cornell Biological Field Station, and a municipal representative from the Village of Sylvan Beach. Two seats on the Committee were vacated in 2001 and 2002 and have not been filled. During the past two years, the Executive Committee took a leading role in developing draft by-laws for the Watershed Advisory Council and in reviewing proposals for the Watershed Improvement Grants. It is anticipated that the Executive Committee will be disbanded in the near future as the Watershed Advisory Council Board of Directors assumes greater involvement with the Watershed Management Plan.

7.2 Oneida Lake Watershed Advisory Council

The Oneida Lake Watershed Advisory Council, formed in the spring of 2002, is a group of local government representatives and non-government stakeholders responsible for overseeing and guiding the development and implementation of the Oneida Lake and Watershed Management Plan. For the purpose of conducting official business of the Council, the decision-making body includes a Board of Directors with twenty-six members. Members on the Council Board are selected because of their appreciation for and interest in local water resources. They are responsible for prioritizing water resource issues of concern and summarizing protection and restoration objectives.

The Watershed Advisory Council Board of Directors is comprised of the following representatives:

County-Level Representatives - The Board includes five County-level representatives. One representative has been appointed from each of the five primary watershed Counties.

Local Government Representatives - The Board includes thirteen local government representatives appointed from each of the following areas within the watershed.

Oneida Lake Waterfront Communities - Nine members from the waterfront towns and villages that surround Oneida Lake. The following communities will be represented on the board of directors: the Towns of Cicero, Hastings, Lenox, Sullivan, Verona, Vienna, and West Monroe; the Village of Cleveland and the town of Constantia (one vote), and the Village of Sylvan Beach

Northern Uplands Area - One member from the Northern Uplands area of the watershed, including portions of the Towns of Turin, West Turin, Lewis, Florence, Camden, Annsville, Williamstown, Amboy, Parish, Albion, Orwell, Ava, Montague, Martinsburg, Redfield, and Osceola, and the Village of Camden.

Eastern Watershed Area - One member from the Eastern Watershed area of the Basin, including the watershed portions of the Towns of Lee, Western, Westmoreland, and the Inner and Outer Districts of the City of Rome.

Southern Uplands Area - One member from the Southern Uplands area of the watershed, including portions of the Towns of Stockbridge, Lincoln, Smithfield,

Eaton, DeRuyter, Fenner, Cazenovia, Nelson, Vernon, Kirkland, Marshall, Madison, and Augusta, the Villages of Cazenovia, Munnsville, Oneida Castle, and Vernon, and the Cities of Oneida and Sherrill.

Butternut / Limestone Creeks Area - One member from the Butternut / Limestone Creeks area of the watershed, including portions of the Towns of Manlius, Dewitt, Pompey, Lafayette, Tully, Preble, Truxton, Cuyler, Fabius, and Onondaga, and the Villages of East Syracuse, Fayetteville, Manlius, and Minoa, and the City of Syracuse.

Stakeholder Representatives - The Board of Directors includes eight stakeholder representatives, many of whom are members of an existing regional organization. The stakeholders represent the following interests: water resources, recreation, fish and wildlife, economic development, Native Americans, agriculture, forestry, and tourism

The responsibilities of the Advisory Council Board of Directors include, but are not limited to refining the structure and current role of the Council; defining the future structure and role of the Council; providing local water resource information (when available) to be included in the State of the Lake and Watershed Report; assisting in the distribution of User Perception Surveys to identify local issues of concern; prioritizing these issues of concern; participating in the identification of water resource problems and potential solutions within the Oneida Lake watershed; and attending occasional regional meetings with other Council members.

By-Laws for the Watershed Advisory Council Board of Directors are available in **Appendix D**.

7.3 Oneida Lake Watershed Agricultural Advisory Committee

An Agricultural Advisory Committee was established in the spring of 2002 to encourage farmer participation in the Watershed Management Plan and to shape regional activities for agricultural projects. Farmer representatives from Madison, Oneida, Onondaga and Oswego Counties participate. Lewis County is not represented despite their invitation to participate. Jo-Anne Faulkner of the Oneida County SWCD, who serves as the Agricultural Watershed Resource Specialist, is a technical advisor to the Committee. Maurice Kelsey, a Madison County farmer, chairs the Committee and also serves as the liaison to the Watershed Advisory Council. Additional information about agriculture programs in the Oneida Lake watershed can be found in Chapter IV, Section 2.6.

Section 8. Project Tasks and Deliverables

Primary tasks and deliverables were developed at the beginning of the Watershed Management Plan, based on U.S. EPA and NYS DEC expectations and CNY RPDB capabilities. Minor modifications to the “scope of services” have been made over the course of the project, based on changing conditions and updated priorities.

TASK: Collect information to be presented in a State of the Lake and Watershed Report

DELIVERABLES:

- A survey will be distributed and responses analyzed to evaluate lake user perceptions, key lake and watershed issues of concern, and recommendations.
- Information about the natural setting, cultural resources, institutional framework, and water quality will be collected and synthesized for the entire watershed.
- Data gaps will be identified and recommendations will be made on ways to collect the missing information.
- GIS maps will be developed and made available to watershed partners. County GIS resources for the six watershed counties will be evaluated for improved regional efficiency.

TASK: Write, edit, copy, and distribute a State of the Lake and Watershed Report and a Watershed Management Plan

DELIVERABLES:

- A State of the Lake and Watershed report will be prepared.
- A Lake and Watershed Management Plan will be developed with municipal input and grass roots participation. The plan will include water resource priorities, a list of issues and concerns, and a strategy for long-term restoration and protection.
- Regional consensus will be encouraged on prioritization of water resource issues.
- The project will include synthesizing, writing, editing, copying, and distributing the report.

TASK: Conduct Educational, Outreach, and Public Participation Programs

DELIVERABLES:

- A web site will be developed to include project updates, meeting and conference notices, employment and intern opportunities, “The Oneida Lake Book” text, research reports, and monitoring data.
- Stakeholder input will be encouraged.
- Educational opportunities will be implemented. These will include public workshops, conferences, newsletters, brochures, and newspaper articles. Education and public awareness programs will promote and publicize the Watershed Management Plan and will encourage citizens, the business community, and government agencies to assume shared responsibility for local water resources.

TASK: Create a Task Force Municipal and Stakeholder Committee and provide staff support for the existing Task Force Land Use, Education, Technical, and Executive Task Force Committees

DELIVERABLES:

- A Task Force Municipal and Stakeholder Committee will be formed. Recruitment efforts will focus on participation from all watershed cities, towns, and villages, and primary watershed stakeholders. Meetings will be held, meeting announcements will be distributed to committee members, minutes will be recorded, follow-up will be provided

on action items approved by the committee, and communications between Task Force partners will be maintained. The Municipal and Stakeholder Committee will facilitate collaborations among and between the public and private sectors and will take a leading role in the development of a Watershed Management Plan.

- Administrative, technical, and financial support will be provided for the other Task Force Committees. Land Use, Technical, Education, and Executive Committee meetings will be scheduled on an as-needed basis, with at least two meetings held for each committee each year.

TASK: Conduct a 3-year, basin-wide baseline and storm-event monitoring program in the Oneida Lake tributaries and apply the findings and results to a watershed modeling program

DELIVERABLES:

- Watershed partners throughout the five-county region will collaborate with the Task Force Technical Committee to design and implement a monitoring strategy in the Oneida Lake tributaries. This design process has already been initiated through a monitoring program conducted in the southern region under the Oneida Lake & Watershed Protection Project.
- Uniform sampling and analyses will be applied.
- Tributary samples will be analyzed for sediment, nutrients, bacteria, and agricultural pesticides.
- A New York State certified laboratory will be used for sampling analyses.
- Invertebrate collection and identification will be applied as a screening tool for future site selections.
- Sampling sites will be selected according to geographic location and land-use impacts.
- Analytical parameters will be selected by the Technical Committee according to land use impacts, flow rates, watershed model data requirements, and professional recommendations.
- Water chemistry and flow data will be applied to a watershed model selected by the Technical and Land Use Committees.
- In-kind services will be contributed by SWCD, Planning Departments, DEC, Health Departments, and CNY RPDB.
- Technical summaries will be produced each year. (Years 1, 2, 3)
- The Technical Committee will suggest program modifications based on annual evaluations.
- The monitoring program will be developed in coordination with the DEC RIBS program (e.g., parameters, labs, sampling sites, protocols, etc.), slated to begin in the Oneida Lake basin in 2002.

TASK: Coordinate watershed implementation projects in cooperation with watershed partners: These projects can be categorized into regulatory, agricultural, and non-agricultural projects and will be implemented in high priority areas, as determined by the Technical and Land Use Committees.

DELIVERABLES:

- Regulatory: Funding will be used to work with communities to review, develop and adopt (when applicable) regulatory land-use controls to reduce non-point source pollution, and to review and assist in updating comprehensive plans, where appropriate.
- Agricultural: Funding will support a continued, coordinated Agricultural Environmental Management initiative in the watershed and help prioritize farms needing the most immediate attention. Funding may also help support Tier 3 activities on priority farms.
- Non-Agricultural: Funding will support the design and implementation of projects to reduce non-point source pollution from non-agricultural, high priority problem areas. Priorities will be based on the results of the stream bank assessments conducted in 1999 in the southern region of the watershed and on the findings of the State of the Lake and Watershed Report upon its completion.