

CONCLUSION

This guidebook has shown you the techniques and resources available to you for developing a comprehensive watershed plan. We began by recognizing the importance of understanding and knowing your watershed and finished with specific recommendations for improving water quality. Each section provided guidance and lessons on how to protect and restore your watershed.

More and more people are realizing that protecting and improving their watersheds is important to the entire community. It starts by recognizing that the watershed belongs to the community. By developing and implementing watershed plans, communities are coming together to protect water resources and improve the overall quality of their wetlands, streams, rivers and lakes, helping you improve not only your water quality but the community as well. This translates into a healthy environment, a good quality of life, and strong local economies.

You can protect and enhance your water resources when.....

- ✓ You understand your watershed and recognize the importance of water quality
- ✓ You have recognized the relationship among economic, social and natural processes
- ✓ You have created a clearly defined vision for the future of your watershed
- ✓ You have established creative partnerships and gained community support
- ✓ You have set realistic goals and laid out a detailed strategy for implementation
- ✓ You based your plan on real on-the-ground priorities and made specific recommendations to improve water quality
- ✓ You have taken advantage of all your resources, assets and opportunities
- ✓ You have generated a sense of community ownership of the watershed
- ✓ You sustain improvements and continue momentum into the future
- ✓ You understand that watershed planning is a dynamic process, requiring careful monitoring and timely adjustments
- ✓ You have the patience and persistence to get through the many phases of watershed planning - one step at a time



Narrow River, Orient



Greenport

APPENDIX

Where to find potential partners and information for watershed planning and implementation

Local Resources

Local governments- whether county, city, town, or villages- may have planning, design, and engineering staff, as well as local committees who can be instrumental in helping you protect and restore your watershed. They can provide local plans and consultant studies such as feasibility studies, engineering reports, land use studies, and infrastructure analyses. They can also provide technical assistance at all stages of developing and implementing a watershed plan.

The **New York State Conference of Mayors and Municipal Officials** (www.nycom.org) can provide technical assistance to its members and holds a Main Street conference annually that addresses many issues related to the redevelopment of waterfronts and watersheds and how they can link to downtowns. The **Association of Towns of the State of New York** (www.nytowns.org) serves town governments by providing training programs, research and information services, technical assistance, legal services, computer software programs, insurance programs, and a variety of publications to member towns.

County governments are an important source of information for communities undertaking

watershed planning efforts. County agencies or organizations can provide census information, digital mapping data, water quality data, etc. You can find individual County websites through the **Direct Links to County Websites** (www.nysegov.com/citguide.cfm?context=citguide&content=munibycounty1); or the **New York State Association of Counties** (www.nysac.org/).

County Soil & Water Conservation Districts provide technical assistance on nutrient management, stormwater runoff and other resources issues. While different counties may have a specific focus based on regional issues, resources related to watershed planning may be obtained through their staff. The **NYS Association of Conservation Districts** (www.nyacd.org) can direct you to your local County Soil & Water Conservation District.

County Environmental Management Councils are voluntary advisory boards appointed by their county governments throughout New York. Their mission is to advise county governments and to provide a liaison between the community and the county. The **New York Association of Environmental Management Councils** (www.nysaemc.org) can direct you to your local County Environmental Management Council.

There are several other county organizations that can provide information and watershed related data for your watershed plan. Contact your **County Planning Departments, County Planning Boards, and County Water Quality**

Coordinating Committees for assistance in the creation of your watershed plan. **County Health Departments** (www.health.state.ny.us/nysdoh/lhu/map.htm) can also provide local water quality data and information on health related issues related to water quality.

Regional Resources

Due in part to the geographic diversity of New York State, there are many regional planning and environmental organizations that can help you throughout the development and implementation of your watershed plan.

New York State Association of Regional Councils (NYSARC) (www.nysarc.com) fosters coordination among neighboring communities and provides a regional approach to issues crossing municipal boundaries. A map showing NYSARC Water Resources Management Program coverage by New York State drainage basins can be viewed at (www.cnyrpdb.org/nysarcwater).

If your watershed lies within Appalachia, the **Appalachian Regional Commission** (www.arc.gov) may be able to assist you in your watershed planning effort. This commission is a state-federal partnership that looks for opportunities to create a better quality of life and enhance economic development. The Appalachian Regional Commission can provide guidance on funding sources, preparing grant proposals, strategic planning, and regional data.

The **Adirondack Park Agency** (www.apa.state.ny.us) can provide assistance related to land use management within the boundary of the Park. The Agency can provide local assistance with zoning, reviewing local regulations, and administering Agency approved programs. The Agency also has GIS data related to watershed planning.

Watersheds in the Tug Hill Region of New York can benefit from contacting the **Tug Hill Commission** (www.tughill.org). The Commission provides technical assistance to local governments and organizations related to natural resource management, land use planning, and economic development.

Great Lakes Commission (www.glc.org), a bi-national agency, fosters the conservation and protection of water and natural resources within the Great Lakes Region. Resources include data and monitoring information, management strategies, and land use and soil management information.

The **Hudson River Valley Greenway Communities Council** (www.hudsongreenway.state.ny.us/index.htm) provides community planning grants and technical assistance through the Greenway Communities Grant Program and the Greenway Compact Grant Program. These programs help eligible communities develop and achieve a vision for their future and assist in the development of the Greenway Compact, a regional planning strategy for the Hudson River Valley.

The **Hudson River Estuary Program** (www.dec.ny.gov/lands/4920.html) is a unique regional partnership designed to protect, conserve, restore, and enhance the estuary. The Hudson River Estuary Action Plan sets forth twenty commitments intended to protect and conserve the estuary's natural resources and ecosystem health, clean up pollution and other impairments, and promote public use and enjoyment of the river. Grants are available from the Environmental Protection Fund to enable communities to help implement the Action Plan and protect and enhance the Hudson River Estuary.

The **Hudson River National Estuarine Research Reserve** (www.dec.ny.gov/lands/4915.html) protects four tidal wetland sites on the estuary. Spaced along the river from the brackish Tappan Zee to tidal freshwater shallows north of the City of Hudson, these sites provide ideal settings for education and comparative research. The Reserve is managed in partnership by NYS DEC and the National Oceanic and Atmospheric Administration (<http://nerrs.noaa.gov/HudsonRiver>).

The **New York City Department of Environmental Protection** (www.nyc.gov/html/dep/home.html) can provide water supply information, maps of watersheds and drainage areas, water treatment systems, groundwater data, and reservoir data. The DEP also has a variety of outreach and education programs that address water and the environment. The **Long Island South Shore Estuary**

Reserve (www.estuary.cog.ny.us) can provide technical assistance in the preparation and implementation of local watershed plans. Reserve Office staff also assist in education, outreach, and stewardship programs to enhance public awareness and appreciation of the Reserve's many resources.

The **Long Island Sound Study** (www.longislandsoundstudy.net/index.htm) provides assistance in the implementation of the Comprehensive Conservation and Management Plan and can provide technical data including water quality monitoring data, restoration assistance, and education and outreach.

The **New York/New Jersey Harbor Estuary Program** (www.harborestuary.org), part of the US EPA National Estuary Program, implements the Comprehensive Conservation and Management Plan. The Harbor Estuary Program provides technical assistance, data, and encourages stewardship and outreach activities.

State Resources

Many New York State agencies provide an array of technical and financial assistance that can support your watershed planning process. The Department of State's **Division of Coastal Resources** (www.nyswaterfronts.com) can provide assistance on all aspects of watershed planning to help you make the most of your community's water resources. The Division

can provide technical and financial assistance to help communities integrate watershed planning with efforts to expand public access, reinvigorate urban waterfronts, restore habitats, protect scenic resources, preserve historic resources, manage water uses, improve water quality, protect against flooding and erosion, and strengthen local economies.

The Department of State's **Division of Local Government Services** (www.dos.state.ny.us/lgss/index.htm) can provide training assistance to municipalities related to zoning procedures and other practical legal and technical advice. Local Government Services can also provide technical assistance to watersheds within the New York City drinking water supply watershed.

The **Department of Environmental Conservation** (DEC) (www.dec.ny.gov) can provide assistance with conserving, improving, and protecting natural resources and the environment, and controlling water, land, and air pollution. Of interest to communities are the funds for protecting clean water. A variety of funds are available for municipal wastewater treatment improvement, pollution prevention, and agricultural and non-agricultural nonpoint source abatement and control. Significant support is available to acquire open space that protects water resources, and to acquire public parklands and protect farmland. The Stormwater Phase II Program (www.dec.ny.gov/permits/6045.html) requires permits for stormwater discharges from Municipal Separate

Storm Sewer Systems (MS4s) in urbanized areas and for construction activities disturbing one or more acres.

The **Environmental Facilities Corporation's** (EFC) (www.nysefc.org) mission is to promote environmental quality by providing low-cost capital and expert technical assistance to municipalities, businesses, and State agencies for environmental projects in New York State. Its purpose is to help public and private entities comply with federal and State environmental requirements. EFC's primary activities are the State Revolving Funds (SRF), the Industrial Finance Program (IFP), and Technical Advisory Services (TAS).

If your watershed contains public drinking water supplies, the **Department of Health** (www.health.state.ny.us/nysdoh/water/main.htm) provides information and technical assistance related to financing mechanisms, preventing drinking water contamination, and additional public health related water protection programs including publications outlining the regulatory framework. New York's Final Source Water Assessment Program Plan (November, 1999) and a list of contacts by county can be viewed at www.health.state.ny.us/nysdoh/water/swap.htm.

The **Department of Transportation** (www.nysdot.gov) funds and implements environmental benefit projects that improve water quality, restore wetlands, promote eco-tourism, protect fish and wildlife, and

enhance transportation corridors through its Environmental Initiative.

Agriculture is an important cultural and economic resource throughout New York State. There are several agencies that work to provide technical and financial assistance to New York farms.

The **Department of Agriculture and Markets** (www.agmkt.state.ny.us) administers several funding programs including the New York State Agricultural Nonpoint Source Abatement and Control Program (ANSCAP), the Agricultural and Farmland Protection Implementation Project Program, and the Farmland Viability Program. The **New York State Soil and Water Conservation Committee** (www.agmkt.state.ny.us/SoilWater) develops and implements "an effective soil and water conservation and agricultural nonpoint source water quality program." Technical assistance is provided through the Agricultural Environmental Management Program, including comprehensive nutrient management planning, streamside conservation, and community conservation. The **NYS Conservation Reserve Enhancement Program** (NYS CREP) (www.agmkt.state.ny.us/SoilWater/crep/index.html) aims to reduce pollution in streams by helping agricultural landowners to voluntarily plant trees, shrubs, and grasses on streambanks to trap sediment, pesticides, and fertilizers in runoff.

New York State Quality Communities

Clearinghouse (www.qualitycommunities.org) is an easy-to-use directory or 'portal' to 25 State agencies with brief descriptions of services and links to the appropriate agency website pages. Organized by "Quality Communities Principles," the web site provides guidance on state agency funding programs that can help you with planning, economic development, and outreach.

Federal Resources

The federal government offers a range of programs associated with the conservation and protection of water and natural resources. These programs offer a wealth of information on water quality, habitat inventories, soil information, and much more. Contact these federal agencies for both technical and financial assistance. The online **Catalog of Federal Domestic Assistance** (www.cfda.gov) gives you access to a database of *all* federal programs available to State and local governments, domestic public, quasi-public, private profit and nonprofit organizations and institutions, specialized groups, and individuals. You can search this database to find grant and funding opportunities meeting the requirements for your waterfront project. You can then contact the office that administers the program and find out how to apply. Also available on this site are several aids to guide you in the writing of a proposal to apply for assistance.

The **National Oceanic and Atmospheric Administration** (NOAA) (www.noaa.gov) is the source of a wealth of information relevant to water quality restoration and protection. The nation's coasts are managed by the coastal states and territories through the federal Coastal Zone Management Program (CZMP). The CZMP (<http://coastalmanagement.noaa.gov>) is a federal-state partnership dedicated to comprehensive management of the nation's coastal resources, ensuring their protection for future generations while balancing competing national economic, cultural, and environmental interests. To carry out NOAA's responsibilities under the Coastal Zone Management Act, the Office of Ocean and Coastal Resources Management (OCRM) works directly with coastal states and territories to support the development of Coastal Management Programs and National Estuarine Research Reserves, provide technical and financial assistance to coastal program and reserve operations, and promote coastal stewardship on a variety of critical coastal issues (see Regional Resources for more information of the Hudson River National Estuarine Research Reserve). Such issues include: coastal habitat protection and restoration; coastal hazards; public access to the shore for recreation; sustainable development of coastal communities, including urban waterfronts; and polluted runoff. In 1990, Congress established a new program requiring coastal states such as New York to prepare a Coastal Nonpoint Pollution Control Program to implement a series of management measures (www.epa.gov/owow/nps/MMGI)

The **United States Environmental Protection Agency** (USEPA) (www.epa.gov) protects environmental quality through a variety of air, water, pollution, and toxics and chemicals management programs, primarily through its Office of Wetlands, Oceans and Watersheds (www.epa.gov/owow). USEPA provides information on water quality programs and assistance with planning and managing watersheds, water quality, wetlands (www.epa.gov/water), and groundwater and surface water supplies and wastewater treatment (www.epa.gov/safewater). USEPA also administers the **National Estuary Program** (www.epa.gov/owow/estuaries), which includes three estuaries in New York: New York/New Jersey Harbor Estuary Program, Peconic Estuary Program, and the Long Island Sound Study, which are highlighted in Regional Resources.

The **United States Fish and Wildlife Service** (USFWS) (www.fws.gov) administers most of the nation's fish and wildlife management programs, including terrestrial and freshwater endangered species protection (<http://endangered.fws.gov>) and migratory bird management. USFWS manages public lands and outdoor recreation (www.recreation.gov) as part of the National Wildlife Refuge system (<http://refuges.fws.gov>). USFWS also offers several funding programs (www.fws.gov/grants), including Coastal Wetland Conservation Grants and North American Wetlands Conservation Act (NAWCA) grants. The Cortland New York, field office can provide you with state and regional information (www.fws.gov/northeast/nyfo).

The **U.S. Geological Survey (USGS)** (<http://water.usgs.gov>) can provide you with information on stream flow, water quality, water quantity, maps, and application software. The USGS has real time data, surface water data, and ground water information. USGS also provides historic topographic maps which can be helpful when delineating your watershed. The USGS New York office (<http://ny.water.usgs.gov>), in partnership with collaborating agencies, has conducted assessments of streams in several of New York's physiographic regions to develop regional stream curves, which illustrate the relationship between watershed size, stream form, and discharge. These relationships will be useful in guiding future stream restoration activities. You can also find publications, including site specific investigations and circulars, which are useful in building understanding of watershed processes.

The **U.S. Department of Agriculture** (www.usda.gov/wps/portal/usdahome) can provide assistance with rural development and help communities with natural resource concerns, such as erosion control, watershed protection, and forestry. The Forest Service (www.fs.fed.us) and the Natural Resources Conservation Service (www.nrcs.usda.gov) are two agencies under the Natural Resources and Environment section of the USDA.

Not-For-Profit Resources

There are several nonprofit organizations specializing in water and natural resources, outreach, and education. These organizations can provide information on protecting or restoring natural habitats and river or stream corridors, as well as localized demographic information and historical data.

New York Rivers United (www.newyorkriversunited.org) is a statewide river conservation organization that works with local communities and partners actively involved in watershed restoration.

New York State Wetlands Forum Inc. (www.wetlandsforum.org) is a non-advocacy organization comprised of individuals and groups with diverse backgrounds, interests and viewpoints regarding wetlands and their science, use and management. Its purpose is to: improve communication among people interested in wetlands; call attention to and objectively discuss local, statewide, regional, national, and global wetland issues as they relate to New York State; improve its members' knowledge and understanding of wetlands; and make information about wetlands available to its members and the general public.

The Institute of Ecosystem Studies (www.ecostudies.org/index.html) is dedicated to the creation, dissemination, and application of knowledge about ecological systems. This knowledge is created through scientific research,

disseminated through teaching, writing, and exhibits, and applied through participation in decision-making regarding the ecological management of natural resources and through promotion of a broader awareness about the importance of ecological relationships to human welfare.

Another source of assistance is local land trusts. Community-based land trusts are experts at helping interested landowners find ways to protect their land in the face of ever-growing development pressure. The **Land Trust Alliance** provides a full array of advice on land trusts and how they can help communities (www.lta.org). The **Open Space Institute** protects significant recreational, environmental, agricultural, and historic landscapes in New York State (www.openspaceinstitute.org).

In rural areas, communities can obtain assistance from the **Rural Community Assistance Partnership (RCAP)** (www.rcap.org). This partnership assists communities in meeting their water supply, wastewater management, and solid waste needs. They can also help you with community and regional planning, public health management, and education and outreach.

The **New York Farm Bureau** (www.nyfb.org) is a non-governmental, volunteer organization financed and controlled by families for the purpose of solving economic and public policy issues challenging the agriculture industry.

If your watershed lies within the Chesapeake Bay Watershed, the **Upper Susquehanna Coalition** (www.u-s-c.org) may be able to provide you with technical assistance. The Coalition is a network of county natural resource professionals who develop strategies, partnerships, programs, and projects to protect the headwaters of the Susquehanna River and Chesapeake Bay watersheds.

Lake George Watershed Coalition (www.lakegeorge2000.org) involves state, county, and local governments, along with non-governmental organizations, to conserve and protect Lake George. They provide education and outreach to local citizens and foster partnerships for conducting water quality monitoring and restoration projects.

Other not-for-profit organizations include: **American Farmland Trust** (www.farmland.org); **Association of State Floodplain Managers** (www.floods.org); **Association of State Wetland Managers** (www.aswm.org); **Center for Watershed Protection** (www.cwp.org); **Conservation Foundation** (www.theconservationfoundation.org); **National Audubon Society** (www.audubon.org); **New York Planning Federation** (www.nypf.org); **Sierra Club** (www.sierraclub.org); **Society of Wetland Scientists** (www.sws.org); **The Nature Conservancy** (www.nature.org); **Trust for Public Land** (www.tpl.org); **Wildlife Conservation Society** (www.wcs.org/sw-wcs_in_new_york).

Not-for-profit organizations can also have a regional interest. These organizations often have localized data, outreach programs, and other information that focus on local issues:

Long Island

Hempstead Harbor Protection Committee (www.hempsteadharbor.org); **Manhasset Bay Protection Committee** (www.manhassetbayprotectioncommittee.org); **NY/NJ Baykeeper** (www.nynjbaykeeper.org); **Save the Peconic Bays** (www.savethebay.org); **Save the Sound** (www.savethesound.org).

Great Lakes

Finger Lakes-Lake Ontario Watershed Protection Alliance (FL-LOWPA) (www.flowpa.org); **Great Lakes Research Consortium** (www.esf.edu/glrc); **Lake Ontario Coastal Initiative (LOCI)** (www.ceinfo.org/loci); **Lake Plains Resource Conservation and Development** (www.lakeplainsrcd.org); **Rochester Environment** (<http://rochesterenvironment.com>); **Save Our Sodus** (www.saveoursodus.org).

Hudson River Valley

Catskill Center for Conservation and Development (www.catskillcenter.org); **The Glynwood Center** (www.glynwood.org); **Hudsonia** (www.hudsonia.org); **Scenic Hudson** (www.scenichudson.org).

Educational

Colleges and universities also provide a wealth of knowledge in the areas of water and natural resources, planning, and local law assessment. Colleges and universities can often provide up-to-date research and data collection techniques.

The **State University of New York, College of Environmental Science and Forestry** (www.esf.edu), provides a number of research institutes and centers that focus on water quality, watershed studies, and hydrology. Assistance in watershed assessments and water quality studies may be available through these institutes (www.esf.edu/research/#Anchor-InstitutesCenters-3).

SUNY Delhi and **New York Onsite Wastewater Treatment Training Network (OTN)** along with **New York State Department of Environmental Conservation (NYS DEC)** has developed a series of hands-on training courses for onsite system professionals and water quality managers. Participants can learn the essentials of onsite wastewater treatment system design, system inspection, proper installation and maintenance, and alternative onsite treatment system technologies. Participants can earn in-service hours of educational credit and network with other industry professionals. Additional information can be found at: http://www.delhi.edu/corporateservices/otn_wastewater_programs.asp

The **New York Sea Grant Program** encourages the wise stewardship of marine resources through research, education, outreach and technology transfer, and can provide assistance with research, education, and outreach relevant to coastal issues ranging from fisheries, environmental quality, coastal processes, and development. A cooperative program of SUNY Stony Brook and Cornell University, New York Sea Grant (<http://nyseagrant.org>) has 10 offices throughout the State that work with partners “bringing science to the shore.”

The **Institute for the Application of Geospatial Technology** (www.iagt.org/gov.asp) at **Cayuga Community College** is a nonprofit organization dedicated to accelerating the application of geospatial information technology (GIT) across government, education, and commercial sectors.

Cornell University Cooperative Extension (www.cce.cornell.edu) and the **Community and Rural Development Institute** (www.cardi.cornell.edu) provide assistance to communities on development, the environment, and agricultural issues. **New York State Water Resources Institute** (<http://wri.eas.cornell.edu/>) is another research group at Cornell University where staff and project principals focus on water research and education projects in support of the public, water suppliers, businesses, and governments.

Pace University Land Use Law Center (www.law.pace.edu/landuse) provides assistance on the development of sustainable communities in New York State.

Cooperative Institute for Coastal and Estuarine and Environmental Technology (CICEET) (<http://ciceet.unh.edu>), a partnership of the University of New Hampshire (UNH) and the National Oceanic and Atmospheric Administration (NOAA), facilitates the development and application of environmental technology that monitors, manages, and prevents the contamination and degradation of coastal waters and habitats. CICEET administers research programs that invest in the development and application of innovative coastal technologies.

UNH Center for Stormwater Technology Evaluation and Verification (www.unh.edu/erg/cstev) has completed a first year report based on data from monitoring the effectiveness of stormwater treatment systems in addressing water quality and the volume of runoff. It also offers a series of stormwater treatment unit fact sheets.

Other universities and educational organizations that are involved with natural and water resources include **Colgate University** (www.colgate.edu); **Hobart and William Smith Colleges, Finger Lakes Institute** (<http://fli.hws.edu/resources.asp>); **Paul Smith’s College** (www.paulsmiths.edu); **SUNY Brockport**

Department of Environmental Sciences and Biology (www.brockport.edu/envsci); **SUNY College at Purchase**, Environmental Studies Program (www.purchase.edu/Departments/AcademicPrograms/las/sciences/EnvStudies); **SUNY Plattsburgh**, Environmental Science Program (www.plattsburgh.edu/academics/envsci); **SUNY University at Albany**, Department of Geography and Planning (www.albany.edu/gp/index.html).

