



Essex County

Point & Non-Point Source Water Pollution Management Strategy

LAKE CHAMPLAIN BASIN PROGRAM ORGANIZATIONAL GRANT

ESSEX COUNTY WATER QUALITY COORDINATING COMMITTEE

UPDATED 2021

Table of Contents

1. Mission Statement.....	4
2. Introduction	4
3. Administrative Arrangements.....	5
4. Essex County Water Quality Coordinating Committee	5
5. Water Quality Coordinating Committee Mission Statement.....	5
6. Committee Structure and Objectives	5
7. Implementing the Strategy.....	6
8. Essex County Water Quality Priority Issues.....	6
I. Sedimentation	
a) Background	7
b) Agriculture Practices	7
c) Construction Site Erosion	8
d) Forestry Practices	8
e) Road Maintenance.....	9
f) Streambanks.....	9
g) Urban Runoff/Stormwater	10
II. Phosphorus.....	
a) Background	10
b) Agriculture	11
c) On-site Septic's	12
d) Urban Runoff/Stormwater	12
III. Nuisance and Invasive Species	13
IV. Toxins, Pathogens, and other Containments of Concern.....	15
V. Flooding and Climate Resiliency	16

VI. Groundwater	17
VII. Wastewater.....	19
VIII. Priority Waterbodies List.....	20
IX. Chloride (Rock Salt)	22
Appendix A – Matrix of Partner Agencies & Organizations	24
Appendix B – Essex County’s Priority Water Problems as Identified by DEC’S PWL	26
Appendix C – Essex County Water Quality Funding Needs	28
Appendix D – Prioritized List of Wastewater Treatment Facilities	30
Appendix E – List of Plans that include Essex County	32

MISSION STATEMENT

The Essex County Non-Point Source Pollution Strategy provides guidelines to identify pollution which degrades water quality, aquatic habitat and vital water resources that promote healthy ecosystems for the future. While point source pollution abatement is equally important in the maintenance of water quality, existing State Pollution Discharge Elimination Systems Permits (SPEDES) are administered through NYS Department of Environmental Conservation and regulate discharge of pollutants to the environment. Non-Point Sources of Pollution are land use activities which are not necessarily identified by a specific outfall pipe to a drainage structure such as a ditch, brook, stream, lake or pond. Nonpoint source pollutants include nutrients, toxins, atmospheric deposition, invasive species, erosion, salt and other human or natural impacts which adversely affect both groundwater and surface water quality.

INTRODUCTION

Essex County is the second largest County in New York State and one of the most rural. The County lies entirely within the “Blue Line” of the Adirondack Park and is comprised of the high peaks, foothills, and river valleys of the Adirondack Mountains. The Adirondack Park Agency (APA) holds jurisdiction over development and over hundreds of miles of rivers in the County through the Wild, Scenic & Recreational Rivers Act. Numerous regulations currently exist regarding land use, construction and development that protect our wetlands, ground and surface waters from point and non-point source (NPS) pollution.



The County also contains more Lake Champlain mile length, and Town shoreline acreage, than any other New York County, and its two major sub-watersheds, the Bouquet and Ausable, comprise 28% of New York’s drainage into the Lake Champlain Basin. In 1990, the Lake Champlain Special Designation Act approved federal funds to protect, restore and maintain the lake. Funded programs in watershed land use modeling, nutrient loading and sediment transport, water monitoring in the basin, and public education increase our knowledge base of NPS pollution and add to the management strategies available to Essex County for NPS pollution mitigation.

In addition to the Lake Champlain watershed, there are areas throughout Essex County that drain into the Hudson River Watershed and the St. Lawrence watershed. The areas draining to the Hudson River fall under the coastal waterways rules for management. Several high peaks within the County drain into the St. Lawrence watershed and the majority of this watershed is

owned by the New York State Department of Environmental Conservation (NYSDEC). The only identified water quality issue in the St. Lawrence watershed is pollution from acid rain into the lakes.

Despite all efforts to date to control NPS pollution, over 900 miles of river segments, more than 5,800 acres of inland lakes, and thousands of acres of Lake Champlain directly off the Essex County coastline are listed on the NYS DEC's Priority Waterbody List. The following issues have been identified, in no particular order, as priorities to be addressed in this management strategy: Sedimentation, Phosphorus, Nuisance Species, Toxics, Pathogens & other areas of concern, Flooding and Climate Resiliency, Groundwater, Wastewater and Chloride (Road Salt).

ADMINISTRATIVE ARRANGEMENTS

Through a Memorandum of Understanding in May of 1992, the County's Environmental Management Council agreed to work with the Essex County Soil & Water Conservation District in order to organize and convene a County Water Quality Coordinating Committee (WQCC) capable of directing the NPS pollution management strategy. The SWCD was designated the lead agency on NPS pollution management strategy by the County Board of Supervisors' resolution No. 164 on 4/3/89. The NYS Department of Environmental Conservation prepared a statewide 319 NPS Water Quality Plan that has been accepted by the Environmental Protection Agency. New York has also elected to create "bottom-up" County strategies. Essex County's Pollution Management Strategy assists DEC in their coordination and administration of programs that investigate and control County specific NPS water pollution.

ESSEX COUNTY WATER QUALITY COORDINATING COMMITTEE

In 1992, the Essex County Environmental Management Council established a Water Quality Coordinating Committee to maximize expertise, working efficiency, coordination of effort, and reporting formats to address WQCC pollution in the County. Since that time, Bylaws have been designed and approved, and the Committee's structure has been streamlined for effective coordination, funding, implementation, and evaluation of projects. The Committee's role is that of agency and organizational coordination and communication.

WQCC MISSION STATEMENT

The Essex Water Quality Coordinating Committee was formed to coordinate agency and organizational efforts to identify NPS pollution in Essex County, and to establish a rational, timely, educative, environmentally sound, and affordable program for its control.

COMMITTEE STRUCTURE AND OBJECTIVES

The Committee's Objectives include:

- I. Review long range goals, NPS pollution sites, and best management practices for pollution abatement.
- II. Plan and schedule implementation projects.
- III. Evaluate project effectiveness.
- IV. Establish and work, as needed, with other committees, organizations, State and Federal partners to implement strategy goals.
- V. Coordinate collection and identification of reference materials and persons with particular expertise.
- VI. Conduct all business and financial affairs in accordance with adopted bylaws.
- VII. Assess funding sources, needs, and draft proposals.
- VIII. Provide the SWCD with business meeting minutes and reports on implementation projects.

IMPLEMENTING THE STRATEGY

The Water Quality Coordinating Committee will make every effort to implement the management strategy in a timely fashion through grant applications for private and government funds; utilization of existing agency, local government organizations, and non-profit groups' programs, missions, or mandates; and networking with local committees, media, and schools for the development of educational materials and projects.

ESSEX COUNTY WATER QUALITY PRIORITY ISSUES

Given current knowledge of conditions in Essex County, the Water Quality Coordinating Committee has determined the following issues of priority concern (in no particular order or prioritization):

- 1) Sedimentation
- 2) Phosphorus
- 3) Nuisance and Invasive Species
- 4) Toxins, Pathogens, and other Contaminants of Concern
- 5) Flooding and Climate Resiliency
- 6) Groundwater
- 7) Chloride – Road Salt
- 8) Wastewater
- 9) Priority Waterbodies List

I. SEDIMENTATION

Background

Sedimentation negatively impacts the ecosystem by harming wildlife habitat, limiting recreational activities, allowing easier access for nuisance species and introducing additional phosphorus and other contaminants. Sources of sedimentation include, but are not limited to; stream bank erosion, road ditch cleaning, natural landslides, construction site erosion, road maintenance, agricultural practices and forestry/logging practices.



The DEC PWL notes excessive sedimentation in

855 miles of county streams and 30 acres of lakes within Essex County. DEC attributes this sediment build-up primarily to the run-off from winter road sanding. However, a 1982 DEC and Soil Conservation Society (SCS) bank erosion study of the Boquet River, in anticipation of the salmon fish ladder at the Willsboro dam, noted some 300 erosion sites on stream banks that produced 7,500 tons of sediment annually (or 550 10-yard truck loads). As a point of success, the Willsboro Dam was removed in 2015, and this included the removal of sediment above the dam. Similar sandy soils, bank slopes, and the lack of vegetation exist on other Essex County rivers, increasing the likelihood of severe siltation to fish spawning and invertebrate habitats due to streambank erosion.

Actions/Recommendations

I.1. Conduct a risk assessment to determine whether sedimentation is or could be affecting aquatic, environmental and/or human health and safety.

Lead Agency: SWCD, WQCC

I.2. Encourage the removal of obsolete man-made structures to protect life, safety or habitat (i.e. Dams).

Lead Agency: TU, USFWS, Watershed Organizations, Owner

Agriculture Practices

I.3. Encourage farmers to implement agricultural run-off control programs, through participation in the Soil and Water Conservation District's Agricultural Environmental Management (AEM) program. AEM is a voluntary, incentive-based program that helps farmers make common-sense, cost-effective, and science-based decisions to meet business objectives while protecting and conserving New York State's natural resources.

Lead Agency: SWCD, NRCS, NEIWPC

I.4. Encourage, through workshops and educational materials, soil health field practices.

Lead Agency: SWCD, CCE, NRCS, NEIWPC

I.5. Support implementation of most cost-effective agricultural BMPs to control run-off.

Lead Agency: SWCD, NRCS, CCE

I.6. Encourage the creation and maintenance of riparian buffer strips (greenbelts) as an agricultural practice.

Lead Agency: SWCD, TU, BRASS, ASRA, CCE, NRCS, ALT, TNC, NEIWPC

I.7. Encourage New York State Farmland Protection Grants to require in contracts the creation and maintenance of riparian buffer strips and filter strips that meet NRCS standards.

Lead Agency: WQCC

Construction Site Erosion

I.8. Encourage Towns to adopt best management practices such as those in current "New York State Stormwater Management Design Manual" that serves as the official guide for stormwater management principles, methods and practices. This includes the reference: NY Standards and Specifications for Erosion & Sediment Control" (the Blue Book).

Lead Agency: SWCD, LCLGRP, Watershed Organizations

I.9. Educate Towns and contractors/ builders about appropriate erosion and sediment control BMPs and seek funding to assist with their implementation including DEC and DOS courses.

Lead Agency: SWCD, CCE, LCLGRP

Forestry Practices

I.10. Educate landowners, foresters, and loggers about appropriate forestry BMPs.

Lead Agency: SWCD, CCE, NYS DEC

I.11. Promote the use of a model contract between landowner and forester/logger.

Lead Agency: WQCC, SWCD, CCE

I.12. Support forestry as part of local economic development and work with communities on forest management planning

Lead Agency: ECCR, SWCD, LCLGRP

Road Maintenance

I.13. Encourage Towns to utilize the reseeding and mulching services provided by the SWCD.

Lead Agency: SWCD

I.12. Follow DEC and Essex County's goals to reduce use of road salt and sand on roadways to prevent runoff into waterways

Lead agency: DPW

I.13. Educate Town and County Highway Departments about appropriate road maintenance BMPs including the use of sediment traps along road ditches, at bridges/culverts, and on steep ditches, as well as proper culvert installation methods to prevent barriers to aquatic passage.

Lead Agency: SWCD, CCE

I.14. Support the seeking of funds to implement appropriate road maintenance BMPs.

Lead Agency: SWCD, ECCR, WQCC

Streambanks

I.15. Support existing and future streambank inventories and monitoring to assess the magnitude of sedimentation and sources of sediment loading in the watersheds within Essex County.

Lead Agency: SWCD, Watershed Organizations

I.16. Support Town and watershed self-help projects to conduct streambank stabilization projects through technical assistance and seeking of funding.

Lead Agency: WQCC

I.17. Educate riparian landowners and Towns about the most cost-effective BMPs (i.e. sediment traps, lunkers, willow posts and tree plantings) and encourage the public (sports clubs, youth groups, water associations, schools, etc.) to take part in volunteer bank stabilization projects and stream clean-up campaigns.

Lead Agency: WQCC

I.18. Encourage citizen involvement in and the development of lake, river and watershed associations to support long term programming.

Lead Agency: WQCC

I.19. Support the collection and analysis of sediment samples at the mouths of lakes and stream tributaries for pollutants.

Lead Agency: DEC, LCBP, Watershed Organizations

I.20. Support the purchase or easements of riparian zones for streambank stabilization.

Lead Agency: WQCC, Towns/County

Urban Runoff/Stormwater

I.21. Educate the appropriate planning officials (i.e. planning boards, zoning boards, code officials) to review the design and placement of stormwater BMPs.

Lead Agency: ECCR, LCLGRP

I.22. Support the monitoring and analysis of outfalls, storm sewers and other stormwater structures during periods of high precipitation.

Lead Agency: WQCC

I.23. Investigate stormwater BMPs, particularly those involving retention, screening and/or treatment, and advise Town officials of the most cost-effective BMPs.

Lead Agency: Watershed Organizations

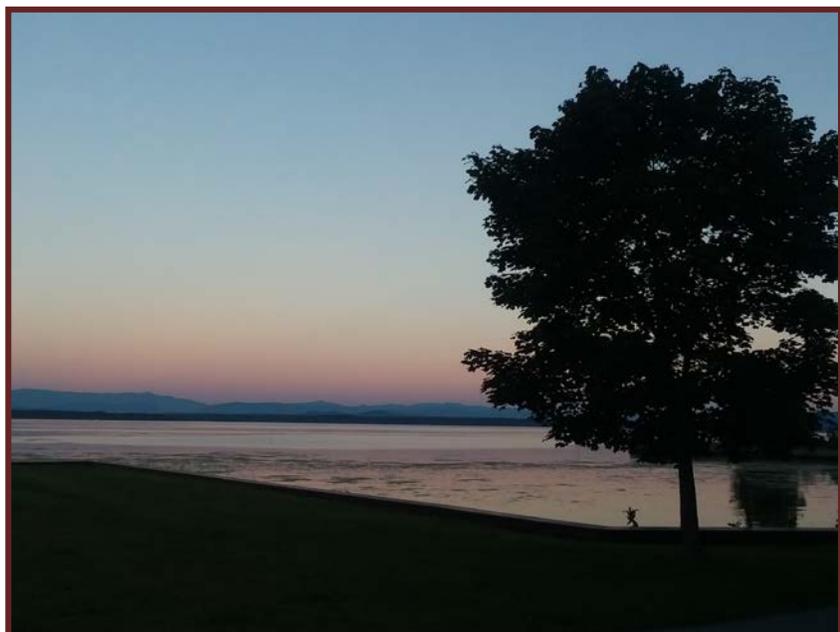
I.24. Identify combined storm and sewer systems, and work toward their separation.

Lead Agency: ECCR

II. PHOSPHORUS

Background

Phosphorus is one of the limiting nutrient to an



ecosystem's growth. With the increase of phosphorus into waterbodies ecosystems experience an accelerated eutrophication. This excessive growth of vegetation harms wildlife habitat, limits recreational activities, and allows easier access for nuisance species. Sources of phosphorus include point sources from wastewater treatment and industrial discharges. Nonpoint sources include lawn fertilizers, agricultural wastes, pet wastes, erosion from construction sites, erosion from stream banks and failing septic systems.

Reducing phosphorus pollution is cited in "Opportunities for Action" as one of the goals set by the Lake Champlain Steering Committee. The Lake Champlain Basin Program (LCBP) is continuously looking at ways to control cumulative, basin-wide phosphorus pollution. A 1980 Essex County Wastewater Study indicated 50% of the individual on-site systems in the County were not properly functioning due to inappropriate soils, system size, or lot size. These systems were generally in small communities and villages. Since most Essex County communities are situated on Adirondack River valleys or along Lake Champlain, pollution to surface waters is highly probable. Water monitoring analyses over the last five years by the Boquet River Association (BRASS) has also demonstrated consistently high fecal coliform rates in particular communities of that watershed, and in the AuSable River and Hoisington Brook.

A solution to failing on-site systems is installing upgraded wastewater and stormwater treatment facilities as appropriate. Attached in Appendix D is a prioritized list of wastewater treatment facility needs within Essex County.

Actions/Recommendations

Agriculture

II.1. Support research on reducing and mitigating phosphorus run-off from agricultural practices, including the impact of tile versus surface drainage for the movement of phosphorus and developing mitigation practices for tile outfalls.

Lead Agency: CCE

II.2. Support all farmers currently receiving federal money to implement BMPs.

Lead Agency: NRCS

II.3. Support the LCBP's study on the agricultural impact on Lake Champlain.

Lead Agency: WQCC

II.4. Support funding for farmer match on appropriate demonstration sites.

Lead Agency: CCE, SWCD, River Associations

II.5. Advocate for a better phosphorus removal coefficient number.

Lead Agency: WQCC

II.6. Educate farmers on approved BMPs and programs to help reduce phosphorus run off from agricultural activities.

Lead Agency: SWCD, CCE

On-Site Septic

II.7. Support the need for a current analysis of on-site system adequacy within the County.

Lead Agency: WQCC

II.8. Support the sampling of rivers and lakes to assist in determinations of bacteria and nutrient loadings from on-site systems.

Lead Agency: ASRA, BRASS, AWI, Watershed Organizations

II.9. Support training programs established for Town code officials and septic professionals. Consider certification program to promote “trained” installers.

Lead Agency: ECCR, LCLGRP, NYS DOH

II.10. Work with Towns, regulatory agencies, and the public to design and implement environmentally sound and cost-effective solutions to remove phosphorus (through artificial wetlands, flocculation, sand beds etc...). Arrange for appropriate short and long-term monitoring of sites to assure against non-point source pollution to ground and/or surface waters.

Lead Agency: ECCR, Watershed Organizations

II.11. Provide technical and financial assistance to remediate failing onsite septic systems.

Lead Agency: SWCD, ECCR, DOH

II.12. Provide public education materials regarding failing on-site systems, steps toward corrective measures, and water usage reduction through conservation measures.

Lead Agency: SWCD, CCE

II.13. Investigate the implementation of ordinances requiring on-site septic system information to be registered with property deeds upon transfer of property.

Lead Agency: DOH, ECCR

Urban Runoff/Stormwater

II.14. Educate the public and local government about the harmful effects of stormwater and what appropriate BMPs they can adopt and employ, including environmental gardening practices.

Lead Agency: CCE, LCLGRP, ECCR, SWCD

II.15. Promote better land use, development, and the incorporation of smart growth into future development plans.

Lead Agency: ECCR, APA, Essex County Towns

III. NUISANCE AND INVASIVE SPECIES

Background

Nuisance and Invasive Species include aquatic and terrestrial species that are non-native to our region and pose threats to water quality. They damage ecosystem habitat by displacing native species and most do not have natural predators to control their spread and the adverse impacts they create. Water quality impacts from invasive or harmful aquatic and terrestrial organisms have increased in Essex County as new infestations thrive in the greater Adirondack region. In addition, it is worth noting that Blue Green Algae is a native organism to nearly all watersheds, but due to excess nutrients can create harmful, and in some cases toxic, conditions in the form of cyanobacteria. Blue green algae outbreaks have increased due, in part, to increasing nutrient loads as well as ancillary changes in water chemistry from salt applications exacerbated by climate change, as in the case of Mirror Lake in the Village of Lake Placid. Harmful toxic cyanobacteria blooms have been reported in numerous lakes and ponds where they were previously absent (e.g., Mirror Lake, Lake Champlain –Essex, Willsboro, Westport, Moriah).

Non-native aquatic organisms recently identified in the Lake Champlain Basin include the Spiny Water flea, Fishhook Water flea and Asian Clam. Terrestrial invasive species recently identified in adjacent Warren County include the Hemlock Woolly Adelgid and the Emerald Ash Borer. Ecosystem impacts from these forest invasives will adversely affect water quality through land use changes caused by increased forest canopy destruction. This could reduce water retention in upland areas (leading to increased runoff), increase water temperatures, and contribute to disruptive zooplankton population dynamics in water environments.

Addressing the impact of Invasive species on the water quality of Essex County and the natural systems which form the basis of economic development for the region will require continual prevention and intervention policies and actions from numerous organizations, state and federal agencies, as well as local communities. Strategic planning, an educated and engaged public, and implementation of coordinated policies are necessary goals to manage the adverse impacts.

Lake Champlain is currently home to 51 aquatic invasive species which threaten other county wide water resources. Certain sub watersheds within the county also have populations of invasive species including Eurasian Watermilfoil (EW) which have adversely affected recreation, aesthetic resources, and local economies. Many Lake Associations have initiated efforts to reduce the spread of EW through hand pulling, mechanical harvesting, and blankets covering EW beds to inhibit expansion. In addition, boat cleaning and monitoring stations have been constructed to prevent further importation aquatic invasive species transported by boats and trailers. Educational efforts by NYS DEC, the LCBP, the Adirondack Park Invasive Plant Program, Lake George Association, and others to reduce the spread of aquatic invasive species are ongoing.

Actions/Recommendations

III.1. Support the survey and monitoring of nuisance and invasive species (IS) in Essex County and coordinate with existing partners on BMPs.

Lead Agency: WQCC, APIPP, LCBP

III.2. Support the implementation of the Adirondack Park Invasive Species Management Plan through public educational programming including the distribution of informational material, implementation of Lake Stewards at access sites, and participation in rapid response teams as warranted.

Lead Agency: WQCC, APIPP, SWCD, Watershed Organizations

III.3. Investigate the most environmentally appropriate and cost effective BMPs as needed.

Lead Agency: DEC, SWCD, NEIWPCC, Watershed Organizations

III.4. Encourage lake associations to join in the NYS Federation of Lake Associations (NYSFOLA) and participate in the Citizens Statewide Lake Assessment Program (CSLAP).

Lead Agency: WQCC

III.5. Encourage the streamlining of IS control permits and implementation of a rapid response plan to assist communities with spread prevention.

Lead Agency: WQCC

III.6. Support educational outreach to targeted audiences at public and private contact sites such as Rest Areas, Tackle Shops, public fishing access locations, boat launches, marinas, Town Halls and commercial watercraft sale/rental sites.

Lead Agency: WQCC, APIPP, Watershed Organization, SWCD

III.7. Support collaborative efforts to control IS spread through installation of equipment wash stations (wading gear), boat inspections/wash stations and expansion of fishing line recycling infrastructure (tubes).

Lead Agency: WQCC, APIPP, Watershed Organization, SWCD

III.8. Support the implementation of physical barriers where appropriate, such as on the Lake Champlain Canal to reduce migration of IS into the waters of Essex County.

Lead Agency: WQCC, LCLGRP, County and Towns, Watershed Organizations

III.9. Identify stormwater transport of nutrients, chemicals and pathogens that promote IS spread.

Lead Agency: WQCC, APIPP, Watershed Organizations

III.10. Support implementation of hydro-seeding of disturbed soils as soon as practical to reduce expansion of terrestrial IS (Buckthorn, Barberry, Japanese Knotweed, Asian Honeysuckle etc).

Lead Agency: SWCD, County and Towns

III.11. Support the education of State DOT, Town and County DPW's on appropriate road maintenance BMP's that eliminate transport and expansion of IS and consider designated shared sites for storage of excavated earth material where IS can be quarantined before use at other locations.

Lead Agency: CCE, SWCD, APIPP

III.12. Support the implementation of the NYS DEC Harmful Algal Bloom Action Plan for Lake Champlain.

Lead Agency: WQCC, SWCD

IV. TOXINS, PATHOGENS, AND OTHER CONTAMINANTS OF CONCERN

Background

Toxic substances are elements, chemicals, or chemical compounds that can poison plants, animals and humans. Although toxic levels may be low compared to more industrialized area, there is still cause for concern in Essex County. The increasing use and release of chemicals in our daily lives threatens the high quality of the waterbodies within the County. Toxins and pathogens of concern include dioxins/PCBs, hormones, pharmaceutical and personal care products, new generation toxics, chlorides/salt, pesticides, mercury, acid rain, urban runoff/stormwater, blue-green algae, cyanobacteria, cryptosporidium, Giardia, E. coli and other diseases. In addition, transportation of oil by soil threatens Lake Champlain where accidental spills may impact public water supplies and roadway corridor may spill petroleum or other toxins near our water resources.

Actions/Recommendations

IV.1. Encourage monitoring and analysis of the effects of toxics on water quality and human health (i.e. dioxins/PCBs, hormones, pharmaceutical and personal care products, new generation toxics etc...)

Lead Agency: WQCC

IV.2. Support the funding and implementation of environmentally sound salt storage buildings for Town DPWs.

Lead Agency: WQCC

IV.3. Support Emergency Response planning and implementation of critical public infrastructure

Lead Agency: DEC, Essex County Emergency Services, NYSDOT, US Coast Guard,

IV.4. Support Town self-help projects such as residential and commercial hazardous waste clean-up days (tires, paint, etc.).

Lead Agency: WQCC, DEC

IV.5. Educate the public that urban runoff/stormwater is a conveyance system for toxics and pathogens (i.e. pet waste, fertilizers, pesticides) to get into local waterbodies, and on the proper use of pesticides and fertilizers.

Lead Agency: LCLGRP, SWCD, CCE



V. FLOODING AND CLIMATE RESILIENCY

Background

Flooding poses a significant problem for Essex County. With the resulting structural damage that can occur and the transport of pollutants, it is a priority issue that needs to be addressed. High intensity storms are increasing in frequency, and winter rain events can increase the chance of flooding. Culverts and drainages that have not been overrun before have experienced washouts in the last 10 years. Ensuring that drainages, culverts, waterways, and infrastructure can handle these increasing surges of water is important in order to reduce erosion, property and infrastructure damage and loss, danger to human life, and more.

Actions/Recommendations

V.1. Educate Towns about the adoption of proper planning/development to prevent flooding.

Lead Agency: ECCR

V.2. Support the installation of stormwater BMPs to handle excessive runoff/flooding.

Lead Agency: WQCC, SWCD

V.3. Support expansion of monitoring programs for all sub watersheds by USGS

Lead Agency: WQCC, LCBP

V.4. Support the purchase, easement, or zoning of riparian floodplains to set aside from development.

Lead Agency: WQCC

V.4. Support the implementation of flood mitigation plans for the Boquet and Au Sable Rivers as well as the identification and development of flood management plans for other Essex County waterbodies.

Lead Agency: WQCC, SWCD, Town Highway

V.5. Review the impact of bridges on flooding and ice jams, and develop recommendations for widening or raising bridges as they are maintained.

Lead Agency: SWCD, ECCR

V.6. Work with the County and Towns to improve infrastructure along roadways and at road-stream crossings to reduce washouts and improve resiliency.

Lead Agency: SWCD, Watershed Organizations, TU, TNC, USFWS

V.7. Support implementation of the Essex County Hazard Mitigation Plan.

Lead Agency: ECCR, County and Towns

V.8. Encourage the adaption of climate resilient practices in agriculture.

Lead Agency: SWCD, CCE

VI. GROUNDWATER

Background

The NYS DEC has conducted groundwater/wellhead protection programs in the state. Some programs are prevention oriented in order to identify sources or activities which could present significant threats to local drinking water supplies. If there are threats (i.e., new industry,

commercial development, or intensive agriculture) to any of the 17 municipal water systems in Essex County, DEC's study designs provide a suitable framework for collecting data to support local management decisions and policy action.

Initial reviews of engineering studies conducted for town landfill closures indicate no significant degradation to surface or ground water. Marginal and low-level contaminant impacts were encountered and, to the extent resources permit, a more thorough review of these studies may be warranted. Currently all landfills within the County are closed.

Based on the information above, this section on ground water is focused on preventative measures. By taking pre-emptive steps to preserve the quality of ground water in the County we are better prepared to handle water quality issues in the future and be pro-active vs. reactive. Aside from Road Salt addressed in Section VII, some of the potential groundwater pollutant sources of concern include but are not limited to: failing onsite septic systems, landfills, nitrogen, spills (gas stations, highway), pesticides and other chemicals/toxics.

Actions/Recommendations

VI. 1. Educate landowners and community leaders about wellhead protection.

Lead Agency: CCE

VI. 2. Support the State and local goal to reduce road salt use.

Lead Agency: WQCC

VI. 3. Encourage and support funding to Towns to provide adequate salt storage facilities for their salt and salt/sand mixtures.

Lead Agency: WQCC

VI. 4. Support landowner surveys of salt in groundwater.

Lead Agency: WQCC, DEC, Essex County, DOH

VI. 5. Support funding for the implementation of wellhead protection programs and projects.

Lead Agency: WQCC

VI. 6. Support the remediation of contaminated groundwater.

Lead Agency: WQCC, DEC, DOH

VI. 7. Support and encourage funding for municipal groundwater systems and correlating regulations that promote groundwater systems.

Lead Agency: DEC, DOH, WQCC



VII. WASTEWATER

Background

Essex County is located wholly within the Adirondack Park and twelve (12) of its eighteen (18) Towns contain Wastewater Treatment Facilities. Wastewater collection and treatment systems are responsible for collection and treatment of residential, commercial and/or industrial wastewater. All of the practices and procedures used to collect and treat wastewater have the potential to pollute, if not operated and maintained properly. State and federal environmental regulations control wastewater discharge in an effort to protect Water Quality.

The best way to protect water quality is to minimize the contaminants. In order to do this, we must reduce the amount of harmful waste we generate. Reducing, reusing, or recycling waste helps minimize the need to treat and dispose of it.

New York State created State Pollution Discharge Elimination System (SPDES) program in response to the United States Environmental Protection Agency for the control of surface wastewater and storm water discharge in accordance with the Clean Water Act. This program permits limits and conditions for discharge of treated wastewater.

In addition, pharmaceuticals, personal care products, micro plastics and other emerging contaminants present threats to ecosystem services by discharging untreated material into the environment.

Actions/Recommendations

VIII. 1. Maintain Sewer Mains, and necessary upgrades to water treatment facilities. Apply for funding for necessary repairs, replacements and upgrades.

Lead Agency: Municipalities, ECCR

VII. 2. Explore, evaluate, and implement alternatives to existing wastewater treatment process, such as UV disinfection in order to avoid chemical treatment that can add toxicity to the treated discharge.

Lead Agency: Municipalities

VII.3. Explore and implement wastewater reuse options (*irrigation of crops and pasture land, commercial uses such as vehicle washing facilities, mixing water for fertilizers, dust control and concrete production projects, fire protection*)



Lead Agency: Municipalities, DEC

VII.4. Encourage and Educate water conservation measures in the community (*leak repair, installation of water efficient showerheads and faucets, wash only full loads in dishwasher and washing machine, shut off water while brushing teeth, replace toilets with low flow models, when replacing appliances encourage purchases for high efficiency models.*)

Lead Agency: WQCC, SWCD, Watershed Organizations

VII.5. Work with and communicate with regulatory agencies frequently to inform and pursue funding mechanisms for new State and Federal requirements

Lead agency: DEC, DOH, Essex County, Municipalities, WQCC,

VII.6. Communicate the importance and provide resources to towns and private entities for promotion and adoption of asset management planning for wastewater and water system infrastructure

Lead Agency: DEC, Essex County, Watershed Organizations, SWCD

VII.7. Promote and advertise training opportunities for Operators

Lead Agency: Essex County, ECCR

VII.8. Promote free drug collection programs to reduce emerging containments into water bodies.

Lead Agency: Essex County Sheriff's Department

VIII. PRIORITY WATERBODIES LIST

Background

The NYSDEC collects monitoring data on rivers, streams, lakes, estuaries, and coastal waters throughout New York State through the RIBS (Rotating Integrated Basin Studies) monitoring program. RIBS monitoring is scheduled to be performed on a 5-year cycle throughout the state's 17 major drainage basin, however most of the data recorded in Essex County through the RIBS

program is dated 2009. The data collected through this program is compiled in the Waterbody Inventory/Priority Waterbody List (WI/PWL) which provides a summary of general water quality conditions, tracks the degree to which a waterbody supports its designated uses, and monitors progress in water quality. Each waterbody is assigned an impact level of severity which are based on that waterbody's ability to support its designated best uses. The levels of waterbody impairment are precluded, impaired, stressed and threatened, and are described in the table below:

DESCRIPTIONS OF LEVELS OF WATERBODY IMPAIRMENTS AS ASSIGNED BY NYSDEC

PRECLUDED	Frequent/persistent water quality, or quantity, conditions and/or associated habitat degradation prevents all aspects of a specific waterbody use.
IMPAIRED	Occasional water quality, or quantity, conditions and/or habitat characteristics periodically prevent specific uses of the waterbody, or; Waterbody uses are not precluded, but some aspects of the use are limited or restricted, or; Waterbody uses are not precluded, but frequent/persistent water quality, or quantity, conditions and/or associated habitat degradation discourage the use of the waterbody, or; Support of the waterbody use requires additional/advanced measures or treatment
STRESSED	Waterbody uses are not significantly limited or restricted (i.e. uses are supported and water quality standards are met) but occasional water quality, or quantity, conditions and/or associated habitat degradation periodically discouraged specific uses of the waterbody.
THREATENED	Water quality supports, waterbody uses, water quality standards are met, and ecosystem exhibits no obvious signs or significant stress (i.e. uses are fully supported) however: Changing land use patterns may result in restricted use or ecosystem disruption, or; Worsening trends or sub-optimum water quality suggest future impacts to uses, or; Support of a specific/distinctive use (e.g., Class AA waters) make the water more susceptible to water quality threats.

Water quality monitoring identifies over 50,000 acres of precluded or impaired waterbodies in Essex County. The most common sources of pollution in these water bodies are Atmospheric Deposition, Contaminated Sediment and Silt/Sedimentation. Additionally, there are 17 waterbodies that are categorized as stressed or threatened. Streambank erosion, silt/sediment, and deicing materials are among the most common sources of pollutants among the waterbodies that are stressed or threatened. It is anticipated that many of the water quality issues identified in 2009 have changed and in order for Essex County to effectively address its water quality needs,

it is important that the WI/PWL be updated to reflect current conditions. See Appendix B for lists of Essex County waterbodies that have been assessed as impaired, stressed, and threatened.

Actions/Recommendations

VII.1. Encourage updates to the Priority Waterbody List

Lead Agency: SWCD, LCLGRP

VIII.2. Investigate, through historic records and public knowledge, fuel spills, tank leaks, well closings, and old industrial sites and dumps. Collect and analyze sediment and/or groundwater at these locations.

Lead Agency: DEC, DOH

VIII.3. Assist Town and County DPWs with the proper spill response education and the development and implementation of a spill response plan.

Lead Agency: DEC, DOH

IX. Chloride (Road Salt)

In the Adirondack Park road crews use about 190,000 tons of road salt each winter. New York State DOT uses about 2.5 times more salt per lane-mile than county and municipal road crews. The chloride in road salt infiltrates into our



lakes, streams, and groundwater. There are different types of chloride base deicers including, sodium chloride, magnesium chloride, and calcium chloride.

The chloride element of road salt-based deicers is not biodegradable and does not absorb significantly to mineral/soil surface, and can impact the soil, groundwater, and surface water. Chloride can reduce soil absorbency and fertility as well as increased soil alkalinity, density, inability to retain water, directly affecting plant growth and erosion control. Roadside vegetation can be negatively impacted by absorption of chloride through the roots, accumulating from branches and foliage. It can lead to drought, stunted growth, brown and falling leaves, dying limbs, and premature plant deaths.

Accomplishments

The New York State Legislature adopted the Randy Preston Road Salt Reduction Act signed into law by Governor Cuomo in December of 2020. Promotes the reduction of salt pollution in

the Adirondacks. Their soils and shallow water tables contribute to road salt pollution and impact water resources for humans, animal and plants.

Actions/Recommendations

IX.1. Educate Town and County DPW employees

Promote education for those who are in charge of setting the road/salt budget for winter maintenance. Promote the use for best available technology and equipment that will make deicing more efficient.

Lead Agency: DEC, DOT

IX.2. Consider Pre-Wetting

When pre-wetting or brining the roads prior to the snow fall the deicer adhere to the road surface reducing the amount of salt needed to melt the snow. Road crews can apply using a brine solution spray delivery system on the roads to prevent the snow from sticking and therefore making it easier to plow.

Lead Agency: Towns, County

IX.3. Alternative uses for deicing

Promote use of alternatives for deicing, such as decreasing speed limits, using other types of equipment as well as the chemical used as the deicer component.

Lead Agency: Towns, County, NYS DOT

IX.4. Monitoring Testing

Continuing to encourage monitoring of wells and tests of private and public wells for chloride to assess impact of road salt on groundwater and drinking water supplies.

Lead Agency: DOH, Essex County Municipalities

IX.5. Relocation of Contaminated Wells and Other Source Protection

Groundwater contamination from sodium chloride is prevalent in NYS and Essex County as it infiltrates into groundwater supplies. Private well owners are responsible for testing their wells if they are vulnerable. Municipal wells although tested frequently should ensure source protection of their aquifer. Unfortunately, heavy metals are also found in groundwater due to de-iced roads from runoff and infiltration. Additional water treatment may be required. Due to the bedrock geology, there may be areas in a landscape that are not impacted from road salt.

Lead Agency: Towns DEC, DOH

APPENDIX A

Matrix of Partner Agencies & Organizations

Agency	Research	BMPs	Planning	Regulatory	Monitoring	Education	Funding
ANC/ALT Adirondack Nature Conservancy and Adirondack Land Trust	x	x	x		X	X	x
APA Adirondack Park Agency		x	x	x		x	x
APIPP Adirondack Park Invasive Plan Program	x	x	x		x	x	
ACOE Army Corporation of Engineers	x			x	x		x
ASRA AuSable River Association	x		x		x	x	x
BRASS Boquet River Association		x	x		x	x	
CCE Cornell Cooperative Extension Association of Essex County	x	x	x			x	x
BOS Essex County Board of Supervisors			x	x		x	x
CWICNY Champlain Watershed Improvement Coalition of New York, Inc		x	x			x	x
DEC Department of Environmental Conservation	x	x	x	x	x	x	x
DOH Department of Health	x	x	x	x	x	x	

Agency	Research	BMPs	Planning	Regulatory	Monitoring	Education	Funding
ECCR Essex County Community Resources	x		x			x	x
FSA Farm Services Agency		x	x			x	x
LGA Lake George Association	x	x	x		x	x	x
LCBP Lake Champlain Basin Program	x	x	x		x	x	x
LCLGRP Lake Champlain – Lake George Regional Planning Board		x	x			x	x
NEIWPC New England Interstate Water Pollution Control Commission		x	x				x
NRCS Natural Resources Conservation Service	x	x	x			x	x
SWCD Essex County Soil and Water Conservation District	x	x	x		x	x	x
TOWN BD Councilmen Town and Village			x	x		x	x
TU New York State Council of Trout Unlimited	x	x	x		x	x	x
UH Upper Hudson Watershed Coalition		x	x			x	x
USFWS United States Fish and Wildlife Service		x		x		x	x

APPENDIX B

Essex County's Priority Water Problems as Identified by DEC's PWL

Number of Water Body Segments by Primary Pollutant Source

Primary Source of Pollution	Precluded & Impaired	Stressed & Threatened
Acid Rain	20	
Agriculture	1	2
Contaminated Sediment	2	
Deicing		10
Habitat Modification	2	3
Landfill		1
Municipal Wastewater		1
On-Site Wastewater		2
Streambank Erosion		4
Urban Runoff		1

APPENDIX B

Essex County's Priority Water Problems as Identified by DEC's PWL

Affected Area by Watershed

Watershed	Streams/Rivers (Miles)	Lakes (Acres)
Ausable	466	314 (Long Pond) 378 (Augur Lake)
Boquet	323	720 (Lincoln Pond)
Hudson	5	4128 (Schroon Lake) 38 (Lake Colden) 30 (Minerva Lake) 6 (Marion Pond) 64 (Stoney Pond)
Lake Champlain	113	103 (Bartlett, Mud, North Ponds) 15 (Willsboro Bay) Whole Lake Fishing Advisory
Lake George		28170 (Lake George)
Saranac	15	20 (Lake Flower)
St. Lawrence		(17 Ponds) – Acid Rain

APPENDIX C

Essex County Water Quality Funding Needs

		Total Project Cost
Sediment Control Program	Decrease sediment entering the waters of Essex County by providing technical and financial assistance for sediment trap installation, streambank stabilization and critical area treatment. Utilize rock rip-rap, biotechnical methods and natural channel design to remediate a major source of sediment in Essex County streams.	\$150,000.00 Annually
Wastewater Treatment Facilities	Assist communities with the installation of wastewater treatment facilities and the upgrade of existing ones. See Appendix D for a list of prioritized projects in need of funding within Essex County.	See Appendix D
Onsite Septic Systems Cost Share Program	Assist communities with identifying, repairing and maintaining onsite septic systems through a cost share program.	\$1,000,000.00 annually
Invasive Species Rapid Response Program	Utilizing existing GPS and GIS technology, funds would be used to assist ongoing work to inventory and assess populations of aquatic and terrestrial invasive plant species. This program would also include the development of a rapid response to help control invasive species. Educational programs would also be used to help prevent the spread of invasive species as well.	\$75,000.00 annually
Digital Soil Resource Coverage for the County	The digitized soils information for Essex County is published (2013) under CUGIR data or see the WEB SOIL SURVEY USDA NRCS (U.S. Department of Agriculture, Natural Resources Conservation Service)	\$100,000.00 Complete

Flood Mitigation Study & Implementation	Previous flood reconnaissance has been done by the Army Corps of Engineers, but now the County needs a Flood mitigation study to finish the report. The report would then recommend items to be implemented to protect the local communities and water quality from the impacts of floods.	\$2,500,000.00
Document Collection & Analysis	Various water quality documents exist throughout the County, but there is no one source for all of them. This project would fund the collection and analysis of any and all existing water quality data and assess the gaps.	\$30,000.00
County Wide GIS Database	Collect and inventory existing digital water quality data and obtain new data and Lidar Imagery as needed. All collected data would assist the County will assessment of environmental impacts and plan for environmental management and protection.	\$700,000.00
Groundwater Protection Programs	Assist local communities and the NYS Department of Health (DOH) to develop groundwater protection programs, including wellhead protection. This would include the formulation of a planning document and the implementation of its recommendations.	\$100,000.00
Emergency Services	Spill containments and cleanup infrastructure to reduce adverse degradation to water resources. Allocate funding annually for training and restoring inventory.	\$50,000.00
Forestry Erosion Control Program	To leave established vegetation undisturbed, when possible, as it is the least expensive method to reduce erosion.	\$150,000.00 Annually
Bridge & Culvert Replacement Program	Infrastructure to rehabilitate and replace bridges and culverts	\$10,000,000.00

APPENDIX D

Prioritized List of Wastewater Treatment Facilities

Essex County Town	Description	Project Cost	Status
Elizabethtown	New Wastewater treatment plant and collection system	\$8,500,000.00	Paused
Essex	Municipal Wastewater treatment and collection system	\$11,191,823.00	Completed
Moriah	Sewer District Extension	\$5,000,000.00	Ongoing
Newcomb	Wastewater treatment plant upgrades	\$4,000,000.00	Completed
North Elba	Municipal wastewater treatment plant and collection system	\$8,550,767.00	Completed
Village of Port Henry/Town of Moriah	New wastewater treatment plant and collection system	\$8,550,767.00	Completed
Town of Schroon	New wastewater treatment plant and collection system	\$7,335,000.00	Completed
Town of Schroon	Sewer District extension	\$3,000,000.00	Ongoing
Town of St. Armand	Wastewater treatment plant upgrades	\$12,000,000.00	Completed

Town of Ticonderoga	Sewer District Extension	\$7,350,000.00	Completed
Town of Ticonderoga	Wastewater treatment plant upgrades	\$7,500,000.00	Completed
Town of Ticonderoga	Stormwater Separation (CSO)	\$8,000,000.00	Ongoing
Town of Ticonderoga	Hague Road – Municipal wastewater treatment and collection system	\$1,000,000.00	Completed
Town of Willsboro	(Buena Vista) Municipal wastewater treatment and collection system	\$15,000,000.00	Ongoing
Town of Willsboro	Municipal wastewater treatment and collection system	\$1,900,000.00	Completed
Town of Willsboro	Water Treatment Back Wash	\$1,200,000.00	Completed

APPENDIX E

List of Plans that address Water Quality in Essex County

Essex County Hazard Mitigation Plan (June 2019)

Pre-Disaster Multi-Jurisdictional Hazard Mitigation Plan (September 2011)

Lake Champlain Non-Point Source Pollution Sub Watershed Assessment and Management Plan – (March 2018)

Essex County Agricultural Environmental Management Strategic Plan – (2021-2025)

Boquet River Association Strategic Plan – 2014 (Draft)

NYS Community Rising Reconstruction Plan for Keene & Jay (March 2014)

Schroon Lake Watershed Management Plan & Addendum (2009/2019)

Ausable River Watershed Management Plan (June 2016)

Assessment of the Economic Value of Clean Water in Lake George

Upper Hudson River Watershed Revitalization Plan (March 2020)

Lake George Winter Road Maintenance Best Practices Initiative for Water Quality Protection (March 2014)

Lake George Watershed Data Atlas (October 2016)

Lake Champlain Watershed Water Quality Management Planning Roadside Erosion Assessment and Inventory (2012)

Lake Champlain Harmful Algal Bloom Action Plan. 2018. NYSDEC.

Upper Hudson River Watershed Roadside Erosion Assessment 2020

Lake Champlain Opportunities for Action 2017



This project has been funded by an agreement awarded by the Great Lakes Fishery Commission (GLFC) to NEIWPCC in partnership with the Lake Champlain Basin Program (LCBP). The contents of this document do not necessarily reflect the views and policies of NEIWPCC, LCBP, or GLFC, nor does NEIWPCC, LCBP, or GLFC endorse trade names or recommend the use of commercial products mentioned in this document.