NEW YORK STATE | Department of Environmental Conservation

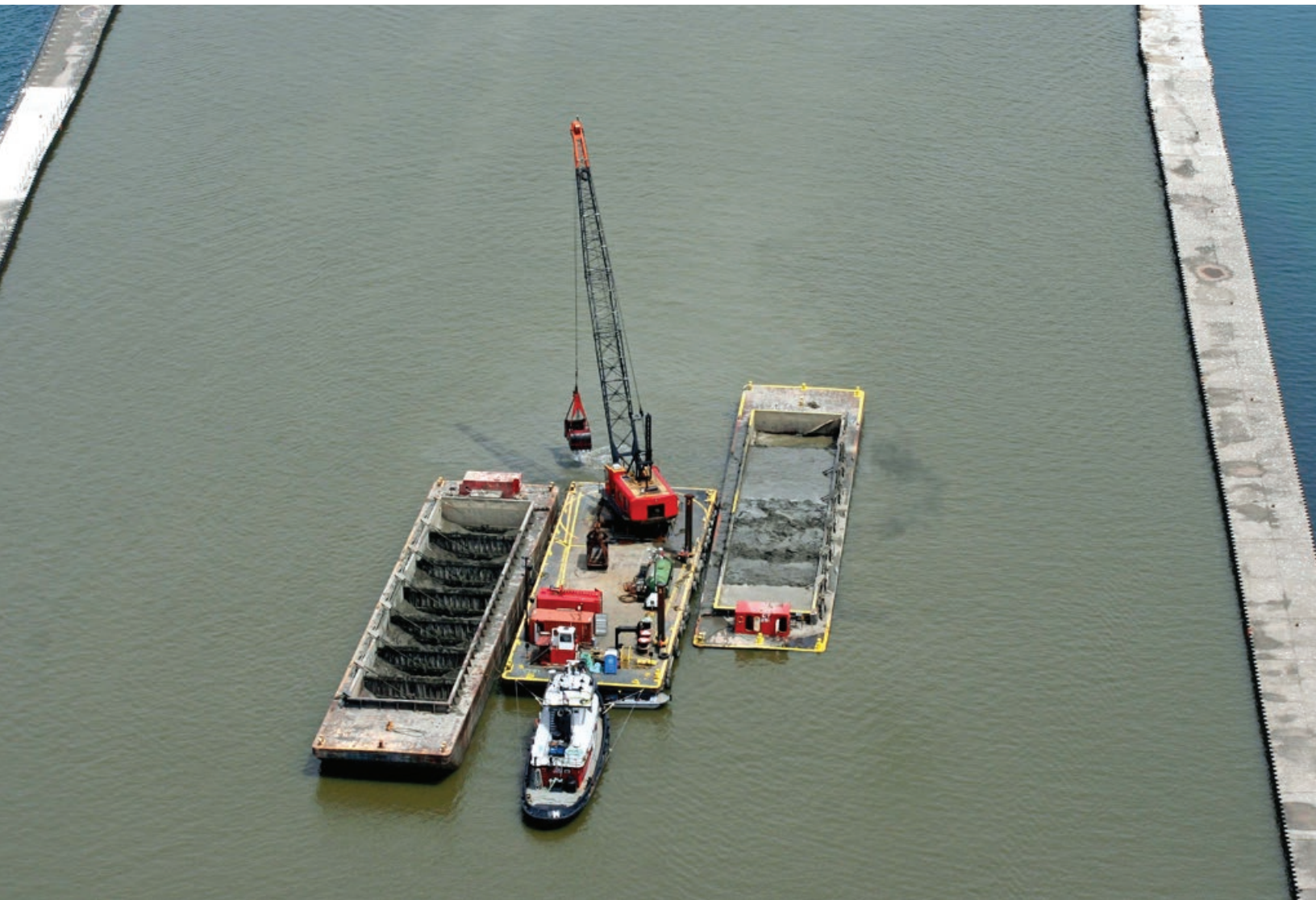
Rochester Embayment Area of Concern

DEGRADATION OF AESTHETICS

BENEFICIAL USE IMPAIRMENT REMOVAL REPORT

JUNE 2022

Kathy Hochul, Governor | Basil Seggos, Commissioner



Prepared by:

New York State Department of Environmental Conservation

and

Monroe County Department of Public Health

This Beneficial Use Impairment (BUI) Removal Report was prepared by the New York State Department of Environmental Conservation (NYSDEC) and the Monroe County Department of Public Health (MCDPH) and was substantially funded by the United States Environmental Protection Agency (USEPA) through the Great Lakes Restoration Initiative (GLRI). NYSDEC and MCDPH have engaged stakeholders and the public, including the Remedial Advisory Committee, during the BUI removal process. For more information, please contact the Rochester Embayment Remedial Action Plan Coordinator at MCDPH or the Great Lakes Area of Concern Coordinator at NYSDEC's Division of Water.

Table of Contents

List of Abbreviations

AOC	Area of Concern
BCP	Brownfield Cleanup Program
BMP	Best Management Practice
BUI	Beneficial Use Impairment
CEI	Center for Environmental Initiatives
CSMI	CSMI
CSO	Combined Sewer Overflow
CSOAP	Combined Sewer Overflow Abatement Program
DNAPL	Dense Non-aqueous Phase Liquid
ECL	Environmental Conservation Law
GLRI	Great Lakes Restoration Initiative
GLWQA	Great Lakes Water Quality Agreement
IJC	International Joint Commission
IRM	Interim Remedial Measure
LAMP	Lakewide Action and Management Plan
MCDPH	Monroe County Department of Public Health
MGP	Manufactured Gas Plant
NYSDAM	New York State Department of Agriculture and Markets
NYSDEC	New York State Department of Environmental Conservation
NYSDOH	New York State Department of Health
RAC	Remedial Advisory Committee
RAP	Remedial Action Plan
RAWP	Remedial Action Work Plan
RG&E	Rochester Gas and Electric
RIBS	Rotating Integrated Basin Studies
SWCD	Soil and Water Conservation District
TSS	Total Suspended Solids
USACE	United States Army Corp of Engineers
USDA-NRCS	United States Department of Agriculture-Natural Resources Conservation Service
USEPA	United States Environmental Protection Agency
USGS	United States Geological Survey
USPC	United States Policy Committee
VCP	Voluntary Cleanup Program
WEC	Water Education Collaborative
WQIP	Water Quality Improvement Program

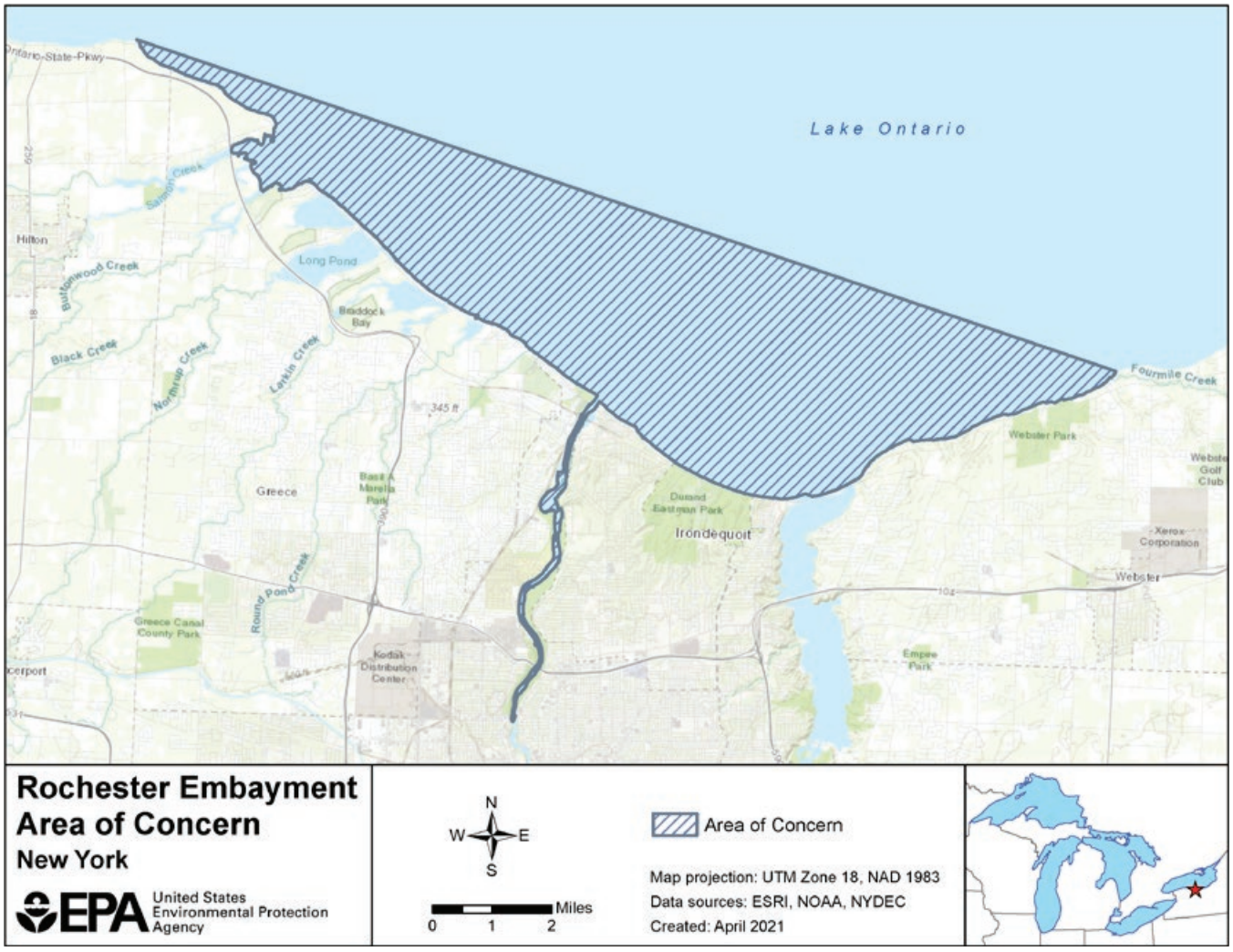
1.0 Introduction and Report Purpose

In the Great Lakes Basin, the International Joint Commission (IJC) has identified 43 Areas of Concern (AOCs) under Annex 1 of the *Great Lakes Water Quality Agreement (GLWQA)* where pollution from past industrial production and waste disposal practices has caused significant ecological degradation. Up to 14 beneficial use impairments (BUIs), or indicators of poor water quality, are used to evaluate the condition of an AOC.

The Rochester Embayment AOC encompasses the lower portion of the Genesee River from the mouth up to the Lower Falls in Rochester, N.Y. and the portion of Lake Ontario within a straight line drawn from Bogus Point to Nine Mile Point (**Figure 1**). This was originally listed as an AOC due to the known or suspected presence of multiple BUIs, including Degradation of Aesthetics, which, per the IJC, is generally considered impaired "when any substance in water produces a persistent objectionable deposit, unnatural color or turbidity, or unnatural odor (e.g., oil slick, surface scum)" (IJC, 1991).

Following an evaluation of the data and evidence gathered to address this impairment, the New York State Department of Environmental Conservation (NYSDEC) and the Monroe County Department of Public Health (MCDPH) have determined that the Degradation of Aesthetics BUI can be removed in accordance with established AOC program guidance. More specifically, the removal criteria established for this BUI have been met to the maximum extent practicable under the AOC program. In those instances where the criteria have not been fully met, the data presented herein demonstrate that the aesthetic conditions within the AOC are similar to those in the surrounding area or other similar environments, and not unique to the AOC. In some instances, the source of the root problems associated with the BUI lie outside of the AOC. The local Remedial Advisory Committee (RAC, **Appendix A**) fully supports the removal of this BUI. Accordingly, the purpose of this BUI removal report is to present the rationale and supporting data to remove the Degradation of Aesthetics BUI from the Rochester Embayment AOC.

Figure 1. Map of the Rochester Embayment Area of Concern



2.0 Background and Beneficial Use Impairment

Per Annex 1 of the 1987 amendment to the GLWQA, all AOCs were mandated to develop a Remedial Action Plan, or RAP, in three stages. Under this framework, the Stage I RAP collectively identifies specific BUIs and their causes, the Stage II RAP outlines the restoration work needed, and the Stage III RAP documents completion of these restoration activities and recommends the delisting of the AOC. Currently, the RAP for the Rochester Embayment AOC consists of: *Rochester Embayment Remedial Action Plan Stage I* (NYSDEC/Monroe County Department of Planning and Development, 1993) and *Rochester Embayment Remedial Action Plan Stage II* (NYSDEC and Monroe County Department of Health, 1997).

The Degradation of Aesthetics BUI was originally listed as impaired in the Stage I and Stage II RAPs due to:

- Accumulation of algae on lake shorelines,
- Presence of litter and sediment in the lower river after storms,
- Objectionable odors from chemical seeps at the Lower Falls,
- Accumulation of dead alewife on lake shorelines,
- Presence of discarded salmonids on river shorelines, and
- Turbid water quality conditions.

2.1 BUI Removal Criteria

BUI removal criteria developed to address the conditions related to the Degradation of Aesthetics BUI presented above were first documented in the *Rochester Embayment Remedial Action Plan Addendum 2002* (MCDPH, 2002) with subsequent minor edits made and presented as final in the *Rochester Embayment Area of Concern Beneficial Use Impairment Delisting Criteria Report* (Ecology and Environment, 2009). The final removal criteria are as follows:

- There are virtually no persistent decomposing algae (algae do not persist more than 10% of summer days) along the Lake Ontario shoreline that is not part of a lakewide problem, for five consecutive years; and
- There is no odor due to chemical seeps at the Lower Falls; and
- There are no alewife die-offs for a five-year period or dead alewives along the Lake Ontario shoreline are part of a lakewide problem to which the Rochester Embayment does not contribute; and
- There are no reports of discarded salmonids along the shoreline of the lower Genesee River, due to fishing practices, for five consecutive years; and
- There is virtually no litter caused by combined sewer overflows or left by fishermen or other recreational users in the lower Genesee River or adjacent shoreline; and
- Suspended sediment concentrations in the Genesee River remain less than 30 mg/L for at least 80% of a year and exceed 200 mg/L for no more than five events with a combined duration of not greater than 20 days, as determined by a five-year average (habitat delisting criterion on suspended sediment).

2.2 BUI Removal Considerations

When evaluating whether to proceed with the removal of the Degradation of Aesthetics BUI, which included the review of technical reports, presentations, and other supporting documents, the following questions were considered:

- Are the methods and results cited in the material technically and scientifically sound?
- Does the information cited regarding restoration of the impaired beneficial use sufficiently address the removal criteria?
- Do the RAC and public concur that the removal criteria have been met?
- In the case where BUI removal criteria have not been explicitly or fully met, are any alternative removal scenarios applicable in accordance with established programs and guidance?

2.3 BUI Indicator Status Resolution

Given the numerous removal criteria established for the Degradation of Aesthetics BUI that cover a wide range of ecological indicators, each criterion was assessed independently. This assessment involved first determining whether available data demonstrate that the individual criterion had been achieved. If this was found to be the case, the assessment went no further and the rationale for removing the BUI was presented on this basis. If the removal criterion had not been explicitly achieved, alternative BUI removal scenarios established in United States Environmental Protection Agency (USEPA) guidance were assessed and ultimately selected based on their applicability to a given removal criterion.

The USEPA guidance document, *Restoring United States Great Lakes Areas of Concern: Delisting Principles and Guidelines*, accepted by the United States Policy Committee (USPC, 2001), states that removal of a BUI can occur under any of these scenarios:

- A delisting target has been met through remedial actions which confirms that the beneficial use has been restored;
- It can be demonstrated that the BUI is due to natural rather than human causes;
- It can be demonstrated that the impairment is not limited to the local geographic extent but rather is typical of lakewide, region-wide, or area-wide conditions (under this situation, the beneficial use may not have been originally needed to be recognized as impaired); or
- The impairment is caused by sources outside the AOC. The impairment is not restored but the impairment classification can be removed or changed to "impaired – not due to local sources." Responsibility for addressing "out of AOC" sources is given to another party.

A description of how each of the six removal criteria for the Degradation of Aesthetics BUI have been met in relation to the four scenarios above is provided in **Section 3**.

3.0 Addressing BUI Removal Criteria

As presented in **Table 1** and subsequently described in this section, the available data demonstrate that the removal criteria established for the Degradation of Aesthetics BUI have either been met to the maximum extent practicable under the RAP, or support removal of the BUI based on one or more of the scenarios as described in Section 2.3.

Criterion	Basis for Removal
1: Decomposing algae	Natural causes/lakewide issue
2: Odors from chemical seeps	Satisfied under RAP
3: Alewife die-offs	Satisfied under RAP
4: Discarded salmonids	Satisfied under RAP/regional issue
5: Litter	Satisfied under RAP/regional issue
6: Suspended sediment	Natural causes/regional issue/ sources outside AOC

Table 1. Basis of Removal for Each BUI Criterion

3.1 Criterion 1:

There are virtually no persistent decomposing algae (algae do not persist more than 10% of summer days) along the Lake Ontario shoreline that is not part of a lakewide problem, for five consecutive years.

Lake Ontario is a complex ecosystem which has experienced periodic fluxes in benthic algae (typically *Cladophora*) coverage over the last century. Provided in this section is a brief overview of historical evidence of these periodic fluxes and inherent mechanisms which promote growth, proliferation, and subsequent decomposition. The root causes underlying *Cladophora* growth and decomposition are widely attributed to nutrient loading and the establishment of *Dreissenid* mussels, both of which are known lakewide issues in Lake Ontario and are beyond the scope of the RAP. However, remedial actions presented here and supporting efforts to monitor occurrences have proven successful in improving aesthetic conditions within the AOC boundary despite its widespread persistence throughout the lake.

Cladophora grows on hard substrates throughout the nearshore zone of Lake Ontario, where its growth is dictated largely by light attenuation and the availability of phosphorus in various forms. Under natural conditions, *Cladophora* can provide ecological benefits such as absorption of contaminants, habitat structure, and nourishment for lower food web organisms. However, the algae can create nuisance conditions when it reaches highly dense growth or detaches during strong weather events and subsequently forms rotting mats along the

shoreline. Nuisance blooms in Lake Ontario were first recorded by the 1930s, with the realization that nutrient inputs from agricultural growth and industrialization within the Great Lakes basin was a primary driver (Neil and Owen, 1964). *Cladophora* biomass reached high levels in the 1970s (Painter and Kamaitis, 1987), leading in part to implementation of lakewide phosphorus control measures. Due to binational cooperation for phosphorus reductions, including upgrades to wastewater treatment facilities throughout the Great Lakes basin, concentrations in the lake declined through the 1980s and 1990s, contributing to a reduction in *Cladophora* levels along with nuisance blooms (Painter and Kamaitis, 1987). Little monitoring of biomass was conducted during this period; however, one study stated that, between 1972 and 1982–1983, *Cladophora* biomass declined almost 60% following a 67% reduction in spring-soluble reactive phosphorus concentrations (Painter and Kamaitis, 1987). Additional information on phosphorus reduction efforts through wastewater treatment upgrades and watershed actions is provided in the Rochester Embayment Area of Concern **Eutrophication or Undesirable Algae BUI Removal Report** (NYSDEC/MCDPH, 2019).

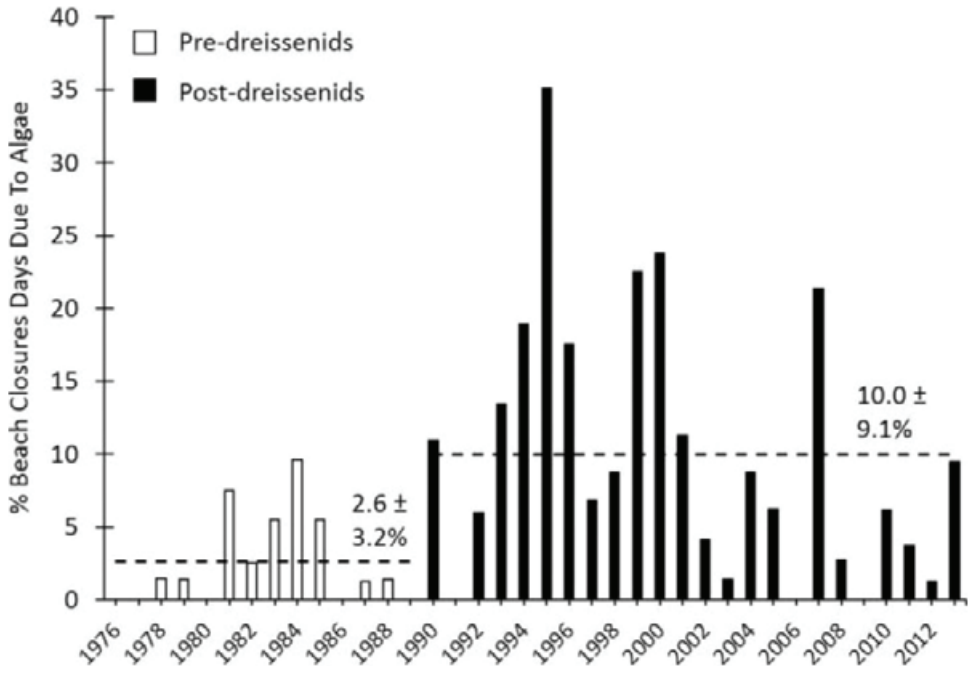


Figure 2. Charlotte Beach closures due to algae (number of beach closure days due to algae per total number of beach days as a percentage). Data taken from MCDPH, as reported by Kuczynski et al., 2016)

The introduction of *Dreissenid* mussels into Lake Ontario in the mid-1990s initiated a reversal of this improvement in algae conditions. Intense filtering by *Dreissenid* mussels drastically enhanced lake water clarity. The resulting increased light intensity at the lake bottom promotes *Cladophora* growth, often in the deeper waters of nearshore areas where growth was previously limited or nonexistent. The *Dreissenid* mussels also concentrate nutrients near the lakebed, further enhancing the growth of Cladophora. Since *Dreissenid* mussels have become established in the lake's nearshore areas, there has been an increase in overall biomass and spatial coverage of algae, and recent model development and simulations has shown a near doubling of depths (i.e., 3.0–4.5 m) supporting *Cladophora* growth (Auer et al., 2010). The net effects of these conditions were made apparent based on the percentage of beach closures at Charlotte Beach (Ontario Beach Park) due to algae, which increased significantly after the establishment of *Dreissenid* mussels (Kuczynski et al., 2016; **Figure 2**).

Resurgence in *Cladophora* growth led to an increase in beach closures within the Rochester Embayment AOC, particularly Charlotte Beach at Ontario Beach Park. Remedial actions to combat this issue have proven extremely successful. Monroe County and the City of Rochester, in conjunction with the U.S. Army Corps of Engineers (USACE), implemented an algae management system in June 2015, primarily carried out through installation of a high-powered pump located at the east end of the beach (**Figure 3**). To remove floating *Cladophora* mats, Monroe County Parks personnel "herd" accumulations of algae with a large front loader toward the pump intake, where the algae is directed over the west pier and into the Genesee River (navigation channel). The flow from the river then carries the algae out into the lake. Federal funding from USACE was used for the early studies and testing of the concept, while New York State provided grant funding for full implementation of the system. The Monroe County Department of Environmental Services funds and oversees the continuing operations of the high-powered pump. In the years since the installation of the algae management system in 2015, Charlotte Beach has remained open for recreational use more than 80% of the time, a percentage not achieved since the late 1980s, and no beach closures due to *Cladophora* have occurred since the system became operational (MCDPH data for Ontario Beach, **Appendix B**). Additionally, odors caused by decomposition of *Cladophora* on shore were eliminated.

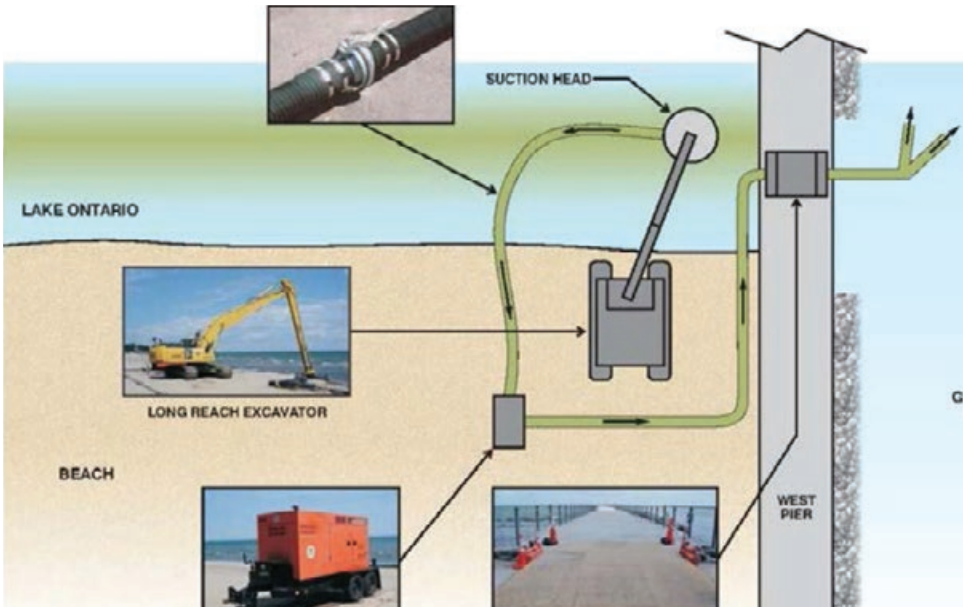


Figure 3. Conceptual model depicting the high-powered pumping system, as part of the algae management system, installed at Charlotte Beach located at Ontario Beach Park

The introduction of *Dreissenid* mussels and the mechanisms by which they promote *Cladophora* growth have become variables beyond human control. Installation of the algae management system at Charlotte Beach has improved aesthetic conditions but is recognized as a mitigatory technique, though highly efficient. Proliferation of benthic algae in Lake Ontario continues to be an issue facing U.S. and Canadian water quality scientists and managers and is not exclusive to the Rochester Embayment AOC. It is recognized that *Cladophora* still persists on a lakewide basis due to ecological drivers, and these are being considered through ongoing binational research efforts under Annex 4 of the GLWQA. The remedial action (i.e., algae pump) put in place within the Rochester Embayment AOC has mitigated the impact of the decomposing algae where and to the extent practicable (i.e., Charlotte Beach). While the removal criterion has not specifically been met, it has been demonstrated that the BUI, to the extent it may still exist, is due to natural rather than human causes and is not limited to the local geographic extent but rather is typical of lakewide conditions. This is consistent with two of the four scenarios allowing for BUI removal included in the EPA guidance listed in **Section 2.3**.

3.2 Criterion 2: There is no odor due to chemical seeps at the Lower Falls.

From the late 1800s to the mid-1900s, hundreds of manufactured gas plants (MGPs) across New York State supplied homes and industry with fuel for heating, cooking, and lighting. Freshly manufactured gas had to be cooled and purified before it could be used. Two principal by-products resulted from the cooling process: coal tar and purifier waste. Both wastes present environmental problems that may persist to this day. There may also be health concerns based upon exposure to some of the constituents of these materials. The most widespread environmental impacts from former MGPs involve groundwater which becomes contaminated by contact with coal tar, tar-contaminated soil, or purifier waste. The contaminated groundwater can then move away from the site and into other areas. Typically, the most significant environmental impacts from MGP sites are related to organisms living on the bottom of nearby surface water bodies such as streams, rivers, and lakes. Significant accumulations of tar-impacted sediments have been found near former MGPs. MGPs may have also discharged mixtures of tar and water directly into waterbodies when they were operating, and some MGP sites may contain tar seeps, where tar emerges from subsurface soil into waterbodies. Today, NYSDEC is overseeing the investigation and cleanup of contamination left behind from these plants throughout the state.

Past reports of chemical seeps leading to noxious odors in the Lower Falls portion of the Genesee River were generally attributed to contamination from MGP facilities upstream of the Lower Falls and were a contributing factor to the Degradation of Aesthetics BUI within the Rochester Embayment AOC. The Lower Falls is an approximate 100' drop within a City of Rochester public park and is a popular fishing/recreational area as it is the first impassable barrier for fish migrating upstream from Lake Ontario.

Six sites upstream of the AOC boundary at the Lower Falls were identified for extensive remediation based on their potential to impact the Genesee River in this area: Rochester Gas and Electric (RG&E)-Front Street, Brewer Street, RG&E-Canal Street, RG&E-Beebee Station, RG&E-West Station, and RG&E-East Station (**Figure 4**). Source investigations and cleanup at these sites are being performed under various New York State cleanup programs, as described below, with public (New York State) and private (property owner/responsible party) funding, depending on the cleanup program. Additional information on each of these sites, including site-related documents, can be found at NYSDEC's **Environmental Site Remediation Database** (enter site code as listed below). The status of the seeps has been monitored by staff of RG&E (site owners), NYSDEC, and MCDPH. Additional information about DEC's MGP Program can be found **here**.

Figure 4. Former MGP sites along the lower Genesee River, upstream of the AOC boundary at the Lower Falls

RGE-Front Street, Site Code V00073 - Voluntary Cleanup Program

The structures associated with this facility were demolished in 2000. Interim remedial measures (IRM) were conducted in 1999 which included grouting of the riverbank to prevent seeps from occurring. The final remedy at the site was completed in 2018 and has achieved soil cleanup objectives. Remedial measures are in place to address residual contamination remaining at the site. Portions of the river wall were rebuilt due to major fractures and concrete failure, and shotcrete was applied to some portions of the wall as a rehabilitative measure to prevent any residual contaminants that may remain at the site from entering the river. The river wall is inspected annually.

Brewer Street, Site Code V00214 - Voluntary Cleanup Program

During the construction of the Cliff Street Siphon Tunnel Project (sewer tunnel) in 1984 and 1985, coal tar was encountered. As a result, two on-site settling lagoons were approved and closed in place in 1985. In 2003, 62,195 tons of contaminated soils were removed for off-site disposal and the site was backfilled with clean material. Additional remediation was required as seeps were persistent. Bedrock re-grouting occurred and a new concrete spillway over the Middle Falls was constructed. Follow-up inspections do not show any evidence of dense non-aqueous phase liquids (DNAPL) seeps into the Genesee River and ground water monitoring indicated non-detectable levels of site-related contaminants. A deed restriction was filed in 2010 requiring periodic inspections and certifications. Subsequent monitoring indicates that the site remedy continues to meet the remedial objectives.

RG&E-Canal Street, Site Code V00594/C828217 - Voluntary Cleanup Program

Site characterization was conducted in 2007 along with additional investigations in 2008 and 2009. The investigations revealed some residual MGP-contaminated soils along with lower levels of benzene, toluene, ethylbenzene, and xylene (BTEX) in the groundwater. The site has subsequently been entered into the Brownfields Cleanup Program (BCP) program as 65 Trowbridge St., Site Code C828217. An IRM work plan was completed in 2021, which calls for the removal of the top one foot of soil. Implementation of the IRM will be scheduled in spring 2022. A remedial investigation (RI) of the entire site began in July 2021 and is scheduled to be completed in summer 2022.

RG&E-Beebee Station, Site Code V00014 - Voluntary Cleanup Program

This area, also known as Beebee Park, was a disposal area for coal tar wastes from the former RG&E-West Station MGP. Upon completion of an IRM in 1997, coal tars below the ground surface were excavated and an on-site 8-foot-thick cap of clean soil was placed on the remaining residual contamination. The remaining portion of the site is being investigated as part of State Superfund Site RG&E-West Station, Site Code 828205 (refer to next site below).

RG&E-West Station, Site Code 828205 - State Superfund Program

This site was initially in the Voluntary Cleanup Program (Site Code V00593) but was transitioned to a Superfund Site in April 2018. A final Remedial Action Work Plan (RAWP) was approved by NYSDEC in February 2018. Remedial design is currently ongoing; a revised 100% design was submitted by RG&E for DEC agency review in December 2021. Implementation of the remedial action is anticipated in 2023–2024.

RG&E-East Station, Site Code 828204 - State Superfund Program

The East Station MGP site underwent a focused RI in 1998. Based on documented coal tar contamination, RG&E conducted an IRM in 2008, which consisted of the removal of purifier wastes, construction of a barrier wall, and a NAPL collection system to prevent coal tar seeps into the lower Genesee River. A sitewide RI conducted in 2011 consisted of test pits and installing overburden and bedrock wells, which initiated supplemental investigations. Supplemental investigative work was performed in 2013 and 2014. Several stages of RI have since been completed, resulting in a feasibility study that was approved by NYSDEC in May 2021. Preparation of the remedial design is scheduled to begin in 2022; implementation of remedial actions will occur after the final design has been completed.

NYSDEC, MCDPH, and RG&E have provided anecdotal evidence of little to no complaints of odors since cleanup efforts at the sites above have taken place. This has been corroborated by officials through periodic site visits and monitoring during work conducted in the Lower Falls area. Record of a visit to the Lower Falls area by MCDPH and RG&E in August 1999 has been verified, where staff were able to walk out onto the top of the Falls on the west side. Representatives observed no visible signs of seeps, nor did they detect objectionable odors of any kind during this visit. NYSDEC's Region 8 Bureau of Fisheries and Environmental Remediation staff maintain there have been no complaints of odors in recent memory (RAC meeting discussions, personal communication). Additionally, RG&E has provided firsthand information from long-term employees who maintain that there have been no reports of odors since October 2018 (Appendix C). Based on remedial actions performed and continuing to take place, in conjunction with anecdotal evidence presented here, there is sufficient evidence to conclude strong odors no longer pose an issue and therefore justify fulfillment of this BUI removal criterion.

3.3 Criterion 3: There are no alewife die-offs for a five-year period, or dead alewives along the Lake Ontario shoreline are part of a lakewide problem to which the Rochester Embayment does not contribute.

Alewife grew to such overwhelming numbers in Lake Ontario in the 1950s due to a lack of predators and increased lake productivity resulting from nutrient enrichment, and periodic alewife die-offs became quite common as a result of these changing lake conditions. To control populations, the U.S. and Canadian governments began stocking non-native Pacific salmonid species in Lake Ontario in the late 1960s. The U.S. Geological Survey (USGS) and NYSDEC have cooperatively assessed prey fishes, including alewife, each year since 1978. These data are critical for understanding the ecology of predator-prey dynamics so fisheries managers can determine the overall balance of stocked and wild predators, and prey populations. Since implementation of the Pacific salmonid program, adult alewife (age-2 and older) have continued to decline in abundance from historical levels (Walsh et al., 2016; **Figure 5**). Furthermore, stocking of these non-native salmonid species in the lake has fostered a burgeoning sport fishery, contributing to growth of local economies along its shore. Fisheries managers are acutely aware of strong public interest in maintaining a robust sport fishery, which relies heavily on the status of the pelagic alewife population.

Lake Ontario, including the Rochester Embayment AOC, has not experienced a significant alewife die-off in several years. Management of Pacific salmon, predation by native fish, and lower lake productivity/nutrient levels have prevented alewife from returning to historical highs, when die-offs were a prominent issue. This BUI removal criterion is predicated on occurrences directly related to an imbalance in the predator-to-prey ratio. Furthermore, incidences of alewife die-offs have occurred on a lakewide basis due to fluctuating environmental influences, such as summer temperatures and winter duration (O'Gorman et al., 2004). The most recent record of significant decline in yearling (age-1) alewife abundance occurred in 2015 and were attributed to below-average summer temperatures and unprecedented harsh winter conditions in both 2013–2014 and 2014–2015 (Walsh et al., 2016). During this period, reports of dead alewives washing ashore were documented near Bald Eagle Marina in Kendall, N.Y. and near Pultneyville, N.Y. (**Appendix D**; J. Lantry and M. Connerton, NYSDEC, pers. communication). It should

be noted both locations are situated outside of the AOC boundary and suggest die-offs are not exclusive to or indicative of degraded conditions within the AOC. Apart from the 2015 event noted above, there is no documented evidence that any additional alewife die-offs have occurred between 2015 and 2020 (5-year period). Although shifting climate patterns pose challenges for this sensitive species throughout Lake Ontario, NYSDEC believes the information presented here demonstrates that threats to aesthetic conditions within the AOC have been substantially eliminated due to fisheries management and therefore the removal criterion is satisfied to the extent possible under the RAP.

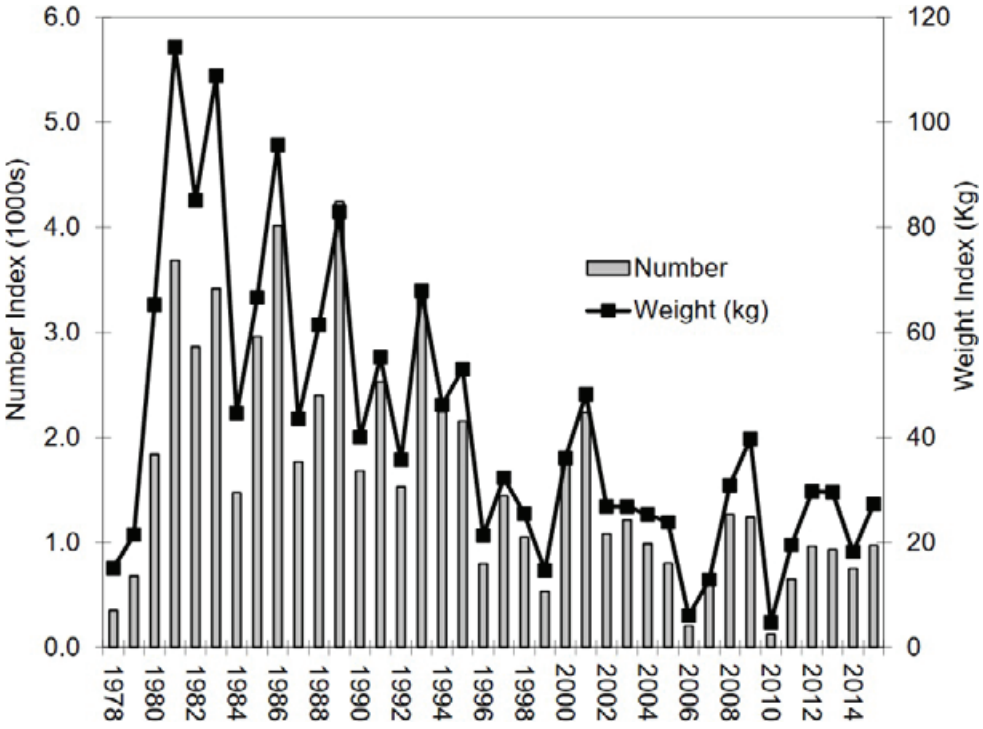


Figure 5. Abundance and weight indices (depth-stratified mean per 10-minute trawl tow) for adult (age-2 and older) Alewife in the U.S. waters of Lake Ontario during late April–early May, 1978–2015 (1 kg = 2.205 lbs) (Walsh et al., 2016)

3.4 Criterion 4: There are no reports of discarded almonids along the shoreline of the Lower Genesee River, due to fishing practices, for five consecutive years.

As previously discussed, NYSDEC implemented stocking of Pacific salmonids in the late 1960s for control of booming alewife populations in Lake Ontario. Subsequent spawning and reproduction of Pacific salmonid species began taking place in major tributaries along the lake (including the Genesee River), which in turn, attracted increasing numbers of anglers to these areas. At the time, it was thought snagging (hooking of fish in areas other than the mouth) would be necessary to facilitate harvest and removal of fish before they naturally expired and decomposed along the banks of rivers and streams. The allowance of this practice made "catching" the migrating fish easy and further contributed to the number of recreational anglers. Additionally, NYSDEC allowed the sale of salmon eggs to licensed bait dealers, who could package them for bait sales in New York or elsewhere. This provided additional incentive for those seeking to profit from the abundance of salmon in the tributaries. The salmon themselves are large and often, anglers who were faced with long walks back to parking areas removed the fillets of fish they kept and discarded the remainder of the carcass back into the water or left it along shore. Male fish were often discarded because they lacked the valuable eggs, and females were often stripped of their eggs and then released back into the streams. These practices on the lower Genesee River resulted in an overwhelming accumulation of decomposing salmon on and near the banks of the river, particularly at the Lower Falls (first impassible barrier).

In 1989, three years before the publication of the Stage I RAP, a New York State Fish Carcass Disposal Law went into effect prohibiting the improper disposal of fish carcasses. In summary, this law states "No person taking or assisting in the taking of fish in other than the marine and coastal district, shall discard any fish carcass or parts thereof into the waters of this state or upon any public lands contiguous to and within one hundred feet of such waters or upon any private lands contiguous to and within one hundred feet of such waters unless such lands are owned by such person or unless such person enters or remains with the permission of the owner of record or his representative or agent." The full text of this law can be found in the New York State Environmental Conservation Law (ECL), Article 11, Title 13, § Section 11-1321.

In 1995, ECL, Article 11, Title 13, § Section 11-1321 incorporated a full ban on the practice of snagging for all New York State tributaries of Lake Ontario, stating "Pacific salmon shall not be taken by hooking, snatching or snagging. Pacific salmon taken by hooking, snatching or snagging shall not be possessed, transported or otherwise trafficked in." Earlier bans had been in place between 1990 and 1995 for a limited number of tributaries. This was a controversial issue at the time, since it made catching fish much more difficult, and the ban was accompanied by a greatly increased enforcement presence along the popular salmon fishing waters (including the lower Genesee River) during the Pacific salmon run, which further discouraged the illegal activities.

In its own response to fish disposal problems in the Genesee River gorge, in 1991, the City of Rochester adopted Section 79-4A of the Municipal Parks Code, which states "No person shall bring into, drop, deposit, dump or leave behind any rubbish, garbage, lawn refuse, ashes, papers, cardboard, metal cans or other metallic substances, bottles, glassware or any other refuse, waste material or other unwanted material of any kind in a park, except that any such materials resulting from picnics or other permitted activities shall be deposited in receptacles, pits or other containers provided for that purpose" and Section 79-19A, which states: "No commercial cleaning or purchase of eggs without a permit." Informational signage indicating notice of these laws are posted at various access points in the Lower Falls area (**Figure 6**). Strategic placement of signage has facilitated awareness amongst local anglers.

Figure 6. Municipal parks code (adapted and enacted in response to establishment of NYS Environmental Conservation Law) placard affixed to chain-link fencing

In 2019, in support of BUI removal efforts, the Monroe County Fishery Advisory Board provided a letter to the MCDPH stating that they had not received any reports or witnessed firsthand discarded salmonids along the shores of the lower Genesee River in at least five years prior to the letter submittal (**Appendix E**). However, NYSDEC staff, including Environmental Conservation Officers, do acknowledge that salmonid carcasses are left along the shoreline by anglers, but this is not considered a problem unique to the Rochester Embayment AOC. This occurs to varying extent in other Lake Ontario tributaries that support large runs of spawning salmonids that subsequently attract large numbers of anglers. The letter from the Fishery Advisory Board demonstrates the general attainment of this BUI removal criterion, and the adoption and enforcement of the regulations listed above address the root problems underlying the presence of discarded salmonids along the lower Genesee River, to the extent feasible.

3.5 Criterion 5: There is virtually no litter aused by combined sewer overflows or left by fishermen or other recreational users in the lower Genesee River or adjacent shoreline.

The Stage I RAP states that litter reaches waterways through direct negligence and dumping of non-biodegradable materials on shore. During storm events, litter is transported via storm sewers and overflow from impervious surfaces and deposited in nearby waterways. Dredging in the Genesee River has shown that a significant amount of litter sinks and becomes resident at the river bottom, posing a risk to aquatic and human health. Additionally, the Stage I RAP notes that areas not kept clean and free of trash can promote continued misuse of the area, allowing the behavior to persist. Increasing societal awareness of the litter problem has driven development of regulatory and community actions mitigating harmful effects to the environment and aesthetics within the Rochester Embayment AOC. Though littering continues to be a prevalent issue in society and therefore is not exclusive to the AOC, the following regulations and cleanup efforts described here are examples of actions taken that have led to improved conditions within the AOC since the Stage I RAP.

The most direct mitigative effort that supports removal of this BUI was the construction of the Combined Sewer Overflow Abatement Program (CSOAP) tunnel system in the 1980s and 1990s to mitigate the occurrence of combined sewer overflows (CSOs) from the City of Rochester sewer collection system to the Genesee River and Irondequoit Bay (the latter of which is not within the AOC). The Genesee River tunnel system began operation in 1989, with two additional tunnels being added to the system in 1990 and in 1992. The system consists of deep rock tunnels (most between 6′ and 16′ in diameter) that collect overflow (175-million-gallon capacity) and store it until it can be sent to a treatment facility for processing. The CSOAP has drastically improved the quality of Rochester area waters by virtually eliminating the 60–70 annual sewer overflows and the accompanying litter/trash that had occurred prior to its existence.

The New York State Returnable Container Act (referred to as the Bottle Bill) first went into effect in 1983, requiring customers to pay a five-cent deposit upon purchase of a bottled beverage, which could then be redeemed by returning the bottle to a retailer or redemption center. The law can be found in Article 27, Title 10 of the Environmental Conservation Law (ECL), Sections 27-1001 to 27-1019. The Bottle Bill was strengthened with amendments enacted in 2009 and 2013, becoming the "Bigger, Better Bottle Bill." The new amendments included non-carbonated beverages and bottled water containers in the legislation, and mandated the use of "reverse vending machines" by large chain stores to facilitate the return of bottles. These laws provide incentives for the public to

return containers for the deposit instead of disposing of them in the easiest way—which, prior to the enactment of the laws, often meant just leaving them in public places.

More recently, as of March 1, 2020, all plastic carryout bags (other than an exempt bag) became banned from distribution by anyone required to collect New York State sales tax. For sales that are tax exempt, plastic carryout bags are still not allowed to be distributed by anyone required to collect New York State sales tax (unless it is an exempt bag). The law affects anyone required to collect New York State sales tax, bag manufacturers, and consumers. Cities and counties are also involved. And under **New York's Expanded Polystyrene Foam Container and Polystyrene Loose Fill Packaging Ban**, effective January 1, 2022, no covered food service provider or store (retail or wholesale) will be allowed to sell, offer for sale, or distribute disposable food service containers that contain expanded polystyrene foam in New York. In addition, no manufacturer or store will be allowed to sell, offer for sale, or distribute polystyrene loose fill packaging (commonly referred to as packing peanuts) in the state. These bans will result in a significant reduction of litter throughout the AOC, the larger Rochester area, and New York State.

Additionally, in 1991, the City of Rochester adopted Section 79-4A of the Municipal Parks Code (described previously in **Section 3.4**). More recently, the Water Education Collaborative (WEC) and H_2O Hero campaign were established with the mission of educating local stakeholders on efforts and activities they can engage in to reduce pollutant loadings in stormwater runoff. The H_2O Hero campaign provides interactive education resources to local stakeholders on the main sources of residential pollution and shows homeowners how they can reduce their pollution contribution and exhibit more environmentally responsible behavior through the proper use and storage of household and yard care products. Implementation of the WEC and the H_2O Hero campaign have helped to build a sense of stewardship and conservation amongst local stakeholders and will continue to encourage those positive behaviors that will continue to reduce pollution in local waterways. These two efforts are described in further detail in **Section 4.3**.

The International Coastal Cleanup (held annually in September) has been actively implemented in New York State since 1986, starting with Durand Eastman Beach County Park within the AOC. Sites vary from year to year and have included areas along the Lake Ontario shoreline within the AOC, including Durand Eastman Beach, Ontario Beach, Braddock Bay, and along the lower Genesee River. This program also encourages cleanup of private shorelines, although results and participation for private lands are not tracked. In 2019, more than 75 volunteers participated in the event and collected over 375 pounds of trash from AOC sites. The amount and type of trash and debris collected within the Rochester Embayment AOC are similar to that collected at Coastal Cleanups in other urban areas. The Monroe County effort is managed by the WEC and partners and is anticipated to continue, contingent upon funding support for supplies and trucking and disposal of trash.

The **Seneca Park Zoo** in Rochester also offers multiple opportunities for the community to actively engage in conservation and stewardship, including hands-on citizen science programs and cleanups at multiple area parks.

NYSDEC and Monroe County have implemented other regulatory measures and voluntary consumer-based programs that support recycling and other actions to minimize the amount of waste contributed by human activity to the environment. Additional information on some of these programs can be found at the **NYSDEC website** and **Monroe County website**.

To the extent that it can under the AOC program, the BUI removal criterion has been met. The CSOAP tunnel system has addressed one of the significant pathways for litter entering the Genesee River as identified in the Stage I RAP, and regulation, education, and accountability have been effective in building awareness of negative impacts of litter to the health of the lower Genesee River area. Complete elimination of discarded trash and litter is not attainable within the AOC, as it is a problem throughout the region, and more broadly, throughout society. This was recognized in the *Addendum to Stage I and II Remedial Action Plans, Rochester Embayment Area of Concern* (NYSDEC/MCDPH, 2011), where it was stated "based on the limits of possibility within an urban area, this aspect of the BUI will be proposed for removal."

3.6 Criterion 6: Suspended sediment concentrations in the Genesee River remain less than 30 mg/L for at least 80% of a year and exceed 200 mg/L for no more than five events with a combined duration of not greater than 20 days, as determined by a five-year average.

3.6.1 Background

The Genesee River watershed and its unique features are living artifacts of New York's glacial and geologic history. Beginning in Potter County, Pennsylvania and flowing northward 157 miles where it drains into Lake Ontario at Charlotte, New York, the Genesee River present today began formation through glaciation around 20,000 years ago, with major formations ending when the Laurentide ice sheet receded permanently around 12,000 years ago. As the ice sheet moved and shifted during this period, glacial melt water poured over the landscape, scouring and carving deeply into the bedrock and depositing layers of sediment and debris. As a result, a substantial amount of glacial till and debris loosely deposited in the Genesee Valley became subject to introduction and

transport through the river and its tributaries. During the period of global expansion, the Genesee River attracted early European settlement due to the multitude of cultural uses offered by harnessing its power, in addition to proximity to suitable lands for cultivation. Widespread deforestation and degrading agricultural practices significantly altered the flow of sediment naturally introduced through the system and greatly increased the capacity of exposed soil and glacial debris to be transported to nearby waterways.

Since this time, an improved understanding of societal impacts in the Genesee River Valley has prompted increased awareness and support for action. Various agencies have collaborated over the years to assess changing water quality conditions and identify specific areas in need of best management practices within the watershed to reduce erosion and the amount of sediment making its way into the river. However, the collected data sets were generally considered insufficient for assessing conditions relative to the water quality (suspended sediment) component of the Degradation of Aesthetics BUI removal criteria.

3.6.2 Water Quality Monitoring Program

In 2013, NYSDEC, in partnership with USGS and EPA, initiated a five-year water quality monitoring program on the Genesee River and two tributaries to the river—Oatka Creek and Honeoye Creek. Funded by the federal GLRI, this program was intended to address two important data needs: first, it would provide information on the extent to which the implementation of best management practices (BMPs) in the watershed were resulting in improved water quality conditions in the river and tributaries. This component is not directly related to the BUI removal criteria and is not discussed further in this report. The second component of the monitoring program was to provide a water quality data set that would be sufficient for assessing suspended sediment conditions within the AOC portion of the Genesee River relative to upstream areas, and the general degree to which the removal criterion had been met. It was acknowledged that the data may not provide all information necessary to fully assess each individual component of the removal criterion; specifically, the portion relating to "... for no more than five events with a combined duration of not greater than 20 days, as determined by a five-year average...," as this would have required daily monitoring for the full five-year period, which was not feasible.

Figure 7. 2013–2018 TSS monitoring program locations

NYSDEC staff collected samples from four locations along the Genesee River on an approximately monthly basis from May 2013 through April 2018. The samples were analyzed for a variety of water quality parameters, including total suspended solids (TSS). Additional samples were collected during high-flow periods, typically following heavy rain or snow melt events. The locations were selected to assess water quality in sections of the river with different physical characteristics and land use patterns (**Figure 7**).

The monitoring location at the turning basin in the lower section of the river at Charlotte is within the AOC boundary. The next closest monitoring location was approximately seven river miles upstream within the downtown area of Rochester, outside the AOC boundary. Both locations are in predominantly urban/suburban sections of the river that are relatively deep, wide, and slow moving, with both undeveloped and heavily developed/hardened shoreline segments. The remaining two locations, near Mt. Morris and at Portageville, are in shallower, narrower, and faster moving sections of the river, in predominately rural/agricultural areas.

The goal of the monitoring program was to collect monthly water quality samples for a full five years, with at least three additional event-based (high-flow) collections each year. For logistical and other reasons largely related to regional weather conditions (e.g., ice cover, highly localized rainfall, etc.), neither the monthly nor high-flow targets were specifically met each year. However, a very robust data set over a five-year period that included both base flow and high-flow conditions was obtained, and this serves as the basis for assessing the water quality component of the BUI removal criteria, as discussed below.

A summary of the TSS data from the monitoring program, as relevant to the BUI removal criterion, is reported in **Table 2**. The full data set is provided in **Appendix F**. The data in **Table 2** are presented for each 12-month (one-year) period, beginning with the onset of the program in May 2013. Cumulative/total results over the entire five-year period are also presented.

Table 2. Summary of Total Suspended Solids (TSS) in the Genesee River, 2013–2018 Monitoring Program

2013-2018 Genesee River TSS Monitoring

		Charlotte	Rochester	Mt. Morris	Portageville
Year 1 (May 2013-April 2014)	Number of Samples	12	12	13	14
	Min TSS (mg/L)	11	8.1	8.8	4.3
	Max TSS (mg/L)	482	618	1480	1450
	Average TSS (mg/L)	87	92	169	133
	Number samples < 30 mg/L	8	5	7	11
	% of Samples < 30mg/L	67%	42%	54%	79%
	Number of Samples > 200 mg/L	1	1	2	1
Year 2 (May 2014-April 2015)	Number of Samples	12	10	12	12
	Min TSS (mg/L)	3	7.7	2.6	1.1
	Max TSS (mg/L)	262	772	2200	869
	Average TSS (mg/L)	74	168	425	183
	Number samples < 30 mg/L	8	5	6	7
	% of Samples < 30mg/L	67%	50%	50%	58%
	Number of Samples > 200 mg/L	2	3	5	3
Year 3 (May 2015-April 2016)	Number of Samples	13	13	13	13
	Min TSS (mg/L)	7.3	8	13.4	3.7
	Max TSS (mg/L)	74.6	297	477	391
	Average TSS (mg/L)	27	48	106	63
	Number samples < 30 mg/L	8	9	3	11
	% of Samples < 30mg/L	62%	69%	23%	85%
	Number of Samples > 200 mg/L	0	1	2	2
Year 4 (May 2016-April 2017)	Number of Samples	12	13	13	13
	Min TSS (mg/L)	2.4	10	13	3
	Max TSS (mg/L)	172	416	2570	1320
	Average TSS (mg/L)	35	55	258	180
	Number samples < 30 mg/L	10	8	8	9
	% of Samples < 30mg/L	83%	62%	62%	69%
	Number of Samples > 200 mg/L	0	1	2	2
Year 5 (May 2017-April 2018)	Number of Samples	11	11	12	12
	Min TSS (mg/L)	8.5	10.2	24.8	3.8
	Max TSS (mg/L)	211	226	1010	3880
	Average TSS (mg/L)	57	74	194	382
	Number samples < 30 mg/L	6	5	3	7
	% of Samples < 30mg/L	55%	45%	25%	58%
	Number of Samples > 200 mg/L	1	1	4	2
Five-Year Totals	Number of Samples	60	59	63	64
	Min TSS (mg/L)	2.4	7.7	2.6	1.1
	Max TSS (mg/L)	482	772	2570	3880
	Average TSS (mg/L)	56	84	228	184
	Number samples < 30 mg/L	40	32	27	45
	% of Samples < 30mg/L	67%	54%	43%	70%
	Number of Samples > 200 mg/L	4	7	15	10

Graphical representations of the data are provided as **Figures 8a** and **8b**; these were separated into two figures to allow a better comparison of results between the monitoring locations within the upper and lower sections of the river. The lower river locations are the most relevant to the BUI evaluation.

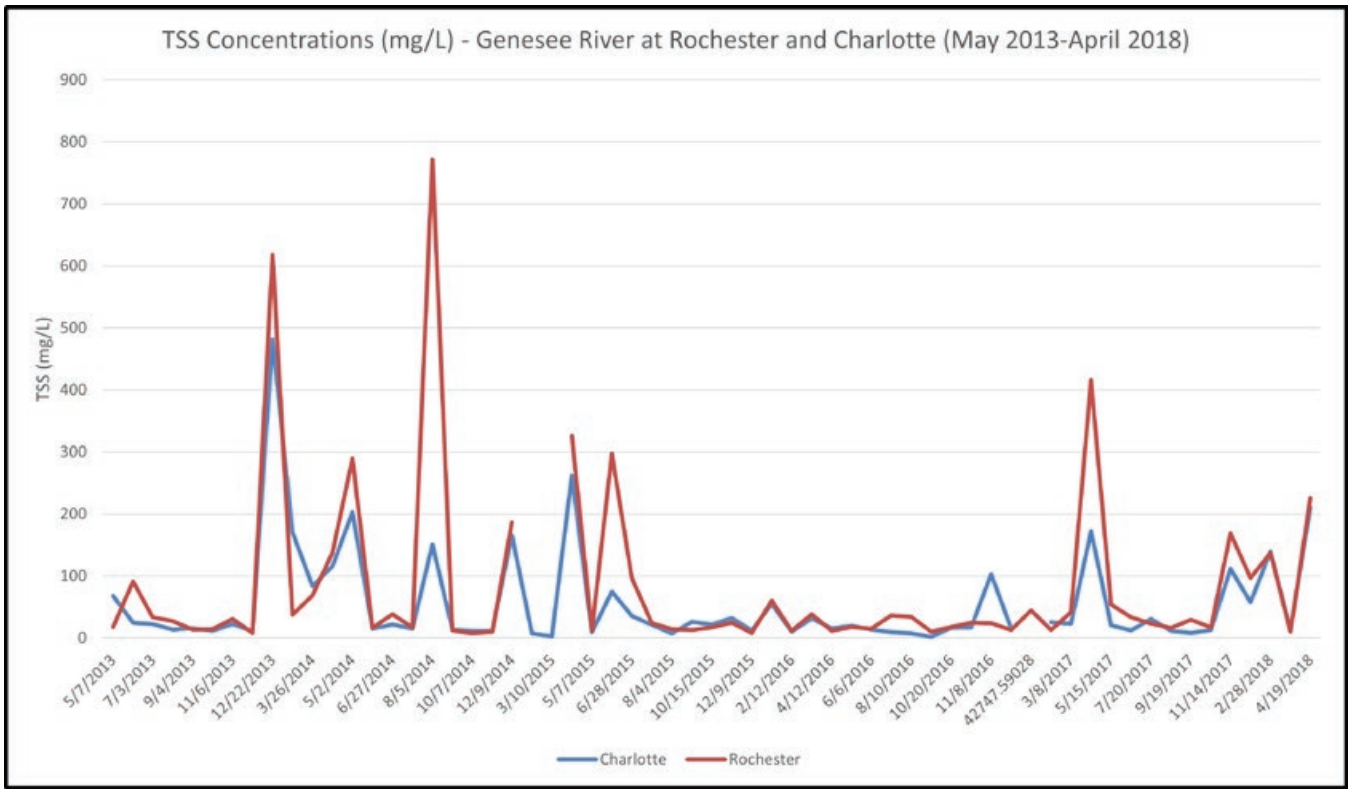


Figure 8a. Time series of total suspended solids (TSS) results from the lower Genesee River, 2013–2018

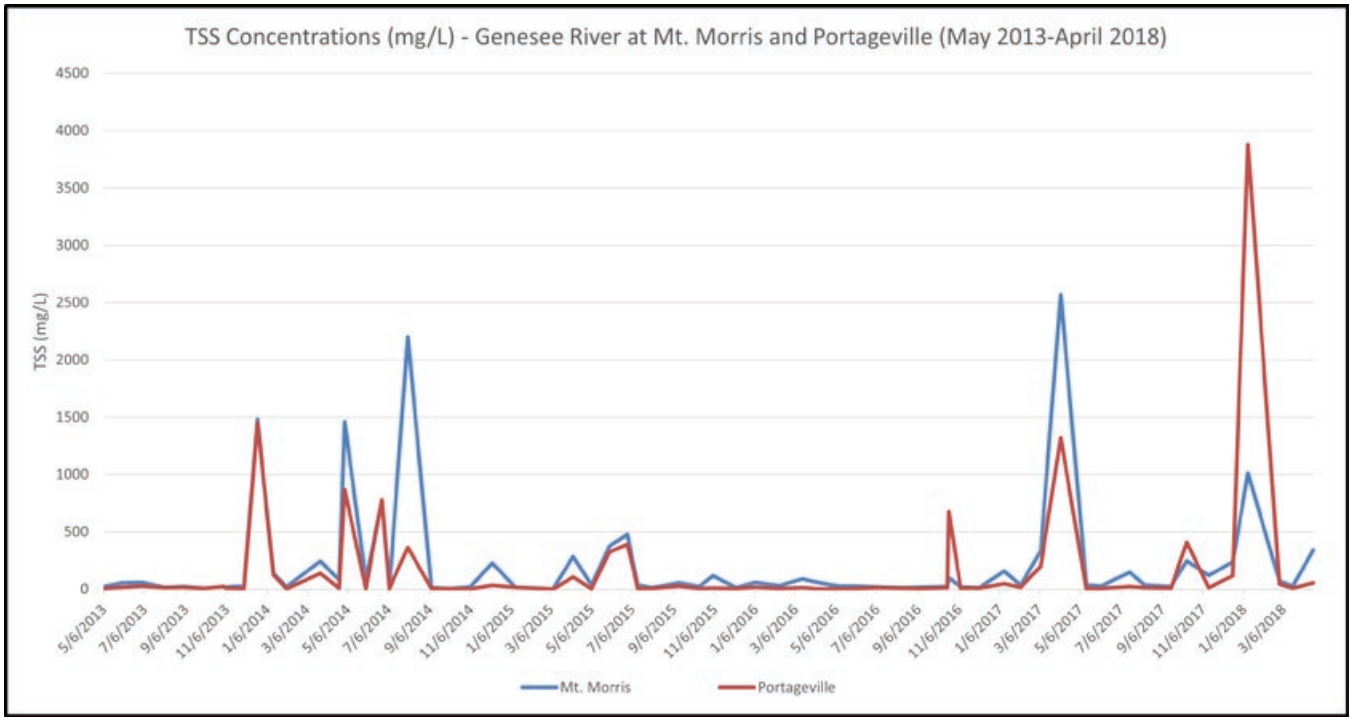


Figure 8b. Time series of total suspended solids (TSS) results from the upper Genesee River, 2013–2018

Overall, the results of the five-year monitoring program did not meet the first component of the BUI removal criterion, "Suspended sediment concentrations in the Genesee River remain less than 30 mg/L for at least 80% of a year." Within the AOC, the results at Charlotte met this target in only one of five years. The other three locations are outside of the AOC and are not subject to a direct evaluation against the removal criteria, but the results were similar to those at Charlotte, with only one of the three locations (Portageville, the furthest upstream) exhibiting TSS concentrations less than 30 mg/L for 80% of a year, and this also only occurred in one of five years. Of particular importance within the data set are the results at the Rochester monitoring location relative to those at Charlotte. These are the only two locations within the deep, wide, and relatively slow-moving section of the river in an urban/suburban setting. The location at Rochester is the best indicator of TSS concentrations that are coming into the AOC from upstream sources. Over the five-year monitoring period, TSS concentrations at Rochester were less than 30 mg/L 54% of the time, compared to 67% at Charlotte. While not meeting the target of 80% each year, TSS concentrations within the AOC were less than 30 mg/L more often than at the nearest location upstream of the AOC.

The second component of the BUI removal criterion, "Suspended sediment concentrations in the Genesee River exceed 200 mg/L...for no more than five events with a combined duration of not greater than 20 days, as determined by a five-year average," is more difficult to directly assess. Part of this criterion (i.e., "five events with a combined duration of not greater than 20 days") was intended to reflect annual conditions, averaged over a five-year period. However, as previously stated, obtaining the data set to allow for this would generally require continuous (daily) monitoring of TSS for five years, which was not feasible. When the five-year monitoring program was planned and implemented this was understood, but it was determined that the resulting data set would be sufficient for assessing TSS conditions within the AOC relative to upstream areas and determining whether sources within the AOC were resulting in the elevated TSS concentrations causing the BUI.

Figure 8a shows that TSS concentrations at Charlotte and Rochester exhibited similar concentration patterns over the five-year monitoring period, with the Rochester location exhibiting somewhat higher concentrations during the high-flow events (represented by higher peaks on the figure). As shown on **Table 2**, only 4 of the 60 samples collected at the AOC monitoring location at Charlotte over the five-year period exhibited TSS concentrations greater than 200 mg/L. At the Rochester location, upstream of the AOC, 7 of 59 samples were greater than 200 mg/L. Additionally, the upstream location at Rochester exhibited maximum and average TSS concentrations greater than those at Charlotte in all five years of the monitoring program. In fact, the maximum and average concentrations at Charlotte were also less than those at the upper watershed locations (Mt. Morris and Portageville) in all five years.

Taken altogether, the results of the study as presented above are a clear indication of sediment loading within the Genesee River watershed, originating outside of the Rochester Embayment AOC. There is no indication that sources within the AOC are significantly contributing to TSS concentrations at the Charlotte monitoring location. If significant AOC sources did exist, elevated TSS concentrations, relative to upstream locations, would be a more frequent occurrence at Charlotte.

A number of factors can contribute to high sediment load and persistent water clarity issues, including agricultural and land use practices; nonpoint sediment sources, such as highly erodible streambanks; and runoff during significant precipitation events. In addition to anthropogenic and climate-driven forces, the Genesee Valley's unique origins and geology are also important factors to consider. As previously mentioned, the upper watershed is predominantly rural/agricultural, and highly erodible banks exist in much of this area. Relative to the downstream section of the river, elevation changes in the upper watershed are more significant, and higher river velocity further exacerbates bank erosion, especially during high-flow events. In the lower section of the river, elevation change is less dramatic and land use gradually transitions to an urbanized setting with increased impervious surfaces and development. Not surprisingly, TSS concentrations in the lower part of the river at Rochester and Charlotte were consistently lower than those at Mt. Morris and Portageville. These results pair well with findings documented through previous large-scale studies conducted in the Genesee River basin (Makarewicz et al., 2015).

Land use in the upper watersheds of Great Lakes tributaries has become a recurring theme throughout the basin in recent years, specifically with regards to nutrient and sediment loads to the tributaries. This has encouraged water quality managers to focus efforts on restoring and improving landscape uses to minimize inputs from bank erosion and runoff. A considerable effort to implement such practices and programs has been initiated in the Genesee River basin, some of which are listed in the following section of this report. While the data from the five-year monitoring program do not show that the TSS conditions of the BUI removal criterion have been met, it has been demonstrated that conditions within the AOC are similar to or better than upstream conditions, are predominantly due to upstream sources, and that a significant component of the sources are the result of natural causes (e.g., streambank erosion). These conditions are consistent with three of the four scenarios allowing for BUI removal (USPC, 2001).

3.6.3 Additional Nutrient and Sediment Reduction Projects

In addition to support received through the Great Lakes AOC Program for project implementation, the Genesee River watershed has received a substantial amount of support for water quality improvement projects over several years. A testament of the importance to its stakeholders and communities, the initiatives listed in **Table 3** are expected to lead to improved water quality in the Genesee River.

Funding Recipient	Year	Funding (Source)	Project
NYSDEC	2010–2012	$305,000 (EPA)	Total Maximum Daily Load (TMDL) development for phosphorus in the Upper Black Creek
Genesee Co. SWCD	2017–2022	$749,240 (EPA)	Genesee River watershed phosphorous and sediment reduction project
CEI	2017–2020	$250,288 (EPA)	Reducing Nonpoint Source Pollution along the upper Genesee River
USDA-NRCS	2010–2017	$1,285,654 (USDA-NRCS)	In the lower Genesee River watershed, through Conservation Technical Assistance Program, Wildlife Habitat Incentives Program, and Environmental Quality Incentives Program, work to implement conservation practices to address habitat and wildlife protection and restoration, and reduce soil erosion and nutrient loading.
USDA-NRCS	2015–2021	$1,122,902 (USDA-NRCS)	Work directly with agricultural producers through Environmental Quality Incentives Program to implement conservation practices to reduce soil erosion and nutrient loading.
USDA-NRCS	2015-2022	$1,637,874 (USDA-NRCS)	In the upper Genesee River watershed, provide technical assistance through Farm Bill Programs to implement best management practices for reducing nutrients and sediment.
USDA-NRCS	2018-2023	$2,006,208 (USDA-NRCS)	In the upper Genesee River watershed, provide technical assistance through Farm Bill Programs to implement best management practices for reducing nutrients and sediment.
Genesee Co. SWCD	2018	$171,750 (NYSDAM)	Provide additional waste storage capacity to eliminate the need to spread manure in sensitive environmental conditions.
City of Rochester	2018	$1,000,000 (WQIP)	City of Rochester green infrastructure
Allegany Co. SWCD	2021	$250,950 (NYSDAM)	Genesee River bedded pack barns and manure storage
Livingston Co. SWCD	2021	$70,000 (NYSDAM)	Genesee River watershed silage leachate storage
Wyoming Co. SWCD	2021	$478,435 (NYSDAM)	Genesee River waste storage and trout stream forest buffer
Alleghany Co. SWCD	2022	$130,040 (NYSDAM)	Cropland conversion and buffer on one farm in Genesee River watershed
Genesee Co. SWCD	2022	$535,925 (NYSDAM)	Nutrient management and storage on one farm in the Oatka Creek/ Black Creek watershed
Livingston Co. SWCD	2022	$216,259 (NYSDAM)	Implement conservation practices on five farms in the Genesee River watershed
Wyoming Co. SWCD	2022	$36,360 (NYSDAM)	Riparian herbaceous buffer on one farm in the Oatka Creek Watershed
Town of Richmond	2022	$936,000 (WQIP)	Town of Richmond streambank stabilization and culvert replacement

Table 3. Nutrient and sediment reduction projects and programs in the Genesee River watershed that support BUI removal

3.7 Criteria Conclusions

The extensive amount of time, funding, and support invested to improve environmental conditions within the Rochester Embayment AOC since the Stage I/II RAP documents were prepared cannot be overstated. While some arguments made within this report in support of removing the Degradation of Aesthetics BUI attribute lingering impaired conditions to natural causes, lakewide or regional conditions, or sources outside of the AOC, it is important to consider that remedial actions completed to date have substantially improved aesthetic conditions and significantly reduced the risk of resurfacing issues in the future. Aside from these, it is evident the BUI removal criteria have been met to the maximum extent practicable under the RAP. Maintenance of improved conditions will continue to be challenged and tested by increasingly unpredictable climate patterns and natural forces within the watershed. Additional actions and programs will be implemented, where warranted and as feasible, both within and outside of the AOC, to continue the improvements made under the AOC program. Some of these are described in the next section of this report.

4.0 Additional Activities Supporting BUI Removal

The items presented in this section, while not initiated under the AOC program, include efforts that will continue to support and improve conditions within the Rochester Embayment AOC.

4.1 2018–2022 Lake Ontario Lakewide Action and Management Plan

The 2018–2022 Lake Ontario Lakewide Action and Management Plan (LAMP) is a binational, ecosystem-based action plan to restore and protect the water quality of Lake Ontario and its connecting river systems, the Niagara River and St. Lawrence River. This is the first Lake Ontario LAMP under the 2012 amendment of the GLWQA; subsequent updates are anticipated every five years. The LAMP was developed by member agencies of the Lake Ontario Partnership, which is a collaborative team of natural resource managers led by the governments of the U.S. and Canada, in cooperation and consultation with state and provincial governments, tribal governments, and watershed management agencies committed to restoring and protecting Lake Ontario, the Niagara River, and the St. Lawrence River. In preparing the LAMP, the Lake Ontario Partnership also sought input from scientists, First Nations, Métis, stakeholders, non-governmental organizations, and the general public.

The purpose of the LAMP is: 1) to summarize the current state of Lake Ontario according to the nine General Objectives of the GLWQA and point out key threats; 2) to outline actions that will be taken to address the threats and contribute to the restoration and protection of water quality in Lake Ontario; and 3) to engage all groups and individuals in the Lake Ontario basin to take action in protecting the water quality in Lake Ontario. LAMP-guided project implementation and agency support of the overall goals and objectives of the LAMP are expected to contribute to the continued restoration of beneficial uses historically hindered by degrading aesthetics within the Rochester Embayment AOC.

4.2 Dredging of the Federal Navigation Channel

Sediments within the federal navigation channel portion of the Genesee River are routinely dredged by the USACE. Because of the potential for water quality impacts during dredging activities, including elevated TSS concentrations, the dredging permits issued by NYSDEC include a stipulation that, under no circumstances, are the dredging operations to be conducted in such a manner that water and/or suspended sediments, be allowed to be discharged from the vessel by "overflow dredging"—the process of allowing excess water that accumulates within the dredge barge to overflow as it's filled. All material, including the water, must be discharged at the USACE-authorized open water placement areas in Lake Ontario. Additional information on navigational dredging and the associated management of sediments is provided in the Rochester Embayment Area of Concern ***Restrictions on Dredging Activities BUI Removal Report*** (NYSDEC/MCDPH, 2018).

4.3 Water Education Collaborative (WEC)/ H_2O Hero Campaign

To help mitigate the problem of urban stormwater runoff carrying nutrients and pollutants to local waterways, the WEC was established in 2001 based on a recommendation originally made in the Stage II RAP. The WEC is composed of experts, public interest parties, and local stakeholders. The primary goal of the WEC is to raise local stakeholder awareness of environmental issues and opportunities to mitigate them through public engagement and education initiatives. To achieve this goal, the WEC, with the support of Causewave Community Partners (formerly the Advertising Council of Rochester) and the Stormwater Coalition of Monroe County, launched the H_2O Hero campaign in 2007 with the vision that individuals can have a positive impact on local water conditions through awareness and modest changes in certain everyday activities.

Through the H_2O Hero campaign, the WEC offers interactive educational resources on the main sources of residential pollution and shows residents how they can reduce their pollution contribution and exhibit more environmentally responsible behavior, such as the proper use and storage of household and yard care products. Through the initiatives of the WEC and the H_2O Hero campaign, the population within the larger Genesee River watershed can better understand how they impact local water quality, and how they can actively participate in efforts to improve and protect their water resources through the reduction of nutrient and pollutant loading to waterways.

4.4 Genesee RiverWatch Initiative

In 2014, the CEI commenced the Genesee RiverWatch initiative, and since has passionately and successfully engaged communities within the watershed to provide awareness of critical issues and promote an appreciation for the river and its tributaries. Each year, Genesee RiverWatch facilitates educational and recreational experiences to enhance public knowledge and increase commitment to its future health (**geneseeriverwatch.org**, 2021). In addition to educating and informing, the organization collaborates with state and local partners to seek ways to improve water quality and overall environmental conditions. Through collaborative project design and implementation, Genesee RiverWatch is committed to restoring degraded riparian areas, reducing phosphorus and sediment load, and continuously supporting ongoing monitoring efforts.

Within the context of the Rochester Embayment AOC, ongoing collaboration and support of this organization represents a commitment to stewardship and education for the future. The Rochester Embayment will continue to benefit from programs, projects, and initiatives led by the Genesee RiverWatch community long after delisting.

4.5 Genesee River Nine Element (9E) Plan

In September 2015, NYSDEC approved the ***Genesee River Basin Nine Key Element Watershed Plan for Phosphorus and Sediment,*** with the goal of reducing nutrient and sediment loading to the Genesee River. Nine Element Plans are locally developed watershed-scale management plans designed to address known water quality issues. The 9E Plan identifies major sub-basins within the Genesee River watershed, and prioritizes nutrient and sediment reduction efforts within these sub-basins. Based on data collected through a suite of scientific studies, load estimates from point and nonpoint sources are listed, identifying land use and human activities which contribute the greatest negative impacts. From here, the 9E Plan has identified specific management measures and associated load reduction estimates favored to improve water quality throughout the watershed when implemented. Management measures such as grassed waterways, stream bank stabilization, cover crops, buffer strips, and other green infrastructure projects are effective practices identified for reducing phosphorus and sediment transport within and specific to the Genesee River watershed. Additionally, the Genesee River watershed has been designated as an Agricultural Priority Watershed under the federal GLRI Action Plan III. The development of the 9E Plan, along with the federal priority designation, serve to provide greater access to State and Federal Great Lakes funding opportunities that will continue to support projects to reduce watershed sediment and nutrient loads.

5.0 Public Outreach

On February 23, 2022, NYSDEC and MCDPH held a virtual public outreach event to present the rationale for removing the Degradation of Aesthetics BUI to the general public. The outreach event consisted of a formal presentation followed by a question-and-answer session where local stakeholders asked questions directly to NYSDEC and MCDPH staff regarding this BUI removal. Approximately 45 people participated in the event, including 20 representatives of federal, state, and local government agencies, and 25 from the general public (including members of the AOC RAC). All questions posed during the event were answered directly by NYSDEC and MCDPH staff.

Following the public outreach event, the draft BUI removal report was posted on the MCDPH website for a 30-day period during which the public was encouraged to review the report and to provide any comments or questions via email to MCDPH. No comments or questions were formally submitted by the public during this 30-day period. However, some additional information from a couple of longtime RAC members was informally conveyed to DEC and MCDPH, which provided insight into the changes related to aesthetic conditions within the AOC over time, and some of the related past decisions of the RAC. Where applicable and relevant, this information has been incorporated into this BUI removal report.

6.0 Conclusions

6.1 Removal Statement

The Degradation of Aesthetics BUI was originally listed as impaired due to multiple documented ecological issues described in the Stage I RAP, including:

- Accumulation of algae on lake shorelines,
- Presence of litter and sediment in the lower river after storms,
- Objectionable odors from chemical seeps at the Lower Falls,
- Accumulation of dead alewife on lake shorelines,
- Presence of discarded salmonids on river shorelines, and
- Turbid water quality conditions.

Over the past three decades, management actions have been undertaken to improve water quality and mitigate the causes of degraded aesthetic conditions within the Rochester Embayment AOC to the maximum extent practicable under the RAP. MCDPH and NYSDEC have determined that the established removal criteria for the Degradation of Aesthetics BUI have been substantially met to the extent possible under the AOC Program. Additionally, data presented herein illustrate that some causes underlying the Degradation of Aesthetics BUI are the result of impacts from the surrounding watershed outside of the AOC, and/or are considered lakewide or regional concerns not unique to the Rochester Embayment AOC. Therefore, under the BUI removal scenarios presented earlier in this report, the Degradation of Aesthetics *BUI* can be removed. The Rochester Embayment RAC fully supports the removal of this BUI.

6.2 Post-Removal Responsibilities

New York State Department of Environmental Conservation

NYSDEC will continue to monitor water quality in the lower Genesee River and the surrounding watershed through a variety of statewide programs and initiatives, including the Rotating Intensive Basin Studies (RIBS) program. The RIBS program monitors for a broad suite of contaminants, including TSS. NYSDEC will also continue to work with other partners, including federal agencies, to ensure appropriate monitoring of the Genesee River is conducted, where necessary and feasible, as part of binational lakewide management activities such as the

Lake Ontario Cooperative Science and Monitoring Initiative (CSMI) and nutrient assessments under Annex 4 of the GLWQA. And NYSDEC and watershed partners will continue to pursue implementation of projects supporting the Genesee River Nine Element Watershed Plan.

NYSDEC will also continue to promote the public's use of a volunteer ***Cladophora* survey**. Through an online portal, the public has an opportunity to report instances of *Cladophora* anywhere along New York's Great Lakes shorelines on a voluntary basis. Surveys submitted are reviewed by DEC staff and the location of occurrences are documented. The intended purpose of this survey is to provide a better understanding of where, under what conditions, and the extent to which *Cladophora* is accumulating.

As feasible and as funding allows, NYSDEC will work with MCDPH and other local partners to develop a plan for continued monitoring of conditions within the AOC after delisting, to ensure that the improved conditions leading to the removal of the Degradation of Aesthetics and other BUIs are maintained or further improved well into the future.

United States Environmental Protection Agency

USEPA will continue to provide funding for RAP/RAC coordination and technical assistance to the extent that resources are available to support the removal of remaining BUIs and ultimately the delisting of the Rochester Embayment AOC. NYSDEC Great Lakes Program staff will continue to assist with these efforts. USEPA and other federal agencies will also continue to recognize the Genesee River as an Agricultural Priority Watershed within the Great Lakes Basin.

Monroe County Department of Public Health

With EPA/GLRI funding, MCDPH currently provides a Coordinator for the Rochester Embayment AOC RAP, facilitation with RAC efforts, and technical assistance for AOC documentation and project design. With ongoing funding support, MCDPH will continue in these roles to assist the RAC and USEPA in achieving the long-term goal of delisting the Rochester Embayment AOC.

Remedial Advisory Committee

The RAC will continue to forward the objectives of the RAP by evaluating, supporting, and documenting the restoration of the Rochester Embayment AOC, until all BUIs are restored to the extent feasible under the AOC program and the long-term goal of delisting the AOC can be achieved.

7.0 References

Auer, M.T., Tomlinson, L.M., Higgins, S.N., Malkin, S.Y., Howell, E.T., Bootsma, H.A. 2010. Great Lake Cladophora in the 21st century: same algae – different ecosystem. J. Great Lakes Research. 36: 248-255.

Ecology and Environment. March 2009. Rochester Embayment Area of Concern Beneficial Use Impairment Delisting Criteria Report.

International Joint Commission. 1991. Restoring Beneficial Uses in Areas of Concern.

Kuczynski, A., Auer, M.T., Brooks, C.N., Grimm, A.G. 2016. The Cladophora resurgence in Lake Ontario: characterization and implications for management. Can. J. Fish. Aquat. Sci. 73: 999-1013.

Makarewicz, J.C., Lewis, T.W., Winslow, M., Rea, E., Dressel, L., Pettenski, D., Snyder, B.J., Richards, P., Zollweg, J. 2015. Utilizing intensive monitoring and simulations for identifying sources of phosphorus and sediment and for directing, siting, and assessing BMPs: The Genesee River example.

Neil, J.H., and G.E. Owen. 1964. Distribution, environmental requirements and significance of Cladophora in the Great Lakes. Publication 11, Great Lakes Research Division University of Michigan. pp. 113–121.

New York State Department of Environmental Conservation and Monroe County Department of Planning and Development. August 1993. Rochester Embayment Remedial Action Plan Stage I.

New York State Department of Environmental Conservation and Monroe County Department of Health. September 1997. Rochester Embayment Remedial Action Plan Stage II.

New York State Department of Environmental Conservation and Monroe County Department of Health. 2002. Rochester Embayment Remedial Action Plan 2002 Addendum.

New York State Department of Environmental Conservation and Monroe County Department of Public Health. December 2011. Addendum to Stage I and II Remedial Action Plans, Rochester Embayment Area of Concern.

New York State Department of Environmental Conservation and Monroe County Department of Public Health. 2018. Rochester Embayment Area of Concern Restrictions on Dredging Activities Beneficial Use Impairment Removal Report.

New York State Department of Environmental Conservation and Monroe County Department of Public Health. 2019. Rochester Embayment Area of Concern Eutrophication or Undesirable Algae Beneficial Use Impairment Removal Report.

O'Gorman, R., B.F. Lantry, C.P. Schneider. 2004. Effect of stock size, climate, predation, and trophic status on recruitment of Alewives in Lake Ontario, 1978-2000. Transactions of the American Fisheries Society. 133: 855-867.

Painter, D.S., and G. Kamaitis. 1987. Reduction in Cladophora biomass and tissue phosphorus in Lake Ontario, 1972-83. Canadian Journal of Fisheries and Aquatic Sciences 44, 2212–2215.

United States Policy Committee (USPC). 2001. Restoring United States Areas of Concern: Delisting Principles and Guidelines. Adopted by the US Policy Committee on December 6, 2001.

Walsh, M.G., B.C. Weidel, M.J. Connerton, and J.P. Holden. 2016. Status of Alewife and Rainbow Smelt in the U.S. waters of Lake Ontario, 2015. Section 12a in NYSDEC 2015 Annual Report, Bureau of Fisheries Lake Ontario Unit and St. Lawrence River Unit to the Great Lakes Fisheries Commission's Lake Ontario Committee. Albany, NY.

Appendices

Appendix A – Remedial Advisory Committee Members

Appendix B – MCDPH Ontario Beach Closure Data (1976–2020)

Appendix C – Communication Documenting Elimination of Odor Complaints

Appendix D – Communication Documenting Absence of Alewife Die-offs

Appendix E – Communication Documenting Absence of Discarded Salmonids

Appendix F – 2013–2018 TSS Monitoring Data

Appendix A – Remedial Advisory Committee Members

Starr O'Neil
Rochester Embayment Area of Concern - Remedial Action
Plan Coordinator
Monroe County Dept. of Public Health
111 Westfall Road – Room 910
Rochester, NY 14620
soneil@monroecounty.gov
585-753-5209

Name	Organization	E-mail
Charlie Knauf	General Public (MCDPH retiree)	**anniebl@frontiernet.net**
Jayme Breschard	Barton & Loguidice	**jbreschard@bartonandloguidice.com**
Louis J. DiVincenti	Seneca Park Zoo	**Louis.DiVincenti@monroecounty.gov**
Anne Spaulding	City of Rochester	**Anne.Spaulding@CityofRochester.Gov**
Wayne D. Howard	Solara Concepts	**whoward@solaraconcepts.com**
Jeff Wyatt	URMC	**Jeff_Wyatt@URMC.Rochester.edu**
Chris Fredette	Roch. Comm. for Scientific Info.	**cfredette@rochester.rr.com**
Charles Valeska	General Public	**CHAZVAL46@YAHOO.COM**
David Klein	The Nature Conservancy	**dklein@tnc.org**
George Thomas	Genesee RiverWatch	**gthomas@geneseeriverwatch.org**
Paul Flansburg	Great Lakes Comm., Sierra Club	**pflansburg@hotmail.com**
Paul Sawyko	Water Education Collaborative	**psawyko@rmsc.org**
Michael G. Parker	Charlotte Comm. Assoc.	**manyhats2u@gmail.com**
John Waud	RIT	**jmwscl@rit.edu**
Jae Forbes	City of Rochester	**forbesj@cityofrochester.gov**
Dorraine Kirkmire	City of Rochester	**Kirkmired@CityofRochester.Gov**
Stevie Adams	The Nature Conservancy	**sadams@tnc.org**
June Summers	Gen. Valley Audubon Society	**summers@frontiernet.net**
Agency Staff		
Peter Rightmyer	MCDPH	**prightmyer@monroecounty.gov**
Sara Madison	MCDPH	**saramadison@monroecounty.gov**
Nicole Saavedra	NYSDEC	**Nicole.saavedra@dec.ny.gov**
Jennifer Dunn	NYSDEC	**jennifer.dunn@dec.ny.gov**
Joan Kennedy	NYSDEC	**joan.kennedy@dec.ny.gov**
Jim Lehnen	NYSDEC	**James.lehnen@dec.ny.gov**

Appendix B – MCDPH Ontario Beach Closure Data (1976–2020)

ONTARIO BEACH REASONS FOR CLOSURES

Year	# of Open days	% Open	# of Closed days	% Closed	% River Flow	% Rain	% Algae	% Water Clarity	% Bacteria	Total %
1976	50	76	16	24	3	84	0	13	0	100
1977	58	76	17	24	23	59	0	18	0	100
1978	69	94	4	6	0	88	12	0	0	100
1979	66	92	6	8	0	50	8	42	0	100
1980	68.5	94	4.5	6	33	45	0	22	0	100
1981	66	82	14	18	0	43	18	39	0	100
1982	72	90	8	10	0	44	12	19	25	100
1983	59	81	14	19	3	36	18	43	0	100
1984	42.5	58	30.5	42	16	16	12	56	0	100
1985	65	89	8	11	0	6	31	56	6	99
1986	47	69	21	31	0	43	0	57	0	100
1987	66	84	13	16	0	50	12	38	0	100
1988	61	84	12	16	0	58	8	33	0	99
1989	53	75	18	25	0	17	0	83	0	100
1990	53	73	20	27	0	40	28	32	0	100
1991	53	73	20	27	0	20	20	60	0	100
1992	31	46	36	54	28	28	5	36	3	100
1993	51	76	16	24	0	9	31	53	6	99
1994	40	54	34	46	3	23	36	28	9	99
1995	40	54	34	46	0	4	51	38	7	100
1996	39	53	34	47	9	12	38	38	3	100
1997	52	71	21	29	17	9	14	60	0	100
1998	48	60	32	40	24	20	12	35	9	100
1999	49	61	31	39	2	6	37	47	8	100
2000	43	54	37	46	1	15	41	27	16	100
2001	56	70	24	30	0	3	17	38	42	100
2002	52	71	21	29	5	2	7	86	0	100
2003	48	66	25	34	24	0	2	48	26	100
2004	49	61	31	39	6	9	33	52	0	100
2005	55	69	25	31	2	9	17	71	1	100
2006	50	62.5	30	37.5	1.3	20.3	2.7	73	2.7	100
2007	49	65	26	35	0	5	54	22	19	100
2008	46	63	27	37	0	13	19	17	51	100
2009	38	47.5	42	52.5	4.4	20.2	0	23	52.4	100
2010	39	48.1	42	51.9	0	16.3	7	36	40.7	100
2011	52	64	29	36	0	14.3	6.9	31.6	47.2	100
2012	37	45.7	44	54.3	0	7.6	1.1	21.2	70.1	100
2013	32	43	42	57	1	8.3	7.8	27	56	100
2014	44	65.7	23	34.3	0	0	0	78.3	21.7	100
2015	46	62.2	28	38	0	14	0	50	36	100
2016	60	81.1	14	18.9	0	0	0	64.3	35.7	100
2017	61	82.4	13	17.6	0	0	0	100	0	100
2018	64	86.5	10	13.5	0	30	0	70	0	100
2019	66	89.2	8	10.8	0	0	0	100	0	100
2020	60	81	14	18.9	0	14.3	0	85.7	0	100
Average	52.1	69.8	22.6	30.2	4.6	22.5	13.7	45.9	13.2	100

Appendix C – Communication Documenting Elimination of Odor Complaints

From: Wade S Silkworth
To: Peter A Rightmyer; Kuzia-Carmel, Michael X (DEC); Saavedra, Nicole (DEC)
Cc: Charlie Knauf
Subject: RE: Odor complaints - lower falls
Date: Monday, January 27, 2020 8:21:24 AM
Attachments: image002.png

ATTENTION: This email came from an external source. Do not open attachments or click on links from unknown senders or unexpected emails.

Thank you Pete. Great work!

Mike, Nikki - please include this email as supporting documentation in the Aesthetics document.

Thanks,
Wade

.....
Manager of Environmental Health
Monroe County Dept. of Public Health

From: Peter A Rightmyer <PRightmyer@monroecounty.gov>
Sent: Monday, January 27, 2020 7:31 AM
To: Wade S Silkworth <WadeSilkworth@monroecounty.gov>
Subject: FW: Odor complaints - lower falls

From: Mullin, Steve <Steve_Mullin@rge.com>
Sent: Sunday, January 26, 2020 3:27 PM
To: Peter A Rightmyer <PRightmyer@monroecounty.gov>
Cc: STONE, NATHAN <nathan.stone@avangrid.com>
Subject: RE: Odor complaints - lower falls

CAUTION: This email originated from outside your organization. Exercise caution when opening attachments or clicking links, especially from unknown senders.

Hello Peter,

Sorry for the delay, I was of town for meetings last week and this is the first opportunity I've had to get back you.

Following up to my phone message to you on January 16th, I was following up to a message I received from Nathan Stone in our communication group regarding your inquiry if RG&E had received any complaints of coal tar odors in recent years at the Genesee River Lower Falls. In my message I indicated I've worked at RG&E for 20+ years in the environmental group (various roles since 1998), recently as Manager of the Environmental Remediation group (since Oct.2018) and during this time I've not been aware of any complaints coal tar- / petroleum type odors at the lower falls. I've also asked a couple colleagues that have been in the group for the past few years if they have any awareness or knowledge and they don't as well.

Hope this helps and if you have any other questions, please feel free to let me know.

Sincerely,

Steve

Steve Mullin, **PMP**
Manager – Environmental Remediation & Projects
Avangrid EH&S

89 East Avenue, 7th Floor
Rochester, NY 14649
Telephone 585.771.4556
Cell 585.315.0079
steve_mullin@rge.com

From: Peter A Rightmyer [mailto:PRightmyer@monroecounty.gov]
Sent: Tuesday, January 21, 2020 11:16 AM
To: Mullin, Steve
Subject: EXTERNAL: Odor complaints - lower falls

Sorry I missed your call last week. Our Remedial Action Committee (RAC) meeting for the Rochester Embayment Area of Concern recently questioned if there had been any complaints of odors associated with coal tar seeps in the lower falls area of the Genesee River. The Monroe County Department of Public Health has not received any complaints of odors in this area in many years. In your voice mail you stated that in your 20+ years as the Manager of Environmental Remediation and Projects (RG&E), you are not aware of any complaints either. Can you send me an email confirming this statement so we can provide this to our RAC members at the next meeting. Thank You for your time and if you have any questions, feel free to contact me.

Peter Rightmyer
Public Health Sanitarian
111 Westfall Rd. Room 916
Rochester, New York 14620
(585) 753-5480

Appendix D – Communication Documenting Absence of Alewife Die-offs

Saavedra, Nicole (DEC)

From: Connerton, Michael J (DEC)
Sent: Friday, March 20, 2020 11:46 AM
To: Lantry, Jana R (DEC); Saavedra, Nicole (DEC)
Cc: bflantry@usgs.gov; Weidel, Brian C
Subject: Re: alewife dieoff papers

Hi Nicki
Yes, that is my recollection too. We received calls or reports of dead alewife in harbors or stream mouths but I don't think the calls were for nuisance, rather concern over the status of the population. I recall that our thought at the time was that alewife moved inshore to warmer water, then were driven into streams by cold water temperatures where some died.

From: Lantry, Jana R (DEC) <jana.lantry@dec.ny.gov>
Sent: Friday, March 20, 2020 11:37 AM
To: Saavedra, Nicole (DEC) <Nicole.Saavedra@dec.ny.gov>
Cc: bflantry@usgs.gov <bflantry@usgs.gov>; Connerton, Michael J (DEC) <michael.connerton@dec.ny.gov>
Subject: RE: alewife dieoff papers

We did receive calls at the Cape for specific areas (e.g., off pultneyville, Bald Eagle)....I wouldn't say they were causing nuisance conditions – my recollection is that it was more out of concern for the status of the alewife population. I believe these fish were noted by the Seth Green Crew – I've CCed Mike to add insight.

From: Saavedra, Nicole (DEC) <Nicole.Saavedra@dec.ny.gov>
Sent: Friday, March 20, 2020 11:23 AM
To: Lantry, Jana R (DEC) <jana.lantry@dec.ny.gov>
Cc: bflantry@usgs.gov
Subject: Re: alewife dieoff papers

Hi Jana - I found a reference to the decrease in year classes from 2013 and 2014 likely due to below average summer temps and harsh winter conditions in both 2013-2014 and 2014-2015. This reference comes from the 2015 LOU Annual Fisheries Report and not the latest one. I have decided this is in fact relevant info for the BUI Report.

I may have already asked this question when we discussed but, can I confirm with you via personal communication that you and staff at the LOU did not receive calls/reports of fish washing ashore, causing nuisance conditions during this period?

Thank you!
Nikki

From: Lantry, Jana R (DEC) <jana.lantry@dec.ny.gov>
Sent: Tuesday, March 3, 2020 3:12 PM
To: Lantry, Brian <bflantry@usgs.gov>
Cc: Saavedra, Nicole (DEC) <Nicole.Saavedra@dec.ny.gov>
Subject: alewife dieoff papers

1

Brian – Are you aware of any published papers that mention the alewife dieoffs from late 60s/early 70s and cause? If so please let Nikki know,\
Thanks

Jana Lantry
Aquatic Biologist 2, Region 6 Fisheries Manager, Division of Fish and Wildlife

New York State Department of Environmental Conservation
317 Washington St., 5th Floor
Watertown, NY 13601
P: (315) 785-2263 | F: (315) 785-2242 | Jana.Lantry@dec.ny.gov
www.dec.ny.gov |

Appendix E – Communication Documenting Absence of Discarded Salmonids

Fishery Advisory Board

Monroe County, New York

Cheryl Dinolfo
County Executive

Frank Sanza
Chair

"A Fish for all Seasons"

January 15, 2019

Mr. Wade Silkworth
Monroe County Department of Public Health
111 Westfall Road
Rochester, NY 14620

Dear Wade,

I am writing to inform you that the Monroe County Fisheries Advisory Board has received no reports of discarded salmonids or witnessed first hand discarded salmonids on the shoreline of the river in at least 5 years along the shoreline of the lower Genesee River, due to fishing practices, for more than five consecutive years. We concur with the decision of the Rochester Embayment Remedial Action Plan Advisory Committee to recommend that this Beneficial Use Impairment be removed for the Rochester Embayment of Lake Ontario and the Lower Genesee River. If you have further questions or concerns, please feel free to contact me.

Sincerely,

Frank Sanza, Chairman

F J Sanza

Cc:

S. Olufsen, MCFAB

CityPlace • 50 West Main Street • Suite 8100 • Rochester, New York 14614-1225 5
(585) 753-2000 • Fax (585) 753-2028 • www.monroecounty.gov
www.fishingmonroecounty.com

Appendix F – 2013–2018 TSS Monitoring Data

USGS Location Identifier	Location Description	CHEMICAL_NAME	SAMPLE_DATE	Result	UNITS mg/l - Milligrams per liter	Qualifier J - Esimated value
04232007	Genesee River Charlotte	Total Suspended Solids	5/7/2013	68	mg/l	
04232007	Genesee River Charlotte	Total Suspended Solids	6/4/2013	24.9	mg/l	
04232007	Genesee River Charlotte	Total Suspended Solids	7/3/2013	22.7	mg/l	
04232007	Genesee River Charlotte	Total Suspended Solids	8/6/2013	13.5	mg/l	
04232007	Genesee River Charlotte	Total Suspended Solids	9/4/2013	15.8	mg/l	
04232007	Genesee River Charlotte	Total Suspended Solids	10/2/2013	11.5	mg/l	
04232007	Genesee River Charlotte	Total Suspended Solids	11/6/2013	22.7	mg/l	
04232007	Genesee River Charlotte	Total Suspended Solids	12/3/2013	11	mg/l	
04232007	Genesee River Charlotte	Total Suspended Solids	12/22/2013	482	mg/l	
04232007	Genesee River Charlotte	Total Suspended Solids	1/16/2014	170	mg/l	
04232007	Genesee River Charlotte	Total Suspended Solids	3/26/2014	83.6	mg/l	
04232007	Genesee River Charlotte	Total Suspended Solids	4/24/2014	116	mg/l	
04232007	Genesee River Charlotte	Total Suspended Solids	5/2/2014	203	mg/l	
04232007	Genesee River Charlotte	Total Suspended Solids	6/2/2014	15.3	mg/l	
04232007	Genesee River Charlotte	Total Suspended Solids	6/27/2014	21.7	mg/l	
04232007	Genesee River Charlotte	Total Suspended Solids	7/7/2014	15.2	mg/l	
04232007	Genesee River Charlotte	Total Suspended Solids	8/5/2014	151	mg/l	J
04232007	Genesee River Charlotte	Total Suspended Solids	9/9/2014	14	mg/l	
04232007	Genesee River Charlotte	Total Suspended Solids	10/7/2014	11.9	mg/l	
04232007	Genesee River Charlotte	Total Suspended Solids	11/6/2014	11.6	mg/l	
04232007	Genesee River Charlotte	Total Suspended Solids	12/9/2014	166	mg/l	J
04232007	Genesee River Charlotte	Total Suspended Solids	1/13/2015	7.3	mg/l	
04232007	Genesee River Charlotte	Total Suspended Solids	3/10/2015	3	mg/l	
04232007	Genesee River Charlotte	Total Suspended Solids	4/9/2015	262	mg/l	
04232007	Genesee River Charlotte	Total Suspended Solids	5/7/2015	9.3	mg/l	
04232007	Genesee River Charlotte	Total Suspended Solids	6/2/2015	74.6	mg/l	
04232007	Genesee River Charlotte	Total Suspended Solids	6/28/2015	35.5	mg/l	
04232007	Genesee River Charlotte	Total Suspended Solids	7/15/2015	20.9	mg/l	
04232007	Genesee River Charlotte	Total Suspended Solids	8/4/2015	7.3	mg/l	
04232007	Genesee River Charlotte	Total Suspended Solids	9/15/2015	26.2	mg/l	
04232007	Genesee River Charlotte	Total Suspended Solids	10/15/2015	21.9	mg/l	
04232007	Genesee River Charlotte	Total Suspended Solids	11/4/2015	32.4	mg/l	J
04232007	Genesee River Charlotte	Total Suspended Solids	12/9/2015	12.2	mg/l	
04232007	Genesee River Charlotte	Total Suspended Solids	1/6/2016	55.1	mg/l	
04232007	Genesee River Charlotte	Total Suspended Solids	2/12/2016	10.2	mg/l	
04232007	Genesee River Charlotte	Total Suspended Solids	3/17/2016	31.6	mg/l	J
04232007	Genesee River Charlotte	Total Suspended Solids	4/12/2016	15.9	mg/l	
04232007	Genesee River Charlotte	Total Suspended Solids	5/10/2016	19.8	mg/l	
04232007	Genesee River Charlotte	Total Suspended Solids	6/6/2016	13.4	mg/l	
04232007	Genesee River Charlotte	Total Suspended Solids	7/7/2016	9.5	mg/l	
04232007	Genesee River Charlotte	Total Suspended Solids	8/10/2016	7.3	mg/l	
04232007	Genesee River Charlotte	Total Suspended Solids	9/7/2016	2.4	mg/l	
04232007	Genesee River Charlotte	Total Suspended Solids	10/20/2016	16.1	mg/l	
04232007	Genesee River Charlotte	Total Suspended Solids	10/21/2016	16.8	mg/l	J
04232007	Genesee River Charlotte	Total Suspended Solids	11/8/2016	103	mg/l	
04232007	Genesee River Charlotte	Total Suspended Solids	12/6/2016	15.6	mg/l	J
04232007	Genesee River Charlotte	Total Suspended Solids	2/7/2017	25	mg/l	
04232007	Genesee River Charlotte	Total Suspended Solids	3/8/2017	23	mg/l	J
04232007	Genesee River Charlotte	Total Suspended Solids	4/7/2017	172	mg/l	J
04232007	Genesee River Charlotte	Total Suspended Solids	5/15/2017	20.6	mg/l	
04232007	Genesee River Charlotte	Total Suspended Solids	6/6/2017	12.1	mg/l	
04232007	Genesee River Charlotte	Total Suspended Solids	7/20/2017	30.8	mg/l	J
04232007	Genesee River Charlotte	Total Suspended Solids	8/10/2017	11.9	mg/l	
04232007	Genesee River Charlotte	Total Suspended Solids	9/19/2017	8.5	mg/l	
04232007	Genesee River Charlotte	Total Suspended Solids	10/12/2017	13.1	mg/l	
04232007	Genesee River Charlotte	Total Suspended Solids	11/14/2017	112	mg/l	
04232007	Genesee River Charlotte	Total Suspended Solids	1/12/2018	57.7	mg/l	
04232007	Genesee River Charlotte	Total Suspended Solids	2/28/2018	139	mg/l	
04232007	Genesee River Charlotte	Total Suspended Solids	3/20/2018	13	mg/l	
04232007	Genesee River Charlotte	Total Suspended Solids	4/19/2018	211	mg/l	

USGS Location Identifier	Location Description	CHEMICAL_NAME	SAMPLE_DATE	Result	UNITS mg/l - Milligrams per liter	Qualifier J - Esimated value
04227500	Genesee River Mt Morris	Total Suspended Solids	5/6/2013	25.4	mg/l	
04227500	Genesee River Mt Morris	Total Suspended Solids	6/3/2013	56.2	mg/l	
04227500	Genesee River Mt Morris	Total Suspended Solids	7/2/2013	57.4	mg/l	
04227500	Genesee River Mt Morris	Total Suspended Solids	8/5/2013	15.8	mg/l	
04227500	Genesee River Mt Morris	Total Suspended Solids	9/3/2013	22.6	mg/l	
04227500	Genesee River Mt Morris	Total Suspended Solids	10/1/2013	8.8	mg/l	
04227500	Genesee River Mt Morris	Total Suspended Solids	11/5/2013	19.4	mg/l	
04227500	Genesee River Mt Morris	Total Suspended Solids	12/2/2013	27.2	mg/l	
04227500	Genesee River Mt Morris	Total Suspended Solids	12/22/2013	1480	mg/l	
04227500	Genesee River Mt Morris	Total Suspended Solids	1/15/2014	137	mg/l	
04227500	Genesee River Mt Morris	Total Suspended Solids	2/3/2014	20.8	mg/l	
04227500	Genesee River Mt Morris	Total Suspended Solids	3/26/2014	244	mg/l	
04227500	Genesee River Mt Morris	Total Suspended Solids	4/23/2014	83.9	mg/l	
04227500	Genesee River Mt Morris	Total Suspended Solids	5/1/2014	1460	mg/l	
04227500	Genesee River Mt Morris	Total Suspended Solids	6/2/2014	83.9	mg/l	
04227500	Genesee River Mt Morris	Total Suspended Solids	6/26/2014	767	mg/l	
04227500	Genesee River Mt Morris	Total Suspended Solids	7/7/2014	22.1	mg/l	
04227500	Genesee River Mt Morris	Total Suspended Solids	8/4/2014	2200	mg/l	J
04227500	Genesee River Mt Morris	Total Suspended Solids	9/8/2014	13	mg/l	
04227500	Genesee River Mt Morris	Total Suspended Solids	10/6/2014	7.2	mg/l	
04227500	Genesee River Mt Morris	Total Suspended Solids	11/5/2014	20.2	mg/l	
04227500	Genesee River Mt Morris	Total Suspended Solids	12/8/2014	225	mg/l	J
04227500	Genesee River Mt Morris	Total Suspended Solids	1/12/2015	18.5	mg/l	
04227500	Genesee River Mt Morris	Total Suspended Solids	3/9/2015	2.6	mg/l	
04227500	Genesee River Mt Morris	Total Suspended Solids	4/8/2015	283	mg/l	
04227500	Genesee River Mt Morris	Total Suspended Solids	5/6/2015	34	mg/l	
04227500	Genesee River Mt Morris	Total Suspended Solids	6/1/2015	374	mg/l	
04227500	Genesee River Mt Morris	Total Suspended Solids	6/28/2015	477	mg/l	
04227500	Genesee River Mt Morris	Total Suspended Solids	7/14/2015	37.7	mg/l	
04227500	Genesee River Mt Morris	Total Suspended Solids	8/3/2015	13.4	mg/l	
04227500	Genesee River Mt Morris	Total Suspended Solids	9/14/2015	55.8	mg/l	
04227500	Genesee River Mt Morris	Total Suspended Solids	10/14/2015	22.8	mg/l	
04227500	Genesee River Mt Morris	Total Suspended Solids	11/3/2015	115	mg/l	J
04227500	Genesee River Mt Morris	Total Suspended Solids	12/8/2015	13.9	mg/l	
04227500	Genesee River Mt Morris	Total Suspended Solids	1/5/2016	58.3	mg/l	
04227500	Genesee River Mt Morris	Total Suspended Solids	2/11/2016	30.2	mg/l	
04227500	Genesee River Mt Morris	Total Suspended Solids	3/16/2016	88	mg/l	J
04227500	Genesee River Mt Morris	Total Suspended Solids	4/11/2016	55.5	mg/l	
04227500	Genesee River Mt Morris	Total Suspended Solids	5/9/2016	27.9	mg/l	
04227500	Genesee River Mt Morris	Total Suspended Solids	6/6/2016	28.5	mg/l	
04227500	Genesee River Mt Morris	Total Suspended Solids	7/6/2016	19.3	mg/l	
04227500	Genesee River Mt Morris	Total Suspended Solids	8/9/2016	14.5	mg/l	
04227500	Genesee River Mt Morris	Total Suspended Solids	9/6/2016	18.6	mg/l	
04227500	Genesee River Mt Morris	Total Suspended Solids	10/19/2016	22.8	mg/l	
04227500	Genesee River Mt Morris	Total Suspended Solids	10/21/2016	98.8	mg/l	J
04227500	Genesee River Mt Morris	Total Suspended Solids	11/8/2016	20	mg/l	
04227500	Genesee River Mt Morris	Total Suspended Solids	12/6/2016	13	mg/l	J
04227500	Genesee River Mt Morris	Total Suspended Solids	1/12/2017	157	mg/l	
04227500	Genesee River Mt Morris	Total Suspended Solids	2/6/2017	34.9	mg/l	
04227500	Genesee River Mt Morris	Total Suspended Solids	3/8/2017	334	mg/l	J
04227500	Genesee River Mt Morris	Total Suspended Solids	4/7/2017	2570	mg/l	J
04227500	Genesee River Mt Morris	Total Suspended Solids	5/15/2017	37.4	mg/l	
04227500	Genesee River Mt Morris	Total Suspended Solids	6/6/2017	26.1	mg/l	
04227500	Genesee River Mt Morris	Total Suspended Solids	7/19/2017	149	mg/l	J
04227500	Genesee River Mt Morris	Total Suspended Solids	8/10/2017	36.9	mg/l	
04227500	Genesee River Mt Morris	Total Suspended Solids	9/19/2017	24.8	mg/l	
04227500	Genesee River Mt Morris	Total Suspended Solids	10/12/2017	246	mg/l	
04227500	Genesee River Mt Morris	Total Suspended Solids	11/14/2017	120	mg/l	
04227500	Genesee River Mt Morris	Total Suspended Solids	12/20/2017	237	mg/l	
04227500	Genesee River Mt Morris	Total Suspended Solids	1/12/2018	1010	mg/l	
04227500	Genesee River Mt Morris	Total Suspended Solids	2/28/2018	71.6	mg/l	
04227500	Genesee River Mt Morris	Total Suspended Solids	3/20/2018	26.8	mg/l	
04227500	Genesee River Mt Morris	Total Suspended Solids	4/20/2018	344	mg/l	

USGS Location Identifier	Location Description	CHEMICAL_NAME	SAMPLE_DATE	Result	UNITS mg/l - Milligrams per liter	Qualifier J - Esimated value
04223000	Genesee River Portageville	Total Suspended Solids	5/6/2013	5.1	mg/l	
04223000	Genesee River Portageville	Total Suspended Solids	6/3/2013	16.8	mg/l	
04223000	Genesee River Portageville	Total Suspended Solids	7/2/2013	27.9	mg/l	
04223000	Genesee River Portageville	Total Suspended Solids	8/5/2013	15.3	mg/l	
04223000	Genesee River Portageville	Total Suspended Solids	9/3/2013	16.7	mg/l	
04223000	Genesee River Portageville	Total Suspended Solids	10/1/2013	7.6	mg/l	
04223000	Genesee River Portageville	Total Suspended Solids	11/1/2013	22.9	mg/l	
04223000	Genesee River Portageville	Total Suspended Solids	11/5/2013	11.8	mg/l	
04223000	Genesee River Portageville	Total Suspended Solids	12/2/2013	6.7	mg/l	
04223000	Genesee River Portageville	Total Suspended Solids	12/22/2013	1450	mg/l	
04223000	Genesee River Portageville	Total Suspended Solids	1/15/2014	125	mg/l	
04223000	Genesee River Portageville	Total Suspended Solids	2/3/2014	4.3	mg/l	
04223000	Genesee River Portageville	Total Suspended Solids	3/26/2014	136	mg/l	
04223000	Genesee River Portageville	Total Suspended Solids	4/23/2014	9.9	mg/l	
04223000	Genesee River Portageville	Total Suspended Solids	5/1/2014	869	mg/l	
04223000	Genesee River Portageville	Total Suspended Solids	6/2/2014	6.7	mg/l	
04223000	Genesee River Portageville	Total Suspended Solids	6/26/2014	778	mg/l	
04223000	Genesee River Portageville	Total Suspended Solids	7/7/2014	7.1	mg/l	
04223000	Genesee River Portageville	Total Suspended Solids	8/4/2014	363	mg/l	J
04223000	Genesee River Portageville	Total Suspended Solids	9/8/2014	5.8	mg/l	
04223000	Genesee River Portageville	Total Suspended Solids	10/6/2014	3.2	mg/l	
04223000	Genesee River Portageville	Total Suspended Solids	11/5/2014	4.7	mg/l	
04223000	Genesee River Portageville	Total Suspended Solids	12/8/2014	34	mg/l	J
04223000	Genesee River Portageville	Total Suspended Solids	1/12/2015	15.5	mg/l	
04223000	Genesee River Portageville	Total Suspended Solids	3/9/2015	1.1	mg/l	
04223000	Genesee River Portageville	Total Suspended Solids	4/8/2015	107	mg/l	
04223000	Genesee River Portageville	Total Suspended Solids	5/6/2015	3.8	mg/l	
04223000	Genesee River Portageville	Total Suspended Solids	6/1/2015	322	mg/l	
04223000	Genesee River Portageville	Total Suspended Solids	6/28/2015	391	mg/l	
04223000	Genesee River Portageville	Total Suspended Solids	7/14/2015	6	mg/l	
04223000	Genesee River Portageville	Total Suspended Solids	8/3/2015	6.6	mg/l	
04223000	Genesee River Portageville	Total Suspended Solids	9/14/2015	27.9	mg/l	
04223000	Genesee River Portageville	Total Suspended Solids	10/14/2015	6.8	mg/l	
04223000	Genesee River Portageville	Total Suspended Solids	11/3/2015	9.9	mg/l	J
04223000	Genesee River Portageville	Total Suspended Solids	12/8/2015	6.5	mg/l	
04223000	Genesee River Portageville	Total Suspended Solids	1/5/2016	16.8	mg/l	
04223000	Genesee River Portageville	Total Suspended Solids	2/11/2016	7	mg/l	
04223000	Genesee River Portageville	Total Suspended Solids	3/16/2016	12.1	mg/l	J
04223000	Genesee River Portageville	Total Suspended Solids	4/11/2016	3.7	mg/l	
04223000	Genesee River Portageville	Total Suspended Solids	5/9/2016	3	mg/l	
04223000	Genesee River Portageville	Total Suspended Solids	6/6/2016	8.3	mg/l	
04223000	Genesee River Portageville	Total Suspended Solids	7/6/2016	14.6	mg/l	
04223000	Genesee River Portageville	Total Suspended Solids	8/9/2016	10.6	mg/l	
04223000	Genesee River Portageville	Total Suspended Solids	9/6/2016	6.8	mg/l	
04223000	Genesee River Portageville	Total Suspended Solids	10/19/2016	13.9	mg/l	
04223000	Genesee River Portageville	Total Suspended Solids	10/21/2016	676	mg/l	J
04223000	Genesee River Portageville	Total Suspended Solids	11/8/2016	9.3	mg/l	
04223000	Genesee River Portageville	Total Suspended Solids	12/6/2016	9.9	mg/l	J
04223000	Genesee River Portageville	Total Suspended Solids	1/12/2017	48.7	mg/l	
04223000	Genesee River Portageville	Total Suspended Solids	2/6/2017	17.7	mg/l	
04223000	Genesee River Portageville	Total Suspended Solids	3/8/2017	200	mg/l	J
04223000	Genesee River Portageville	Total Suspended Solids	4/7/2017	1320	mg/l	J
04223000	Genesee River Portageville	Total Suspended Solids	5/15/2017	3.8	mg/l	
04223000	Genesee River Portageville	Total Suspended Solids	6/6/2017	7.4	mg/l	
04223000	Genesee River Portageville	Total Suspended Solids	7/19/2017	22.9	mg/l	J
04223000	Genesee River Portageville	Total Suspended Solids	8/10/2017	15.1	mg/l	
04223000	Genesee River Portageville	Total Suspended Solids	9/19/2017	11.3	mg/l	
04223000	Genesee River Portageville	Total Suspended Solids	10/12/2017	407	mg/l	
04223000	Genesee River Portageville	Total Suspended Solids	11/14/2017	15	mg/l	
04223000	Genesee River Portageville	Total Suspended Solids	12/20/2017	117	mg/l	
04223000	Genesee River Portageville	Total Suspended Solids	1/12/2018	3880	mg/l	
04223000	Genesee River Portageville	Total Suspended Solids	2/28/2018	43.8	mg/l	
04223000	Genesee River Portageville	Total Suspended Solids	3/20/2018	9.7	mg/l	
04223000	Genesee River Portageville	Total Suspended Solids	4/20/2018	55.2	mg/l	

USGS Location Identifier	Location Description	CHEMICAL_NAME	SAMPLE_DATE	Result	UNITS mg/l - Milligrams per liter	Qualifier J - Esimated value
04231600	Genesee River Rochester	Total Suspended Solids	5/7/2013	17.5	mg/l	
04231600	Genesee River Rochester	Total Suspended Solids	6/4/2013	91.4	mg/l	
04231600	Genesee River Rochester	Total Suspended Solids	7/3/2013	33.8	mg/l	
04231600	Genesee River Rochester	Total Suspended Solids	8/6/2013	27.2	mg/l	
04231600	Genesee River Rochester	Total Suspended Solids	9/4/2013	13.6	mg/l	
04231600	Genesee River Rochester	Total Suspended Solids	10/2/2013	14.2	mg/l	
04231600	Genesee River Rochester	Total Suspended Solids	11/6/2013	31.1	mg/l	
04231600	Genesee River Rochester	Total Suspended Solids	12/3/2013	8.1	mg/l	
04231600	Genesee River Rochester	Total Suspended Solids	12/22/2013	618	mg/l	
04231600	Genesee River Rochester	Total Suspended Solids	1/16/2014	37.9	mg/l	
04231600	Genesee River Rochester	Total Suspended Solids	3/26/2014	68.7	mg/l	
04231600	Genesee River Rochester	Total Suspended Solids	4/24/2014	138	mg/l	
04231600	Genesee River Rochester	Total Suspended Solids	5/2/2014	290	mg/l	
04231600	Genesee River Rochester	Total Suspended Solids	6/2/2014	16.1	mg/l	
04231600	Genesee River Rochester	Total Suspended Solids	6/27/2014	38.6	mg/l	
04231600	Genesee River Rochester	Total Suspended Solids	7/8/2014	17.1	mg/l	
04231600	Genesee River Rochester	Total Suspended Solids	8/5/2014	772	mg/l	J
04231600	Genesee River Rochester	Total Suspended Solids	9/9/2014	12.3	mg/l	
04231600	Genesee River Rochester	Total Suspended Solids	10/7/2014	7.7	mg/l	
04231600	Genesee River Rochester	Total Suspended Solids	11/6/2014	10.1	mg/l	
04231600	Genesee River Rochester	Total Suspended Solids	12/9/2014	187	mg/l	J
04231600	Genesee River Rochester	Total Suspended Solids	4/9/2015	326	mg/l	
04231600	Genesee River Rochester	Total Suspended Solids	5/7/2015	11.8	mg/l	
04231600	Genesee River Rochester	Total Suspended Solids	6/2/2015	297	mg/l	
04231600	Genesee River Rochester	Total Suspended Solids	6/28/2015	96.6	mg/l	
04231600	Genesee River Rochester	Total Suspended Solids	7/15/2015	24.1	mg/l	
04231600	Genesee River Rochester	Total Suspended Solids	8/4/2015	14.3	mg/l	
04231600	Genesee River Rochester	Total Suspended Solids	9/15/2015	13	mg/l	
04231600	Genesee River Rochester	Total Suspended Solids	10/15/2015	17.3	mg/l	
04231600	Genesee River Rochester	Total Suspended Solids	11/4/2015	24.8	mg/l	J
04231600	Genesee River Rochester	Total Suspended Solids	12/9/2015	8	mg/l	
04231600	Genesee River Rochester	Total Suspended Solids	1/6/2016	60.5	mg/l	
04231600	Genesee River Rochester	Total Suspended Solids	2/12/2016	11.4	mg/l	
04231600	Genesee River Rochester	Total Suspended Solids	3/17/2016	38.6	mg/l	J
04231600	Genesee River Rochester	Total Suspended Solids	4/12/2016	11.6	mg/l	
04231600	Genesee River Rochester	Total Suspended Solids	5/10/2016	17.8	mg/l	
04231600	Genesee River Rochester	Total Suspended Solids	6/6/2016	15.2	mg/l	
04231600	Genesee River Rochester	Total Suspended Solids	7/7/2016	36.2	mg/l	
04231600	Genesee River Rochester	Total Suspended Solids	8/10/2016	34.5	mg/l	
04231600	Genesee River Rochester	Total Suspended Solids	9/7/2016	10	mg/l	
04231600	Genesee River Rochester	Total Suspended Solids	10/20/2016	17.5	mg/l	
04231600	Genesee River Rochester	Total Suspended Solids	10/21/2016	24.7	mg/l	J
04231600	Genesee River Rochester	Total Suspended Solids	11/8/2016	23.7	mg/l	
04231600	Genesee River Rochester	Total Suspended Solids	12/6/2016	13.2	mg/l	J
04231600	Genesee River Rochester	Total Suspended Solids	1/12/2017	44.9	mg/l	
04231600	Genesee River Rochester	Total Suspended Solids	2/7/2017	12.8	mg/l	
04231600	Genesee River Rochester	Total Suspended Solids	3/8/2017	42	mg/l	J
04231600	Genesee River Rochester	Total Suspended Solids	4/7/2017	416	mg/l	J
04231600	Genesee River Rochester	Total Suspended Solids	5/15/2017	54.3	mg/l	
04231600	Genesee River Rochester	Total Suspended Solids	6/6/2017	33.7	mg/l	
04231600	Genesee River Rochester	Total Suspended Solids	7/20/2017	23.6	mg/l	J
04231600	Genesee River Rochester	Total Suspended Solids	8/10/2017	16.1	mg/l	
04231600	Genesee River Rochester	Total Suspended Solids	9/19/2017	29.2	mg/l	
04231600	Genesee River Rochester	Total Suspended Solids	10/12/2017	17.4	mg/l	
04231600	Genesee River Rochester	Total Suspended Solids	11/14/2017	169	mg/l	
04231600	Genesee River Rochester	Total Suspended Solids	1/12/2018	96.5	mg/l	
04231600	Genesee River Rochester	Total Suspended Solids	2/28/2018	137	mg/l	
04231600	Genesee River Rochester	Total Suspended Solids	3/20/2018	10.2	mg/l	
04231600	Genesee River Rochester	Total Suspended Solids	4/19/2018	226	mg/l	


NEW
YORK
STATE
Department of
Environmental
Conservation