



Department of
Environmental
Conservation

ROCHESTER EMBAYMENT AREA OF CONCERN

Restrictions on Dredging Activities
Beneficial Use Impairment Removal Report

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Rochester Embayment AOC
Restrictions on Dredging Activities BUI Removal Report

Rochester Embayment Area Of Concern
Restrictions on Dredging Activities
Beneficial Use Impairment (BUI) Removal Report

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This Beneficial Use Impairment (BUI) Removal Report was prepared by the New York State Department of Environmental Conservation (NYSDEC) in cooperation with 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). The NYSDEC and MCDPH acknowledge the significant efforts of the Remedial Advisory Committee (RAC) in engaging stakeholders and the public throughout the BUI removal process. For more information, please contact either the Remedial Action Plan Coordinator at MCDPH or the AOC Coordinator at NYSDEC Division of Water.

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I. Introduction

This Beneficial Use Impairment (BUI) Removal Report identifies the background, criteria, supporting data, and rationale to remove the “Restrictions on Dredging Activities” BUI from the Rochester Embayment Area of Concern (AOC). The status of this BUI is currently listed as “Impaired” due primarily to concerns from the Remedial Advisory Committee (RAC) of the impacts that overflow dredging could have on the Genesee River and Lake Ontario, specifically from acute toxicity within the water column and the resuspension of contaminated sediments.

To assess the condition of this BUI, the RAC developed a series of specific BUI removal criteria that would need to be met in order to address the water quality concerns associated with dredging practices performed within the AOC. The three current removal criteria were developed by the RAC to address sediment chemistry evaluation pertaining to open lake disposal of dredged materials, overflow dredging, and regulatory requirements.

Following an evaluation of applicable data sets and evidence gathered to address this impairment, the New York State Department of Environmental Conservation (NYSDEC) has determined that the specific criteria needed to remove BUI 7 – Restrictions on Dredging Activities have been met for the Rochester Embayment AOC. The Rochester Embayment RAC is in agreement with this determination and fully supports the removal of this BUI. Accordingly, the intent of this removal report is to present the supporting evidence and rationale which justifies the removal of the Restrictions on Dredging Activities BUI from the Rochester Embayment AOC.

II. Background

In the Great Lakes Basin, the International Joint Commission (IJC) has identified 43 Areas of Concern (AOC) where pollution from past industrial production and waste disposal practices has created hazardous waste sites and contaminated sediments. Up to fourteen 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 of the river up to the Lower Falls in Rochester, NY and the portion of Lake Ontario within a straight line drawn from Bogus Point to Nine Mile Point (**Figure 1**). Remedial Action Plan (RAP) coordination is led by the Monroe County Department of Public Health (MCDPH), in collaboration with the local RAC (**Appendix A**).

The Rochester Embayment was originally listed as an AOC due to the known or suspected presence of multiple BUIs, including Restrictions on Dredging Activities, which is generally considered impaired when “contaminants in sediments exceed standards, criteria, or guidelines such that there are restrictions on dredging or disposal activities” (IJC, 1991).

All AOCs have a RAP that is developed in three stages: Stage I that identifies specific problems, Stage II which outlines the restoration work needed, and Stage III (not yet developed for the

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Rochester AOC) which documents the cumulative completion of all restoration activities and provides delisting justification for the entire AOC. Currently, the Rochester Embayment RAP consists of the Stage I and Stage II RAP documents, which identify the causes of and restoration plans for the BUIs throughout the AOC. Ultimately, through the progressive development of each component, a Stage III RAP will be developed which will document the completion of all the identified remedial efforts and restoration activities within the AOC. In addition, this final stage will display how the completed efforts satisfy each of the BUI removal criteria goals and objectives, as well as a recommendation that the AOC designation be removed and the AOC is officially delisted.

According to the Stage I RAP for the Rochester Embayment AOC (MCDPD, 1993), the Restrictions on Dredging Activities BUI is listed as “impaired” for the Lower Genesee River portion of the AOC, and “not impaired” for the Rochester Embayment of Lake Ontario portion of the AOC. This determination was made as a result of Monroe County’s concern of the impacts that overflow dredging could have on the Lower Genesee River, specifically acute toxicity within the water column and the resuspension of contaminated sediments. At the request of Monroe County, NYSDEC prohibited overflow dredging in Rochester Harbor. Additionally, the Stage I RAP indicated that the restriction on overflow dredging should be maintained in order to prevent excessive turbidity at public beaches.

A sediment evaluation approach was initially selected as the BUI removal criteria: “When contaminants in sediments do not exceed standards, criteria or guidelines such that there are restrictions on dredging or disposal activities.” This BUI removal criterion matched IJC BUI removal guidance for restrictions on dredging activities and provided a more comprehensive evaluation of sediment chemistry that would be resuspended in the water column during dredging activities, while also incorporating regulatory requirements and standards.

Throughout the RAC’s meeting history, the removal criteria for the Restrictions on Dredging Activities BUI have been refined and better defined to incorporate a complete and comprehensive assessment of site conditions. During the May 18, 2012 RAC meeting the most recent BUI removal criteria were approved, which consisted of three criteria that addressed sediment chemistry evaluation and open lake disposal, overflow dredging, and regulatory requirements.

A. BUI Removal Criteria

The BUI removal criteria for the Restrictions on Dredging Activities BUI were developed by the RAC in order to address the water quality concerns associated with dredging practices performed within the AOC. Through the guidance of technical subcommittees, it was the RAC’s determination during a meeting held on May 18, 2012, that if the following criteria could be achieved the restrictions on dredging BUI for the AOC could be removed.

As determined by the RAC, the removal criteria for the Restrictions on Dredging Activities BUI are as follows (Rochester Embayment RAC 2012 Minutes):

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1. Due to conditions created by overflow dredging, it will be prohibited in the Genesee River.
2. Sediments from routine commercial and recreational navigation channel areas historically dredged by the USACE will meet standards for Open Lake Disposal.
3. Sites outside of the historically dredged channel will be required to follow the current or future NYSDEC/ACOE/USEPA permitting processes and meet the associated standards.

The above BUI removal criteria are consistent with United States Environmental Protection Agency (USEPA) Delisting Guidance document (USPC, 2001) and the International Joint Commission (IJC) delisting guidelines (IJC, 1991).

B. Endpoint

The endpoint to restore this BUI is achieved by satisfying each of the above criteria, which will ensure that the area's environment and overall water quality are adequately protected. As further described below, each of the listed BUI removal criteria have been satisfactorily met as a result of State and Federal permitting requirements and standards. Therefore, removal of the Restrictions on Dredging Activities BUI, from the Rochester Embayment AOC is warranted and proposed by the RAC committee members.

C. BUI Removal Comments and Report Preparation

The following questions were considered when evaluating whether to proceed with the change in status for the Restrictions on Dredging Activities BUI:

1. Are sufficient data available to assess the status of this BUI in terms of the specific removal criteria?
2. Does the information available regarding restoration of the impaired beneficial use support the BUI removal criteria?
3. Does the RAC and general public concur that the BUI removal criteria have been met?

NYSDEC and MCDPH prepared this evaluation and included a thorough review of technical reports and supporting documents.

III. Technical Guidance Resources

In order to evaluate each of the BUI removal criteria, a series of historical references, permitting requirements, and guidance documents have been utilized to assess sediment conditions and future dredging operational restrictions within the Rochester Embayment AOC. Through the resources described below, the RAC was able to determine that the sediment quality as well as future screening requirements for dredging and disposal operations would justify removal of the Restrictions on Dredging Activities BUI.

A. Technical Guidance Resource #1: New York State Technical & Operational Guidance Series 5.1.9 – “In Water and Riparian Management of Dredged Material”

The NYSDEC developed the New York State Technical & Operational Guidance Series 5.1.9 – “In Water and Riparian Management of Sediment and Dredged Material” (TOGS 5.1.9) in an effort to develop a “uniform and balanced approach to dredging projects” throughout the waters of New York State (NYSDEC, 2004). This document provides detailed guidance on how to properly assess, plan, permit, dredge, evaluate, and monitor a dredging project successfully. Through this document, a complete and comprehensive dredging project can be designed to ensure that all environmental concerns are considered and addressed.

In-water sediment dredging is a necessary yet complicated process, often resulting in the short term resuspension of fine and coarse grain material that degrades water quality and impacts the fish and wildlife species within the system. Additionally, for dredged management units where chemical or biological contaminants have been deposited, unregulated dredging operations can result in further contaminant distribution through sediment and chemical transport. Therefore, ensuring that adequate delineation of contaminants and dredging boundaries, best management practices, and placement methods are implemented throughout the planning and implementation process is imperative in protecting water quality and avoiding increased degradation of the water column and surrounding sediments.

The TOGS 5.1.9 guidance document is the primary resource used by the NYSDEC technical staff during the evaluation and permitting of dredging projects. Its content outlines the necessary permit requirements but also incorporates guidance that is to be used to identify appropriate ways of assessing sediment quality, performing dredging, and managing dredged materials. If a project fails to adhere to the TOGS guidance, it will typically not be permitted. Though each dredging project is unique and requires individual analysis for permitting, guidance through TOGS 5.1.9 provides a blueprint on all project components necessary in obtaining a dredging permit through New York State that is consistent with all regulations and regulatory requirements, to ensure water quality and environmental conditions are managed and maintained.

B. *Technical Guidance Resource #2: Great Lakes Dredged Material Testing and Evaluation Manual*

The Great Lakes Dredged Material Testing and Evaluation Manual (GLTM) was developed through the combined efforts of the USEPA and the USACE, in order to “present guidance on testing and evaluation for proposed discharges of dredged material into the United States waters of the Great Lakes Basin” (USEPA & USACE, 1998). The manual’s evaluation process is based on a tiered approach that integrates chemical, physical, and biological factors in order to determine the impacts that the dredging activities and materials will have on the environment. Each subsequent tier offers a greater level of intensity in the evaluation of the dredged material, providing additional evidence beyond standard chemical analysis. This allows for a complete and comprehensive determination, based on multiple factors and site specific considerations.

The initial tier for the GLTM performs a basic analysis on the project, based on available information and background conditions, while successive tiers incorporate more detailed and specialized tests which provide additional scientific information used in the determination

process. Within each tier it will be concluded that either “1) available information is not sufficient to make a contaminant determination, or 2) available information is sufficient to make a contaminant determination.” A determination will conclude if the project and dredged material will or will not have “unsuitable, adverse, contaminant-related impacts” (USEPA & USACE, 1998). If a determination is unable to be made, additional information will be needed therefore requiring progression to the next evaluation tier.

The GLTM is used by the USACE to evaluate all dredging projects throughout the Great Lakes Basin, as it provides a comprehensive evaluation of the dredging and disposal practices appropriate for a dredging project. This testing manual is especially useful when beneficial reuse and open lake disposal options are considered, as it evaluates direct impacts to aquatic biota and overall water quality beyond standard chemical threshold values. It is also used by NYSDEC staff in permitting of dredge activities, as it provides additional levels of verification to TOGS 5.1.9 through scientific processes in determining ultimate and direct impacts to the environment.

IV. BUI Indicator Status Resolution

The Rochester Embayment AOC’s Restrictions on Dredging Activities BUI has been assessed through a series of State and Federal policies and permit requirements, which conclude that each of the removal criteria has been adequately achieved. Though all dredging projects are unique and site specific, requiring individual assessments to site specific conditions and objectives, the established removal criteria is the best method in determining if the BUI has been adequately addressed or safeguarded to ensure water quality conditions will be maintained, therefore justifying removal.

A. Restrictions on Dredging BUI, Criteria 1: Overflow Dredging

Overflow dredging is the process of allowing excess water, that accumulates within the dredge barge during dredging, to overflow as it’s filled. This process increases the dredged material loading, resulting in fewer disposal trips and optimizing the operational efficiency of the project. However, as the excess water is decanted back into the river system, lower density particles can overflow the barge and cause an increase in turbidity. An increase of turbidity within the water column can potentially result in acute toxicity for many aquatic biota and the recontamination and dispersion of contaminants through the re-suspension of compounds. Therefore, this practice is primarily used with caution and for sediment that has been properly evaluated and determined to be without appreciable contamination (no toxicity to aquatic life).

TOGS 5.1.9 approaches overflow dredging in a conservative manner, recommending that the practice be permitted on only a site specific basis following detailed review, and when dredged sediments are classified as “Class A – No Appreciable Contamination (No Toxicity to aquatic life)” (NYSDEC, 2004). In summation, though overflow dredging can be considered for site specific projects, it is only permissible under very specific and conservative circumstances which demonstrate that water quality and environmental conditions will not be adversely impacted as a result of the overflow.

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The Genesee River's federal navigation channel is routinely dredged by the USACE, with the most recent permitting of the operations and dredging occurring in 2016. These operations require that the USACE obtain a "Protection of Waters" permit from the NYSDEC to ensure regulations and environmental conditions are maintained. The NYSDEC evaluated the proposed operations and issued a permit (Permit ID: 8-2614-00604/00006) with a series of conditions which were required in order to ensure the environment and eco-system were adequately protected. The prohibition of overflow dredging is included as condition four of the permit, stating "Under no circumstances is 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" or discharged from the vessel(s) other than at the approved open-lake disposal site" (**Appendix B**). This permit condition is maintained within the permitting records for this location and will be incorporated within future navigational dredging permits unless sufficient precautions and environmental justification is provided.

Though a complete prohibition on overflow dredging has not been established within the AOC, site specific evaluations and permit conditions have been incorporated into past and future dredging operations, therefore addressing the concerns associated with overflow dredging practices. Through both the technical guidance documents (i.e., TOGS 5.1.9 and GLTM) and permitting requirements specifically set for the Rochester Embayment AOC, the overflow dredging concerns emphasized with BUI removal criteria 1 have been adequately addressed.

B. Restrictions on Dredging BUI, Criteria 2: Open Lake Disposal

Open Lake Disposal (OLD) is often proposed for large dredging projects where significant sediment volumes are generated, typically associated with routine maintenance of Federal Navigation Channels, which make alternative placement options difficult and expensive. While OLD is cautiously used due to the resuspension and deposition of fine grain material, it is acceptable in certain circumstances where it can be shown not to result in adverse impacts to the environment, aquatic biota or the placement location. According the Stage I RAP; "As of 1992, sediments from the Genesee River are deemed suitable for open lake disposal" (MCDPD, 1993).

The GLTM's tiered approach is used in the evaluation of dredged material proposed for OLD, as it provides multiple tiers of evidence on the overall affects and impacts the material will have from both a physical and biological perspective. As described above, the subsequent tiers of the GLTM provide information used in determining if the material will cause adverse impacts based on specific testing conditions which replicate conditions during OLD. If the advanced testing verifies that OLD is appropriate, the practice will be permissible.

Dredging within the Genesee River's federal navigation channel is performed by the USACE, during routine maintenance of the channels navigable depths. In 2016, the NYSDEC issued a Protection of Waters – Water Quality Certification Permit, which authorized the USACE to perform routine dredging within the federal navigation channel of the Genesee River, within the Rochester Embayment AOC boundaries. The permit also identified that OLD would be permitted within a specified Lake Ontario disposal site. "Dredging of an estimated maximum of

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450,000 cubic yards of material from the federal navigational channel and placement of the material at the authorized Lake Ontario open-lake disposal site.”³

The USACE utilized the GLTM in order to evaluate the dredging practices for the navigational dredging project and determine acceptable disposal methods which would not result in adverse impacts to the environment. The material from within the federal navigation channel was analyzed and compared to both a Lake Ontario reference area as well as the proposed OLD placement area, in order to determine if adverse or unacceptable related impacts would be expected from OLD of the dredged material. Determinations were based on an analysis and comparison of the material's physical and chemical (inorganics, metals, PAHs, pesticides, PCBs) composition. In addition, advanced testing was performed in order to predict the release of contaminants into the water column, which was then directly compared to applicable water quality standards.

The testing results and comparison analysis allowed for a determination to be made on the applicability and impacts that OLD would have on the area. The analysis also incorporated historical sampling/evaluations from previous dredging projects within the project area in order to provide additional data and supporting documentation. It was concluded that OLD would be an acceptable disposal method for the Rochester Embayment navigation channel material due to the lack of adverse impacts to the environment; “Evaluation of Rochester Harbor and offshore Lake Ontario sediments shows that the open lake placement of dredged sediments at the existing, authorized open-lake placement area is not expected to cause unacceptable, adverse, contaminated-related impacts.”

The NYSDEC evaluated the sampling results and conclusions presented by the USACE and determined that OLD was an acceptable practice for the proposed navigational maintenance dredging. A Protection of Waters – Water Quality Certification permit was issued on February 1, 2016.

Though additional sampling and advanced analysis will be required for future proposals to perform OLD, the USACE has obtained appropriate permits to perform OLD within the Rochester Embayment navigation channel for over 30 years. While there is no reason to assume that future dredging projects will not meet OLD criteria, similar advanced testing procedures and analysis through the GLTM will be required in order to justify the practice and obtain appropriate permits. Therefore, this BUI removal criterion is considered to be satisfied.

C. Restrictions on Dredging BUI, Criterion 3: Permitting for Dredging Operations Located Outside of the Federal Navigation Channel

The policy of New York State, set forth in Title 5 of Article 15 of the Environmental Conservation Law (ECL), is to preserve and protect the State's lakes, rivers, streams and ponds. In order to ensure this is performed the Protection of Waters Regulatory Program was developed by the NYSDEC to prevent undesirable activities on water bodies by establishing and enforcing regulations. According to the Protection of Waters regulation 608/608.5 (Use and Protection of Waters/Excavation or placement of fill in navigable waters), a permit is required for excavation or placement of fill in navigable waters of the State, below the mean high water level, including

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adjacent and contiguous marshes and wetlands: “*Permit required.* No person, local public corporation or interstate authority may excavate from or place fill, either directly or indirectly, in any of the navigable waters of the State or in marshes, estuaries, tidal marshes and wetlands that are adjacent to and contiguous at any point to any of the navigable waters of the State, and that are inundated at mean high water level or tide, without a permit issued pursuant to this Part.”

Similarly, the USACE, NYS Office of General Services (NYSOGS), and the NYS Department of State (NYSDOS) have similar laws and permitting requirements which regulate in water projects. In an effort to ensure individual projects obtain all necessary permits, across multiple regulatory agencies, a Joint Application was developed. This application form is exclusively for activities affecting streams, waterways, waterbodies, coastal areas, sources of water, and endangered and threatened species, based on project specific conditions and objectives; and identifies NYSDEC, USACE, NYSOGS, and NYSDOS permitting requirements. The application is utilized by these agencies in order to ensure permitting requirements and appropriate methodologies are incorporated into the project.

The Joint Application form ensures that all necessary and current permitting requirements are obtained and properly regulated throughout the project design and implementation process. This ensures that a consistent and comprehensive permitting process is implemented for all inwater projects, including dredging activities. These controls and regulatory process ensures that all projects abide by all regulatory requirements, are protective to the environment, and incorporates appropriate best management practices for all stages of the project. As a result, all areas within the AOC will be properly addressed and permitted within the AOC. Therefore BUI criteria 3 has been satisfied.

V. Conclusions

As discussed within this document, the established BUI removal criteria have been adequately achieved and therefore justify removal of BUI 7 – Restrictions on Dredging Activities for the Rochester Embayment AOC.

Due to the fact that all dredging projects are unique, specific restrictions and requirements are difficult to implement. However, as a result of a series of environmental regulations, permit conditions, and monitoring studies, future dredging operations will be evaluated and permitted in a selective and conservative manner that is protective of environmental conditions. Through these regulatory measures and technical guidance documents overflow dredging, open lake disposal, and proper permitting, each of the BUI removal criteria will be sustained.

A. Removal Statement

In the Stage I and Stage II RAPs for the Rochester Embayment AOC, the Restrictions on Dredging Activities BUI was originally listed as Impaired for the Lower Genesee River portion of the AOC. This designation was made as a result of Monroe County’s concern of the impacts that overflow dredging could have on the waterbody, specifically acute toxicity within the water column and the resuspension of contaminated sediments.

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In order to assess the status of the Restrictions on Dredging Activities BUI, the NYSDEC consulted the New York State Technical & Operational Guidance Series 5.1.9 – “In Water and Riparian Management of Sediment and Dredged Material” (TOGS 5.1.9) and the Great Lakes Dredged Material Testing and Evaluation Manual (GLTM) as technical guidance resources. These documents are used by the USEPA, USACE, and NYSDEC in the evaluation of dredged material and ultimately in the permitting process associated with dredging activities. TOGS 5.1.9 and the GLTM were used in the permitting of 2016 maintenance dredging in the Genesee River’s federal navigational channel by the USACE. This dredging project was used to re-assess the removal criteria for the Restrictions on Dredging Activities BUI.

Following an evaluation of applicable data sets and evidence gathered to address this impairment, the New York State Department of Environmental Conservation (NYSDEC) has determined that the specific criteria needed to remove BUI 7 – Restrictions on Dredging Activities have been met. The RAC fully supports the recommendation that the Restrictions on Dredging Activities BUI for the Rochester Embayment AOC be removed from the list of impaired BUIs.

B. BUI Removal Steps (To Be completed as steps are taken)

	<i>Completed</i>	<i>Date</i>	<i>Step Taken</i>
1.	√	8/1993	BUI first documented as “Impaired” in the Stage I RAP.
2.	√	5/2012	BUI removal criteria revised with RAC consensus.
3.	√	12/2017	RAP advisory committee agreed to proceed forward with BUI removal.
4.		3/2018	Public meeting advertised and held, information, outreach, and comment on removal recommendation conducted (included a 30-day public comment period) – see Appendix F.
5.		TBD	Comments assembled, re-drafted BUI removal report prepared to include necessary changes.
6.		TBD	NYSDEC (in consultation with USEPA R2) completes final modifications to the Restrictions on Dredging Activities BUI removal document.
7.		TBD	Coordinate the formal transmittal of the BUI removal with USEPA GLNPO and communicate result with IJC.
8.		TBD	Communicate results to local RAP Coordination for appropriate recognition and follow-up.

C. Post-Removal Responsibilities

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Following removal of the Restrictions on Dredging Activities BUI, the organizations listed below will continue ongoing environmental programs to assure that the restored beneficial use is protected and continues to remain unimpaired. The environmental programs relating to this beneficial use are: dredged material testing, evaluation, and permitting, and coordination of the Rochester Embayment RAC.

1. New York State Department of Environmental Conservation

NYSDEC will continue to evaluate dredging projects throughout the Rochester Embayment AOC, and will continue using TOGS 5.1.9 as well as GLTM in the issuance of permits for dredging proposals. TOGS 5.1.9 provides a blueprint on all project components necessary in obtaining a dredging permit through New York State that is consistent with all regulations and regulatory requirements, to ensure water quality and environmental conditions are managed and maintained. This will also ensure that the BUI removal criteria are sustained into the future.

2. United States Army Corps of Engineers

The USACE will continue to use GLTM as a technical guidance resource in the assessment of dredging projects in the Rochester Embayment AOC. USACE will continue to perform routine navigational dredging in the lower Genesee River, and will do so in accordance with all applicable procedures, standards, and guidance.

3. United States Environmental Protection Agency

The 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 AOC. NYSDEC Great Lakes Program staff are anticipated to assist with these efforts.

4. Monroe County Department of Public Health

With EPA/GLRI funding, MCDPH currently provides a Coordinator for the 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.

5. 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 of the Beneficial Use Impairments are restored and the long-term goal of delisting the AOC can be achieved.

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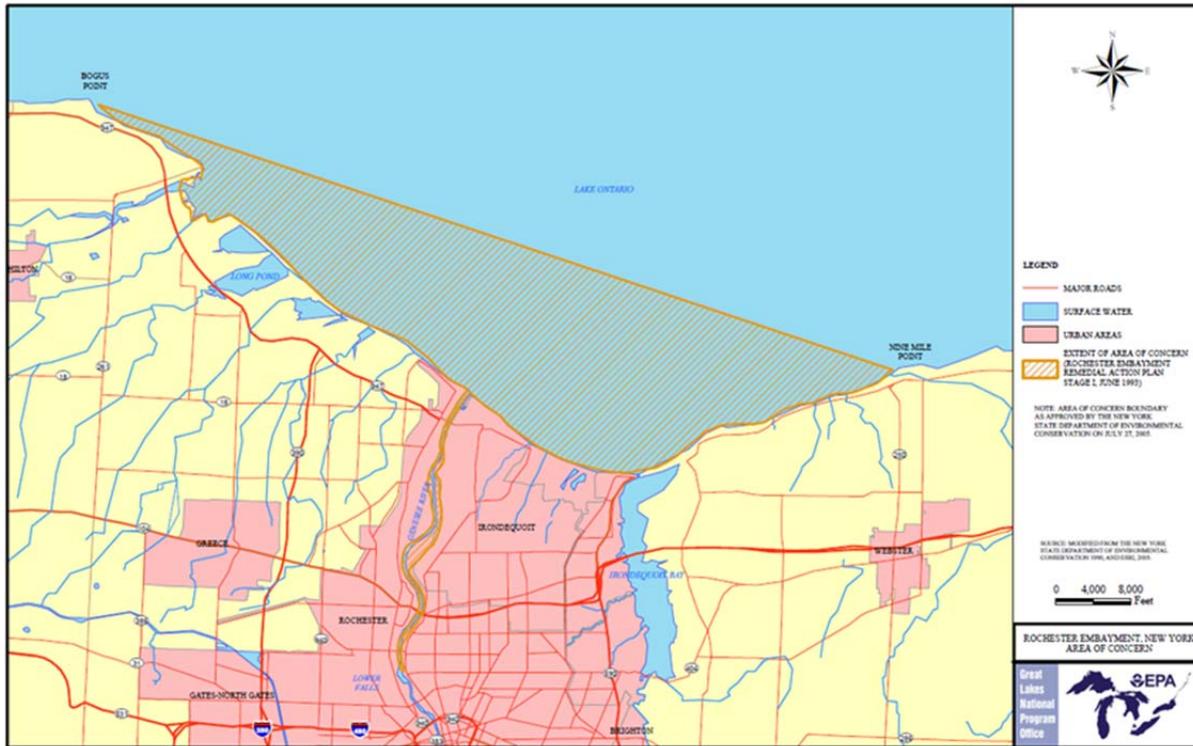


Figure 1. Map of Rochester Embayment AOC

Appendices:

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